Big Ideas Exchange seeks tactical edge to address Marine Corps challenges

By MC2 Patrick Dionne

The U.S. Marine Corps at the Naval Postgraduate School (NPS) hosted the university’s latest Big Idea Exchange (BIX) presenting and discussing their cutting-edge research and ideas with a greater Navy and Marine Corps audience, May 16. The BIX forum brings forward new and potentially game-changing thinking developed by NPS faculty and students to address grand challenges in American national security.

“The incredibly positive reception from the audience and the insightful questions they asked really extended the knowledge of the presentation to the next step and question of ‘how do I do more?’”

–Col. Todd Lyons, NPS Associate Dean of Research

“This forum really allows our students to tailor the hundreds of pages of work they’re doing down to a digestible format in which they can communicate effectively,” said Col. Todd Lyons, NPS Senior Marine Corps Representative and Associate Dean of Research. “It’s critical that our ideas don’t just stay inside the halls here at Monterey, but rather head out to the fleet where they can impact the greater Navy and Marine Corps.”

The central theme for the Marine Corps-centric BIX was “Empowering commanders at the tactical edge.” Brig. Gen. William J. Bowers, President of Marine Corps University, and NPS President retired Vice Adm. Ann Rondeau attended the students’ presentations and engaged with the participants on their ideas.

Students presented research that examined several diverse areas including how the weight of a combat load impacts the survivability of the warfighter, the use of block chain to improve logistics, and the use of a rocket delivered communications relay.

According to Lyons, students who fielded questions about their projects provided an invaluable opportunity to help solidify and test their ideas.

“The incredibly positive reception from the audience and the insightful questions they asked really extended the knowledge of the presentation to the next step and question of ‘how do I do more?’” said Lyons. “This collaboration elicits passion for both the chance at future work, but also the opportunity from General Bowers and from President Rondeau to do something about it now, and that’s really where the rubber meets the road.”

SWO flags offer insights to future department heads
GSBPP intern Jones studies crypto crime at nearby MIIS
Marine’s thesis honored with multiple student awards
Acquisition symposium puts technology at the forefront
SWO flags offer insights to future department heads

By Javier Chagoya

With more than 100 prospective department head candidates from the Surface Warfare community attending NPS, it seems fitting that four visiting Surface Warfare flag officers would jump at the chance to talk with them. And they did.

Recently, an audience of upwardly-mobile Surface Warfare Officer (SWO) lieutenants filled Ingersoll auditorium for an hourlong conversation with a collective of highly-experienced flag SWOs. The senior officers, all rear admirals, were on the NPS campus attending the Center for Executive Education’s Leading Innovation Seminar along with 15 other flag level participants.

NPS’ senior SWO and Surface Warfare Chair Capt. Chuck Good invited Rear Admirals Cedric Pringle, Bill Byrne, Richard Cheeseman and Joey Dodgen to get their perspectives on leadership at sea, expectations for department heads when they were in command, and what the officers can do over the next several years to prepare themselves.

“One of the advantages of having a strong SWO community on campus is the ability to take advantage of distinguished visitors from the community,” said Good. “Our students are able to receive and understand the strategic direction of our community straight from the top, and in turn, those leaders get immediate feedback and dialog with the junior leaders charged with carrying out that direction.”

Rear Adm. William Byrne, Commander of Carrier Strike Group 15, said he wanted to see four things from his officers – aggressive, assertive, confident and knowledgeable.

“As you cross the brow as a brand spanking, new department head school graduate, let me throw this bit of advice to you. I expect you to be aggressive. I want you to be an aggressive ship handler, warfighter, an aggressive leader and mentor,” said Byrne.

“In order to be aggressive, you have to be assertive, and being assertive is not personality dependent,” he continued. “You have to be confident and to be confident, you have to have knowledge. You just have to know your stuff.”

“And it really doesn’t matter if you’re getting a degree in operations research, mechanical engineering, national security affairs, or any other degree. What you really learn at NPS is how to study, how to manage your time, how to team, how to partner, and how to get the result,” Byrne said.

Surface Navy Association Monterey Chapter President Lt. Levi Beaird was in the audience listening closely to what each of the admirals had to impart to the gathering.

“There were several points each admiral emphasized and reminded all of us SWOs that we are in a new era of Great Power Competition. In this era, we are presented with new threats that require a different strategy,” said Beaird.

“Part of this strategy is the professional and tactical development of naval officers, SWOs, who will lead the high-end fight at sea,” he continued. “The other part of this strategy is leveraging SWO’s experience and education, across multiple disciplines, to think and respond innovatively to new and emerging threats and tactics.”

The senior officers stressed the importance of being “brilliant at the basics,” as Byrne put it. They stressed the importance of serving as examples to junior officers, of being compliant and innovators at the same time.

And they all resoundingly agreed that there is little better experience for a SWO than time at sea.

“The point is to place proven talent back at sea to drive operational excellence and surpass what was required with compliance. It is also a push to give SWOs more experience at sea to drive proficiency in seamanship and other warfare areas,” said Beaird.

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GSBPP intern Jones studies crypto crime at nearby MIIS

By Matthew Schehl

Noni Jones is an administrative whiz inside the Graduate School of Business and Public Policy (GSBPP) at the Naval Postgraduate School (NPS). The modest intern deftly navigates the Defense Travel System to greatly ease the burden on university faculty.

Outside of NPS, Jones is a graduate student at the nearby Middlebury Institute of International Studies (MIIS), where she prepares for a future of deftly defeating a new generation of cyber criminals and money-laundering masterminds.

“My specialization is the nexus between financial crimes and cybersecurity,” she said. “I’m really interested in the economics of illicit trade and how that affects everything from national security to quality of life and loss of industry.”

Jones’ passions were revealed to the world in March when she and three other MIIS students banded together to react to a devastating cyber attack on the United States presented at the Atlantic Council’s intense Cyber 9/12 Strategy Challenge competition in Washington, D.C.

The MIIS team placed second — only behind the Air Force Academy — out of 47 teams from such esteemed universities as Brown, Columbia, Duke, Georgetown, Stanford, Tufts and the other service academies.

“That competition was fierce!” Jones recounted. “First, we had to write a policy memo and present it, then go on to the next round, 10 hours overnight.”

“The scenario kept changing as one moment you learn the Russians are involved, then it’s Hezbollah operating out of Venezuela; how do you react to that?” she continued. “A lot of it was focused on the interconnectivity of government agencies and how you would use a particular agency to employ X, Y or Z.”

Jones chalks up their success to the expertise of her all-women team, which they dubbed “MIIS attribution 2.0.”

“To be able to bring our vastly different skills together cohesively and not want to kill each other at four o’clock in the morning was really great,” she said. “Things didn’t always go perfectly, but it was just water off the duck’s back: we just kept moving, kept tracking, and I think that reflected really well on us.”

Jones did not blink when asked how she acquired her particular powers.

“The Naval Postgraduate School!” she declared. “I feel like it’s this crown jewel of Monterey, like I’m part of something that’s actually producing something really cool.”

In June 2017, Jones began an internship through the Office of Naval Research’s Naval Research Enterprise Internship Program (NREIP), working with NPS’ Global Education Community Collaboration Online (ECCO) to model terrorist financing networks.

After completing her undergraduate degree, she enrolled in MIIS and the federal government’s Pathways internship program to begin work at NPS’ GSBPP.

“I’m essentially a travel clerk, but I’m getting the opportunity to learn how the government works and how to operate within it, hopefully to work in public service in the future,” Jones noted. “I’m so glad I’m here; I feel like I’m part of this greater community.”

And Jones is just getting started. She has an internship lined up this summer as an anti-money laundering specialist with a major investment banking firm ahead of her Spring 2020 graduation from MIIS. And she will do so armed with the knowledge, skills and abilities earned through her hard work and engagement with the NPS community.

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Marine’s thesis honored with multiple student awards

By MC2 Taylor Vencill


Four students from the OR department’s graduating class were selected to present their theses to a panel of judges. Following the detailed presentations and extensive deliberations, the judges recognized Thompson’s work as the project with the highest potential near-term impact on the service.

“I am both honored and humbled to receive this award,” said Thompson. “The entire group graduating this year worked so hard on their theses, so I was not expecting to even be a finalist knowing the group in which I was competing.”

Thompson's thesis explored how the amount of combat gear a Marine can carry affects their combat effectiveness. Thompson noted that just 15 pounds can dramatically affect how a Marine operates in combat.

“Marines always have to be prepared to engage with the enemy,” stated Thompson. “In doing so they typically have personal protective equipment, weapons and other gear. Ultimately, the goal is to make those Marines as lethal and survivable as possible, and my thesis works towards that same goal.”

It’s a topic, Thompson says, that has been getting a fair share of attention recently.

“The commanding general of the Marine Corps Warfighting Lab is asking for my research and results,” Thompson said. “I also worked with a few people at Marine Corps Systems Command who’ve been looking at this problem specifically so they may use it to help support their further research.”

The Tisdale Award is actually the second quarterly award to go to Thompson in recognition of her research. The soon-to-be alumna will be joined several of her peers on the NPS Quarterdeck on Tuesday, June 4, where she will be presented with the Navy League Award for Highest Academic Achievement, the top academic award of the quarter.

The MORS/Tisdale award is named in honor of Lt. Cmdr. Stephen A. Tisdale, a dual-degree graduate of NPS in 1989 who perished in a military aircraft accident on March 21, 1991, while serving with Patrol Squadron 50 off the coast of California. Tisdale’s outstanding and influential thesis, “Assessing Optimal Utilization of Potential Anti-Satellite Architectures,” won the MORS prize for his graduating class, and he was also recognized as the top Space Systems Operations student as well.

NPS hosts Chinese Defense University delegation

By NPS Public Affairs

Naval Postgraduate School (NPS) welcomed a visiting delegation of senior leaders from China’s People’s Liberation Army (PLA) for a brief introduction in NPS’ historic Herrmann Hall, furthering military-to-military relations and interaction stemming from a reciprocal agreement with the U.S.’s National Defense University (NDU) originally signed in 1996.

“This is an important time for such conversations between two great nations, and we are delighted to have you take part of this conversation,” noted NPS President retired Vice Adm. Ann Rondeau as she opened the round table.

The delegation engaged in conversation moderated by NSA associate professor Christopher Twomey, with the Chinese and American students alternating questions for each other.

Twomey, who along with Glosny, serve as two of the NSA department’s resident experts on Sino-U.S. relations, summed up the goals of the visit well.

“This was an opportunity to expose PLA leaders to the value we place on developing independent critical thinking in our officers and to highlight the deep integration of the United States with its security allies and partners, both in the classroom and beyond,” Twomey said.
Students refine research through industry internship connections

By MC2 Taylor Vencill

The Naval Postgraduate School Industry Internship Program recently completed its third iteration sending 21 students for week-long internships at leading private sector technology companies to develop partnerships with industry while complementing each student’s development and area of study.

NPS’ Dean of Students launched the program in the spring quarter of 2018 seeking to bring real-world relevance and experience to the student experience, and to further align student programs with Secretary of the Navy Richard V. Spencer’s call to support partnerships between the DOD and industry.

Through the support of the NPS Foundation and Alumni Association, the program sent this latest cohort of students to nine different companies including Lockheed Martin in West Palm Beach, Fla., Raytheon Missile Systems in Tucson, Ariz., Amazon in Seattle, Wash., Elbit Systems in Fort Worth, Texas and Boeing in St. Louis, Miss.

Each student spent one week collaborating with an industry partner that aligns with their studies, research, and possible career trajectories. Lt. Matthew Henricks, a student in NPS’ Combat Systems Science and Engineering program, spent his time with Raytheon Missile Systems.

“Going to Raytheon providing me with first-hand interactions with people I will very likely be able to work with during my thesis work,” said Henricks. “I got the opportunity to meet with some of the top minds working on interesting problems. After I graduate, I will be working with companies like Raytheon regularly, and getting the opportunity to see what drives them and making these connections will only benefit me in the long run.”

Marine Corps Capt. Caliph Lebrun, who visited Elbit Systems, brought back valuable insights in how to refine his unmanned all-terrain vehicle research at NPS.

“I went to Raytheon with questions of how do you reliably implement a machine learning algorithm in a system intended for military use,” he said. “They already have a lot of systems that are running live, with a high level of fidelity. For me, having that kind of knowledge shortens the time for me to get a reliable model to implement on a real-life system.”

While the internships provided benefits to student learning, they were mutually beneficial to the companies taking part as well. The program provided the companies the opportunities to speak with military professionals and gain from their experiences working with their products.

“As a submariner, Lockheed Martin had questions for me regarding ideas and products for operations on a submarine,” said Sale. “So not only the perspective for me to understand how they operate, but for them to have feedback on the equipment was useful as well.”

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Hosted by the Naval Postgraduate School (NPS) and sponsored by the Department of Defense, the 16th annual Acquisition Research Symposium: Creating Synergy for Informed Change at the Embassy Suites, May 8-9th, explored the latest innovation and research in the field across a range of panel discussions, including cybersecurity, autonomous systems, data analytics and international defense.

The symposium comes at a precipitous and crucial moment, noted NPS President retired Vice Adm. Ann Rondeau as she welcomed the participants.

“In the Information Age, we are at the point where we can bring data analytics towards saving money and making cost avoidance so that we can put more of the nation’s treasure towards the end effect that would have this nation safer and more secure all the time,” she said.

Driving the event was NPS’ Acquisition Research Program (ARP), which since 2003 has served as the locus for innovation, creative problem-solving and on-going dialogue in the acquisition world. Nestled within the NPS Graduate School of Business and Public Policy, ARP produces over 80 acquisition products each year and maintains a repository of more than 2,100 unclassified publications, stimulating research into acquisition management, workforce development and policy research.

“Our research program continues to be a major component of the critical thinking skills in the current and future acquisition workforce,” remarked Acquisition Chair retired Rear Adm. James Greene. “What is not fully understood is that almost all of [our students] end up in the acquisition world, not just business school people but people in engineering or science.”

Understanding this context is key to navigating these new waters, and the presentations and sidebar conversations at the symposium demonstrated that the assembly of participants is well underway, according to keynote speaker Elliott Branch, Deputy Assistant Secretary of the Navy for Acquisition and Procurement.

“Tomorrow’s war will have things like ‘stochastic terrorism,’ where we use social media to potentially demonize a person or a group of people, which triggers an unknown person at an unknown time to commit an act of terror like we saw with the San Bernardino shooting,” Branch warned. “The next war will include terms like ‘computational propaganda,’ where we use big data so that a granular profile of who you are, what you do, how you think and who you associate with can be used to fine tune a message to you personally.”

Under the aegis of the nation’s 76th Secretary of the Navy, the Honorable Richard V. Spencer and Chief of Naval Operations Adm. John Richardson have laid down the marching orders to adjust course for this sea change through a string of published initiatives, including A Design for Maintaining Maritime Superiority 2.0 and Education for Seapower.

Focus On... New Possibilities

The inclusion additive manufacturing and 3D metal printing now allows NPS’ Mechanical and Aerospace Engineering (MAE) department to expand several curricula creating not just new capabilities, but a new design space where students and faculty can innovate.

The MAE department’s new EOS M100 Direct Metal Laser Sintering 3D printer uses a laser-powered welding process where material is machined away and then the additive manufacturing process welds very fine powders to build up solid material parts.

“The 3D printer is an amazing tiny manufacturing plant where students with this technology can open up new possibilities for design and solutions for manufacturing,” said Supervisory Technician Stefan Kohlgrueber.

According to Associate Professor Walter Smith, the new capability provides NPS with a platform to explore new welding and additive manufacturing processes in the construction of new materials, as well as to design parts that would otherwise be impractical or impossible to machine.

“Additive manufacturing creates opportunities which otherwise would have been too expensive to pursue, both in terms of money and time,” said Smith. “There are many avenues of research that this machine opens up, from building parts en masse with complex geometries for application in other research endeavors, to optimizing the welding process for support structures and build orientations, and finally the post processing of constructed parts to ensure the required end use strength and toughness.”

The printer is currently being used for welding and joining metallurgy to produce aerospace components out of titanium alloy powder using a 200-watt fiber laser.
Maj. Caitlyn Diffley, USAF

The Spring Quarter is wrapping up quickly and comes with a host of news. First, Tech Sgt. Gerald McLaughlin will take over as the Chair. Lt. Christina Gatti will keep the organization going forward while continuing her position as the Vice Chair.

The PBSA - President’s Board for Student Affairs - is the new name for the PSC. We wanted to distinguish the work our organization does on behalf of students for the President of NPS, highlight the intent of professional development for all members, and draw some separation from the bake sales and volunteering that references to student councils seem to draw.

The PBSA took on a few initiatives. We made progress with maintenance issues and water quality, a Teach & Learning grant, and a book exchange for international students. We have been granted recognition that all weekdays except Tuesday are No Hat, No Salute days for all students in civilian UOD.

We hosted the first Women’s Leadership Forum May 31. President Rondeau was the keynote speaker and she introduced a panel discussion with several distinguished leaders to highlight the unique contributions and challenges in women’s careers.

Finally, as graduation rolls closer, I will heap gratitude upon my colleagues, the professors, and staff here at NPS. Thank you so much for an incredible year. My family and I hope to return to NPS in some fashion someday!

Blue Skies, Fair Winds, and Godspeed!

Caitlin B. Diffley

Have a story to share?
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“Out east of Monterey in a park there was a beautiful white hotel with high towers and red tiles and striped awnings...”

So begins the tale of young “Henry” and his pal “Benny,” a couple of local kids out to spend a leisurely summer day at the best “park” in town, circa 1925.

Hiking along the railroad tracks “past the boat works...straight out past Monterey”, the boys arrive at distant Del Monte. A casual slide through the bushes next to the Roman Plunge takes care of “admission”, and the day begins. After a swim, they head off the the lake, “quiet and dreamy and beautiful”, where well-dressed children feed the elegant white swans as chauffeurs and governesses stand by. Later, the boys cadge coins to lead guests out of the Maze. Across the highway at the golf course, stylish duffers in loud socks and plus fours gossip and curse as older, tougher kids - caddies - taunt them as outsiders. No matter, it’s just another summer day, and the “old, old black asphalt of Fremont Street was soft and warm” as they headed back home to Monterey. Read about Henry and Benny’s day in the NPS Archive, Calhoun. https://calhoun.nps.edu/handle/10945/59058

Historical Highlights are provided by the Dudley Knox Library.