



VCNO Explores Warfighting Research at the Naval Postgraduate School

By MC2 Nathan K. Serpico

Vice Chief of Naval Operations (VCNO) Adm. Bill Lescher made a brief visit to the Naval Postgraduate School (NPS), April 28, touring several key research labs and speaking with senior leadership about NPS' consequential work and its impact on the Navy.

Lescher visited one of NPS' additive manufacturing (AM) labs, the [Center for Cybersecurity and Cyber Operations](#), and the [Center for Autonomous Vehicle Research](#) (CAVR) where NPS students briefed their ongoing research that aims to solve key operational problems.

Lescher also met with students in NPS' Cyber Battle Lab and CAVR Lab, receiving insight from students about their immersive research in the fields of artificial intelligence and autonomy.

"[Talking with Lescher] was a great experience," said NPS student U.S. Navy Lt. Timothy Howarth. "I think [his visit] is important because it gives him an opportunity to see not only what my research is capable of and how it can impact the Fleet, but how our students, in general, provide very real solutions for today and even tomorrows challenges."

Another key engagement for Lescher was a visit with the recently established [Wayne P. Hughes, Jr. Naval Warfare Studies Institute](#) (NWSI). The goal of NWSI is to expedite the Navy's ability to access the university's immense talent and resources in taking on its most complex warfighting issues. Leaders and faculty from NWSI explained how interdisciplinary studies, research, wargaming and experimentation can come together here to provide solutions to the fleet.

"NPS is developing the leaders the Navy needs for the future force. I saw students who are developing tangible solutions to key operational problems, which are needed in the Fleet. It's the hands-on, research-based education they get here are NPS which builds the competencies we need for an increasingly technical all-domain naval force as called for in the Tri-Service Maritime Strategy."

-Vice Chief of Naval Operations Adm. Bill Lescher

According to NWSI Director retired Navy Capt. Jeff Kline, it was not just a privilege to inform the VCNO on relevant education and research, but also to see NPS students presenting on how they've applied their education to warfighting challenges.

"[Lescher] certainly witnessed our officers applying their education to their profession," said Kline. "NPS is at its best when our student-officers are the primary presenters. Today, he saw NPS at its best."

To read the full article, please visit our [website](#).



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Pentagon's Senior Climate Advisor Delivers Talk on Security, Climate Change in Latest SGL

By MC3 James Norket

Mr. Joseph Bryan, Senior Advisor on Climate to the U.S. Secretary of Defense spoke virtually to Naval Postgraduate School (NPS) students, faculty and staff about [“The Security Implications of Climate Change,”](#) and how the United States military and the world can benefit from reducing carbon emissions during the latest [Secretary of the Navy Guest Lecture](#) (SGL), April 27.

Bryan is an internationally-recognized expert on energy policy and clean energy, serving as Deputy Assistant Secretary of the Navy for Energy during the Obama Administration.

[Quoting Secretary of Defense Lloyd Austin](#), Bryan began the lecture by saying, “There is little about what the Department [of Defense] does to defend the American people that is not affected by climate change.”

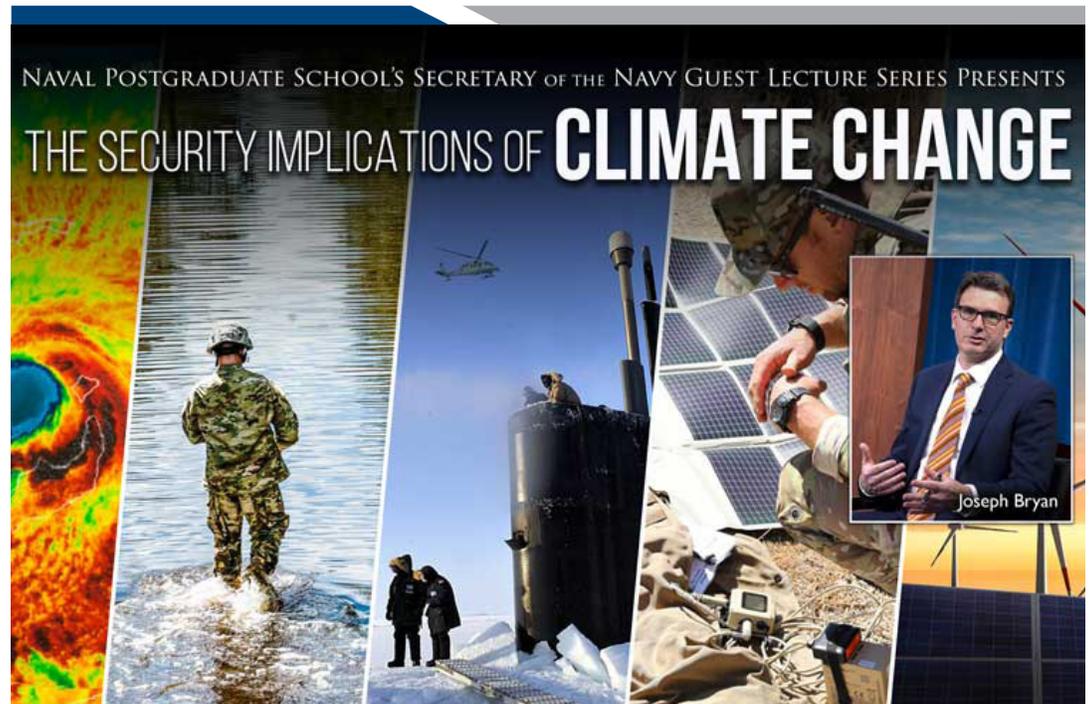
“That couldn’t be more true,” he said. “Climate change has an impact on the DOD in terms of supply and demand, and climate is driving both of these lines in the wrong direction. Mission demands from climate are going up, and more severe weather impacts our ability to respond.”

Bryan named a few examples of how mission demand will increase, pointing to incidents around the world that are affected by climate change and have a direct impact on the United States military. He mentioned how the Arctic is warming at twice the rate of the rest of the planet, causing multiple countries to compete for newly-available resources and influence. He spoke about how warmer temperatures and drought in the Middle East contribute to instability and challenge for local governments.

He talked about how hurricanes, wildfires, power outages and extreme temperatures in regions where U.S. forces conduct training all directly impact the ability for the U.S. to effectively prepare and conduct missions. He also talked about vulnerabilities caused by dependence on energy sources whose production is dominated by peer adversaries. Lithium ion batteries, for example, are used in countless systems used by the U.S. military. China’s dominance in the supply chain of these batteries, from mining through production, is a serious vulnerability, he explained.

“It is important for us to look at not only the effects that climate change has on the world, but the impact it has on the mission,” Bryan stressed. “Because they are inextricably linked.”

After his prepared remarks, Bryan opened the floor to NPS students, posing questions on everything from the DOD’s plans to reduce its



Senior Advisor on Climate to the Secretary of Defense Mr. Joseph Bryan spoke virtually to Naval Postgraduate School students and faculty, April 27, on “The Security Implications of Climate Change” during the latest edition of the Secretary of the Navy Guest Lecture (SGL) series. (Graphic by NPS Office of University Communications)

carbon footprint, to the short- and long-term effects of a successful transition to clean energy.

U.S. Navy Lt. Monica Killoran for example asked, “How might climate change facilitate opportunities for increased international cooperation?”

Bryan replied, “This is not a problem the United States can solve on its own, and so we need to work with the world community to address carbon reductions to transform our economies. I think there’s going to be tremendous international cooperation required.”

U.S. Navy Lt. Cmdr. Kellen Jones, a Ph.D. candidate in Meteorology, asked, “Does the DOD plan to invest in research and development for alternative carbon-neutral fuels?”

Bryan responded by saying, “We’re going to need to figure out how to address that part of our portfolio. We also are going to start thinking about new platforms. I think at some point we’re going to be thinking about what comes next, both on the fuel side and what comes next on the platform side. I know there’s some great research happening in both the Navy and in the other services around that.”

Catch [Bryan’s full lecture](#) on the [NPS YouTube channel](#).

Department of the Navy CIO and Cyber Leads Explore NPS for Partnerships on Security Applications, 5G

By Javier Chagoya

With the Naval Postgraduate School's (NPS) focus on applied research and education in emerging technologies, a recent visit to the university by Aaron Weis, Chief Information Officer for the Department of the Navy (DON CIO), and Chris Cleary, Principal Cyber Advisor, has opened doors to a range of new possibilities.

Building upon exploratory research using the university's unique educational network, Weis, Cleary and a small team of leadership from the DON-CIO office visited campus, April 7-8, meeting with university leaders to discuss how NPS can help leverage the latest in cybersecurity and next generation wireless technologies for naval advantage.

As the Navy advances critical work in IT infrastructure, network security, and 5G technology, the visit was an opportunity for NPS to demonstrate how it can partner with DOD and industry to help develop products on a path to technical maturity.

Weis and Cleary received a firsthand look at the latest cybersecurity tools and software in the NPS enterprise, and participated in discussions about the latest developments in 5G mobile networking with NPS leaders and experts

"Every time I come to NPS, I'm reminded of the untapped opportunities that we have here," noted Weis. "This trip has reaffirmed that there are so many incredible resources that we can take advantage of the education and academic mission at NPS."

According to Scott Bischoff, NPS CIO and Director for Information Technology and Communication Services (ITACS), and ITACS Deputy Director Rob Sweeney, the school can support research at multiple levels. ITACS staff have intellectual cache to work with industry to test, evaluate, integrate and deliver services and cyber defenses. In addition, robust faculty expertise and student-driven research add another layer of alignment with Weis' strategic vision to modernize, innovate and defend IT infrastructure.

A key goal for the visit, Bischoff said, was to make sure the visiting team took notice of NPS' flexibility and pace in innovation, and its availability to be a testbed for the emerging technologies necessary to meet his vision.

"We feel this visit was important because it demonstrated to DON IT leadership NPS' capability to pilot and prototype products on our .edu network before large scale implementation across the Navy and DOD," said Bischoff.

One of the opportunities already in NPS' court is its work with Project Overmatch – a priority for Chief of Naval Operations Adm. Mike Gilday. Overmatch is an effort to integrate sensors, platforms and weapons in every domain. Led by the Naval Information Warfare Systems Command (NAWWAR), Project Overmatch seeks to enable sustained maritime dominance using manned and unmanned systems, an area of expertise NPS has been developing for decades.

In addition to discussing networks and security, conversations also included 5G technology. NPS Associate Dean of Research Marine Corps Col. Randy Pugh briefed Weis and his team on how 5G mobile

networking could provide the warfighter access to advanced tools and applications in real-time.

"We are building concepts of how we're going to fight and who we're going to compete against," Pugh said addressing the CIO team. "Concept development, education and applied research, deploying a combat Ops Center without a "tent," is in our future. NPS' 5G initiatives are responding and looking at the needs in capacity, response times and the continuous streaming of data required for our future 5G networks.

In order to get there, Pugh noted, NPS must reinforce its current education and research efforts to become the hub for the technology.

"By leveraging NPS' faculty, 1,500 tactically-experienced students, and their collegial relationships, NPS' unique position intersects with the Navy Education Enterprise, Naval Research and Development establishment that prioritizes Fleet/Fleet Marine Force challenges and then develops and delivers solutions," said Pugh.

Weis pointed to NPS as a critical partner in both developing better infrastructure, and in DON-wide efforts to participate in specific, sanctioned 5G pilot programs.

"I was really heartened to see the whole emerging technology portfolio of NPS," said Weis. "What I heard this time was more of a holistic view on emerging technologies and how NPS is viewing them, thinking about them and how they can have value in incubating [technologies] and being a part of bringing them to life."

NPS efforts to partner with industry in the cyber area are driven by its "wide aperture and willingness as an academic institution to lean in," he added. "I see NPS helping us drive competitive advantage ... It's very exciting!"



The Department of the Navy's Chief Information Officer Aaron Weis, right, and DON Principal Cyber Advisor Chris Cleary, left, meet with NPS leadership in the university's Executive Briefing Center, April 7-8, to discuss next generation wireless communications with a focus on applications of 5G to military challenges. (U.S. Navy photo by Javier Chagoya)

Annual NRWG Connects NPS Researchers and Fleet Sponsors, Warfighter Challenges

By MC2 Tom Tonthat

The Naval Research Program (NRP) at the Naval Postgraduate School (NPS) held its annual Naval Research Working Group (NRWG) event virtually, April 20-22, providing a forum for Department of Defense (DOD) organizations to be research topic sponsors, communicating their operational challenges and recommending research topics to NPS faculty and students.

Approximately 300 people from throughout the DOD, Navy and Marine Corps, as well as the NPS community, participated in NRWG to connect with each other for researching and developing solutions to current warfighter challenges.

“[NRWG] is about the ability to bring to the force and the fleet a remarkable aggregation of intellectual and experiential knowledge,” said NPS President retired Vice Adm. Ann E. Rondeau during her keynote address. “Our research needs to be different. It needs to have that competitive edge, but also must have a collaborative core to it because we need to do these things together, not for redundancy, but for integration and the sharing of knowledge. That’s what this particular NRP does, it’s different than so many other research endeavors in the country. It requires and mandates collaboration with the purpose in mind of application.”

NPS Senior Marine Corps Representative Col. Randy Pugh believes the NRP is tremendously important for three big reasons. The first being its ability to answer a multitude of difficult questions and provide insight about topics that the Navy and Marine Corps value over others, supporting 80 to 85 different projects per year. Next, it connects the Naval Education Enterprise (NEE), the Naval Research and Development Establishment (NRDE), the service headquarters, and brings this to the Fleet and Fleet Marine Force as a coherent team working collaboratively and collectively towards finding solutions for these challenges. Third, and most importantly to Pugh, the NRP provides NPS faculty and students with critical projects to focus on.

“[The NRP] will provide them ideas about what the problems are and how to get after the solutions,” said Pugh. “This will prepare them moving forward as they go back to the Fleet and Fleet Marine Force, integrating the solutions into operations.”

As representatives from DOD organizations shared research topic briefs to potentially make connections through shared research interests or goals, NPS faculty and students highlighted their capabilities through poster sessions, panels, pre-recorded lab tours, and presentations during NRWG.

For example, faculty from NPS’ newly-established Climate and Security Network talked about their current projects. NPS Energy Academic Group (EAG) Research Associate Kristen Fletcher talked about the EAG’s interdisciplinary effort to develop an environmental portfolio focused on climate, energy and security. During the presentation, the U.S. Coast Guard Research & Development Center (RDC) expressed interest in working with the Climate and Security Network to develop scenarios for a climate and technology focused evergreen event with the Coast Guard Headquarters.



The Naval Postgraduate School (NPS), as part of its Naval Research Program (NRP) held the annual Naval Research Working Group (NRWG) online, April 20-22. NRWG-21 served as a virtual forum for Navy and Marine Corps organizations to connect with NPS faculty and students to review, and recommend topics for NPS research over the coming fiscal year. (Graphic by NPS Office of University Communications)

Recently, RDC renewed a Memorandum of Understanding with NPS to conduct joint research projects and exchanges that directly support defense priorities, and Coast Guard statutory missions within the Tri-Service Maritime Strategy. According to RDC Commanding Officer Capt. Dan Keane, the Coast Guard is eager to help researchers get onboard a Coast Guard vessel or aircraft to conduct research.

“Perhaps one of our strongest and most impactful partnerships is with the Naval Postgraduate School,” noted Keane. “Since an MOU was signed three years ago, the RDC has become a topic sponsor, we have proposed questions related to our portfolio that have turned into academic products, NPS researchers have worked with our researchers on summer studies and we have provided platforms for NPS experimentation. We believe that we have just scratched the surface and the future is incredibly bright. We are excited about the next five years.”

Since the start of NRWG in 2013, more than 2,500 topics have been submitted through the Navy Research Program. This year’s NRWG covered nearly 350 research topics.

“[NRWG] exposes our faculty and our students to real-world problems,” said Deputy Program Director for the NRP U.S. Marine Corps Lt. Col. David Forbell. “It allows them to work on solving these problems, which I think enhances their education. It allows the faculty to provide a much more enriching experience in their classes when they’re using real world problems.

“There are few organizations or institutions in academia that are as purely defense-focused as NPS is,” continued Forbell. “When you combine our defense-focused curricula with our primarily active duty officers and enlisted students who have the requisite experience coming from operational tours, it’s a powerful combination not largely replicated anywhere else.”

NPS, U.S. Coast Guard R&D Center to Jointly Research Maritime Solutions

By Office of University Communications

As a result of the Tri-Service Maritime Strategy (TSMS) released in December, which underscored the need for joint cooperation in today's security environment, the Naval Postgraduate School (NPS) in Monterey, Calif. and the U.S. Coast Guard Research and Development Center (RDC) in New London, Conn. agreed to a Memorandum of Understanding (MOU) Apr. 14 extending their previous three-year direct collaboration on joint research projects and exchanges to five more years.

NPS President retired Vice Adm. Ann E. Rondeau and RDC Commanding Officer Capt. Dan Keane met through an online collaboration tool, virtually, to sign the memo. The emphasis of the MOU is to further optimize joint collaboration for specific research and educational outcomes that directly support defense priorities and Coast Guard statutory missions within the TSMS.

With mid-career Coast Guard officers as students at NPS, the MOU will help focus NPS on aspects of the TSMS that chiefly fall to the Coast Guard in order to define research projects that those students, and NPS faculty, can work on together and advance toward solving key maritime challenges. In addition to identifying thesis topics of mutual interest, the MOU includes access and use of each institution's unique laboratories and facilities, and involves other key research exchanges to mutually advance their mission of research and education for warfighting advantage.

"The Tri-Service Maritime Strategy prioritizes developing future capability and capacity for both the Navy and the Coast Guard," said Rondeau. "Our formalized partnership not only strengthens the strong ties between NPS and the Coast Guard, but it brings to bear our defense-focused faculty and operationally-experienced Navy and Coast Guard students in joint projects to develop our future force. The relationship between NPS and RDC is critically important, which is supported also by our relationship with Rear Adm. Penoyer of the Eleventh Coast Guard District and Lt. Cmdr. John Gatti of the local Coast Guard Station Monterey. We all look forward to enhancing our applied research and education that will help solve the toughest maritime challenges."

According to Keane, one of the cornerstones of the RDC portfolio accomplishment

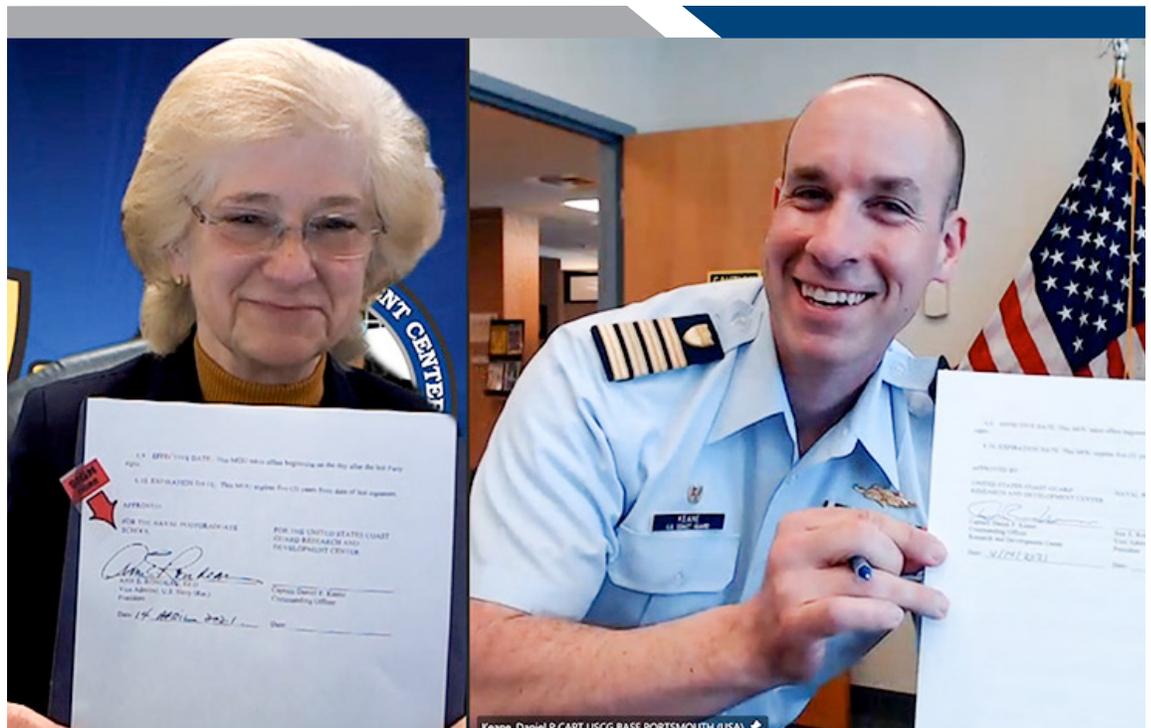
strategy are the collaborations they have with a wide range of partners from Department of Defense and Department of Energy Labs, to the Federal Lab Consortium, and into academia.

"Perhaps one of our strongest and most impactful partnerships is with the Naval Postgraduate School," noted Keane. "Since an MOU was signed three years ago, the RDC has become a topic sponsor, we have proposed questions related to our portfolio that have turned into academic products, NPS researchers have worked with our researchers on summer studies and we have provided platforms for NPS experimentation. We believe that we have just scratched the surface and the future is incredibly bright. We are excited about the next five years."

Rear Adm. Brian Penoyer, Eleventh Coast Guard District commander noted that NPS has been a true force-multiplier for the Coast Guard and the RDC.

"This partnership helps us quantify disaster relief responses, provides a better understanding of drug trafficking patterns at sea, and fosters an environment of innovation for Coast Guard men and women," said Penoyer. "It's through these relationships that we maintain our mission-ready total workforce to continue safeguarding our nation."

Currently, institution-level planning is underway to facilitate joint research projects on such things including renewable energy, additive manufacturing, maritime-domain awareness and wargaming.



NPS President retired Vice Adm. Ann E. Rondeau and U.S. Coast Guard Research and Development Center Commanding Officer Capt. Dan Keane sign a Memorandum of Understanding (MOU), Apr. 14, extending their collaboration on applied research and education outcomes in direct support of the Tri-Service Maritime Strategy. (Screen capture by NPS Office of University Communications)

NPS Establishes Climate and Security Network for Research Collaboration, Accessibility

By MC3 James Norket

On January 27, President Joe Biden signed an executive order to tackle climate challenges at home and abroad, which both elevates and frames climate concerns within a national security perspective. Responding swiftly, the Naval Postgraduate School (NPS) launched the Climate and Security Network, connecting NPS faculty with relevant expertise across campus together, along with staff, students and even alumni, ready to collaborate on important research and support related educational efforts.

The network was established March 12 to connect faculty, students and researchers at the university who are engaged in climate and security issues, and provide opportunities for interdisciplinary learning and problem-solving. In this way, the network bridges experts from different organizations, including the Meteorology and Oceanography departments, the Energy Academic Group, the Center for Infrastructure Defense and others. The network presents the collective, relevant expertise at NPS to the Pentagon, to help solve climate change challenges in the Navy and the Department of Defense (DOD) as a whole.

“We wanted to pull together the folks at NPS who are doing this work and to give them a way to collaborate easier on these issues, and to share information about their research and expertise,” said Kristen Fletcher, a faculty associate for research in the Energy Academic Group (EAG). “Someone in oceanography may be doing something that’s particularly relevant to someone in systems engineering or national security affairs and meteorology.”

“We also wanted to present this network to the Navy and DOD to help meet the mandates of these new executive orders,” she continued. “This is the research and expertise that NPS can bring to the table.”

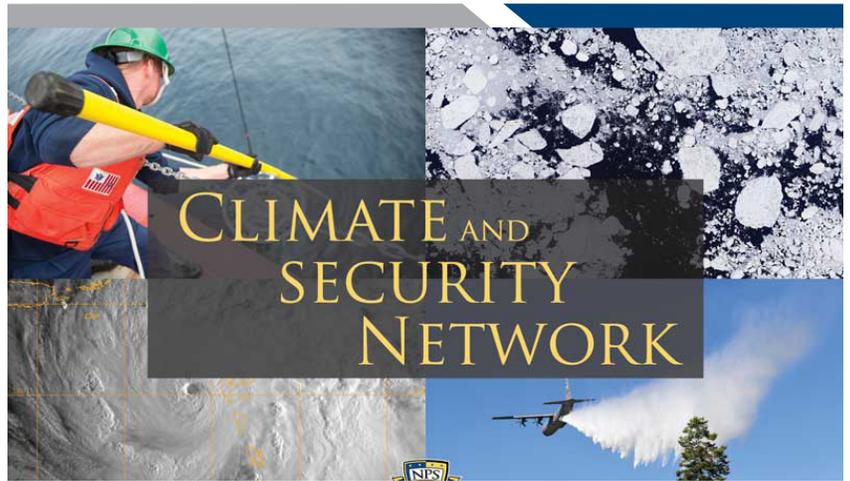
NPS approaches climate change and its effects from many different angles, such as how can the university help develop new, or utilize already-discovered technologies, to reduce the greenhouse gases that the DOD produces? In other words, how can NPS help combat problems that climate change creates?

According to Dr. Tom Murphree, an NPS research professor in meteorology, NPS is the perfect place to study all things related to climate.

“We have people like me who deal with the science of change in the the physical environment,” said Murphree. “But then we have other people who focus on the operational impacts of climate change, and look at how climate change could destabilize countries. Other people take an engineering perspective and look at how we can engineer our bases, equipment, ships and planes so that we have less of an impact on the climate system.”

One of the first actions of the Climate and Security Network was to create a speaker series.

“We want to bring experts in from the outside who can give us different perspectives and then highlight for them the research that’s going on at NPS,” said Fletcher.



In response to DOD actions to address the security implications of climate change, NPS has launched the Climate and Security Network, bringing relevant expertise across campus together to support the research needs of the Navy and DOD, and to advance educational programs related to these issues. (Graphic by the NPS Office of University Communications)

The first speaker was [John Conger](#), director of the Center for Climate and Security and chair of the Climate and Security Advisory Group.

Conger spoke about the administration’s executive orders on climate change and how it will affect the DOD. He spoke on the strategic advantages that come with studying changes in the environment, as well as the humanitarian benefits. After his presentation, he took time to answer questions from students and faculty.

“The benefit of having Mr. Conger kick off our Speaker Series is that he provided details on the Executive Orders and climate and security mandates of the Biden Administration and put it into context by drawing on his experiences at Department of Defense,” said Fletcher. “That helped spark discussions about how DOD will meet its mission in the future while considering climate and security priorities.”

The network is still in its early stages, but Fletcher has big hopes for the program. She said that while the first few speakers will be from external sources, by the summer, it will focus on research conducted by NPS students and faculty who can share their expertise with the Navy and Department of Defense.

The creation of the Climate and Security Network is a step forward for NPS in climate and security, highlighting the work that has been conducted here for decades.

“My hope is that the network will advance the research and expertise from NPS that goes back decades, both in terms of scientific expertise as well as security policy,” said Fletcher. “By integrating climate and security issues better into our curriculum, then our students will be better prepared on their next assignment. So when they leave they can start integrating those changes wherever they go, and they will have a broader impact as leaders.”

To join the NPS Climate and Security Network, visit the [website](#).

NPS Professor, Students Explore Innovative Ways to Power the Navy

By Rebecca Hoag

Imagine a machine that collected water from the air, broke the water down into hydrogen and oxygen, then used hydrogen as a power source. That's the goal of Dr. Anthony Gannon, associate professor at the Naval Postgraduate School's Mechanical and Aerospace Engineering (MAE) school, and his rotating group of thesis students, who are applying their interdisciplinary education and research to support developing these new capabilities. Gannon has been working with students towards this goal since 2016.

The original idea was just the first part, collecting moisture from the atmosphere, but then MAE Chair Dr. Garth Hobson pushed Gannon to go further.

"When he saw what we've done there, he said, 'You've got electricity and you've got water, so you might as well make hydrogen,'" Gannon says, recalling the conversation between him and Hobson.

Being able to get energy from moist air would reduce challenges in transporting fossil fuels to bases in deployment locations. Hydrogen is also lighter than other forms of fuel, which would be advantageous for running small devices off submarines, hypothetically fueling drones from the surrounding water instead of going up to be refueled. Finally, hydrogen power can be used as a method of storing excess energy produced by renewable sources.

Gannon proposed the idea to the Office of Naval Research (ONR), who now funds the research. Since then, he's found a number of students interested in helping at each part of the energy generation. They are only using technology that is commercially available for practical reasons.

Automatically compressing hydrogen

Hydrogen is traditionally produced as a byproduct during natural gas reforming when natural gas is hit by high pressure steam. The hydrogen is then usually transported in bottles on trucks or via pipeline. With economical or environmental considerations in mind, U.S. Navy Lt. Joshua Lewis is looking to produce a small, compact and mobile system that captures hydrogen from the air.

"If I create a mobile system that runs on renewable sources, I can drop this thing anywhere in the world and start producing hydrogen gas," Lewis explains.

He envisions using this method of hydrogen energy production to power drones, like a commercial medical drone that currently runs on batteries. It would decrease the turnaround time for these systems because the operator would no longer have to wait for the batteries to charge.

His system involves a dehumidifier to take moisture out of the surrounding air, an electrolyzer to separate the hydrogen from the water collected, and a compressor to compress the hydrogen. All these systems would be solar-powered. Navy Ensign Charles Heaton has been working closely with Lewis to power hydrogen generation on solar and to automate the whole process.

From fossil-power to hydrogen-power

Navy Lt. Emille Nicholas Perez is working to convert a small industrial engine to run on gas. Traditionally, these engine runs on a kerosene and synthetic oil mixture for both fuel and lubrication. Perez wants to create a baseline for the engine to run on gas, and then another student can pick up where Perez leaves off to shift the engine from running on gas to hydrogen.

Meanwhile, Ensign Ethan Hardt is picking up where a previous master's student Ensign Brianna Kaufman left off, converting a natural gas and propane-powered turbine to run on hydrogen power instead. His predecessor developed the hydrogen supply system and was able to run the retrofitted system for a short period of time.

In addition to all these individual projects, the team is working to run a quadcopter on a hydrogen fuel cell. While current copter designs are not optimized for being run on hydrogen, Gannon says that running it on hydrogen could increase the run time from 20-30 minutes to up to 180 minutes.

Ultimately, Gannon and his students are working to optimize energy access in difficult operational environments – environments that his students know very well with their operational experience providing real-time recognition of exactly what an operator needs.

In addition to their research, Gannon says his students, Gannon says, have NPS students are known to be excellent translators of operational needs into solutions.

"They're very keen and very bright, and some of the guys who have been on tour, they have practical insight," Gannon says. "Once we bring them up-to-speed on the analysis side, they are powerful because they can bring the analytical tools and experience together."



With the help of several NPS students, Dr. Anthony Gannon is exploring innovative methods to produce hydrogen fuel utilized by various current and possibly future Navy platforms, like this hydrogen-powered UAV flown by NPS researchers at the Military Operations in Urban Terrain testing facility in the former Ft. Ord. (Photo courtesy Dr. Anthony Gannon)

NPS, NASA Team Up on “Astrobotics” Project Advancing Spacecraft Robotics

By MC3 Lenny Weston

On March 17, Naval Postgraduate School (NPS) students and researchers in the NPS Spacecraft Robotics Laboratory, working with NASA and the International Space Station research team, including astronauts Dr. Shannon Walker and U.S. Navy Cmdr. Victor Glover, an NPS alumnus, conducted the first of five experiments in the NPS “Astrobotics” project.

The Astrobotics project, led by Dr. Marcello Romano, aims at developing and testing new dynamic models, and guidance and control techniques for the maneuvering of autonomous robotic spacecraft. The project utilizes the NASA “Astrobee” free-flying robotic vehicle, inside the International Space Station.

For more than a decade, robotic assistants called SPHERES (Synchronized Position Hold, Engage, Reorient, Experimental Satellites) have helped astronauts conduct experiments in areas of formation flight, docking and autonomy.

NASA’s Astrobees free-flyer, designed by NASA Ames and lifted up to the ISS in 2020, brings a new iteration to these astronaut assistants. They are small, one-foot cube autonomous spacecraft that come with many improvements, including auto-docking capability, artificial vision navigation, and an on-board robotic arm.

The NPS Astrobotics project is currently supported by the NPS Alumni Association and Foundation with a seedling-level gift fund with Romano as principal investigator, and involves critical technical collaboration by NASA Ames Research Center Intelligent Robotics Group, as well as operational collaboration by the Department of Defense Space Test Program.

According to NPS Astrobotics Engineering and Operations Team Lead, Dr. Jennifer Hudson, the team is possibly the first to demonstrate how an autonomous vehicle can use a robotic arm to maneuver an orbiting space vehicle from the surface of another spacecraft. This opens the door for new orbital robotics applications.

“I think projects like ours that are helping to advance robotic capabilities in space are really contributing to this revolution in the technology that’s going to enable more and more complex operations in space over the next decade – things that aren’t even possible now,” said Hudson. “I think we’re the first ones who have demonstrated use of a robotic arm to propel a vehicle from one location to another on a spacecraft.”

To conduct the first experiment, NPS researchers worked with NASA Ames to upload flight software developed by NPS students. In turn, the flight software took control of the Astrobee spacecraft, and successfully flew it performing “hopping” maneuvers by using the small robotic arm as a jumping “spring.”

With the first experiment complete, the Astrobotics team has had some time to analyze the data collected, and are determining what series of experiments will be needed for their next iteration.

Dr. Stephen Kwok-Choon, NPS’ Astrobotics deputy team lead, notes the experiment involved eight different self-toss maneuvers that encompassed 18 different runs. Each self-toss maneuver started with



NASA Astronaut Victor Glover, a Naval Postgraduate School (NPS) alumnus, is currently aboard the International Space Station (ISS) where NPS is working with the ISS Research Team on developing new forms of mobility for the Astrobee robotic vehicles. (Courtesy Photo)

the Astrobee grasping on a handrail, then the Astrobee robotic arm was commanded to move to a final flight state, followed by releasing the arm’s grip. This allowed the Astrobee to perform a launch from a handrail projecting itself into motion, explained Kwok-Choon.

“I am grateful and excited to report that overall, the experiment session was a resounding success,” said Kwok-Choon. “Our experiment highlighted that both the Astrobee vehicles can be successfully utilized for different payload developers onboard the ISS. This will lead to greater flexibility and coordination for future experiments.”

With the collaboration with NASA’s Ames Research Center of Mountain View, California, NPS students, faculty and staff get a unique experience to work on research with space and robotics technology that astronauts on the ISS can test.

“This is special because nothing has been done like this before,” said NPS student U.S. Navy Lt. James “Dillon” Summerlin. “Having a free environment using a toss maneuver to move could allow drones to reach spaces that they have never been to before.”

Hudson said one of the most exciting aspects of this project is the students’ opportunity to work closely with NASA Ames on the development and utilization of the Astrobee, and on the future of spacecraft robotics.

“It’s a great educational opportunity for the students in astronautical engineering,” said Hudson. “This is a very nice, accessible hands-on project where the students can work on projects in the lab and then see them implemented in space in a very short time frame. We certainly look to continuing that relationship and working on other Astrobee projects in the future.”

The NPS Astrobotics Team stressed that the effort would not have been possible without great support from the NASA Ames Intelligent Robotics Group, Romano noted, whose assistance has been invaluable throughout this endeavor. He added a special recognition for the “excellent work” of current and previous Astrobotics team members who have contributed to the project, and in particular to Dr. Josep Virgili-Llop, Romano added, who left the project in 2019 to become a senior flight engineer in the SpaceX Crew Dragon team.

Missile Defense Agency Chief Discusses Technology, Education, Mission During Virtual SGL

By MC2 Taylor Vencill

Naval Postgraduate School (NPS) distinguished alumnus and current [Missile Defense Agency](#) (MDA) Director Vice Adm. Jon A. Hill spoke virtually to NPS faculty, staff and students on the topic of “Missile Defense and Technology Warriors” during the latest edition of the [Secretary of the Navy Guest Lecture](#) (SGL) series, April 13.

Hill talked about the MDA and his role in overseeing the agency’s mission to develop, deliver and sustain layered capabilities to defend the United States, deployed forces, allies and friends against missile attacks in all phases of flight. A graduate of NPS’ [Applied Physics](#) and Ordnance Engineering curriculum, Hill stressed the role of the evolving threat in driving continuous improvement across the system.

“You have to have a credible missile defense to be a credible missile deterrent,” stated Hill. “As you walk into the evolution of the threat, we are well geared to take on and grow in the areas of hypersonic missile defense. We’re working to integrate all of these different pieces into our defense systems because the adversary is integrating their ballistic cruise missiles and unmanned air vehicles and trying to make me nervous. However, I’m not nervous because I believe we’ve got the best defenses on the planet.”

Through all of MDA’s development and innovation, along with collaboration with partners and allies, Hill made clear that the warfighter is at the forefront of his mind.

“I’m going to take care of the warfighter first,” he said. “I’m going to make sure we’re producing and getting things to the field. We’re going to be deploying capabilities, assessing the threat, and bringing in technology and working on hardcore developments so that we can continue to support and defend the nation.”

Part of his effort to take care of the warfighter, Hill explained that the foundation of all past, present and future defense systems is education. He quoted Chief of Naval Operations (CNO) Adm. Michael M. Gilday, in saying, “Learning, the ultimate warfare enabler, and the intellectual development of our Sailors is the most critical warfighting capability.”

“[CNO] is pointing towards education as a foundational aspect to what you are as a naval officer and what we will do as we progress through our careers, because it’s not going to get easier,” said Hill. “The threat is constantly evolving.”

Following his prepared remarks, Hill spent time answering questions from NPS students in the Meyer Scholar Program, named for the Father of the AEGIS Combat System retired Navy Rear Adm. Wayne E. Meyer. The objective of the Meyer Scholar program is to develop officers who are exceptionally well-educated in the science and engineering disciplines associated with Integrated Air and Missile Defense (IAMD). The students asked Hill about the future of the MDA, evolving threats, and how officers can be more technically prepared to fulfill missile defense roles.

U.S. Navy Lt. James Kornowski, for example, asked about the most significant future challenge to the Missile Defense Agency and its mission.

Hill swiftly replied, “It’s the continuously evolving threat. Nothing is static. The threats that were present early in my career have evolved and continue to evolve.”

Referencing the [CNO NAVPLAN 2021](#), U.S. Navy Cmdr. Doug Jones asked, “In your opinion and from the MDA perspective, what transformation within the Naval Education Enterprise is required in order to compete, deter and win in the future?”

Hill addressed the complexities that are involved with that answer . . . “We need to know how these systems work so that we can adequately employ them. I think that is the key thinking that will drive reform in education because it is becoming more technical and more connected and that means it’s also more challenging.”

Recognizing the role NPS played in his own career trajectory, Hill said that graduate education and research opportunities for DOD officers are paramount. From his own experience, it wasn’t about the direct application of the physics concepts he learned. Rather, it was about the development of his own analytical mind, and being able to break down complex problems.

For the development of that skillset, he said, “NPS is one of the most important institutions on the planet.”

Watch [Hill’s full lecture](#) on the [NPS YouTube channel](#).



NPS distinguished alumnus and current Missile Defense Agency (MDA) Director Vice Adm. Jon A. Hill presented his virtual Secretary of the Navy Guest Lecture (SGL) to university students, faculty and staff, April 13. Hill discussed the topic, “Missile Defense and Technology Warriors” to a broad online audience before fielding questions from several NPS students. (U.S. Navy graphic by Office of University Communications)

NPS Student Invents, Patents Durable Uniform Nametags

By Javier Chagoya

Using his own time and resources, Naval Postgraduate School (NPS) Space Systems Engineering student Lt. Mitchell Kempisty ventured into uncharted waters to bring an invention of his making through the patent process, an invention which he hopes will improve Navy uniform fabric nametag durability.

Kempisty is something of an overachiever. As an NPS student, he is fully engaged in his thesis, titled “Attitude Optimization of NASA’s Lunar Reconnaissance Orbiter in Sun-safe Mode in Order to Minimize Star-Tracker Obstructions from Local Orbiting Bodies.”

But that’s not enough for the Naval Surface Forces’ 2020 Shiphandler of the Year, who says he saw an opportunity for improvement while serving on two ships where he noticed a lot of wear and tear with the name tag patches on shipboard working uniforms, especially those that use hook and loop to stick to coveralls and work shirts. Coincidentally, Kempisty’s former ships were both used as Navy testbeds for the newest of flame-retardant shipboard clothing in 2019, the two-piece Type III NWU (Navy Working Uniform).

“An issue that all Navy Sailors deal with are their nametags on their coveralls, and now on the new NWU, quickly becoming disheveled and unprofessional looking,” noted Kempisty. “I came up with a patentable idea that provides industrial reinforcement of the hook and loop on the patches to protect it and keep it looking professional.”

The patent title is “Industrial Reinforcement for a Wearable Identification,” said Kempisty, but he calls his patch backing invention uGuard.

Kempisty says his research in uniform patches follows accepted standards for creating flame retardant materials and meets or exceeds Navy requirements for accessories that attach to shipboard clothing. The backing material for the patches are a fire-retardant carbon fiber and nylon blend with appropriate flexural rigidity that offers both wearable comfort and resilience. The backing Kempisty invented protects the soft wearable patch during extensive manual labor.

While Kempisty is a master’s candidate in aeronautical engineering, he realized the best way to prototype his invention was to dive into the field of additive manufacturing. He purchased an inexpensive 3D printer and learned to use it.

“Once comfortable with 3D printer operation, I then modified almost all the components to fit my exact needs,” said Kempisty. “I also learned Computer Assisted Design (CAD), using my own AutoCAD license. Once exact specifications were determined and designed from CAD and 3D printing, I created my first set of real-life products.”

Now that he had a product in hand, his next step to getting into the hands of the warfighter was a patent. For this, Kempisty turned to an attorney friend in San Francisco, who worked out a meeting with his firm’s patent lawyers, who saw promise in the product and helped draft his patent application for the U.S. Patent and Trademark Office (USPTO). The move proved fortuitous for Kempisty, saving him time and money in what could have been a lengthy and expensive process to receive a patent.



U.S. Navy Lt. Mitchell Kempisty has invented a fire-retardant material backing for nametags and other patches worn on military clothing that hold up to the rigors of daily work. He accomplished the research using his own resources and time while a student in the Space Systems Engineering program. (U.S. Navy photo by Javier Chagoya)

With a patent number for his product in hand, Kempisty pushed ahead into another unfamiliar realm of the process: mass production and manufacturing. Luckily, Kempisty not only found a manufacturer for his durable and fire-retardant patches, he found one willing to guide him through the mass production process.

“The president of the company was very understanding of the fact that I have never done anything like this before and guided me in the negotiation and setup of producing a full manufacturing line for the product,” said Kempisty. “I am also proud to say that this product is fully designed and manufactured in the USA.”

“My ultimate goal right now is to gain an audience with the Navy Exchange Command to get the [name tags] stocked in the uniform store,” he continued.

If things go well, Kempisty wants to look into expanding the product line to include protection of circular patches for pilots.

“Doing everything by myself at my home computer has forced me to learn quite a few skills and have taken up a lot of my free time, but if I can get to the finish line, it will all be worth it. It also opens the door for many more opportunities to come,” added Kempisty.

Design Challenge Seeks to Advance Prototype for “Athena” Collaboration Tool

By MC3 James Norket

In an effort to modernize the way that research is conducted and shared, the Naval Postgraduate School (NPS) hosted a design challenge workshop for students, faculty and staff to further develop Athena, a collaborative research tool, April 17.

Athena is currently a prototype tool that demonstrates what it might be like if NPS researchers were able to seamlessly share current research, all past research and even find sponsors for future research opportunities. Ultimately, developers hope Athena will be a research collaboration portal that encourages diverse, but like-minded teams to tackle Navy and Marine Corps challenges and support the rapid iteration of solutions that support the fleet and force.

In its final form, anybody in the DOD with a challenge could access Athena. They would login, use keyword search functions to see if anyone experienced similar challenges, and explore existing research related to the problem. If the search returns no results, the person can then utilize Athena to submit a thesis topic for future investigation by students at NPS.

“Athena has true potential to change the way that we do business in the United States military,” said NPS student U.S. Marine Corps Capt. Ben Cohen.

Cohen is leading the development for Athena, and believes that the program will make years of research available at the click of a button.

“Anybody in the fleet Marine Force or Navy is able to come to Athena and search for information in a problem they are facing, and maybe there’s already a solution in place,” said Cohen. “If the answer is not there, you can present the problem to students and faculty who can conduct the research as part of their thesis.”

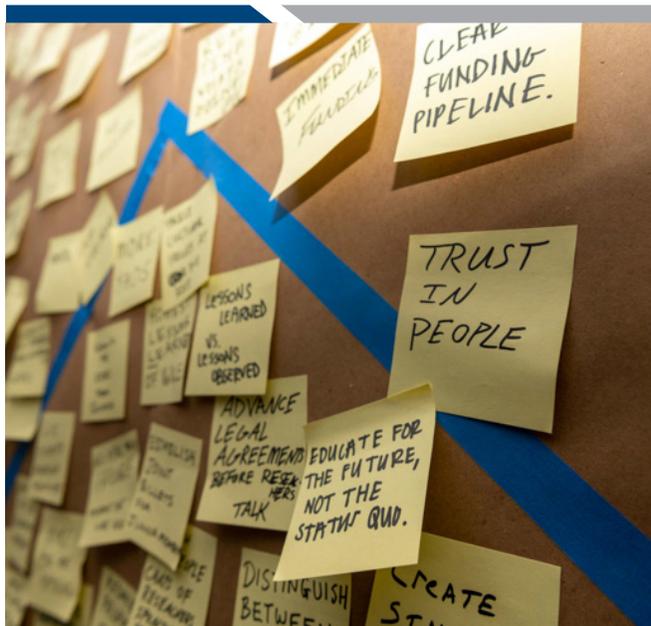
Helping conduct the design

challenge workshop were facilitators from the Center for Adaptive Warfighting (CAW), an organization that trains Sailors and Marines on the best practices for complex problem-solving and ideation.

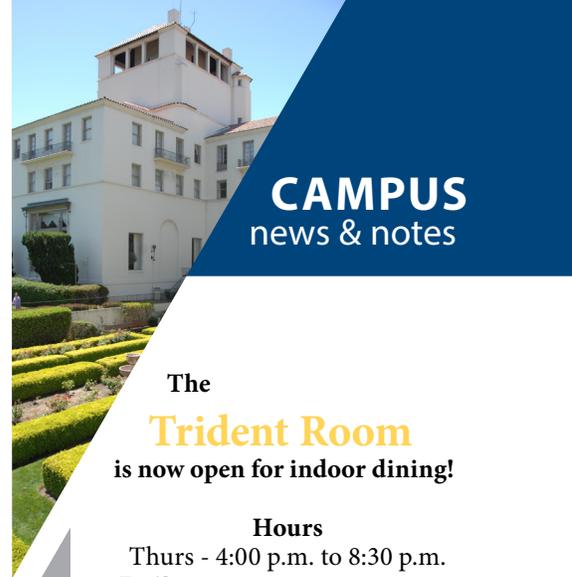
According to U.S. Marine Corps Capt. Michael Troncoso, a volunteer at CAW and an NPS alumnus, they all came together to brainstorm concepts and ideas to solve issues and problems associated with collaborating across our defense system. Troncoso noted that this collaboration is necessary to take a prototype such as Athena and make it a better platform useful for an enterprise such as the entire DoD.

U.S. Marine Corps Lt. Col. David Forbell, the NPS Deputy Senior Marine Representative expressed that students often approach him with a yearning to solve real-life problems with their research.

“The students are chomping at the bit to solve these problems, but they don’t always know what the problems are or where to go or who to ask,” continued Forbell. “That’s where Athena brings everything together. It brings the research demand and the research supply together.”



Naval Postgraduate School (NPS) students, faculty and staff, joined by members from the Center for Adaptive Warfighting, used sticky notes in a design thinking and brainstorming exercise to develop concepts for Athena, a collaborative research tool created at NPS to share current research, explore past research and find sponsors for future research opportunities. (U.S. Navy photo by MC3 James Norket)



CAMPUS news & notes

The **Trident Room** is now open for indoor dining!

Hours

Thurs - 4:00 p.m. to 8:30 p.m.
Fri/Sat - 4:00 p.m. to 10:00 p.m.

(Tables are socially distanced, Tables have 90 minute time slots. Reservations are required)

To make reservations, scan the barcode below



Send your campus news and notes to update@nps.edu.

NPS' 2020 Sailor of the Year Selected as Runner-up in Next Level Competition

By MC2 Nathan K. Serpico

Naval Postgraduate School's (NPS) own 2020 Sailor of the Year (SOY), Yeoman 1st Class Lao Kue was selected as Navy Personnel Command's (NPC) runner-up for the Enterprise Support Sailor of the Year (SOY).

From his selection as NPS' 2020 SOY, Kue advanced to the second level in the Navy-wide Shore SOY competition and competed against five other outstanding Sailors from NAVMAC, OPNAV SDC, Naval Academy, Naval War College, and CHNAVPERS SUPPORT WASH DC to finish as NPC's runner up.

"Truth be told, I was in disbelief to hear my name announced as the runner-up of the Enterprise Support Sailor of the Year," recalled Kue. "I was competing against the best, and to be placed even as the runner-up was a humble and blessing experience."

A true success story emanating from Detroit, Mich., Kue's parents are first generation Hmong who immigrated to the United States after the Vietnam War in 1978. He enlisted into the U.S. Navy in March 2006 and has served and deployed to diverse areas, such as Ali Air Base, Iraq, in support of Operation IRAQI Freedom; Commander, U.S. Forces Korea in Seoul, South Korea; Naval Special Warfare Basic Training Command in Coronado, Calif., where he was named Junior Sailor of the Year for 2012; U.S. Fifth Fleet/U.S. Forces Naval Central Command in Manama, Bahrain; and Naval Mobile Construction Battalion ONE in Gulfport, Miss.

"I am extremely proud of and for Kue, the honor bestowed upon him is a testament to his work ethic and persistence, not just at NPS over the last year but throughout his entire career," said U.S. Navy Lt. j.g. Christopher Miller, NPS staff executive officer and administrative officer. "A combination of factors and many individual accomplishments played a role [in his selection], and additionally his



YN1 Lao Kue, who was the 2020 Sailor of the Year at NPS, was selected as Navy Personnel Command's runner up for the Enterprise Support Sailor of the Year. (U.S. Navy photo by Javier Chagoya)

leadership role within the accomplishments of his highly successful team also played a factor."

"I would like to thank the leadership at NPS for affording me this opportunity to represent our command," noted Kue. "Also, I would like to thank my peers and junior Sailors for allowing me to guide them and learn of their leadership style and perspective. Lastly, I would like to thank my wife for her daily support, without her, I don't think I would be where I'm at."

NPS Sailor Selected to Attend Naval Academy Preparatory School

By MC2 Nathan K. Serpico

Informationn Technician 3rd Class Jacob Onedera has been accepted to the Naval Academy Preparatory School (NAPS), and after a year will become Midshipman Onedera at the Naval Academy. His goal is to complete his degree in Cyber Operations and, upon graduation, commission as a U.S. Navy Ensign.

Onedera hails from Memphis, Tenn., and works in Information Technology and Communication Services as a Vulnerability Assessment Manager scanning our networks to locate and combat cyber threats. He reported to NPS in March 2020 where he began working toward his goal of attending the Academy.

"When I found out I was in total disbelief," recalled Onedera. "It was not until I called my mom that the joy of getting accepted finally hit me. Getting accepted made all the long hours of preparing the package that my mentor, YN1 Ruiz, and I put in all worth it."

"I was extremely happy for Petty Officer Onedera," noted NPS Senior Enlisted Leader Chief Electrician's Mate Brian Carpenter. "His high-level of military acumen along with his tenacious work ethic was evident to the entire chain of command upon arrival to NPS. I predict he is going to have an extremely rewarding future in the Navy."



IT3 Jacob Onedera, who currently works in the Information Technology and Communications Services at NPS, will attend the U.S. Naval Academy after a year of Naval Academy Preparatory School. (U.S. Navy photo by MC3 James Norket)

Onedera acknowledged several people as helping him on his journey to his selection, including NPS senior leadership along with his departmental leadership. Although he is early in his career, Onedera is already looking to the future of what he hopes to accomplish as he climbs the officer ranks.

COVID-19 PCS WAIVER Approval Flow (UPDATED April 5, 2021)

PCS TRAVEL | NAVADMIN 073/21

Are Orders from a Green to Green Factor area?

MYNAVY PORTAL TRAVEL TRACKER



MYNAVY PORTAL

PCS Travel Waiver Form* available on MyNAVY Portal. Form is found on the Login Page on the right side.

LOSING COMMAND

GAINING COMMAND

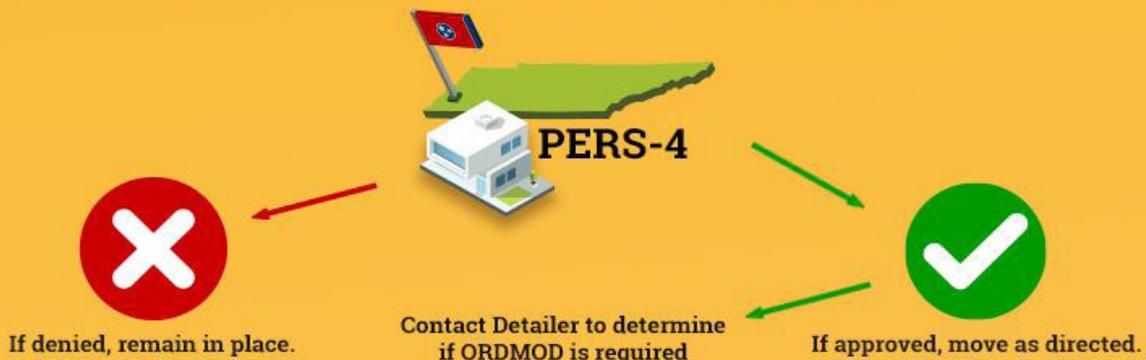


Your Losing Command will submit the COVID-19 Waiver Request with O-6 level endorsement to the Gaining Command.

If Gaining Command concurs with O-6 level endorsement, they will return approval to Losing command and submit to PERS-451. If either command contests waiver, it must be sent to PERS-451 for adjudication by PERS-4.

PERS-451 MILLINGTON, TN

*Send all approved Waivers and contested Waiver Requests to PERS451@navy.mil
**COPY/PASTE waiver text into body of email to help expedite



NPS' Peter Denning Adds Computer Pioneer Award to Long List of Honors

By MC3 Lenny Weston

The list of accolades and awards for Naval Postgraduate School (NPS) Distinguished Professor Peter Denning continues to get longer. The Institute of Electrical and Electronics Engineers (IEEE), which recently renamed its Computer Pioneer Award to the IEEE Computer Society Women of Electronic Numerical Integrator and Computer (ENIAC) Award, recognized Denning for significant contributions in virtual memory, Internet development, infrastructure, and computing education on Feb. 2, 2021.

Since 1981, the society has recognized and honored the vision of those who aided the computer industry and presented the award to individuals who in at least 15 years prior contributed to the creation, concepts, and development of the computer field.

"I'm glad that other people appreciate the contributions that I made, and I certainly don't profess to be the only one who made them," said Denning. "When somebody says you were a pioneer and something that they're looking back into the distant past, it made me remember that I worked on those things but am no longer working on them and now I'm working on new things that matter in today's world."

Denning's early work helped contribute to the creation of the network that connects the world – the Internet. He began his work with the Advanced Research Projects Agency Network (ARPANET), today known as Defense Advanced Research Projects Agency (DARPA). His work on these networks allowed a project, Computer Science Network (CSNET), to be funded by the National Science Foundation (NSF), which helped develop a network only available to DoD personnel before being opened to the public.

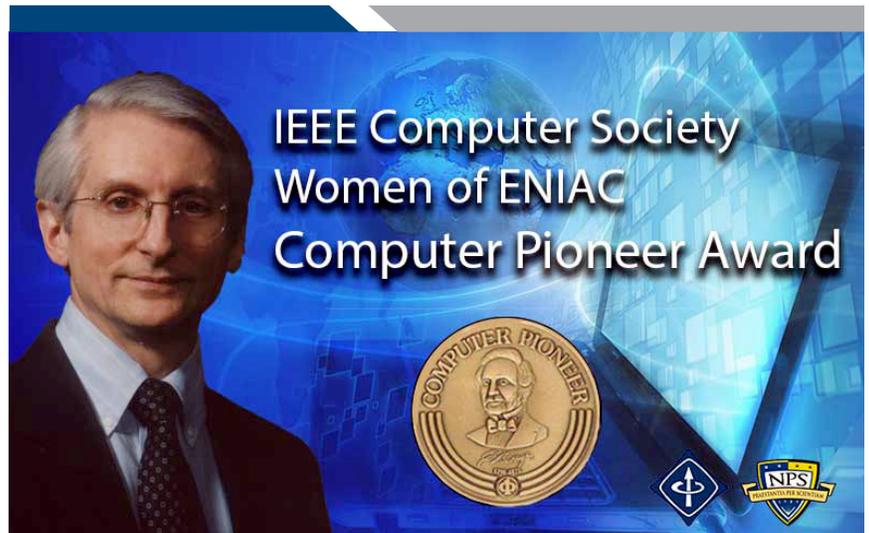
"He has, throughout a long career, been renowned for continually introducing fresh perspectives," added NPS Distinguished Professor of Defense Analysis Dr. John Arquilla. "NPS has benefited tremendously from Prof. Denning's presence in the classroom and from his body of work that has tremendous implications for the Navy and the Department of Defense."

Denning noted that his work in virtual memory, done as a student at the Massachusetts Institute of Technology (MIT), helped figure out flaws that were slowing down the computers of that age and with his work he was able to increase the speed at which a computer could "think."

"I think at that time, if we hadn't been able to solve those performance problems, this great invention might not have succeeded," noted Denning. "It would have just faded away."

His expertise in these fields eventually led to developing a curriculum that blended the "flavor" of computing in math and science with the electrical engineering side by running task forces and committees.

"The National Science Foundation decided that it wanted to create a network connecting the supercomputing centers that had been



NPS Distinguished Professor Peter Denning has been named the recipient of the Institute of Electrical and Electrical Engineers (IEEE) Computer Society Women of ENIAC Computer Pioneer Award recognizing his significant contributions in virtual memory, Internet development, infrastructure and computing education. (Graphic by NPS Office of University Communications)

established, and so it took all the graduates of our network and they designed the so-called NSF-net," recalled Denning. "Connecting all the supercomputers and that, before very long, became the backbone of what we call the modern Internet."

"This was very successful and brought the two major computing societies at the time, IEEE and the Association for Computing Machinery (ACM), into partnership," he continued. "Ever since that time, they've worked to issue periodic updates to the computing curriculum."

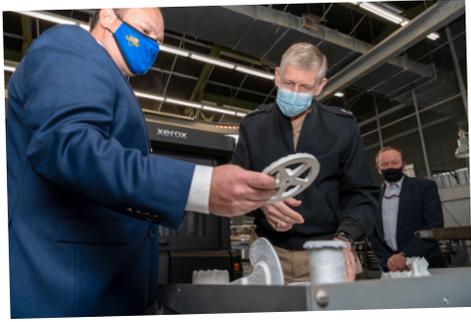
Denning's expertise adds to the education of NPS students who are figuring out leading ways to advance our nation and military by allowing them to learn from a figure who has been there from the beginning of the technology that everyone in the world is using today.

Denning continued, "I think the students find that stuff interesting, to find out that it didn't exist at some point in the past, had to be invented and then it had to grow up into usable technology. I'm an eyewitness to many of those events."

Denning is the second NPS professor to receive this award, the 33rd significant awards of his prestigious career. He is placed among 106 other awardees and 32 charter recipients of the award, one of which was notable NPS Professor Emeritus Dr. Richard Hamming.

"It has been one of the great privileges of my professional life to work with Peter Denning," said Arquilla. "He is one of the great minds of our time and I am delighted to see that this Computer Pioneer Award is now added to the long list of honors that have recognized his trailblazing contributions."

Any Day at NPS



Chief of Naval Research Rear Adm. Lorin Selby, right, and Naval Postgraduate School (NPS) Research Associate Professor Dr. Walter Smith take a look at 3D printed materials from the Xerox ElemX 3D Liquid Metal Printer, April 12. (U.S. Navy photo by MC3 James Norket)



Capt. Phillip Old, Chief of Staff at NPS, left, inspects MC2 Tom Tonthat during a uniform inspection, April 23. (U.S. Navy photo by Javier Chagoya)



VCNO Adm. Bill Lescher, left, inspects a small turbine fabricated using additive manufacturing techniques by NPS Mechanical Engineering student Lt. Anthony DeMartino during a brief visit to NPS, April 28. (U.S. Navy photo by Javier Chagoya)



Col. Randy Pugh, the Senior Marine Representative and Associate Dean of Research at the Naval Postgraduate School, participates in a design thinking workshop facilitated by the Center for Adaptive Warfighting to develop concepts for Athena, a collaborative research tool, April 17. (U.S. Navy photo by MC3 James Norket)



The NPS Navy staff assembles for a dress uniform inspection, April 23. (U.S. Navy photo by Javier Chagoya)

FACULTY news & notes

NPS is very honored to announce two recipients of the **2021 Richard W. Hamming Faculty Award** for Interdisciplinary Achievement:

Dr. Amela Sadagic, Research Associate Professor in the Computer Science Department / MOVES Institute

Dr. Giovanna Oriti, Associate Professor in the Department of Electrical and Computer Engineering

Congratulations Dr. Sadagic and Dr. Oriti on receiving this well-deserved recognition!

For more information about the awardees, please click [here](#).

Associate Provost Raluca Gera has completed her term as Associate Provost for Graduate Education here at NPS. Under Professor Gera's watch, NPS significantly and successfully increased its efforts to support innovative teaching both generally and during the challenging instructional environment of COVID. Thank you, Dr. Gera, for your terrific contributions to NPS!

Please welcome Interim Associate Provost for Graduate Education, Dr. Dennis Lester. Dr. Lester agreed to take on the interim AP position, in addition to his role as Director, Graduate Education Advancement, while we conduct a search for the AP position. Thank you, Dr. Lester!

Have a story to share?
Public Affairs is constantly seeking interesting news and stories for Update NPS. Send your tips to pao@nps.edu.

May 11-13

18th Annual Acquisition Research Symposium
Online



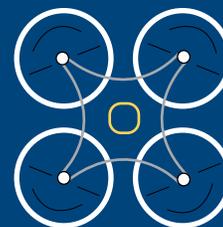
May 14

NPS Students' Big Idea Exchange 2021 (BIX 21)
11:00 a.m. | Online



May 24-28

Joint Interagency Field Experimentation (JIFX 21-3)
Camp Roberts | Online



May 31

Memorial Day



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