



NAVAL POSTGRADUATE SCHOOL

UPDATE
NPS



Dr. Scott Gartner Selected as the New Provost for NPS

By the Office of University Communications

The Naval Postgraduate School (NPS) has selected lauded scholar Dr. Scott Gartner to become its 16th Provost and Academic Dean, the university announced Nov. 16. Following his acceptance of the official offer from Secretary of the Navy Kenneth Braithwaite, Gartner is set to join the NPS team on March 1st following several years at Penn State University where he is the Director of Penn State's School of International Affairs and holds Affiliate Professorships in both the Department of Political Science and Penn State Law in University Park.

Gartner is a widely-published scholar and sought-after thought leader on empirical studies of war and conflict resolution. The influence of his scholarship ranges from national security and counterterrorism policies to the intersection of foreign and domestic politics, U.S. national security, wartime assessment, and third-party mediation. Interdisciplinary studies have been a hallmark of Gartner's career, with published articles in top journals in the fields of political science, sociology, international affairs, history, military intelligence, public policy, international negotiations and communication. He has published five books, including two with Cambridge University Press, on strategic assessment, historical statistics, war and politics, conflict management and Taiwan and China.

“Research provides a hedge against uncertainty and education enables leaders to navigate that uncertainty. NPS provides both, which affords the university a powerful competitive advantage that we can wield in this current era of Great Power Competition. I want to be a part of that advantage, of this great university, where our efforts not only develop solutions for tomorrow's warfighters, but also advance the critical thinking of today's leaders.”

-Dr. Scott Gartner, 16th NPS Provost and Academic Dean

“On behalf of all faculty, staff, students I want to welcome Dr. Gartner to our NPS team and the Monterey community,” said NPS President retired Vice Adm. Ann E. Rondeau. “Scott's impeccable credentials and interdisciplinary scholarly work define him as a leader with deep understanding of the security challenges facing our country. He has a clear vision to strongly connect NPS' graduate education and applied research to solve complex naval and national security needs.”

Gartner replaces Dr. Steve Lerman, who served as Provost from August 2016 to March 2020 and remains engaged with the NPS community as an active member of the Board of Trustees for the NPS Foundation.

Dr. Robert Dell has served “masterfully” as Acting Provost since March, Rondeau noted, and will continue to serve the university in a leadership capacity returning to his position as Dean of the Graduate School of Operational and Information Sciences.

Read the [full story](#) at the NPS website.

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**Happy
Holidays!**

December 2020

Ambassador Harris Discusses U.S./ROK Alliance, Statesmanship During NPS Virtual Lecture

By MC2 Tom Tonthat

U.S. Ambassador Harry Harris, lauded leader and diplomat, who became the first Asian American to hold a four-star rank in the U.S. Navy and is the former commander of U.S. Pacific Command (PACOM), spoke to students, staff and faculty of the Naval Postgraduate School (NPS) about the U.S./Korea Alliance and about his experiences transcending from military service into statesmanship during NPS' latest virtual [Secretary of the Navy Guest Lecture](#) (SGL), held Nov. 17.

While his lecture, titled, "[Critical Allies: The U.S. / Republic of Korea Alliance](#)," explored the many dimensions of the relationship and history of the two countries, the question and answer session afterward focused on contrasting his experiences in the Department of Defense and the State Department, with NPS students – the military's future leaders – asking the questions.

"Whether you wear the uniform or the suit of a diplomat, alliances are an integral part of U.S. foreign policy," said Harris to open the lecture. "The U.S./ROK Alliance is dynamic and we have built a multi-dimensional partnership reinforced by shared values, shared concerns and shared economic interest. It's lasted generations and will continue to thrive for generations to come as long as we together nurture it, resource it, and remain committed to it."

Harris recalled his concerns of the Indo-Pacific's security environment when he was the USPACOM Commander (now USINDOPACOM) and how they compared to his concerns as an ambassador.

"When I was USPACOM Commander, I thought about the proliferation of weapons of mass destruction, an assertive China, a resurgent Russia, as well as the [Democratic People's Republic of Korea] unresolved history, natural disasters and hazards, and the increasing importance of space and cyber as well as the accelerating rates of change," said Harris. "Taking a look at what I think about every day in Korea, not much has changed."

In addition to talking about the strengthening the defense of the Indo-Pacific against mutual threats, Harris talked about Korea's innovations and benchmark policies in combatting the COVID-19 pandemic, in which the Korean government's measures to contain the spread of COVID-19 has become a global model for other countries to follow.

"As a recent example of the U.S./ROK partnership, [Korea] has demonstrated the firsthand advantages of partnering in science and technology with an innovative nation," Harris stated. "Koreans, Americans, and the rest of the world for that matter have all directly benefited from the ROK's successful response to COVID-19. Korean companies, sister cities, and provinces have shown great generosity in the early months of the pandemic."

In addition to sharing strategies for COVID-19 containment, Korea and the U.S. share in the responsibilities in maintaining strength in the region. Harris noted that the Indo-Pacific region contains four of the world's six largest economies, and that more people live in this region than all the other world regions combined.

"America has a vested interest in the Indo-Pacific region, and as rival countries compete in the Great Power Competition to flex control of the region, the U.S. seeks to strengthen relationships based on respect,

an equal footing, and a fair exchange," said Harris. "The network of U.S. alliances and partnerships has been at the core of a stable and peaceful Indo-Pacific. No country can shape the future of the region in isolation and no vision for the region is complete without a robust network of sovereign countries cooperating to secure their collective interests."

After his prepared remarks, Harris spent time answering a series of questions from NPS students – Navy, Marine Corps, Space Force, Coast Guard and international officers – who asked about his transition from the Defense department to State Department, challenges in the region with regards to China and the DPRK, and for words of wisdom.

"I'll make an observation that I noticed when I was in uniform," said Harris. "The military has no monopoly on courage. We see foreign service professionals who are on the front lines of diplomacy. They're running Provincial Reconstruction Teams in Afghanistan and in Iraq. An IED will kill a Foreign Service Officer just as quickly as it would kill a uniformed service member."

"They're often serving side by side with their brothers and sisters in uniform, and they're often serving alone without the backup that we provide for our military on many occasions," he continued. "We all work for the same national strategy."

The final question of the day belonged to Coast Guard Lt. Cmdr. James Reilly, who asked if Harris had any words of wisdom he'd like to impart to NPS' mid-career officer students.

"Civility and cheerfulness matters," imparted Harris. "I tend to take a cheerful and positive attitude into the jobs I take. But the most important thing is, whether you fly airplanes, drive ships, space ships or launch missiles, competence matters more than anything else."

"You need to be an expert in your warfare specialty first before you can become a geo-political thinker," noted Harris. "So become the expert in your field and then branch out to bigger things."



U.S. Ambassador to the Republic of Korea (ROK) Harry Harris delivers remarks about the U.S./ROK alliance and answers questions from NPS student Coast Guard Lt. Cmdr. James Reilly (bottom right) as Navy Captain Bernard Wang (upper right) facilitates the discussion during the Naval Postgraduate School's latest virtual Secretary of the Navy Guest Lecture (SGL), Nov. 17. (Screen Capture by MC2 Tom Tonthat)

NPS Scholar Program Takes Warfare Tactics Instructors to the Next Level

By MC2 Taylor Vencill

A pilot program at the Naval Postgraduate School (NPS) is taking fleet Warfare Tactics Instructors – officers with specialized training, operational experience and a deep understanding of fleet tactics considered to be tactical subject matter experts – and giving them the academic theory behind those tactics to make them even better warfighters.

WTIs, pronounced “Witties,” are a cadre of officers trained by the Naval Surface and Mine Warfighting Development Center (SMWDC) to conduct advanced tactical training, doctrinal development, assessments of shipboard at-sea training, and serve in critical operational billets.

The genesis of the NPS “WTI Scholars” program began when leaders at SMWDC saw a return on investment from officers in the WTI program who already had an NPS master’s degree, or were earning their degrees through NPS’ distance learning program.

According to Capt. Ryan Billington, the Assistant Chief of Staff for Training, Operations, and Readiness at SMWDC, there was a key difference for officers with an NPS education.

“Officers with master’s degrees from NPS bring a deep understanding of systems, tactics, and processes,” said Billington. “These officers are incredibly well-rounded, for they are well versed in tactics as a WTI and also understand the concepts behind them because of their NPS graduate education, and we value the education those officers are receiving.”

The WTI Scholars pilot program, which currently has 4 students with the aim to double that or better in 2021, is designed to tie academic theory with the operational experience of these advanced tactically-trained officers to create even greater warfighting capability, said Capt. Chuck Good, NPS’s Surface Warfare Chair.

“We are adding the academics to the intense real-world experience they’ve amassed so they have ‘the why’ behind their tactical principles,” said Good. “By understanding ‘the why’ these officers will have greater warfighting proficiency making them better practitioners – something that’s greater than the sum of its parts.”

While there are four different types of WTI areas – anti-submarine warfare surface warfare, amphibious warfare, mine warfare and integrated air and missile defense – Good noted that NPS did not have to create any special curriculum to match them; rather, NPS leveraged the curricula and capabilities it already had and folded each WTI type into them.

“We had nine different curricula already available in our catalog for the WTI’s to take advantage of that map directly to their core warfighting competencies,” said Good. “The thesis work that they are doing is all warfighting related. NPS and NSMWDC are working together to improve and enhance an officer’s warfighting capability at key points in a surface warfare officer’s career.”

“Junior officers often desire to do both in-residence education at NPS and complete the WTI course of instruction and follow-on production tour,” said Billington. “However, not everyone has the career timing to do both before department head school. The WTI Scholars Program



The Naval Surface and Mine Warfighting Development Center (SMWDC) is sending Warfare Tactics Instructors (WTI) to NPS as part of a new pilot program, allowing select WTI students to complete their master’s degree, gaining the academic theory behind their tactics, and increasing the lethality and tactical proficiency of the Surface Force. (U.S. Navy photo by Clinton Beard)

gives them the ability to complete both the WTI course of instruction, a WTI production tour, and graduate education in residence at NPS.”

While in-resident education at NPS and being a WTI was not mutually exclusive prior to the WTI Scholars Program, there wasn’t a direct route for students to directly build off their WTI training with further academic education. According to WTI Scholar Lt. Grant Arrigo, one of the first four students currently in the pilot program, this program allows him to be a WTI and a forerunner in the field of space, especially with the emergence of space as a realm for military operations.

“From the fleet, space is very important from a targeting and communication standpoint” said Arrigo. “Having the background for the surface WTI program, I know that targeting is always your limiting factor and space is the next frontier for that. As far as the whole breadth of space operations goes, I can apply my NPS education to any combat system. I’m interested to see how I will be able to take everything back to the fleet and be better informed on the strategic policy side of the house, as well as the technical side.”

Good noted that the relationship between NPS and SMWDC will flourish simply because of the cross pollination of highly educated officers coming to NPS and returning the fleet.

“These officers will be bringing relevant and current tactical information up to campus, and then they’ll take their academic knowledge back to the waterfront.”

As for SMWDC, Billington expressed that WTIs are “warriors, thinkers, and teachers,” and when these tacticians return to the fleet from NPS they will have become exceptional warfighters.

“An officer who has completed both WTI training and NPS graduate education program will be the most lethal and tactically proficient tactical action officer on their ships because they have the requisite background knowledge both in the classroom and in relevant community tactics,” said Billington.

Computing Pioneer Leads NPS into the Cognitive Era

By Matthew Schehl

It has been said that technology advances at an extraordinary speed. What, then, would be said about a mind that has been innovating in the field of technology, always a step ahead, for more than half a century?

Such has been the career of Dr. Peter Denning, Distinguished Professor of Computer Science at the Naval Postgraduate School (NPS) who even today after a 50-year career of thoughtful and remarkable achievements in the field computing stands at the beginning of his latest effort for the university. As a creator and first chair of the [Consortium for Intelligent Systems Education and Research](#) (CISER), Denning and his NPS colleagues have developed a collaborative effort to advance intelligent systems capabilities in the Navy.

In addition to CISER and its potential for extraordinary contributions, [Denning's Harnessing Artificial Intelligence](#) course has already levied a powerful impact on workforce development in this complex, critical field. In fact, the DOD's Joint AI Center has already incorporated [multiple lectures](#) into its instructional materials, with further potential already in the works.

In the 52 years since Denning graduated from the Massachusetts Institute of Technology, he has been a veritable cornerstone of the computer sciences. He has published over 440 articles in the field and 12 books. He's been the recipient of 32 notable awards, including three distinguished service awards, three honorary degrees, three professional society fellowships, twelve technical achievements, eight best-papers, a hall of fame award, and several outstanding educator awards.

Denning's working set was a game-changer, allowing computer scientists to predict what instructions and data a program will use based on where it previously looked. He became known as a virtual memory performance pioneer whose work made a nascent technology stable, reliable, dependable, and transparent.

The development of the Internet itself can draw a direct line of continuity to Denning's work. After teaching at Princeton University for four years, Denning joined the computer science department at Purdue University. There, he worked in the early 1980s as one of four Principal Investigators in a collation of four universities with NSF sponsorship to develop a network, CSNET, for the computer science community based on the DOD's Advanced Research Projects Agency Network (ARPANET).

CSNET was a new open research community, which soon connected computer science and engineering departments in the U.S. and Europe that had previously been unable to access the ARPANET.

"It was the first step of the journey. We pulled it off and it was done well," Denning recalled in a 2009 NPS interview. "It feels nice to be recognized for all that work, but we weren't looking for recognition, just a good network."

In a few short years, CSNET burgeoned to link more than 180 academic and research institutions with 50,000 members around the world. CSNET gave the NSF the confidence that it could build a much larger network, NSFNET, which became the backbone of the modern Internet. CSNET enabled the transition of the closed ARPANET to the Internet as we know it, radically altering connectivity, communications, and the world.

When Denning joined the NPS community in 2002 as Chair of the Computer Science Department, he was a well-established leader in computer science research, education, and advocacy. He brought with him a profound depth of knowledge which he now applied to a host of DOD issues. Over the next 18 years, he became a definitive voice in deepening NPS' capacity to advance the education and capabilities of the Navy and the nation's military officers.

As Director of NPS' [Cebrowski Institute for Military Innovation](#), Denning spearheaded research into a more efficient architecture of battlespace communications systems and laid the groundwork for a [World Wide Consortium for the Grid](#) for the DOD. He initiated the Great Principles of Computing project, an ongoing effort to gather and clarify the essential principles of computing to enable discussion of information processes across scientific fields. From this, Denning created a [Great Principles of Computing](#) technology course for incoming graduate students to impart the foundational knowledge necessary to take on advanced technological problems.

These are just a few examples of Denning's many contributions to NPS, its students and the military. He continues to push the frontiers in crucial areas, including operating systems, high-performance computing, global security, network science, information storage and security in cloud systems, data science and AI.

These have taken on greater salience as intelligent systems take on a greater role in human affairs, including warfare. Just as the emergence of the aircraft carrier induced radical change in naval operations from World War II to the present day, networking and artificial intelligence are profoundly changing the balance of power in naval operations around the world.

When asked how he has kept pushing into new areas over the past half century, Denning replied, "I am always a beginner. There is always something new to learn and new teachers to engage. Most of the time, my past expertise is only marginally relevant to the next set of concerns I am drawn to address."



After 18 years as chair of the university's Department of Computer Science and an extraordinarily accomplished career that spans five decades, Dr. Peter Denning reflects on his many contributions to the field of computing, but is keenly focused on his next challenge to advance intelligent systems capabilities in the Navy and the university's role in educating tomorrow's AI workforce. (U.S. Navy photo by Javier Chagoya)

NPS, Open Robotics Hosting Virtual Ocean Robotics Challenge

By MC3 James Norket

The Naval Postgraduate School (NPS) has once again partnered with the robotics research and development company Open Robotics to host a virtual competition on autonomy with the 2020 Virtual Ocean Robotics Challenge (VORC). An international, university-level competition, VORC is designed for both Navy professionals and STEM-students to evaluate the fundamental capabilities of autonomy and maritime robotic technologies.



With the challenge of the COVID environment, NPS is partnering with Open Robotics to bring the annual Ocean Robotics Challenge into the virtual environment. Instead of writing code for a physical surface vehicle, teams will program a virtual “common raft” to perform tasks in a virtual marina, which is modeled after the marina of La Spezia in Italy. (Courtesy asset)

Originally slated to be an in-person event but modified to due to the coronavirus, the event begins software testing on Nov. 23, and the competition will begin in earnest Dec. 7. Student teams will operate virtual unmanned surface vehicles (USV) within a simulated environment built by NPS and Open Robotics, and will need to direct their vehicles to perform assigned challenges and tasks. In order to do so, the students will need to develop creative solutions to those challenges along the way.

Similar to previous “Virtual RobotX” competitions that initially forged the NPS and Open Robotics collaborative relationship, VORC will consist of teams from institutions and U.S. partner nations around globe to explore fundamental capabilities in robotics. Teams will be evaluated on how their USV performs in station-keeping, wayfinding, landmark localization and characterization, and more, and will be individually scored to determine a winner.

Creating real autonomous vehicles requires collaboration between a team of engineers and programmers. A difficult part of the challenge for these developers is to write and test the software that makes the vehicles autonomous when the testing system itself is still being built. So that is where NPS came in. To build the competition platform, the development team leveraged existing open-source tools that provided a baseline for simulating robot behavior, but then customized it to create a simulation environment targeted specifically toward unmanned surface vehicles.

“We are focusing on virtual environments so we can create a virtual place, and virtual vehicles, where developers can test and produce codes,” said NPS Computer Science Research Associate Dr. Michael McCarrin, who also serves as the technical lead on the VORC project. “Then developers can just plug that into a physical vehicle when it is built. We try to match the virtual challenge to the actual thing.

“We are trying to build something that will allow people to participate,” McCarrin continued. “We want to have a low barrier of entry so we

can allow programs that don’t necessarily have the funding to field a physical vehicle but want to get involved on the software side of the challenge.”

Since they will be able to control the elements due to it being virtual, McCarrin thinks the challenge will be more consistent for every competitor.

“We’ve added different models of ships and have simulated winds and currents,” said McCarrin. “For maritime robots, those are the most important factors and wouldn’t necessarily be taken into effect when virtually testing land vehicles. We are able to throw things at the challengers that they have not experienced, and it will make it a little more difficult.”

So far, 10 teams from four different countries have registered to participate in the challenge.

“It’s a great opportunity,” said McCarrin. “We get to work with universities from around the world. We are able to make progress in the development of autonomous vehicles in the maritime environment and create a network for future research projects.”

According to Carlos Aguero, the Open Robotics lead for VORC, the competition is made possible by the specific collaboration between industry and academia.

“[Open Robotics] brings the expertise of general robotics and [NPS] provides the technical expertise in the maritime domain,” said Aguero. “It’s a very good opportunity for everyone interested in maritime robotics. All you need to join is a computer and time. It should be a fun competition.”

USW, Oceanography Student Uses Arctic Experience to Advance Research

By Rebecca Hoag

Lt. Kristen Ainslie, an undersea warfare student at the Naval Postgraduate School (NPS), is on the home stretch of her challenging thesis in physical oceanography. Her research, critical to continue the advancement of the Navy's understanding of the unique Arctic environment, explores the dynamics of diffusive convection, often observed in the Arctic Ocean.

As the Navy continues to evolve Arctic strategies, it's clear the service has every intention, and need, to operate successfully in the Arctic region. For this reason, understanding sound propagation in these one-of-a-kind environments is paramount. Ainslie's thesis aims to use numerical modeling to define conditions that are either favorable or unfavorable for creating thermohaline staircases, and she hopes to provide an explanation as to why they are not constantly prevalent throughout the Arctic. Fortunately for her, she has first-hand experience performing research and collecting data in the region she is diligently studying, continuing what has become a tradition of NPS student participation in the Navy's ICEX Arctic exercise.



Lt. Kristen Ainslie, an undersea warfare/oceanography student at NPS, captured this self-portrait while participating in ICEX 2020 this past March, continuing a long tradition of NPS student/faculty participation in the Navy's Arctic exercise. Ainslie is using the experience to advance her thesis research which explores the dynamics of diffusive convection, often observed in the Arctic Ocean. (U.S. Navy photo by Lt. Kristen Ainslie)

ICEX occurred this past March, with Ainslie part of a small NPS team that partook in the biennial, three-week effort hosted by the Arctic Submarine Laboratory (ASL). This is NPS' third time fully participating in the exercise, a top priority since 2014 when former Chief of Naval Operations Adm. Jonathan Greenert set a goal of having more Navy personnel prepared to operate in the harsh Arctic conditions.

NPS Oceanography professor John Joseph led the NPS team. This year he was joined by Ainslie and NPS Associate Professor Ben Reeder.

"It's nice to go up every couple years in generally the same part of the ocean and get a new snapshot from time to time," Joseph says.

The NPS team's research has been focused on the same topic each time ... turbulence and thermohaline staircases. Due to the mixing of fresh and salt water and the unique temperature gradients under the ice, it can be difficult to predict how sound will propagate in different areas around the Arctic. Submarines use sound to see obstacles and threats, but these staircases of varying salinity and temperature disrupt sound broadcasts. In most of the ocean, researchers can predict where these zones will be, and submarine operators can adapt. This truth doesn't extend to the unique Arctic Ocean.

"There's a lot of dynamics going on out there that can cause a lot of fading in, fading out of the target because the sound energy changes, gets scattered, refracts differently," Joseph explains.

To learn more about how sound will react in different conditions, he and his team took connectivity, temperature, depth (CTD) water profiles. They specifically wanted to explore a thermohaline structure where the Atlantic water and the winter Pacific water meets. This experience gave Ainslie a leg up in her preparations for the thesis

she's now working.

Ainslie is using MATLAB to simulate different amplitudes of the shear wave to see if they would result in the formation or breaking down of those staircases. Data collected this year was unique because the team was able to collect data from the same location throughout the expedition.

Normally the ice floe chosen to support the ICEX camps floats around a bit, giving researchers the opportunity to sample different spots throughout their stay. But this year the ice floe was unusually stationary, and the data set is a bit different than years prior.

"You can plan all you want, but the Arctic gets a vote," says ASL Director Howard Reese.

ICEX is executed via a combination of preparation in the off years – through a testing period called ARCX – and adaptation on the ice. Reese hopes to increase the number of outside projects in years to come, which would lead to potentially increasing the NPS group's participation as well.

"I want to see the Navy get a benefit out of the ICEX program beyond the data collection, but through people getting experience," Reese says. "Data and experience will turn into other programs that the submarine force and the Navy can use to better operate in the Arctic."

For Ainslie, that's exactly the benefit she is realizing through her own extraordinary experience ... One she'll likely be able to enjoy quite a bit more when she completes her thesis and graduates from the university, currently scheduled for March 2021.

NPS Researchers Use Flying Laboratory to Study Wildfire Smoke Effects on Naval Operations

By MC2 Taylor Vencill

As the recent Monterey county wildfires burned more than 150,000 acres, Naval Postgraduate School (NPS) researchers took to the skies in a specially-equipped deHavilland Twin Otter UV-18A aircraft, basically a flying laboratory full of scientific instruments, to research the effects that smoke has on the atmosphere to help better understand how smoke can affect optical and infrared sensor performance, and to test how well Navy aerosol models do in predicting smoke conditions.

Since the COVID-19 pandemic began in March, NPS' aerial researchers from the Department of Meteorology's CIRPAS Airborne Research Facility had not flown a research mission, that is, until these wildfires presented a key opportunity for study that could lead to improved naval operations.

The research team, consisting of NPS Meteorology Research Professor Dr. Anthony Bucholtz, Research Associates Ryan Yamaguchi and Roy Woods, and five others, conducted 15 five-hour flights sampling the air from the lowest possible altitudes to higher than 20,000 feet. They did so with three goals in mind.

"First, we wanted to understand the effects of smoke on the radiative balance of the atmosphere," said Bucholtz. "The second was to study the characteristics of the sea salt particles over the ocean and lower atmosphere. And the third goal was to gather data to test Navy global and regional aerosol models.

"Depending on how much smoke and sea salt particles there are, it can affect the performance of various sensors and visibility," continued Bucholtz. "Smoke can be a factor in various theaters of operation for the Navy because smoke can have an effect on visibility, the performance of electro optical

sensors, or the performance of high energy lasers."

According to Yamaguchi, who had to personally evacuate from his home due the wildfires, the team was collecting smoke data to ultimately help improve one of the Navy's key weather models – the Coupled Ocean/ Atmosphere Mesoscale Prediction System (COAMPS) – developed by researchers at the Naval Research Laboratory (NRL) and used by the Fleet Numerical Meteorology and Oceanography Center for short-term numerical weather prediction for various regions around the world.

NPS partnered with the NRL in Monterey during the mission to utilize the COAMPS computer model to forecast the aerosol conditions as an aid to flight planning. The data gathered during these flights will be used to test how well these models perform and their accuracy when predicting the aerosol conditions.

While the two researchers still need to dive deeper into their data for a full analysis and its implications, they already have requests from researchers at Arizona State University, the California Institute of Technology and NRL to view the data, which the two are confident they will be able to use to better understand the effects of atmospheric smoke and improve the Navy's operations in a smoke-filled environment.



Members of the NPS Center for Interdisciplinary Remotely Piloted Aircraft Studies (CIRPAS) and Airborne Research Facility team pose in front of the deHavilland Twin Otter UV-18A aircraft used to collect various smoke samples to allow them to better understand the characteristics of different types of smoke. From left to right: Ryan Yamaguchi (NPS; Flight Scientist), Bryce Kujat (Pilot; Zivko Aeronautics, Inc. (ZAI)), Dennis Hamaker (Aircraft Mechanic, ZAI), Anthony Bucholtz (NPS; Director of CIRPAS; Mission PI), George Loudakis (Co-Pilot; ZAI), Greg Cooper (Chief Aircraft Mechanic; ZAI), Roy Woods (NPS; Payload Tech), Brian Angiolillo (Tech; ZAI) (Courtesy asset)

CAMPUS news & notes

The mission of the Naval Postgraduate School (NPS) is to develop technological leaders and warfighting advantage for the Naval service.

With that in mind, NPS held a 10-day workshop Nov 9-19 where faculty, staff and students worked with the architectural and engineering company The Urban Collaborative to create a plan to update NPS facilities.

The "Campus Modernization Plan" is a project intended to update Spanagel Hall, Halligan Hall, Root Hall, Ingersoll Hall and the Dudley Knox Library to optimize under-utilized spaces and modernize instruction and research areas.

"[The conference] was an on-site design workshop in order to reset the campus," said Ryan Stewart, NPS' facilities manager. "We want to make sure the buildings are modernized to meet educational needs not only now but, in the future, as well. We want to be sure that we have the right amount of admin spaces, a certain amount of lab spaces and even more space allocated to academic instruction."

The Urban Collaborative firm has helped several U.S. federal agencies achieve their sustainability goals.

"Our goal is to consolidate compartments, optimize space and give the whole facility an overhaul for the future," said the firm's project co-manager Holly Workman. "We want to update the utilities and the mechanical systems of the facilities and bring them into the 21st century. I think we are all products of our environment. We want people to have pride in the university and look forward to coming in to learn and lead."

The Urban Collaborative aims to have a rough draft of the designs after the new year and a final report in the spring.

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

COVID-19 Guidance to All Hands

From Capt. Philip E. Old, Chief of Staff

NPS Staff, Students, and Faculty,

First, I sincerely hope you and your families had a Happy Thanksgiving!! In these challenging times, I offer that there is still much to be grateful for and we should not lose sight of that.

Second, I hope that you and your families have a safe and healthy holiday and return to work COVID-19 free. The Office of the Secretary of Defense has published Holiday Season Guidance. As I'm sure you're aware, across both the nation and the world, we are seeing a massive increase in COVID-19 cases and resulting hospitalizations. In the United States, the 7-day average of new cases exceeded 17,000 per day, a 15% increase, and hospitalizations have recorded record highs for 14 consecutive days reaching over 85,000. At this point, COVID-19 is getting worse not better.

To stay safe and healthy this holiday season, I strongly encourage all to limit exposure to persons outside of your immediate family if at all possible.

For those residing in military housing areas, a hopefully unnecessary but not so gentle reminder that the Presidio of Monterey Commander's order also contains guidance that governs your holiday gatherings ("Indoor gatherings inside of a residence, of any number of people from outside a single household are prohibited") and is enforceable for residents in La Mesa housing, Ft. Ord housing, and on the Presidio.

The best course is not to gather with people outside of your immediate family. But if you must, the more outside air the better—ensure the area is properly ventilated; open windows and doors, provide outside

air to the gathering—and follow the simple but effective measures to break the chain of transmission.

- Maintain your distance
- Wear face coverings indoors and when within six feet
- Limit your time indoors
- *If you or any of your guests have ANY symptoms, do NOT gather*

Please consider carefully your plans for the upcoming Christmas holiday. If you are not able to quarantine for the 14-days following the holiday, then please consider postponing your travel plans or having visitors.

Lastly, as you take stock of your blessings, I encourage you to reach out and look after others who may be separated from family and friends. This pandemic has taken a toll on all our psyches, and for some, the holiday season is a source of even greater stress. As we head into the holiday season, I know that many members of the NPS family were planning to travel to reconnect with family and friends but are now not able to and others who were expecting visitors who now cannot travel, as well as those with relatives who are isolated. It's been my experience that the more someone is focused on giving to others, the less likely someone is to be consumed by their own challenges.

On this holiday weekend, please take care of yourself, take care of your family, and take care of your shipmates!

Capt. Philip E. Old
Chief of Staff, Naval Postgraduate School



Wherever we are, we can change the world together.

Join the CFC community to help those in need.

You can give to the charities you care about through payroll deduction, sign up to volunteer, and *Be the Face of Change*.

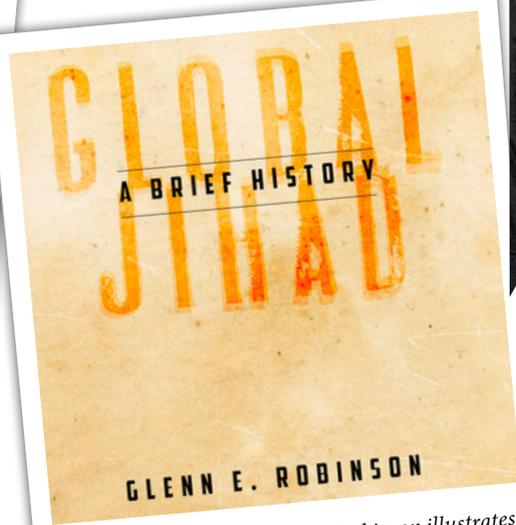


Show Some Love at NorthernCaliforniaCFC.GiveCFC.org

Any Day at NPS



CTT1 Ryan Barry, left, receives a Navy and Marine Corps Achievement Medal from NPS Chief of Staff Capt. Philip Old during an Awards and Quarters ceremony, Nov. 20. (U.S. Navy photo by MC3 James Norket)



NPS Associate Professor Glenn Robinson illustrates the four waves of post Islamic State holy war in his latest book *Global Jihad – A Brief History*. With this book, Robinson develops a compelling and provocative argument about the evolution of this violent political movement. (Courtesy asset)



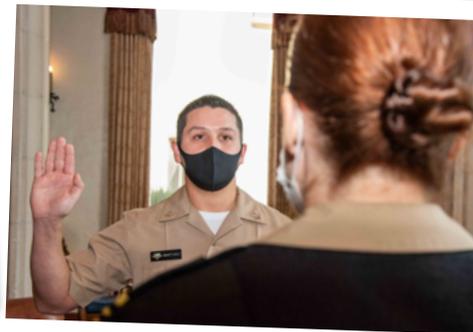
The Naval Postgraduate School is partnering with The Urban Collaborative, an interdisciplinary design firm, to update Spanagel Hall, Halligan Hall, Root Hall, Ingersoll Hall and the Dudley Knox Library. These renovations will help optimize under-utilized spaces across campus. (U.S. Navy photo by MC2 Taylor Vencill)



Lt. Cmdr. Timothy James, center, listens to a representative from the architectural and engineering company The Urban Collaborative, right, propose campus renovations during a 10-day “Campus Modernization Plan” workshop, Nov. 9-19. (U.S. Navy photo by MC2 Taylor Vencill)



YN2 Lavell Davis, left, receives a Flag Letter of Commendation from NPS Chief of Staff Capt. Philip Old during an Awards and Quarters ceremony, Nov. 20. (U.S. Navy photo by MC3 James Norket)



IT2 Mark Martinez recites the oath of enlistment during a reenlistment ceremony, Nov. 20. (U.S. Navy photo by MC3 James Norket)

FACULTY news & notes

NPS Dept. of Defense Analysis Associate Professor Glenn Robinson recently released his latest book, “Global Jihad – A Brief History,” examining extremism post the Islamic State (IS) in the Muslim world. The timing of Robinson’s book corresponds with continued unrest and uncertainty in the Central Asia Region and North Eastern Syria where potential power vacuums can yield unpredictable threats.

With the latest terror attacks in Vienna, Austria, authorities continue the fight against the latest wave of Islamist terrorism on the streets of European cities, as individual Jihadi emissaries emerge to lash out on Western nations.

Robinson identifies each stage of incendiary movements of jihad in the 20th century and establishes his argument on how these movements have evolved and why they persist.

Robinson begins with the Jihadi International movement of 1979, which began after the Soviet Union’s incursion into Afghanistan, and then the power vacuum left in its wake after its embarrassing and destructive extrication from an endless war in 1989. He also draws on America’s involvement from 1996 through 2011 and even later IS campaigns to resurrect a politically unifying caliphate.

Robinson closes with how the IS has persuaded individuals to take action around the world, especially those who are in a personal struggle with their devotion to Islam. The Islamic State’s propaganda machine continues to churn out caustic videos, music, and alluring social media via the Internet, recruiting disciples at large scale, regardless of the low strategic threat they may have.

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



DOD GUIDANCE FOR GATHERINGS

DURING NOV-JAN HOLIDAY SEASON

MEMORANDUM FOR SENIOR PENTAGON LEADERSHIP (SEE DISTRIBUTION)
DEFENSE AGENCY AND DOD FIELD ACTIVITY DIRECTORS (NOV 16, 2020)

CDC Recommendations include, but not limited to:



Influenza vaccination is an essential part of protecting your health and family.



Do not travel or attend gatherings if recently diagnosed with COVID-19 and not yet met the criteria for when it is safe to be around others; have symptoms of COVID-19; are awaiting test results; may have been exposed to someone who has contracted COVID-19 within the last 14 days; or are at increased risk of severe illness from COVID-19.



During travel and during gatherings, wear a face covering, avoid close contact, wash your hands, avoid contact with sick individuals, and avoid touching your eyes, nose, and mouth.



Avoid crowded, poorly ventilated, and fully enclosed indoor spaces and activities.

Current DoD travel guidelines remain in effect and are provided in Under Secretary of Defense for Personnel and Readiness Memorandum, "Force Health Protection Guidance (Supplement 12), Department of Defense Guidance for Personnel Traveling during the Coronavirus Disease 2019 Pandemic," August 6, 2020. We will revise this guidance to reflect any updates in CDC overseas travel guidance when issued.

THE NPS GUIDE TO HOLIDAY SAFETY



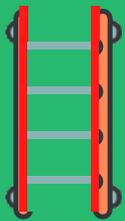
The holidays are meant to be spent at home, not in the hospital. By being aware of possible hazards that the holidays bring, you can ensure that yours will stay merry and bright.



Make sure that you do not overload your electrical outlets!



Practice social distancing at holiday gatherings, ventilate with fresh air and don't forget your mask!



Be cautious when hanging lights, especially when going up and down ladders. Avoid using ladders in wet conditions.



If using a live tree, keep it hydrated to prevent your tree from becoming fuel for a house fire.



Wash your hands throughout the festivities, and ensure your family does the same.



For those who cut down your own tree, don't forget to use your personal protective equipment.



'Tis the season for deep frying your turkey. Do your research before frying your turkey to avoid burns and fires.



The holidays can be stressful. As stress increases, so do traffic accidents and general mishaps. Take care of your mental health and be mindful of your actions.



"We hope that you have a wonderful holiday season, and don't forget to put safety at the forefront of everything you do!"

-Your NPS Safety Team

For any questions or concerns, please contact safety at 831-656-7758 or visit: <https://nps.edu/web/safety/contact-us>

On campus this month

December 18

Fall Quarter Graduation
Online



December 25

Christmas



December 31

New Year's Eve



LISTEN
LEARN
LEAD

Now Online
Dr. Raluca Gera
Applied Mathematics

