



NAVAL POSTGRADUATE SCHOOL

UPDATE  
NPS



(U.S. Navy photo by MC2 Victoria Ochoa)

## U.S. Strategic Command Chief Talks Deterrence, Partnerships During SGL

By MC2 Victoria Ochoa

NPS welcomed U.S. Air Force Gen. John E. Hyten, Commander, U.S. Strategic Command (USSTRATCOM), for its latest Secretary of the Navy Guest Lecture (SGL), May 18 in King Auditorium. Hyten spoke about the importance of maintaining strategic deterrence and NPS' inclusion into the USSTRATCOM's Academic Alliance.

Hyten shared words of advice to the students congregated in King Auditorium, explaining his thoughts on how he managed to succeed. He then transitioned to the topic of nuclear weapons and their capabilities.

*“Over the last 15 years, we’ve forgotten that nuclear weapons are the most powerful weapons ever built by man, and because of that, we had better know how to operate them on order of the President of the United States to execute the missions that we have to,” said Hyten.*

“One question that people ask me is, ‘Can you imagine a world without nuclear weapons?’”

“The answer to that is yes. All you have to do is go back before August 1945 and you would see a world without nuclear weapons,” he continued. “So, let’s see what a world without nuclear weapons looks like, between 1939 and 1945 in World War II. The world killed between 60 to 80 million people, and if you do the math that’s 1 million people a month, 33,000 people a day, being killed in World War II.

“I don’t want to go back to that world,” Hyten stressed. “The one thing that nuclear weapons have done for this country is they have kept the great power conflict down ... It’s not that the conflict disappears, it never disappears, conflict will exist on this earth for as long as humans walk the earth.”

Hyten stressed that the conflict would have to be dealt with one way or another, and the only way he could see nuclear weapons disappearing in the future would be if they were replaced with something deadlier.

“I can’t even imagine the horror of what that would be like, replacing nuclear weapons with something more powerful,” said Hyten. “Nuclear weapons are significant, they’re scary but they also help keep the peace on the planet and that is why we have to be critical with everything we do. Don’t forget that.” Hyten also emphasized the importance of strategic deterrence and training in preparing for the worst.

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LGBT PRIDE MONTH

June 2017

# NPS Faculty, Students Develop Innovative Cyber Defense for Front Line Operators

By MC3 Patrick Dionne

In the realm of cyber defense, timing is critical ... An immediate, structured response to a cyber incident can make a critical difference in mitigating an attack. In order to meet this challenge, faculty and students at the Naval Postgraduate School (NPS) have spent the last two years working on the tools front line operators need to do just that.

Over that time, several students in the university's Master of Cyber Systems and Operations, and Master of Applied Cyber Operations (MACO) programs have left their mark on the Cyber Defense Operational Sequencing System (CDOSS) project.

CDOSS is an effort to develop a set of properly sequenced standard procedures that give Sailors immediate and follow on actions in the case of an incident, mirroring what a cyber expert would do.

NPS Director of Information Warfare and Innovation, Cmdr. Pablo Breuer plays a lead role in the project, guiding his team of students in the development of this intricate set of cyber defense counter measures in hopes of improving the fleet's shipboard cyber capabilities.

"Everyone these days deals with computers, and when most of us think about a computer, we think about a desktop or a laptop. But most of us don't realize, even things such as our cars have about 40-50 computers and 100 million lines of code," said Breuer. "The same thing happens on a Navy ship. The engineering systems, the combat systems, the fire control systems, all of these things have computers in them and our Sailors jobs rely on these things."

CDOSS operates as a list of cards containing tools, tactics and techniques, providing Sailors a way to identify and correct casualties in computing systems without having a background in computer science.

"When I was first commissioned, I worked as a Boiler's Officer when the Navy still had Boiler Technicians, and even though none of them had experience in thermodynamics or mechanical engineering, they kept the plant running," said Breuer. "They were able to do this because of an Engineering Operational Sequencing System, or EOSS, that told them how to mediate casualties. This inspired me to create a more universal system because, as time went on, ships, like the rest of the world, began to rely more heavily on computers."

CDOSS gives unit commanders organic capabilities to continue on mission and rely less on the Navy Cyber Defense Operations Center (NCDOC) and similar cyber support groups. The effort is in direct accordance with Commander, Fleet Cyber Command and Commander, U.S. Tenth Fleet, Vice Adm. Michael Gilday's call for a decentralization of the Navy's cyber operations.

"We can't move terabytes of data back to a central location in order to do aggregation and collection," Gilday said during the AFCEA West conference in February 2017. "Those analytics have to be distributed

as well, and the force must be decentralized, much like how the fleet fights in a distributed manner."

During its development, Breuer and his team looked to the Navy's Consolidated Afloat Networks and Enterprise Services (CANES) program, which is the Navy's next generation tactical afloat network. CANES represents the consolidation and enhancement of shipboard network programs to provide a common computing environment for more than 40 command, control, intelligence and logistics applications.

"The first thing we had to figure out was what tools do we have on Navy units to support this, and we did this by taking a standard CANES installed computer system on a destroyer and found that there was an unused computer network intrusion detection system on all CANES installed networks," said Breuer. "Once we did some network discovery, the next step was to take this new tool and figure out how we should configure it. Now that we know what we have and what we are looking for, we can summarize ways to mediate any issue we may come across."

Breuer, who graduated from NPS' Department of Computer Science in 2008, said he and his team of students were able to use experience and opportunities gained on campus, which he calls a "nexus of advanced research for the Navy," to better get the CDOSS project off the ground.

"It was personally very satisfying knowing that what I was working on as an NPS degree requirement would have a direct and immediate impact in the fleet," said Chief Warrant Officer Robert Labrenz, an NPS alumnus who contributed to the project during his studies in the MACO program.

"While working on CDOSS, I was able to employ a unique perspective from my enlisted experience to forge an important piece of the overall project, in order produce a product that a junior enlisted Sailor could read, understand, and put to use in defending the network," he added.

After two years of development and research, nine student theses on CDOSS have been released, with the product being reviewed both by NCDOC and surface forces, paving the way for its upcoming follow on fleet testing in order to get proper feedback from Sailors on its effectiveness and usability.

"I think it is going to have tremendous impact," said Breuer. "A lot of people would tell you that the Internet and cyber space is really big, but in reality, you can get from any point in cyber space to another in under 600 milliseconds, so if our cyber defense relies on us packing up a hard drive and putting it on a helicopter, then we are not operating at the speed of cyberspace. This will allow ships to gain that advantage and give ships a better understanding of their systems."

***"Update NPS" is a monthly publication for students, faculty and staff of the Naval Postgraduate School produced by the Public Affairs Office. For additional copies, comments, or to suggest story ideas, contact the editorial staff at [pao@nps.edu](mailto:pao@nps.edu).***



# 14th Annual Symposium Advances Defense Acquisition Practices, Policies

By MC2 Victoria Ochoa

Leaders across the spectrum of defense procurement gathered in Monterey, April 26-27, for the 14th annual Acquisition Research Symposium at the Monterey Marriott hotel. The two-day symposium serves as a forum for the advancement of acquisition research, and the exchange of ideas among scholars and practitioners of public-sector acquisition.

NPS President retired Vice Adm. Ronald A. Route, kicked off the symposium, expressing appreciation for the attendees' time, and for their commitment to advancing their practice, to the benefit of all participants, including future users of research and scholarly work.

"This means a great deal to the Naval Postgraduate School," Route said. "Providing this opportunity for you to have these discussions, and for our professors and students to experience it with you, is invaluable."

Vice Adm. David Johnson, Principal Military Deputy to the Assistant Secretary of the Navy (Research, Development and Acquisition), served as keynote speaker on the first day, sharing his thoughts on the process of defense acquisition, and the many factors that influence it, especially in the current fiscal and defense environment.

"Acquisition professionals are being pressed to go faster, and deliver more, at reduced costs. That is a tall order," said Johnson. He emphasized the role of Chief of Naval Operations Adm. John Richardson's Design for Maintaining Maritime Superiority, noting the objectives of this strategy are instrumental in the acquisition research field.

"It is clear that we need a bigger Navy. Our readiness is very important, and our strength is our people, and they matter the most," said Johnson. "We need to work closely with industry to achieve our objectives ... our Navy and Marine Corps, and industry objectives."

The service is working towards these objectives, he said, building the Navy to support the war on terror, in addition to the force required to advance Richardson's maritime strategy.

"We are producing product ... 46 ships spanning nine ship classes are under construction today across seven shipyards. We are building the next Navy," said Johnson. "The stuff that we are delivering today is

making a difference, and our forces are continuing to support maritime operations."

Schwartz, LaPlante and Dyer followed Johnson's keynote with the first plenary session of the symposium, holding an engaged conversation with the audience about regulatory and legislative frameworks to improve efficiency and effectiveness in defense acquisition. The trio fielded several questions from the audience, listening to the spectators' comments and opinions.

Breakout sessions covered the Acquisition Research Symposium's usual diverse range of relevant topics, from working with Silicon Valley to advancing contracting practices.

Dr. Richard Carlin, Head of the Sea Warfare and Weapons Department for the Office of Naval Research, served as keynote speaker for the symposium's second day. Carlin discussed how the DOD is working in partnership with academic institutions, such as nearby Stanford University, to develop programs to help solve acquisition's problems through collaboration.

"I want missions solved by business," said Carlin. "Institutions and government entities working together to solve a problem."

Following a second full day of breakout sessions covering all aspects of acquisition, the symposium adjourned until 2018. Until then, organizers say the NPS Acquisition Research Program will continue to serve as a conduit for the advancement of government, industry collaboration to improve the field of federal acquisition.



Capt. Moshe Schwartz, Dr. William LaPlante and retired Vice Adm. Joseph Dyer, from left, participate in a panel discussion on regulatory and legislative approaches to improve acquisition during the Naval Postgraduate School's (NPS) 14th annual Acquisition Research Symposium at the Monterey Marriott hotel, April 26. (U.S. Navy photo by MC2 Victoria Ochoa)

## FACULTY news & notes

NWC Associate Chair and Professor Harold (Hal) Blanton received a Meritorious Civilian Service Award recognizing for 18-years of dedicated service to the program during an award ceremony in the Trident Room, April 27. The event also served as a retirement ceremony for Blanton who was been part of the NWC Monterey program since its inception in August of 1999.

"I came to NPS in August of 1999 with Donald Stoker and Fred Drake. I felt like I won the lottery when I got this job" said Blanton.

Throughout the years, there were many changes, Blanton says, to include switching from a trimester to a quarterly system, faculty increasing from three to 18, and the changes to the curriculum.

"I have had some really good groups of students over the years," said Blanton. "I have stayed in contact with students dating as far back as 2000 with one former student returning as a professor. It's interesting to teach students that are also professionals.

"As we watch the events around the world, it makes you feel that what we are doing here at NPS really helps and matters," Blanton continued. "And hopefully the service we are providing makes the students' jobs a bit easier, or at least more understandable. The military is changing so we have to change with it. As long as we keep a flexible mind, we will do a good job," Blanton said.

In closing, Blanton reflected on the first time he saw Monterey as a young man back in 1964 when he completed Army training at the former Ft. Ord.

"After the Army, I returned to the area to watch races at Laguna Seca," said Blanton. "I always loved this area and I thought if I could just make a living here. Years later the War College helped me achieve that goal."

# Space Systems Students Introduced to Celestial Navigation, New Horizons

By MC1 Lewis Hunsaker

Coralie Jackman, Lead Optical Navigation Engineer at KinetX Aerospace, offers a guest lecture on celestial navigation and the New Horizons mission to Pluto to NPS students, staff and faculty in Spanagel Hall, May 18. Jackman has been a member of the New Horizons Navigation Team since 2011, supporting optical navigation development, analysis, planning and operations, and is currently leading optical navigation efforts on the OSIRIS-REx mission to the asteroid Benu.

“The New Horizons spacecraft was launched on Jan. 16, 2006. We knew about Pluto and Charon, its largest moon, with a distance between them of about a nine to one ratio,” said Jackman.

In 2012, through some help with Hubble imaging, two new moons around Pluto were discovered.

“The additional moons posed serious issues in the scope of operations,” Jackman said. “Could our aim point be in a debris field? Could there be a ring system that could pose a risk to the spacecraft?”

Due to this new information, the team completed various studies on alternate trajectories and models on how the moons could sweep out debris and if there was a safer place to fly.

“It turns out that our original aim point was one of the safest and least likely regions for debris,” added Jackman.

During its travel time, the spacecraft received a gravity assist at Jupiter. “Had we missed this gravity assist and launched two weeks later in the window it would have taken up to four

additional years to reach Pluto,” Jackman added.

“In 2014, information about Pluto was limited ... But since the New Horizons satellite flyby of Pluto on July 14, 2015, we now have very high-resolution photos and we never thought it was going to look the way it did.”



Coralie Jackman, Lead Optical Navigation Engineer at KinetX Aerospace, offers a guest lecture on celestial navigation and the New Horizons mission to Pluto to NPS students, staff and faculty in Spanagel Hall, May 18. (U.S. Navy photo by MC1 Lewis Hunsaker)

Photos revealed a variety of things to include ice mountains as high as 11,000 feet; an abundance of methane ice; flowing ice in a manner similar to glaciers on Earth; and, a thin layer of clouds. Over the course of the nine-year travel time, at an average of 14 kilometers per second, the spacecraft arrived only 97 seconds ahead of its scheduled time.

Chair of the NPS Space Systems Academic Group, Dr. James Newman said the lecture was a compelling example of an important topic for SSAG students, faculty.

“We want our students to be exposed to the current state of the art, whether it is near earth or far away. Sometimes

ideas aren't necessary attached or immediately obvious in application, but that can stimulate new kinds of thinking. So, a topic about determining where a satellite is, whether it's close or far away like this one, has some applicability,” said Newman. “Also, anyone that can navigate to Pluto is worth listening to.”

Although New Horizons met its destination in 2015, NASA opted to continue the craft's exploration, with its next mission to explore select Kuiper Belt Objects beyond Pluto in 2019.

## NPS Community Recognizes Military Spouse Appreciation Day

By MC2 Victoria Ochoa

In 1984, President Ronald Reagan recognized the commitment and dedication that military spouses have by dedicating the Friday before Mother's Day in May as National Military Spouse Appreciation Day. This year, Military Spouse Appreciation Day was observed on Friday, May 12.

“I feel fortunate that I have the opportunity to do many things that not a lot of people get the chance to do,” said Stevie Taylor, whose husband, Lt. Ian Taylor, is a student in the mechanical engineering, undersea warfare program at NPS. “As a military spouse, I've had the opportunity to travel the world with my best friend by my side.”

On Military Spouse Appreciation Day, spouses are honored for the contributions and sacrifices they make every day.

“The military is a really tight knit community, so every time we move it's

like we have instant friends,” said NPS Foundation Director of Development Meredith Terrian. “You're in a group with people that are facing the same challenges as you, and they're familiar with what you go through as a military spouse.”

Supporting a spouse that serves their country and divides their time between family and duty is difficult. Military spouses are the pillars of the families who support our troops during missions and deployments. They are silent heroes who are essential to the strength of the nation, and they serve their country just like their loved ones.

“One of the struggles of being a dual working family is the relocation that you have to do every so often,” said NPS Media Assistant and military spouse, Andrew Ward. “The hours are long and it's hard to plan things, but I think that, like many things in life, you need to put one foot in front of the other and take things one step at a time.”



# Physics Researchers Patent Unique Barrel Design for Navy's Rail Gun

By MC2 Brian Abel

NPS electronics technician Gene Morris has been assisting NPS students and faculty with their research projects in the university's Graduate School of Engineering and Applied Sciences, and his efforts have earned him a place on a new patent awarded to several researchers for a unique barrel design for the Navy's developmental rail gun weapons system.

Morris, along with former NPS faculty and students William Maier II, Dr. Eugene Nolting, Donald Snyder and Cmdr. George Caramico, were awarded a patent for their project, "Electromagnetic Device and Method to Accelerate Solid Metal Slugs to High Speeds."

Rail guns use electricity, instead of chemical propellants, to propel projectiles at extremely high velocities. NPS researchers took a unique approach toward their design for the barrel of the electromagnetic projectile launcher.

"The concept is completely different from a traditional rail gun design and yet we were able to consistently accelerate aluminum slugs to speeds greater than 1 km/sec," continued Morris. "We still have a number of major design hurdles to overcome, which big Navy is working on, but the big push to get this figured out will save the Navy lots of money in the long run."

Morris says much of the advancements in rail gun technology can be traced to former physics faculty member, Maier, who served as lead researcher, and one of his former students.

"We spent years working on various rail gun related projects, and we have had more than 50 thesis students working through the years on the program," said Morris. "Most importantly, a student critical in kick starting the big Navy rail gun program got his start with NPS."

## NPS and AFIT Seek to Expand Partnership

By MC2 Michael Ehrlich

NPS Provost and Academic Dean Dr. Steven Lerman briefs the NPS Board of Advisors on the state of the campus in Herrmann Hall, April 26-27. During the two-day event, the relationship between NPS and the Air Force Institute of Technology (AFIT) was examined on how both institutions can continue to benefit through future collaborations.

Two of the current high visibility partnerships between AFIT and NPS are High Energy Laser propagation in the atmosphere and adaptive beam control, and Space systems with a focus on CubeSat's, a type of miniaturized satellite.

"I think there are many more points of connection around other research and teaching areas like directed energy weapons," said Lerman. "I know that both the Navy and the Air Force are working on that, and I think it will continue to be less about where students attend here or there, but much more about the intersection of the various technologies."

AFIT director and chancellor Dr. Todd Stewart agrees that there is, "significant untapped potential, for collaboration between the universities that will be mutually beneficial."

AFIT Provost and Vice-Chancellor Dr. Sivaguru S. Sritharan, who was former Dean of NPS' Graduate School of Engineering and Applied Sciences and Professor of Mathematics, believes that

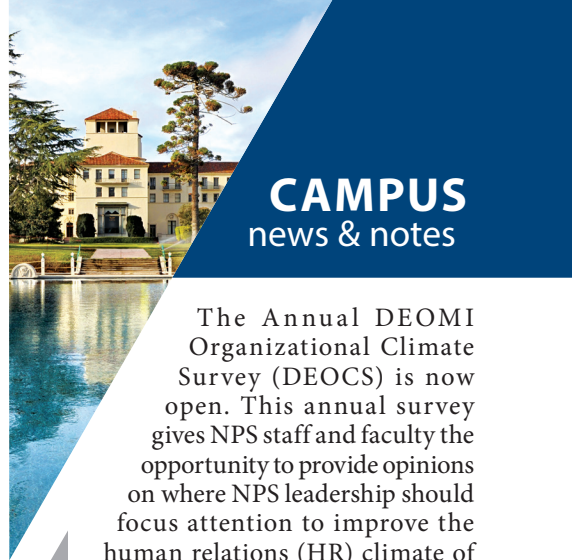
the faculty-to-faculty professional relationship is the key to sustaining and building academic partnership between the two institutions.

"I think AFIT and NPS should jointly work to identify the enabling science and technology areas of the "Third Offset Strategy" for the U.S. Defense department," said Sritharan.

The Third Offset Strategy is the challenge that the DoD combats with both a decrease in military spending and a need for modernization of all forces. The First Offset Strategy comes from the 1950's with the development of the U.S. Nuclear arsenal. The Second Offset Strategy came in the 1970's and 80's as new technologies began to emerge.

"It is fair to say that over the past half century or so, AFIT and NPS have directly or indirectly contributed to the policy and strategy," Sritharan said. "As well as science and technology aspects of the First Offset, the Second Offset, and educated generations of military leaders.

"It is quite natural to expect AFIT and NPS to team up and take leadership in building a pathway for pursuing the "Third Offset Strategy" with the key areas currently identified as: unmanned and autonomous operations, extended-range and high speed air operations, low-observable air operations, undersea warfare, and the complex systems engineering and integration and associated cyber security," Sritharan concluded.



## CAMPUS news & notes

The Annual DEOMI Organizational Climate Survey (DEOCS) is now open. This annual survey gives NPS staff and faculty the opportunity to provide opinions on where NPS leadership should focus attention to improve the human relations (HR) climate of our organization. No attempt will be made to identify you, so please respond openly and frankly by June 19, 2017. To access the DEOCS survey, visit <https://www.deocs.net/user4/login/login.cfm>, and enter this case sensitive access code 17034312JWE3t.

DOD Hiring Freeze Lifted. On May 3, 2017, Deputy Secretary of Defense the Honorable Robert O. Work signed and released an official memorandum lifting the civilian hiring freeze for the Department of Defense. memorandum lifting the civilian hiring freeze for the Department of Defense.

Recently, NPS has seen phishing emails asking users to change their NPS password. The email claims the user's password is expiring and a link is provided to change it. Please be suspicious of any emails with a link to a website that requests your login information (NPS user ID and password). This has led to compromised accounts, allowing the attacker to access NPS resources and send additional phishing emails to NPS and non-NPS users.

The TAC will never email users to change their password. Also, it is a recommended practice to hover over the link to preview the URL. It should always begin with "https" and contain nps.edu

If you ever have any doubt regarding the validity of an email or site that requests your user ID and password, please do not hesitate to contact the TAC (831) 656-1046 for further guidance.

Send your campus news and  
notes to [pao@nps.edu](mailto:pao@nps.edu)

# Potential Water-Barrier Defense for Riverine Craft Makes a Splash

By Javier Chagoya

In the final months of World War II, as the battle for the Pacific raged on, ship commanders employed out-of-the-box maneuvers to keep torpedoes, bombs, strafing, and even kamikaze aircraft, from hitting their ships. One creative defensive tactic used against approaching aircraft was to train the ship's gun at the water just in front of the plane in an effort to swamp it before it collided with the ship. Now, an NPS professor is revisiting this low-tech defensive tactic with some convincing data.

NPS Department of Physics Professor Raymond Gamache and U.S. Naval Research Laboratory scientist Dr. William Szymczak have developed a model that demonstrates that a burst of water can effectively stop a projectile, such as a rocket-propelled grenade (RPG), aimed at riverine craft.

"We have created a model for directing a splash zone large enough, and with ample density, to mitigate an incoming projectile," said Gamache.

Gamache's concept would use the active infrared radar detection system onboard the riverine craft that can track and defeat incoming threats, including RPGs and missiles. Based on split-second calculations from data via onboard sensors, the craft deploys an explosive charge directed into the water along the calculated flight path of the threat. The charge detonates, creating a water barrier sufficient enough to change the angle of the RPG and/or detonate and absorb the incident threat debris away from the boat's occupants.



*A riverine patrol boat careens through the water while on drug interdiction duty. However agile the craft may be, and adept the Sailor is at the helm, it would still be a challenge to maneuver away from a missile attack. (Photo courtesy U.S. Navy)*

"If you can imagine a detonated explosive that creates an upward surge of water 48 inches thick and 15 feet high, with a velocity of 100 to 160 feet per second, it's like putting up a cement wall in the path of that RPG in a time scale of a tenth of a second," described Gamache.

Recently, Gamache presented his paper to attendees of the 2017 Operations and Technology (OPTECH) South Conference held in Cartagena, Colombia. The event was conducted by NPS' own Littoral Operations Center and supported by the Office of Naval Research-Global, the Colombian Naval Science and Technology Office, and Swedish defense company, Saab.

Gamache says the Colombian Navy showed great interest in his theory of combating RPG attacks by employing a force field made of water, and offered a tentative nod to field test his theories in their sovereign waters.

"Small riverine craft can't effectively negotiate their waters with exceedingly high weight deficits associated with steel plating or heavy guns," says Gamache, "So having a suite of small explosive

charges that only needs two to three feet of water to foil an attack is a big win in protecting the small craft."

Further testing under both static and moving targets will have to be conducted, Gamache says, adding that he hopes to secure additional funding to forward the idea to field testing.

## Focus On ... New Leadership Opportunities

A Monthly Look at Names and Faces on Campus

Recently, NPS Student Services Officer Lt. David Lee and NPS Mechanical and Systems Engineering Program Officer Cmdr. Todd Greene traveled to the Boeing Leadership Center, located in St. Louis, in response to an invitation by Boeing Executive Vice President Leanne Caret, who recently served as an NPS Secretary of the Navy's Guest Lecturer.

In March, Caret spoke to the NPS student body about effective leadership and drew parallels between the military and civilian sector's

approach to getting the job done regardless of the person wearing a business suit or uniform.

"It was upon Ms. Caret's suggestion to explore the possibility of a partnership between NPS and Boeing's Leadership Center when she was here in March," said Lee.

While there is no process for faculty or staff to be sent to Boeing's Leadership Center, there are opportunities for the Dean of Students to field up to four resident students to take advantage of the company's

leadership courses, some running only five days. Students would be allowed to travel there during NPS' enrichment week.

"We do have limited funding for those NPS students who meet the criteria of exhibiting excellent grades, along with an approved thesis by their advisor(s). The instruction for industry interns, NPSINST 5450.1 can be found on-line for further information," added Lee.

The purpose of the trip was to see

if there was a benefit for an NPS student, who might have thesis related work with Boeing and to also get that experience of attending Boeing's leadership course in their personal development packet.

While cross pollinizing with an outfit as big as Boeing Leadership Center sounds like a great idea, the Dean of Students has started out by putting out feelers for students who might be interested in going in September, 2017. For more information contact Lt. Lee in student services office.



# Any Day at NPS ...



Vice Adm. William A. Brown, Director for Logistics on the Joint Staff, speaks to NPS students, faculty and staff during a Secretary of the Navy Guest Lecture in King Auditorium, May 2. Brown spoke about the importance of logistics in the Navy, and was recognized as an NPS Distinguished Alumnus during his visit. (U.S. Navy photo by MC2 Victoria Ochoa)



Students from NPS' Department of Defense Analysis technical writing course presented a unique painting to the university's Dudley Knox Library, May 24. The artwork, inspired by the poem "Take a Moment," was presented in honor of their course instructor, senior lecturer George Lober, recognizing his nearly 20 years of service to NPS. (U.S. Navy photo by MC3 Patrick Dionne)



Lead Assistant Registrar Heidi Woodward teaches a hula lesson to NPS faculty and staff during the Asian American and Pacific Islander Heritage Month celebration at the Roman Plunge, May 24. There are 24,743 Asian American and Pacific Islander Sailors currently serving as part of the Navy team, including eight admirals, 659 master chief and senior chief petty officers, and 318 officers. (U.S. Navy photo by MC2 Michael Ehrlich)



Naval War College Monterey students earning academic honors during the second quarter of Academic Year 2017 are pictured following a brief ceremony in their honor near the NWC Monterey program offices in Halligan Hall, May 9. (U.S. Navy photo by MC2 Victoria Ochoa)



Lt. Lincoln Schneider, left, Air Force Maj. Brent Pomeroy, second from left, and Marine Corps Maj. Jake Aldean, far right, present the Rifle Team Champions trophy to Naval Support Activity (NSA) Monterey Commanding Officer Capt. Rich "Coyote" Wiley in the NPS Trident Room, May 5. The NPS Marksmanship team placed first in the 2017 Pacific Fleet Rifle Marksmanship competition during the annual event at Marine Corps Base Camp Pendleton, April 21-30. (U.S. Navy photo by Javier Chagoya)



Finalists for the Naval Postgraduate School (NPS) Operations Research department's Military Operations Research Society (MORS) Tisdale Competition are pictured in Glasgow Hall, May 25. The MORS/Tisdale Award recognizes the quarter's top thesis, with Pakistani Air Force's Salman Aleem and German Army Maj. Manuel Loewer sharing top honors in this quarter's competition. (U.S. Navy photo by MC3 Patrick Dionne)

## STUDENT voice

*U.S. Marine Corps Maj. Tom Kulisz, Chairman of the President's Student Council*

Faculty and Fellow Students,  
It is with great pleasure that Paul and I wrap up our term in your PSC and turn it over to the capable hands of U.S. Marine Corps Capt. Daniel Salazar, and U.S. Air Force 1stLt Margarita Balish.

As Paul and I turn over the reins, you should know that all facets of the NPS life are improving and it is directly related to your participation in the PSC.

From the President to the Provost to the Dean, everyone is wholly dedicated to making you wildly successful. Moreover, we are lucky to have support from our MWR experts like Marley at the Gym, Sam at the Golf Course, and Melanie and Mikey masterminding our catering and Trident Room activities.

Keep the ideas coming! Paul and I challenge you to keep flooding the PSC with new ideas and issues and let the PSC be your champion to make your good ideas a reality.

So where can you get involved? Our next meeting will be Tuesday, June 6, in Room 263A of the library; if you can't make it then reach out to your school reps and join us in July for our first meeting of the summer quarter.

As always, if you're interested in helping and want to represent your schools or departments, contact us and we will tie you in to the PSC.

The more feedback we provide to the leadership, the better we can make our collective experience at NPS.

**Have a story to share?**  
**Public Affairs is constantly seeking interesting news and stories for Update NPS. Send your tips to [pao@nps.edu](mailto:pao@nps.edu).**

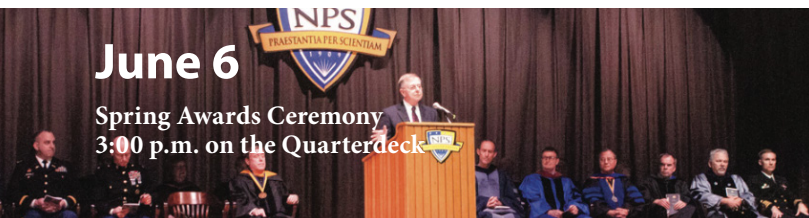


# On Campus this Month

**LGBT PRIDE MONTH**

## June 6

Spring Awards Ceremony  
3:00 p.m. on the Quarterdeck



## June 16

Spring Quarter Graduation  
10:00 a.m. to 12:00 p.m.  
at King Auditorium



## June 8

NWC Graduation Ceremony  
3:00 p.m. - 4:00 p.m.  
at the Barbara McNitt Ballroom



## June 26

Reporting Day



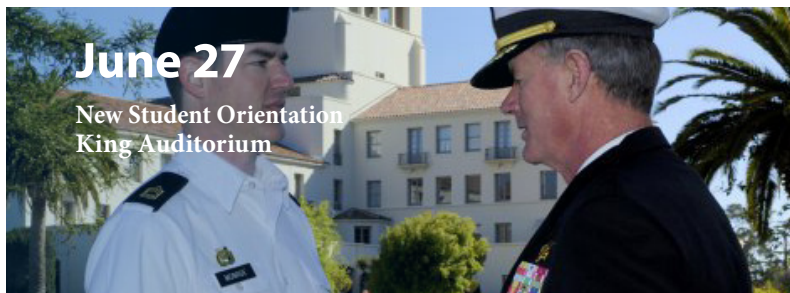
## June 13-15

Final Exams



## June 27

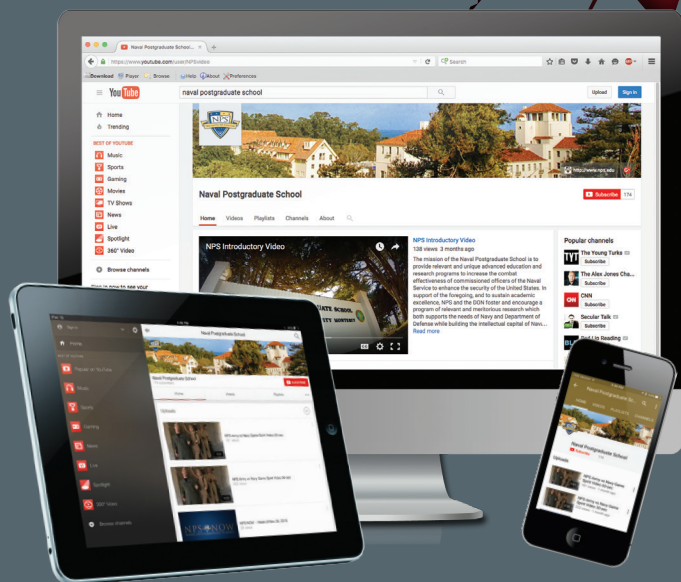
New Student Orientation  
King Auditorium



## BREAKING NEWS HAPPENS

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## Historical Highlights

NPS as venue for oversized abstract art?



This giant sculpture was once located near the Library's then- back entrance, ahead and to the left of today's entryway. What was its story? We plead ignorance, but according to one source, it was installed "overnight" by unknown persons, and once discovered, was just as quickly removed.

Today, the Guinness Book of World Records may list one 15 feet tall in Saskatchewan, Canada, but for a (very) short period in 1986, it's just possible that NPS once held the record for The World's Biggest Paperclip.

*Historical Highlights are provided by the Dudley Knox Library.*