Annual NRWG Leverages NPS Expertise for Research and Innovation

By MC2 Patrick Dionne

The Naval Postgraduate School (NPS), as part of its Naval Research Program (NRP), held the annual Naval Research Working Group (NRWG) across the university’s campus April 9-11. The NRWG serves as a forum for Navy and Marine Corps organizations to communicate, review, validate and recommend topics for NPS research over the coming fiscal year.

Now in its sixth year, the annual NRWG connects faculty and students with Department of Defense (DOD) organizations seeking to leverage their expertise and operational experience to overcome warfighter challenges through research. In total, representatives from 20 different organizations from throughout the Navy and Marine Corps team attended the conference.

“This event not only aids NPS in providing the highest quality graduate level education to our students, but it also helps us further support the services as a whole.”

–Lt. Col. David Forbell, NRP Deputy Program Manager

“This is really a win-win for everyone,” said Deputy Program Manager for NRP Lt. Col. David Forbell. “For the Navy and Marine Corps representatives this provides an opportunity for them to get their research needs met at a minimal cost, and it allows NPS faculty and students to work on relevant real-world problems while meeting academic requirements. This also helps faculty keep their curriculum current and up to date on relevant challenges that helps underpin our student’s thesis and capstone projects.”

The conference format included poster sessions, panels, research trade shows and lab tours allowing students and representatives from around the fleet to network and understand the unique capabilities found at NPS.

Since the inception of NRWG, more than 2,000 topics have been submitted through the Naval Research Program, including 293 in the last fiscal year. More than 350 research projects have been completed or are in progress.

“This event not only aids NPS in providing the highest quality graduate level education to our students, but it also helps us further support the services as a whole,” said Forbell. “NPS provides them a DOD organization to help them face and tackle their specific challenges.”
CNAF Turns to NPS to Take on Naval Aviation Readiness

By Matthew Schehl

In the fall of 2017, U.S. Navy aviation had seen a surge in aviation mishaps, and aircraft readiness levels across the Fleet had reached unacceptable levels. Incidents involving F/A-18 E/F Super Hornets, for example, had more than doubled over this time, and the Navy testified to Congress that only 31 percent - 170 aircraft - of the Navy’s 542 Super Hornets were ready to “fight tonight.”

When Vice Adm. DeWolfe “Chip” Miller III took the helm in January 2018 as the nation’s 8th “Air Boss” - Commander, Naval Air Forces (CNAF) - he was tasked in no uncertain terms by then-Secretary of Defense retired Gen. James Mattis to turn this around.

“When I took command, I knew up front how challenging it is to walk into a large command that you’ve not been part of, so I knew that I needed to learn an awful lot,” said Miller. “That’s when I reached out to the Naval Postgraduate School (NPS).”

CNAF set out to work with this solid foundation. Under the banner of what would be termed the Navy Sustainment System (NSS), CNAF implemented an aggressive program to reform the provision of spare parts and aviation engineering, as well as increase maintenance and logistics support and performance.

The results were stunning. In September 2018, Mattis broadcast a memo calling on the service to “focus on meeting our critical priorities first,” including “achieving a minimum of 80 percent mission capability rates for our FY 2019 Navy and Air Force F-35, F-22, F-16 and F-18 inventories — assets that form the backbone of our tactical air power — and reducing these platforms’ operating and maintenance costs every year, starting in FY 2019.”

CNAF announced that NSS was well underway; by this point, the Navy’s Super Hornet fleet was at a 50 percent mission-capable rate, with approximately 260 aircraft ready to scramble at a moment’s notice. The goal, Miller told a naval aviation panel at the Center for Strategic & International Studies last October, was to increase that number to at least 341 Super Hornets by October 1, 2019, reflecting Mattis’ mandate.

Miller intends to not only move over the yard line but far beyond, and one of his first actions was to return to NPS. From March 19-21, the Air Boss brought an expanded CNAF team to Monterey to attend CEE’s Strategic Planning for Execution: Assessment and Risk (SPEAR) workshop. A long-standing program at NPS, SPEAR assists commanders and their executive teams with shaping specific planning initiatives.

In doing so, the SPEAR workshop enabled the CNAF team to take NSS to the next level. In synchronizing to the same sheet of music, the entirety of the naval aviation enterprise is now poised to succeed in its challenge of aircraft readiness recovery, noted Capt. James "J.J." Johnston, special assistant to CNAF.

Miller credits NPS for enabling him and the CNAF team to successfully take on the monumental challenge of turning naval aviation readiness around.

“NPS is the United States Navy’s institution of higher learning ... We are warrior scholars and the scholar piece is honed here; there’s just not a finer institution in the world,” he said. “I appreciate the opportunity to be at NPS and I hope that this inspires others to take advantage of the great resource that’s here.”

“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.
Students from the Naval Postgraduate School (NPS), the Middlebury Institute of International Studies (MIIS), and four other regional academic institutions took an opportunity to refine their skills in the art of diplomacy during the U.S. Army War College-sponsored International Strategic Crisis Negotiation Exercise (ISCNE) held on the MIIS campus in March.

Several NPS students joined colleagues from MIIS, California State University at Monterey Bay (CSUMB), University of California, Berkeley, San Jose State University, and the Defense Language Institute Foreign Language Center, with participants role-playing as delegations against a United Nations backdrop.

“The purpose of ISCNE is to expose students to the challenges of conducting crisis diplomacy in a real-world global scenario,” said U.S. Army Col. John Zavage, Foreign Area Officer Chair in NPS’ National Security Affairs (NSA) Department. “The students received a lengthy packet of reading material on real world history, and based on that material, they wrote a hypothetical crisis scenario. Then, the seven teams formed a hypothetical negotiation conference, and we asked them to resolve the crisis.”

The teams were mentored by subject matter experts, including current and former Foreign Service Officers, and faculty from NPS, MIIS, San Jose State University, and the U.S. Army War College.

“The exercise benefits students involved in either international or regional affairs,” said Zavage. “It exposed everybody to the challenges of trying to advocate for their nation’s national security interests while considering the national security interests of their partners and adversaries. It gave them an idea of how hard it is to reach an agreement with a United Nations-level problem.”

Even though this was a simulation, students experienced first-hand the challenge of crisis negotiations.

“The first challenge was the pace of the negotiations,” said U.S. Air Force Maj. Brandon Horii, an NPS student studying Far East Regional Security Studies. “The nature of the exercise forced the team to divide up so we could negotiate with other teams simultaneously. It made for a fast-paced dynamic environment that was a lot of fun, and reinforced the importance of team-building and developing a group narrative to reach unified team objectives.”

Horii said that the experience has helped him identify what areas he needs to emphasize more as he finishes his studies at NPS.

“For NPS students to partner with MIIS and with other students from local universities is just fantastic,” added Zavage. “We appreciate getting more diverse viewpoints when we work with students from around world and all over the country. In the end, different viewpoints mean different ways to approach and understand a problem.”

Perhaps summed up best during her acceptance of the INFORMS award, Sanchez noted, “Love what you do and feel that it matters, for that is one of the things that attracted me to stay at NPS," she said. “I like to tell people if you don’t ask, the answer is no. The work and the students are incredible and we really feel we can make a difference to improve the lives of those involved.”

Have a story to share? Public Affairs is constantly seeking interesting news and stories for Update NPS. Send your tips to pao@nps.edu.
Annual TechCon Examines Government, Industry Partnerships

By MC2 Michael Ehrlich

The Naval Postgraduate School’s Consortium for Robotics and Unmanned Systems Education and Research (CRUSER) held its eighth annual Technical Continuum (TechCon), allowing the greater robotics and unmanned systems community to examine how NPS researchers can partner with private industry to foster innovation.

Held in the Mechanical and Aerospace Engineering Auditorium, April 17, the event was inspired by Secretary of the Navy Richard V. Spencer’s direction to help drive innovation by partnering with industry.

“This year our focus on engaging with industry is really a compliment to everything that is going on campus,” said Dr. Brian Bingham, Director of CRUSER and host of TechCon. “Since NPS is situated half in the DOD and half in academia, CRUSER in particular can be very agile and able to respond and deliver on the goals that leadership present.”

The continuum’s three panels included subject matter experts discussing partnerships from the perspectives of both the government and industry entrepreneurs, as well as a panel focused on how NPS has facilitated relationships between DOD and the private sector.

Presenting during one of the panels was Navy veteran Adam Hesch from the Defense Innovation Unit in Silicon Valley. Hesch is part of a team performing software development.

Hesch expressed great value in a diverse team with both military and industry backgrounds, noting it “enhances our understanding” of the organizations they work with.

“Simply, when you have talented officers and researchers that can innovate systems on a large scale, then you can make an impact,” Hesch said. “I think our team, having the composition that it does, gives us advantages in solving hard challenges.”

Speaking to some of the already well established and successful relationships between NPS and industry, Dr. Don Brutzman, Professor in NPS’ Department of Information Sciences, described how NPS has traditionally been a channel for the DOD and industry to collaborate on the needs of the United States.

“Why would companies want to work with NPS?” Brutzman asked. “Part of it is to have NPS faculty review their technology, and then have students look at operational applications. If you study the history of NPS all the way back to World War II, it took a combination of young officers, scientists and industry to work together to pull everything off and win.

“Amazing things have continued to happen here,” continued Brutzman. “When you bring all of that together down to CRUSER, it becomes an opportunity for NPS, industry, academia, the Department of the Navy, and the Department of Defense, to all come together and think of things in innovative and collaborative ways.”

NPS Senior Sailor of the Year Rose to Final Five Among Shore Command Sailors

By MC2 Nathan K. Serpico

Electronics Technician 1st Class Jennifer Macaya, from Bronx, New York, represented the Naval Postgraduate School (NPS) as one of the five finalists for the 2018 Naval Shore Activities Sailor of the Year.

Macaya was recognized for her performance as the Academics Leading Petty Officer where she led 10 Sailors in the operation, inventory and equipment maintenance of all Department of Electrical and Computer Engineering (ECE) and System Engineering (SE) labs aboard NPS.

“I spend a good portion of my day making sure Sailors are trained,” said Macaya. “I want them to have everything they need to succeed professionally and personally. It’s a great feeling to know that my senior leadership believes in me, and is doing the same for me.”

Chief Electrician’s Mate Brian Carpenter, Academics Leading Chief Petty Officer, said recommending Macaya was one of the easiest and most confident decisions he has made in his 20 years of service.

“I am very proud of ET1 Macaya, and I eagerly await her future selection as Electronics Technician Chief Petty Officer,” said Carpenter.

Electronics Technician 1st Class Jennifer Macaya, one of five finalists for the 2018 Naval Shore Activities Sailor of the Year competition, is pictured in the NPS Calibration Lab, one of several labs she supports as Academics Leading Petty Officer. (U.S. Navy photo by MC2 Nathan K. Serpico)
Distinguished Faculty Awarded Top Spot in Essay Contest

By Matthew Schehl

Two leading Naval Postgraduate School (NPS) professors have just won a prestigious essay competition for a co-authored article challenging the United States Navy to fully lean into the coming ascendancy - and risks - of automation and artificial intelligence (AI).

Announced April 19, Distinguished Professors Peter Denning and John Arquilla, respectively chairs of NPS’ Computer Science and Defense Analysis departments, were selected as the winners of this year’s NPS Foundation/ U.S. Naval Institute (NPSF/USNI) Essay Contest for their submittal, “Sea Power and Automation,” which provides a roadmap to navigate the fleet-wide changes ahead.

“Our view is that automation will have as profound an effect on naval affairs over the next 80 years - that is, the rest of the 21st Century - as the aircraft carrier has had over the past 80 years,” Arquilla said.

Since 1878, essay contests fostering the professional development of the nation’s naval officers have been a mainstay of the U.S. Naval Institute (USNI). The NPS Foundation partnered with USNI in 2016 to jointly sponsor the NPSF/USNI Essay Contest Award to specifically encourage NPS students, faculty and staff to broaden the horizons of U.S. national security.

As some of the world’s foremost authorities in their fields, Denning and Arquilla bring a wealth of understanding to the question of integrating automation into the U.S. Navy.

Virtually every facet of the service will soon be profoundly influenced by the introduction of AI, they observe, not only at the tactical level but systemically: organization, doctrine, policy and operations. The Navy will experience this with no less salience than the transition from sail to steam, from solid shot to exploding shell, or to the submarine and aircraft carrier.

“The rapid rise of digitization and networking signal the beginning of a new era that may, one day, take us beyond the carrier’s primacy,” Denning and Arquilla state.

The timing of Denning and Arquilla’s essay is impeccable. In December 2018, Chief of Naval Operations Adm. John Richardson explicitly laid out his strategic vision of a networked fleet in “A Design for Maintaining Maritime Superiority 2.0” (DMMS 2.0), calling for a comprehensive operational architecture to support distributed maritime operations as the service expands its unmanned underwater, surface and air systems.

“There are plenty of examples in history where just the power of networking things together creatively, adaptively, brings actually more power to that force,” Richardson explained during a Heritage Foundation presentation this February. “It makes intuitive sense. ... If you’re able to share data more across the force, you’re able to respond to that awareness with more agility, you can be a more powerful fleet.”

Automation integration is not an either/or proposition between humans and machines, Denning and Arquilla insist, but human-machine teaming is ultimately the best way forward towards the future of military AI. The key to success, therefore, lies in the Navy’s ability to cultivate the skilled engineers, mathematicians, statisticians and others required to design, build and sustain these sophisticated networks.

“We advocate an approach to naval education that emphasizes deep learning in the technologies of computer science, networking, machine learning, sensor data acquisition and analysis, and advanced statistics,” Denning and Arquilla conclude.

The award-winning essay will appear in the June edition of USNI’s “Proceedings” journal.

The Naval Postgraduate School’s (NPS) Dudley Knox Library (DKL) welcomed Thomas (Tom) Rosko as new University Librarian, bringing a diverse background from a variety of academic institutions and organizations as the award-winning library continues its vital support to the campus community.

“I’ve heard nothing but positive things about the library and the resources it has for the students,” said Rosko. “I want to make sure that we continue meeting the needs of the students and faculty, and making sure they know what resources we have available.”

Before coming to NPS, Rosko served as head of archives and special collections at the Massachusetts Institute of Technology (MIT) Libraries. Prior to MIT, Rosko held archives and records management positions at University of Kentucky, Princeton University, New York University and the New-York Historical Society.

Compared to his previous positions, Rosko says, NPS’ emphasis on defense issues and its military and government-based student body presents a unique setting with some new challenges, and opportunities.

“An interesting aspect of NPS is there are a lot of opportunities to do interesting, unique things,” said Rosko. “Similar to a place like MIT or an Ivy League school, the intelligence and brilliance of the faculty and students at NPS are remarkable ... And everyone here is here with a clear purpose.

Rosko intends to continue the accomplished work of his predecessors in keeping DKL an integrated member of the NPS team. Following the path of NPS’ Strategic Plan, the Library will seek to assist and partner with emerging research activities such as data research management, GIS (Geographic Information Systems), AI, and augmented and virtual reality.

Send your campus news and notes to update@nps.edu.
International Day Showcases Cultural Diversity at NPS

By MC2 Nathan K. Serpico

The Naval Postgraduate School (NPS) International Executive Committee (IEC) hosted its annual International Day on the university’s Academic Quad showcasing the diversity and culture of its international students and their families with the local community, April 27. The celebration opened the doors of NPS to the public, offering food, entertainment and cultural information of 22 different nations from around the world.

NPS’ Root Hall breezeway bustled with activity and enjoyment Saturday afternoon, with food and information booths representing countries from all hemispheres, such as Germany, Singapore, Israel, Finland, South Korea, Indonesia and Romania, just to name a few.

“International Day is very important and beneficial because it allows international students at NPS the opportunity to showcase their country’s culture in an engaging and fun way,” said IEC Chair Lt. Ryan Goldsmith. “I think a lot of people in the community aren’t aware that the NPS student body represents [so many] different countries.”

Juan Manuel Calderón Jaimes, Consul General of Mexico, attended supporting his native Mexico and all who helped make the festivities possible. He was one of an estimated 3,000 visitors from across the Monterey Peninsula visiting the celebration, enjoying dancing, singing, martial arts and authentic food prepared by the students and their families.

“I think coming in and seeing different cultures, trying different foods, and meeting different people broadens your mind and gives you another perspective,” noted Thomas Sundby, an international student from Denmark. “The support we have received from the school and the Monterey community has been amazing and I couldn’t have pictured a better experience.”

Countries big and small had their equal share in the interaction during the celebration.

“While I enjoyed sharing my culture with everyone, my favorite part of the day was actually pointing out on a map where we are from,” claimed Krishnakumar Rajaram, an international student from Mauritius. “There are only two of us, but we wanted to contribute to this special day.

“I wanted to give a big bravo to everyone that organized and attended the event for making it such an amazing experience for us,” continued Rajaram.

The IEC is a non-profit organization with the sole purpose of promoting good relationships between the U.S. and international students and their families. Goldsmith encourages non-international students to get involved with IEC, whether through volunteering or taking on an official position, for a rare opportunity to build relationships with students from all over the globe.

“The IEC helps students adapt to life in the U.S. and supports them and their families during their time at NPS,” explained Goldsmith. “All international students attending NPS, along with their spouses and any sponsors of international students, are IEC members.”

Focus On... Board of Advisors Meeting

During his travels through the West Coast, Secretary of the Navy Richard V. Spencer stopped at the Naval Postgraduate School (NPS), April 24, to welcome the university’s Board of Advisors, and provide a first-hand perspective on the board’s critical role with NPS, especially with the recent changes to Navy education through the Education for Seapower (E4S) study.

 “Where I see the tremendous value of all these minds around the table right now is supporting the NPS president as she unfolds her plans for this organization,” said Spencer.

“And we have some pretty bold plans,” he continued. “One of the things that always amazed me when I looked at education within the military services were these brilliant white-hot pockets of excitement.”

The E4S study and its findings, he said, are an opportunity for the Navy and Marine Corps to link these together.

“I truly believe that we defy math by making one plus one equal three when we put our efforts together,” he said.

With board members from all branches of service, both active duty and retired, along with civilian, academic and defense industry leaders, the Board of Advisors is a federal advisory board directed to provide guidance, advice and advocacy to the university as it executes its mission of graduate education and research.
Maj. Caitlyn Diffley, USAF

The President’s Board for Student Affairs is bringing a new charter (and name) forward to President Rondeau. We are reinforcing our mission to elevate and advocate for students in the academic, professional, and quality of life spheres. We restructured our regular meetings to include a monthly town hall meeting for interested students and stakeholders to see what we’re doing and raise issues.

Student leaders recently briefed the group on International Day, and SMSgt Alex Eudy volunteered as emcee for the day. Maj. Michelle Dryden also discussed the newly formed International Club and its efforts to ensure NPS international students and those in DRMI and CCMR are supported during their time at NPS. We hope the student body builds networks to include the international cohort because we’ll all be working together as we return to the Fleet and beyond!

We’ve raised issues to school leadership about water quality around campus. We earned a grant from the Teaching and Learning Commission for feedback kiosks to get student input that will be fielded as available data for classroom and research use. We’re planning a Women’s Leadership Forum and looking to support a campus-wide book exchange program.

Thank you for the hard work you are doing to build your academic and leadership acumen while at NPS. Consider joining our Board at the next Townhall meeting, 1 May at noon in DKL-263 (upstairs in the library).

With Warm Regards,
Caitlin B. Diffley

STUDENT
voice

Maj. Caitlyn Diffley, USAF

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Chair: Maj. Caitlyn Diffley, USAF
Vice-Chair: Lt. Christina Gatti, USN
SIGS School Lead: Maj Pete Larsen, USAF
SIGS Representative: Maj Peter Cox, USA
SIGS Representative: Lt. jg. Tim Cole, USN
SIGS Representative: Lt. jg. Aaron Demers, USN
GSEAS School Lead: Lt. Cmdr. Pete Harley, USN
GSEAS Representative: Lt. Adam Waymouth, USN
GSEAS Representative: Capt. Tyler Flansburg, USAF
GBPPP School Lead: 1st Lt Helene Caniac, USAF
GBPPP Representative: Master Sgt. Alex Eudy, USAF

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On Campus this Month

May 3
The KRUSTY Experiment
11:00 a.m.
SP-117

May 16
Big Ideas Exchange (BIX)
3:00 p.m.-5:00 p.m.
ME Auditorium

May 8-9
Acquisition Research: Creating Synergy for Informed Change
16th Annual Acquisition Research Symposium
Embassy Suites Monterey Bay Seaside

May 22-24
MOVES Open House
MOVES Institute

May 10
Microgrid Projects at Naval Base Ventura County
1:00 p.m., DRMI Auditorium

May 27
Memorial Day
Memorial Day is observed on the last Monday of May, remembering the men and women who died while serving in the U.S. military.

On Campus this Month

May 8-9
Embassy Suites Monterey Bay Seaside

May 27
Memorial Day

Breaking News Happens
Stay Connected. Stay Informed.

Historical Highlights
You’ve Been By This Spot Every Day

Every weekday morning before classes begin, cars stack up at the light for the Del Monte gate. As you wait for your turn, ever let your gaze wander to that wide spot in the road up ahead on your right? That spot is responsible for a lot: the Hotel Del Monte was built specifically to generate business for the Southern Pacific Railroad Company and thousands guests a year visited the Hotel Del Monte.

The elegant horse-drawn wagon you see here conveyed guests to the hotel’s front entrance; their luggage traveled separately. Not much is left that this spot now, but if you look carefully you can still make out the footprint of the old Del Monte station, built to match the 1926 Hotel Del Monte buildings we know today. Rail business dropped off over time, and regular passenger service to Del Monte station ended in April 1971.

Historical Highlights are provided by the Dudley Knox Library.