



(U.S. Navy photo by Javier Chagoya)

NPS Honors Winter Quarter Graduates

by Kenneth A. Stewart

NPS honored 301 graduates during its Winter Quarter Commencement Ceremony at King Auditorium, March 25. The graduates included representatives from every branch of the U.S. military as well as Department of Defense (DOD) civilians and 17 international students from 10 partnered or allied nations.

“Today is a celebration of individual commitment, perseverance and personal accomplishment,” said NPS President retired Vice Adm. Ronald A. Route.

Route also thanked the faculty, staff and loved ones that contributed to their students’ successes and recognized the NPS Foundation for providing the university with an important “margin of excellence.”

Rear Adm. David H. Lewis, the commander of Space and Naval Warfare Systems Command (SPAWAR) served as guest speaker at the event. Throughout Lewis’ address, he spoke of the rapid technological changes that have occurred since he graduated from NPS in 1988. Lewis also spoke about the dramatic changes in international relations, warfare and national security that have taken place over the last century.

“If there is a civil war in Syria, the people of San Bernardino are affected by it. People here have to worry about ... a war 10,000 miles away. Everyone has to worry about national security.”
— Rear Adm. David H. Lewis

Lewis concluded by congratulating the graduating class and challenging them to make the world a better place.

“I am looking to you to change your world ... Are you the one that is going to revolutionize the way we do business? That’s what your leaders expect of you coming out of this school. They sent you here to make them better ... It’s on you to make this world a better place based upon what you have learned,” challenged Lewis.

Prior to the awarding of diplomas and conferring of degrees, Route thanked Lewis for his remarks and presented him with the university’s prestigious Distinguished Alumni Award, noting his extraordinary leadership, distinguished DOD career, and his contributions to graduate education.



NAVAL POSTGRADUATE SCHOOL

UPDATE
NPS

- p2 NPS Students, Faculty Participate in ICEX 2016
- p4 NPS Team Patents New Global Positioning Method
- p6 ITACS Secures \$1 Million Grant to Expand Capabilities

SEXUAL ASSAULT
AWARENESS AND
PREVENTION MONTH

April 2016

NPS Students, Faculty Participate in ICEX 2016

By Kenneth A. Stewart

An interdisciplinary team of NPS students, faculty and staff recently teamed up with members of Submarine Forces Atlantic (SUBLANT) to participate in Ice Exercise (ICEX) 2016.

The NPS delegation supported the effort by conducting a portfolio of detailed acoustic, environmental, and autonomous underwater vehicle (AUV) research at Camp Sargo, a seasonal camp built on Arctic sea ice about 200 miles north of Deadhorse, Alaska. There, they worked alongside some 200 personnel on the ice and 140 submarine crewmen from SUBLANT.

NPS Department of Oceanography Faculty Associate John Joseph and his team were the first researchers from the NPS delegation to reach the ice.

“Our primary objective was to characterize the acoustic conditions of the changing Arctic environment. To do this, we deployed numerous oceanographic and acoustic sensors, both in the camp and at remote sites located several kilometers from the camp,” said Joseph.

The research team employed two different mid-frequency sound sources in their experiment. A Navy Type G-34 transducer was “dipped” to various depths up to 700 meters into the relatively warm Atlantic water layer beneath the camp.

“We also deployed four Expendable Mobile Acoustic Training Targets, which are unmanned mobile acoustic sources programmed to run in preset tracks around our two Vertical Line Arrays (VLA) of acoustic receivers in the field. We also collected temperature and salinity profiles at the camp that will enable us to look closely at the sound speed conditions throughout the water column,” said Joseph.

According to Joseph, collecting data in the harsh environment of Camp Sargo was no simple task. His team deployed its VLAs in minus 20 degree weather, with wind-chill conditions at a staggering 45 below. They even encountered relatively fresh polar bear tracks in the vicinity of their first VLA deployment.

Research Professor Timothy Stanton, also from the university’s Department of Oceanography, is also heading to the ice. Stanton has been a fixture at NPS for 40 years, and has been participating

in ICEX since the 90s. At ICEX 2016, his students will deploy NPS-developed buoys designed to measure processes in the ocean that contribute to melting Arctic sea ice.

“I have been sending students up to the ICEX experiments for over a decade. It’s been an incredible experience for them,” said Stanton. “They make an important contribution to the NPS Oceanography program that is used by both Meteorology and Oceanography and Undersea Warfare students.”

Their primary contribution will come by way of data collected from buoys they are deploying beneath the ice. NPS student Lt. Stephen Fleet will be deploying his first buoy at Camp Sargo later this month.

“We are going to be deploying an autonomous ocean flux buoy,” said Fleet. “The buoy’s instruments systems are over a 150-foot long.”



Ice Camp Sargo, located in the Arctic Circle, serves as the main stage for Ice Exercise (ICEX) 2016, housing more than 200 participants from four nations over the course of the exercise. Multiple faculty/student teams from NPS traveled to Camp Sargo to participate in the exercise. (Courtesy Photo)

The buoy will perform measurements autonomously, and transmit data back to NPS by iridium link for up to a year. Dangling below its near-surface turbulence instruments will be another set of instruments. They will measure ocean diffusivity, which like conductivity, controls the rate of heat coming from deep in the ocean to the surface where it can melt Arctic sea ice.

“The upper ocean in the Arctic is actually warmer the deeper you go. Turbulent diffusion, or weak mixing, brings up heat from the ocean depths to the surface where it melts the ice. We want to find out what is the historical trend of that,” explained Fleet.

“It’s incredibly important if you are doing numerical modeling to try to predict what the ice will look in 10, 15 or 20 years.”

“It is a particularly complex problem because the ice acts as an intermediary between the ocean and the atmosphere. Unlike elsewhere on the planet, the ice cover insulates a lot of properties between the atmosphere and the ocean, and there are a lot of complex processes that I have been involved in researching with colleagues for the last 30 years,” added Stanton.

Another member of the interdisciplinary team, Research Assistant Professor Doug Horner serves as director of the university’s Center for Autonomous Vehicle Research (CAVR). Horner and his team will

“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.

be deploying advanced autonomous robots beneath the ice and in the skies above the camp. Their work is being funded by NPS' Consortium for Robotics and Unmanned Systems Education and Research (CRUSER).

"CAVR is primarily interested in intelligent autonomy – aerial, surface and underwater robotic system interaction and persistence," said Horner. "There are a lot of challenges that are inherent in 20-below operating conditions."

But those challenges are precisely why NPS and the Navy are so interested in the Arctic. Understanding the Arctic environment is critical to naval operations and has the potential to contribute to the burgeoning field of Arctic atmospheric science.

"What we are interested in from a science perspective is measuring the ice," explained Horner. "In the future, we hope to use sensors aboard the Scan Eagle that will give us accurate ice measurements and then combine those measurements with the measurements that we are getting from the underwater vehicles to get a highly-accurate, autonomous measurement of the ice thickness.

Horner and his team will also be helping to solve the important problem of under-ice navigation.

"In the undersea environment, GPS is unavailable. Instead of using GPS, we look at features as navigational references to reduce our positional uncertainty. In our case, we are using features underneath the ice to localize the position of our vehicles.

"The sonar, aboard our REMUS vehicle, which generally is used to look downward, will instead be looking upward to create a map of the underside of the ice. We want to be able to look at the map and be able to navigate relative to it," said Horner. "We will be using what is called 'Terrain Aided Navigation' to localize the position of the vehicle without GPS."

The CAVR team's research into persistence will also be on display at ICEX. The idea is to get the most out of limited robot energy supplies. NPS student Ensign Eric Bermudez, with the university's Undersea Warfare curriculum, will be traveling to the Arctic to further explore strategies in this important area of robotics research.

"We will be deploying the Remus under the ice to gather data, while it runs a mission and then return it by using acoustic homing to a simulated docking station to determine what it would be like if we had an actual

docking station under the ice," said Bermudez. "Our vehicle uses an acoustic beacon that communicates with the vehicle as it comes in."

"This is important because it extends the mission time that the Remus can remain in the water. As it gets closer to the docking station, its uncertainty closes. We're combining its acoustic and terrain recognition abilities," he continued.

NPS Research Assistant Professor Noel Du Toit, with NPS' Department of Mechanical and Aerospace Engineering, is also focused on underwater robots. He is using an Aquius vehicle that has been modified to operate autonomously while conducting close proximity, diver-assist operations.

"We have modified this vehicle so that we can do a fully autonomous run. For example, we would tell the vehicle that we want it to go from this location to that one, and push a button ... It's a fully autonomous tethered AUV.

"One of the big challenges for us up in the Arctic is that we are deploying from an ice hole on a moving ice flow. We deploy our vehicles through the hole, but as we run our mission, the hole moves. When we come back, we have to come back to a different spot. Being able to execute these missions relative to that moving reference point is quite challenging," said Du Toit.

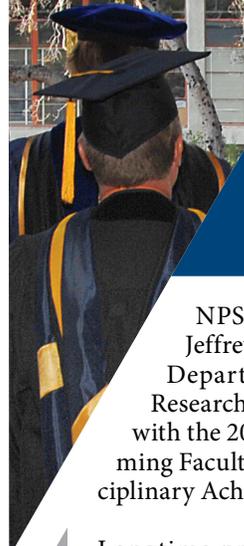
If CAVR's techniques are perfected, they may drastically improve the safety of divers operating beneath the ice.

"Diving under the ice is a high-risk activity. You can't just pop up to the surface when something goes wrong. When operating in high risk environments, it's tremendously useful to have a platform like this that can keep an eye on the divers. It can hover next to them and provide real time information to the support staff on top of the ice," said Du Toit.

And while there are multiple reasons for the Navy and NPS to participate in Arctic research, NPS Research Associate and doctoral student Sean Kragelund seemed to sum up the thoughts of all of the students and faculty members participating in the exercise.

"Participation in ICEX presents a once in a lifetime opportunity to go up and perform really challenging field experiments in an operationally-relevant environment.

"We can take those lessons learned and share them with other students at NPS and throughout the Navy," said Kragelund.



FACULTY news & notes

NPS Senior Lecturer Dr. Jeffrey Appleget with NPS' Department of Operations Research has been recognized with the 2016 Richard W. Hamming Faculty Award for Interdisciplinary Achievement.

Longtime professor Richard W. Hamming's legacy continues in the faculty members recognized each year when the university honors its top researcher with the Hamming Interdisciplinary Achievement Award.

Dr. Hamming dedicated his life to teaching and research, specifically in the mathematics, computer science and telecommunications fields of study. As a mathematician, he served on the Manhattan Project and worked for Bell Telephone Laboratories. Hamming taught at NPS as an Adjunct Professor from 1976 through 1997.

NPS kicked off its first-ever Innovation, Emergence and Communication Symposium in Watkins Hall, March 22.

The symposium provided university students and faculty with an opportunity to brainstorm solutions that will raise the innovation success rate throughout the Department of Defense.

Department of Computer Science Chair Dr. Peter Denning and Graduate School of Business and Public Policy Associate Professor Nick Dew reviewed topics during the seminar.

"The first part of this conversation is what do we mean by innovation, because we are always trying to produce it," said Denning. "Innovation is not about producing ideas, it's about producing new practices."

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

NPS Team Patents New Global Positioning Method

By Kenneth A. Stewart

NPS alumna Kaylene Carter, along with NPS Department of Electrical and Computer Engineering faculty Drs. Murali Tummala and John McEachen, and electrical engineer Rohan Ramlall with the Space and Naval Warfare Command (SPAWAR) Systems Center Pacific, were recently awarded a patent for their “Hyperbolic Positioning Method Using Broadcast Digital Television Signals and Monitor Receiver Ranging.”

The team’s invention utilizes broadcast digital television (DTV) signals to determine a user’s location, and has both military and civilian applications as it may fill a need for accurate positioning data in GPS denied environments.

“I still can’t believe that I hold a patent. It’s something that I never expected, and I am so humbled and excited for our team who accomplished this,” said Carter, who led the effort.

“DTV transmitters are a passive system, broadcasting signals which require no feedback from the end user. This is an approach using a commonly available signal that could give us fairly high precision location under certain circumstances.

“The Navy relies on GPS for everything, from targeting to positioning, and our adversaries know that. Television signals are always around, and they tend to be global. We can leverage the fact that there are existing signals in the environment to help us locate ourselves, in the event that we can’t locate ourselves using GPS,” explained McEachen.

The invention also offers an advantage in urban areas where modern, asymmetric battles are increasingly waged.

“GPS requires a line-of-sight path to the satellite, which doesn’t work well in urban areas,” said Carter. “TV towers are stationary and thousands of miles closer than the satellites that GPS relies on.”

“GPS fails if you jam it ... TV signals are stronger and operate on different frequency bands,” added Tummala. “They can penetrate buildings, whereas GPS tends to fail and tends to be fairly weak [in indoor environments].”

McEachen and Tummala note that the team’s exploration of alternate uses of DTV signals and other signals on the electromagnetic spectrum is part of a larger effort within the Department of Defense to enhance its capabilities in the area of electromagnetic maneuver warfare.

“This is just part of that agility in the electromagnetic spectrum. [If our adversaries] have jammed GPS, we can get our location information from digital TV ... The idea is to stay one step ahead of the adversary, and these techniques allow us to be agile,” said McEachen.

Since the patent filing, Carter has moved on from the Navy. She is currently studying medicine at Stanford Medical School, but hopes that she will be able to apply some of her engineering expertise to the medical field.



Former NPS student Kaylene Carter and NPS Professor Murali Tummala are pictured in Tummala’s Spanagel Hall office. Carter and Tummala, along with NPS Professor John McEachen and Rohan Ramlall were recently awarded a patent for a geo-positioning method that uses digital TV signals. (Courtesy photo)

Naval War College Monterey Grads Honored for Academic Achievement

By MC3 Brian H. Abel

Naval War College (NWC) Monterey graduates earning academic honors during the first quarter of Academic Year 2016 were recently recognized at a brief ceremony in their honor near the NWC Monterey program office in Halligan Hall.

The graduates who earned “with Highest Distinction” honors by completing the program in the top five percent of their class include: Army Capt. Nicholas Dubaz; Army Maj. Rustin Jessup, and Navy Lts. Forrest Bush, Brian Fields and Scott Margolis.

Graduates earning “with Distinction” honors by completing the

program in the top 15 percent of their class included: Navy Lts. James Beaty, Kevin Breach, Jeffrey Buenaventura, Adam Karaoguz, Ralph Montgomery, David Nicolas; Lt. Cmdrs. Jarrod Ozereko, Kevin Solem; Army Majs. Samuel Colby, Ryan Flaherty, Randolph Fleming, Bradley Greaver, Kyle Greenheck, Andrew Johnston, and Marine Corps Capt. David Harris.

NWC Monterey’s partnership with NPS provides qualified officers and select Department of Defense civilians attending NPS with the opportunity to earn a Naval War College Command & Staff program diploma and their Joint Professional Military Education Phase I credit.

Physics Department Holds Mini “Discovery Day” for Area Students

By MC1 Lewis Hunsaker

Students from Monterey High School’s Monterey Academy of Oceanographic Science and Pacific Grove’s Robert Down Elementary School received demonstrations of science in action – basic mechanics, gravity, electricity

and magnetism, optics and the behavior of light, the anechoic chamber and much more at a recent mini NPS Discovery Day event.

Dr. Kevin Smith, Chair of NPS’ Department of Physics broke with his usual routine to meet with students and hopefully, spark some interest.

“We used to allow the entire community to come on base; however, we haven’t been able to do this event for a long time,” said Smith. “So today we are calling this a mini Discovery Day to show students various demonstrations.”

“The main thing we are trying to show the students today is the joy of being involved in science,” Smith continued. “Hopefully, this event peaks their interest in science and technology. We really enjoy events like this because fundamentally, this is why we started doing it ourselves. It’s fun to do science.”



Dr. Kevin Smith, Chair of NPS’ Department of Physics, uses a bicycle wheel to demonstrate conservation of angular momentum during a mini Discovery Day, March 11. (US. Navy photo by MC2 Victoria I. Ochoa)

Area Universities Participate in Crisis Negotiation Exercise

By MC1 Lewis Hunsaker

Students from NPS, the Middlebury Institute of International Studies (MIIS) at Monterey, California State University Monterey Bay, Stanford and the University of California, Berkeley participated in an International Strategic Crisis Negotiation Exercise (ISCNE) on the MIIS campus, Feb. 26-28.

The three-day ISCNE was created 12 years ago by the U.S. Army War College and is hosted multiple times annually at locations across the country with the intent to teach students the fine art of crisis negotiation.

“We want to bring the best political minds, and match them up with the best military minds,” explained Army Col. Dave Price, director for senior leader education at the U.S. Army War College. “If we can start working together now, then later when many of you are working for the State [Department] or other agencies, you will be more inclined to talk to your military partners about flexible deterrent options.”

All students selected for ISCNE are emerging national security professionals at the graduate school and young professional level. Students

are divided into delegations, and in this exercise, given the task of resolving a simulated conflict between India and Pakistan over the contested Jammu-Kashmir region.

“This exercise gives these students and soon-to-be future diplomats an opportunity to crisis negotiate at the strategic level.

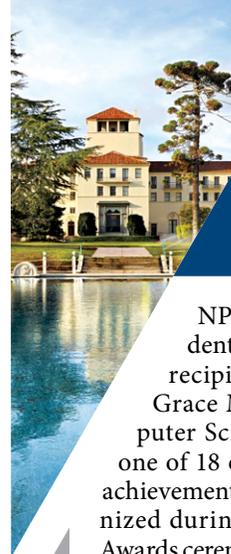
“It’s about honing diplomatic and negotiation skills within a real-world frozen conflict,” said U.S. Army Lt. Col. Chris Wendland, an Army War College Fellow at MIIS.

After three days of back and forth negotiations, the student groups were unable to determine a final, mutually-agreeable resolution; however, the value of the effort was not lost.

“There have been many obstacles, some we expected, and other things we had to work through,” said Army Maj. Josh Russo, a student in NPS’ Department of Defense Analysis.

“It has been interesting to see how each delegation has worked toward a solution, with much progress coming when many countries sit down at the negotiation table,” he said.

CAMPUS news & notes



NPS computer science student Lt. Leslie Ward is the recipient of the Rear Adm. Grace Murray Hopper Computer Science Award. Ward is one of 18 outstanding academic achievement award winners recognized during the Winter Quarter Awards ceremony held in Herrmann Hall’s Quarterdeck, March 15.

NPS student Lt. j.g. Caroline Brown was named the recipient of the Chief of Naval Personnel Award for Excellence in Manpower Systems Analysis for her thesis, co-authored with Lt. Maribel Challburg, titled “Resilience Amongst Naval Recruits,” which hypothesized that recruit resilience can be improved during boot camp through positive self-talk exercises, division discussions, and appreciative guided conversations.

Brown is also a recipient of the Navy League Award for Highest Academic Achievement.

Marine Corps Warfighting Lab Science and Technology Director Col. James T. Jenkins and Department of the Navy Chief of Strategy and Innovation Dr. Maura Sullivan addressed students, faculty and staff at the opening of NPS’ latest Naval Research Working Group (NRWG) in King Auditorium, March 21. The NRWG serves as a forum for Navy and Marine Corps organizations to communicate, review, validate and recommend topics for NPS student research.

“This is your Navy and Marine Corps,” said Sullivan. “The organization needs research, ideas and ingenuity to succeed.”

“It’s an exciting time to be a part of the Department of Defense,” added Jenkins. “There are many opportunities to take advantage of the education that you will receive to make a better tomorrow.”

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

ITACS Secures \$1 Million Grant to Expand Capabilities

By Joan Ackerman

A team of NPS researchers and information technology experts have secured nearly \$1 million in funding from the High-Performance Computing (HPC) Modernization Program for an ambitious data analytics project dubbed the Data Analysis of Real Time Streams (DARTS).

NPS' Information Technology and Communications Services (ITACS) partnered with researchers in the computer science and operations research departments on the two-year initiative. The effort aims to provide the capabilities necessary to support DARTS and needed improvements to the university's supercomputing cluster, Hamming. During the past quarter, ITACS has co-located the hardware for the new system with Hamming, and have fused its current software code with Apache Hadoop and NPS-developed government software, with testing currently underway.

"Borrowing Hamming's infrastructure and integrating the supercomputer's functionalities with the Hadoop system will allow DARTS investigators to conduct big data analytical approaches, real-time processing of streaming data, and offline analysis of historical data. This type of work would have been virtually impossible prior to the DARTS award," said Dr. Jeff Haferman, Director of NPS HPC and DARTS project lead.

Research efforts, designed to take advantage of the new capabilities that DARTS affords, are slated to begin in the late summer. Researchers are currently set to begin three separate efforts - social

media sentiment analysis, bulk data forensics, and image analysis via artificial intelligence - once all testing is complete.

With installation and configuration complete, ITACS' next phase of preparing the enhanced HPC system is site acceptance, including information assurance, followed by application migration and final testing of the system's operational capabilities.



Director of High-Performance Computing (HPC) Dr. Jeff Haferman, above, and a team of data science experts at NPS have secured nearly \$1 million in funding for an ambitious big data analytics project dubbed the Data Analysis of Real Time Streams (DARTS). (U.S. Navy photo by Javier Chagoya)

"Our greatest challenge right now in testing is how to move data quickly, from 'point A to point B,' especially given the sheer volume we will be processing for each research project," said Haferman. "Twitter alone generates 6 million tweets per minute worldwide."

Data science and analytics are emerging capabilities that can provide DOD and DON decision makers with a wealth of information. For NPS researchers, DARTS provides faculty on campus with myriad new capabilities ripe for advancement.

"Computing services and devices have already significantly improved our research efforts, but DARTS will propel NPS to the forefront in processing massive data in real-time," said NPS Chief

Information Officer and ITACS Director Joe LoPiccolo.

The DARTS team includes Haferman, Dr. Mathias Kolsch and Michael McCarrin from the Department of Computer Science, and Drs. Samuel Buttrey and Jonathan Alt from the Department of Operations Research.

Focus On ... Getting Connected

A Monthly Look at Names and Faces on Campus

IT2 Francisco Garcia works with incoming students at the Information Technology and Communications Services' (ITACS) Technology Assistance Center help desk in Ingersoll Hall.

Garcia's dedication to customer service comes from knowing that he is part of a team working to support NPS' ongoing mission.

"We help students set up their computers to work at NPS," said Garcia. "I feel like it makes the

students' jobs easier ... If they can get on their computers without any problems, then ITACS has helped them to graduate."

Garcia went on to describe the many ways he and his fellow ITACS professionals are able to assist NPS students.

"We want to make sure people's computers are safe with antivirus prevention," said Garcia. "We also set them up with Microsoft Office and ensure that their devices

are compatible with SafeConnect and can connect to the network."

Garcia notes that ITACS technicians also help students to transition to success at NPS by helping them to connect their personal devices to the network through the Bring Your Own Device (BYOD) program.

"For the most part, with a tablet or phone you can get on most of the NPS websites. Some of it's compatible, some of it's not, but



IT2 Francisco Garcia

we can walk you through it and find out what works," said Garcia.

Any Day at NPS ...



Education Technician Gloria White recently said farewell to NPS following 45 years of service. Former NPS Dean of Students Capt. Tom MacRae dubbed March 3, "Ms. Gloria White Day," in her honor. (U.S. Navy photo by Javier Chagoya)



Commander, Naval Surface Forces Vice Adm. Thomas S. Rowden, front right, is briefed by Associate Professor Nita Shattuck, front left, on her efforts to improve crew rest, March 8. (U.S. Navy photo by MC2 Michael Ehrlich)



Vice Adm. Mike Shoemaker, Commander, Naval Air Forces, speaks to university students in the aviation career field during an "All Hands call" in Glasgow Hall, March 8. (U.S. Navy photo by MC3 Brian H. Abel)



Monterey County District Attorney Mary Tatum addresses NPS students, faculty and staff during a Women's History Month celebration in the Dudley Knox Library, March 10. (U.S. Navy photo by MCI Lewis Husaker)



Retired Rear Adm. John Padgett speaks to NPS students, faculty and staff about the current state of the submarine force during a guest lecture in the Mechanical and Aerospace Engineering Auditorium, March 3. (U.S. Navy photo by MC2 Michael Ehrlich)



Nobel Prize Winner Dr. Ferenc Dalnoki-Veress speaks to NPS students, faculty and staff about "Solving the Solar Neutrino Puzzle, and Anti-Neutrino Applications for Arms Control," in Spanagel Hall, Feb. 26. (U.S. Navy photo by MC2 Michael Ehrlich)



STUDENT voice

Army Special Forces Maj. Tim Ball, Chairman of the President's Student Council

When I start a new quarter, my thoughts are always, "What am I going to learn here, and who am I about to learn it from?" These questions take on special meaning at an institution like NPS, where a unique blend of operational experience and academic knowledge comes together in the classroom.

But beyond where these backgrounds meet in the classroom, my most valued experiences with the faculty have happened elsewhere. It may be running into my math professor from the Operations Research department, who I can always count on to stop and talk about who has it worse during football season – Detroit fans or Houston fans. It might be the time my professor from the Naval War College stopped to talk with me in the Trident Room about the complexities of dealing with ISIS, and what kind of strategy might lead to their defeat (right before he tells me that Dallas fans are really who has it worse). Or it could be the time that my National Security Affairs professor introduced me not as his student, but as "my friend and colleague." That same professor told me that part of his grading criteria is whether he learned anything from the student, which surprised me considering how much I had learned from him.

These interactions have made my graduate school experience as enjoyable as it has been. As we get started with classes, I don't want to simply wish you all a good quarter. I hope that you seek out and find these same interactions so you can learn from them as much as I have. And finally, let's be honest. Houston fans will always have it worse than anyone else.

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

On Campus this Month

Happy Birthday, Navy Chiefs!



April 7

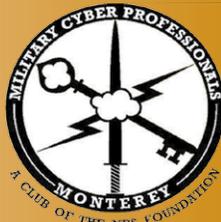
Newcomers' Information Fair

6:00 p.m. - 8:00 p.m. in the Barbara McNitt Ballroom

April 13

Mr. Antonio Scurlock, Chief, Cybersecurity Plans and Coordination, Department of Homeland Security

11:00 a.m. - 1:00 p.m. in the
NPS Foundation Cottage



April 19

SGL with retired Capt. Paul Rinn

3:00 p.m. in King Auditorium

April 21

Robots in the Roses

1:00 p.m. - 5:00 p.m. at Spruance
Plaza and the Academic Quad



April 22

Sexual Assault Prevention Run

3:00 p.m. in front of Herrmann Hall

April 23

International Day

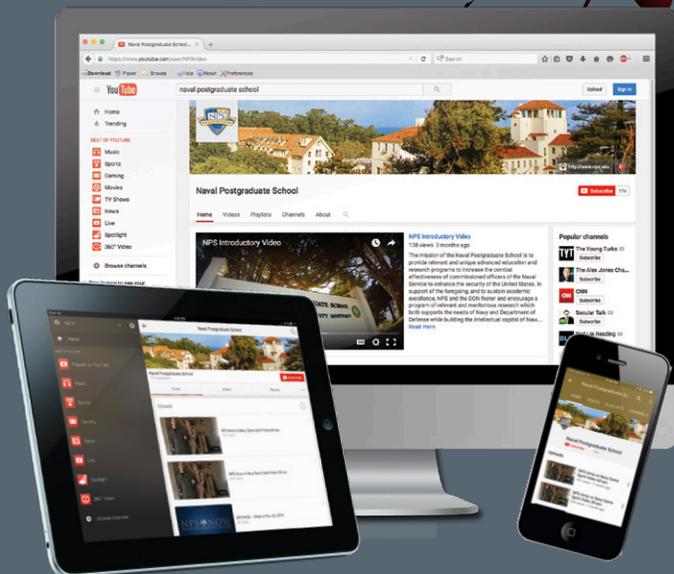
12:00 p.m. - 4:00 p.m.
at Root Hall and
the Academic Quad



BREAKING NEWS HAPPENS

STAY CONNECTED. STAY INFORMED.

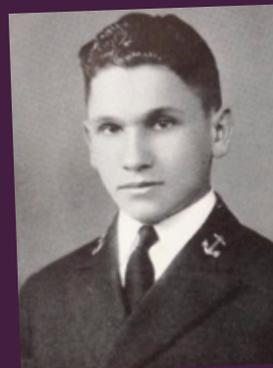
YouTube



JOIN OUR GROWING
YOUTUBE COMMUNITY
www.youtube.com/NPSvideo

Historical Highlights

According to the U.S. Naval Academy's 1940 "Lucky Bag" yearbook, Lt. Cmdr. Joseph Weber's "quest after knowledge and his ability to use it shall stand him in good stead in the future." He survived action in the Pacific and Mediterranean during WWII, and after graduating from NPS' Electronics Engineering course in 1945, Weber moved to the Bureau of Ships to oversee electronic countermeasures.



Weber left the Navy in 1948 for academia, where he pursued a lifelong interest in radio waves. Weber also led groundbreaking research in the development of instruments designed to detect the space distortions predicted by Einstein's theory of relativity. He spent the years until his death in 2000 searching for these waves.

Physicists are heralding Weber's research as part of the foundation for the February 2016 announcement that the Laser Interferometer Gravitational-Wave Observatory (LIGO) has finally observed and confirmed gravitational waves generated by the merging of two black-holes more than a billion miles away.

Historical Highlights are provided by the Dudley Knox Library.