Former POW Honors Winter Graduates

by Kenneth A. Stewart

NPS honored some 334 graduates from 17 countries earning 335 advanced degrees during its Winter Quarter Commencement Ceremony at King Auditorium, March 27. NPS President retired Vice Adm. Ronald A. Route presided over the ceremony.

“The skills you have developed here will help you serve more effectively wherever you are called, and our nation will count on you as strategic influencers, problem solvers and leaders, wherever your career takes you,” said Route.

In addition to recognizing NPS’ latest graduating class, Route welcomed guest speaker and NPS alumnus retired Cmdr. Everett Alvarez, Jr. and inducted him into the NPS Hall of Fame.

“A manager tells you what you are supposed to do, a leader inspires you to do it.” – The Honorable Everett Alvarez, Jr.

Alvarez was the first Navy aviator shot down during the Vietnam War and the longest held POW in North Vietnam. NPS was his first assignment after his release from captivity. The son of Mexican immigrants, Alvarez was raised in the Salinas Valley. He was welcomed back to the institution, and the region, by members of the Everett Alvarez High School color guard.

“First of all, I’m overwhelmed. Seeing the color guard from the high school that was named after me makes me feel very proud,” said Alvarez.

Throughout his commencement address, Alvarez spoke about the importance of character and challenged the assembled students to be leaders.

“A manager tells you what you are supposed to do, a leader inspires you to do it,” explained Alvarez. “Have you ever heard anyone say, ‘take me to your manager? No, it’s take me to your leader. My experience tells me that leadership is really all about character.”

Alvarez’s books, “Chained Eagle” and “Code of Conduct” detail, both his life in captivity and the story of how he rebuilt himself after earning the unenviable distinction of being the longest-held U.S. captive in North Vietnam. He is the 21st member of NPS prestigious Hall of Fame.
Researchers Battle Extreme Environments to Further AUV Research

By Kenneth A. Stewart

NPS Research Associate Professor Douglas Horner and Research Assistant Professor Noel Du Toit recently returned from remote Pavilion Lake, British Columbia where they investigated Autonomous Underwater Vehicle (AUV) operations in extreme, under-ice environments.

“The Navy is very interested in our ability to work under the ice using autonomous vehicles,” said Horner.

Pavilion Lake is located some 250 kilometers northeast of Vancouver, British Columbia. Its frozen-over waters became a natural laboratory in which Horner, Du Toit and a multi-disciplinary team of colleagues were able to test navigation algorithms developed at the NPS campus in Monterey and beyond.

“The lake’s bathymetry is incredible. It varies from 60 to four meters depth in less than a 300 meter distance,” explained Horner. “It provided a unique opportunity for testing the AUV’s ability to collect sensor data while both avoiding potentially hazardous obstacles and building an accurate map.”

Horner and Du Toit both teach at the NPS Department of Mechanical and Aerospace Engineering (MAE). Horner is co-director at the university’s Center for Autonomous Vehicle Research (CAVR) and Du Toit has been participating for several years in NASA's Extreme Environments Mission Operations (NEEMO) program.

While there are many facets to Horner and Du Toit’s combined experimentation efforts, at issue are three main capabilities – the development of navigational techniques that allow AUVs to travel without reliance on GPS; the development of adaptive controllers that will enable robust under-ice operations with changing vehicle configurations; and the development and testing of real-time surveying and 3D-mapping capabilities.

Horner and Du Toit also used their time at Pavilion Lake to gain experience conducting under-ice operations in preparation for further research at Lake Untersee, Antarctica later this year and in the Arctic next year.

“We are trying to do this in increasingly aggressive environments. We started in Pavilion Lake without ice, and now we have conducted experiments beneath the ice. Next, we intend to conduct experiments in a more challenging lake environment in Antarctica and culminate with AUVs deployed beneath moving sea ice in the Arctic,” Horner explained.

According to Du Toit and Horner, under-ice research is increasingly important to the Navy due to the effects of melting polar ice and its implications on geopolitical and economic interests in the region.

But before the Navy is able to fully realize the benefits of their work beneath the ice, they must first get the science right. To do that, Horner and Du Toit will have to contend with not only extreme temperatures, and changing currents, but with moving sea ice as well.

“All of our sensor measurements have to be integrated in a manner that makes sense mathematically,” said Du Toit. “The information comes in from a number of distinct places and has to be combined in a way that captures the relative quality of the information.”

One of the most important research outcomes that Horner and Du Toit hope to realize from their efforts is the ability to accurately and reliably navigate in a variety of challenging environments – from beneath the ice or in the cluttered littorals, the Navy has begun to navigate in these regions with greater frequency.

Horner and Du Toit’s experiments at Pavilion Lake were made possible by funding from the Office of Naval Research (ONR), Defense Advanced Research Projects Agency (DARPA), and NASA’s Extreme Environments Mission Operations (NEEMO) program for underwater experiments.

“The lake’s bathymetry is incredible. It varies from 60 to four meters depth in less than a 300 meter distance,” explained Horner. “It provided a unique opportunity for testing the AUV’s ability to collect sensor data while both avoiding potentially hazardous obstacles and building an accurate map.”

Horner and Du Toit both teach at the NPS Department of Mechanical and Aerospace Engineering (MAE). Horner is co-director at the university’s Center for Autonomous Vehicle Research (CAVR) and Du Toit has been participating for several years in NASA’s Extreme Environments Mission Operations (NEEMO) program.

While there are many facets to Horner and Du Toit’s combined experimentation efforts, at issue are three main capabilities – the development of navigational techniques that allow AUVs to travel without reliance on GPS; the development of adaptive controllers that will enable robust under-ice operations with changing vehicle configurations; and the development and testing of real-time surveying and 3D-mapping capabilities.

Horner and Du Toit also used their time at Pavilion Lake to gain experience conducting under-ice operations in preparation for further research at Lake Untersee, Antarctica later this year and in the Arctic next year.

“We are trying to do this in increasingly aggressive environments. We started in Pavilion Lake without ice, and now we have conducted experiments beneath the ice. Next, we intend to conduct experiments in a more challenging lake environment in Antarctica and culminate with AUVs deployed beneath moving sea ice in the Arctic,” Horner explained.

According to Du Toit and Horner, under-ice research is increasingly important to the Navy due to the effects of melting polar ice and its implications on geopolitical and economic interests in the region.

But before the Navy is able to fully realize the benefits of their work beneath the ice, they must first get the science right. To do that, Horner and Du Toit will have to contend with not only extreme temperatures, and changing currents, but with moving sea ice as well.

“All of our sensor measurements have to be integrated in a manner that makes sense mathematically,” said Du Toit. “The information comes in from a number of distinct places and has to be combined in a way that captures the relative quality of the information.”

One of the most important research outcomes that Horner and Du Toit hope to realize from their efforts is the ability to accurately and reliably navigate in a variety of challenging environments – from beneath the ice or in the cluttered littorals, the Navy has begun to navigate in these regions with greater frequency.

Horner and Du Toit’s experiments at Pavilion Lake were made possible by funding from the Office of Naval Research (ONR), Defense Advanced Research Projects Agency (DARPA), and NASA’s Extreme Environments Mission Operations (NEEMO) program.

Imagine the vehicle is moving around with a bubble of uncertainty around it. When GPS is available the bubble is small, but when it isn’t available the bubble can grow,” explained Horner. “We are interested in how terrain and natural underwater features can help us to manage the bubble and keep it to a minimal size.”
Design Thinking Meets Civil Affairs

By MC3 Michael Ehrlich


The workshop, entitled “Bridging the Great Civil Affairs Divide,” brought together members across the civil affairs (CA) community to consider what CA could look like in 2025.

“We realized there were inherent challenges but we wanted to do our part to make the CA community better than when we came into it,” explained Hayes.

Design thinking is a process of problem solving that focuses on the “human in the loop.” It relies on interdisciplinary expertise and encourages rapid, rough prototypes with end-user feedback and involvement. The key is to embed the problem in context to understand how people who live with the problem experience it, rather than rely on those far from the problem to define and solve it.

An interdisciplinary design team moves through the five-phase design thinking model – discovery, problem definition, ideation, rapid prototyping, and testing – with end-user feedback and involvement at every phase.

For their workshop to be successful, Hayes and Nguyen quickly realized the first phase in the design thinking process, discovery, required them to reach out to leadership and colleagues within the CA community.

“We went out and gathered different perspectives from community stakeholders about the problems they faced,” Nguyen explained. “Traditionally, military personnel rush into framing the problem without completely understanding it. So going through this process, we learned about the community from as many different perspectives as possible.”

Problem framing, the second phase, emerged from the discovery step. In processing their information, it became apparent that the CA community had no common identity. There was little agreement across the community on who they are, what they do, how they do it and why they do it.

NPS Professor Nancy Roberts facilitated the event. She described one of the challenges facing the CA community as “the divorce of 2006” when the community was split into different commands.

“They no longer saw themselves as one community,” Roberts said.

Ideation, the third phase of design thinking, had participants brainstorming new ideas they wanted to include in an identity statement.

“We began to distill what is core, what is distinguishable, and what is unique that can be enduring about our community,” said Hayes. “Those are the building blocks that we used to craft the identity statement.”

Prototyping, the fourth phase, asked participants to brainstorm different ways to ensure their identity would become a reality in 2025. They produced prototypes on branding, training, professionalization of the community, and organizational structure.

The final phase, testing, incorporated feedback from members of the NPS community.

“We keep using feedback during the testing phase to build better prototypes,” said Nguyen. “The work that we have done here, and the work that we will continue to do, is just the beginning of the collaborative effort by the CA community to make the branch better.”

NPS Provost Dr. Douglas Hensler recently released the promotion and tenure results for FYI 2015. The following associate professors have earned tenure: Associate Professors Jonathon Lipow (DRMI), Raymond Madachy (SE) and Rene Rendon (GSBPP).

The following faculty members have been promoted to professor: Professors Michael Atkins (GSBPP), David Henderson (GSBPP), Claudia Luhrs (MAE) and Yu-Chu Shen (GSBPP).

The following faculty members have been promoted to associate professor and awarded tenure: Associate Professors Jonathon Lipow (DRMI), Leo Blanken (DA), Erik Dahl (NSA), Sean Everton (DA), and Arturo Sotomayor (NSA).

Route also noted that in addition to providing a chance for Howard to address the student body, her visit was an opportunity for her to see, first-hand, how current educational and research initiatives can help the Navy advance warfighter capabilities in critical areas such as technology and cyber warfare.

Have a story to share? Public Affairs is constantly seeking interesting news and stories for Update NPS. Send your tips to pao@nps.edu.
Recent NPS alumnus U.S. Air Force Maj. Creighton Mullins of River Ridge, Louisiana was named a recipient of the Ellis Island Medal of Honor by the National Ethnic Coalition of Organizations (NECO), March 25.

The prestigious medal, which honors the contributions made by both immigrants and their descendants, will be presented to Mullins during a ceremony at Ellis Island in May.

“I am deeply humbled, almost to the point of embarrassment, that I was nominated and selected to receive this award,” said Mullins.

Mullins graduated from NPS’ Department of National Security Affairs (NSA) where he studied Middle East Security Studies and completed an award-winning thesis titled, “Syria and the Rise of Radical Islamic Groups.”

“Here at NPS I was able to build upon my previous work in the field,” said Mullins.

“I was able to synch my academic work with my operational experiences and to study under professors whose work I had read prior to deploying. I tried not to waste a second,” he continued.

U.S. Army retired Lt. Gen. Michael T. Flynn nominated Mullins for the award. According to Flynn, much of what Mullins did to be nominated is, and will likely remain, classified top secret. But Flynn was able to speak in broad terms about Mullins’ many accomplishments.

“The medal has been given to six U.S. presidents. Young people don’t usually get it, the fact that he did, is a testament to the kind of leader he is,” said Flynn. “[Mullins] worked for me during the height of the Iraq war and throughout the Middle East fighting terrorists.

“He was the most innovative, mature, and courageous officer that I have worked with. He was willing to dare when nobody else would, and though his actions will never be written about in a book, they likely saved thousands of U.S. and Iraqi lives and led to the death or capture of many enemies of the U.S. and the free world,” Flynn continued.

The NECO program was not the only organization to recognize Mullins’ work. He was also awarded NSA’s Outstanding Thesis and Distinguished Graduate awards as well as the NPS Superior Service and Liskin awards in recognition of his academic accomplishments while at NPS.

Ellis Island Medals of Honor are presented to some 100 awardees each year during a ceremony held in Ellis Island’s Great Hall – the same hall that immigrants traversed for decades on their way to the U.S.

According to NECO, past Ellis Island Medal of Honor recipients have included former heads of state, Nobel Prize winners and leaders of industry, education, the arts and sports. Mullins looks forward to joining this prestigious group and contributing in any way he can.

International Graduates Honored at Quarterly Luncheon

By Javier Chagoya

NPS President retired Vice Adm. Ronald A. Route presented awards to a diverse group of international students during the International Graduate Program Office’s Farewell and Appreciation Luncheon at the La Novia Room, March 6.

Brazilian Air Force Lt. Col. Arthur Alexandre Gentil Toneli was one of 17 international students from 10 countries that participated in the event.

“NPS contributed to my professional development, helping me to understand old problems with new perspectives,” said Toneli.

Toneli also distinguished himself as the recipient of NPS’ Outstanding Academic Achievement Award for International Students. He was presented the award at the Winter Graduation Awards Ceremony, March 17.

Toneli is a Brazilian Air Force Aviation Officer studying Manpower Systems Analysis. He was recognized, in part, for his thesis, in which he developed a senior leader assignment model that he hopes to utilize after returning to the Brazilian Air Force Personnel Command Headquarters.

Student spouses were also recognized at the ceremony with certificates of appreciation for the important roles that they play in support of their loved-ones’ graduate education.
HOF Inductee, Student Connect

By Kenneth A. Stewart

Winter Quarter graduate Francisco Gutierrez-Villareal graduated from the Salinas high school named in honor of the latest inductee to the NPS Hall of Fame, retired Cmdr. Everett Alvarez, the first U.S. aviator shot down during the Vietnam War and the longest held POW in North Vietnam.

Alvarez and Gutierrez-Villareal share more than a mere high school connection, however. Both men are children of Mexican immigrants that came to work in Salinas’ agriculture industry, and both completed their undergraduate studies on scholarship at Santa Clara University. The two also began their time at NPS in the Department of Operations Research (OR)–Alvarez as a student, while Gutierrez-Villareal spent his summer internship in OR.

But it was during that internship that Gutierrez-Villareal learned of the Monarch Scholarship, a Scholarship for Service program designed to encourage college students to enter the cyber security profession.

“I went to Hartnell to complete some math requirements with the intention of transferring back to Santa Clara to pursue a Ph.D in economics. That’s when I learned about the internship program at NPS,” said Gutierrez-Villareal. During his time on campus, Gutierrez-Villareal further explored his interest in cyber security and eventually began studies as a student in the computer science curriculum.

“Being from Salinas, it was very convenient. The professors were great and I have gained some interesting experiences that have led me to do cyber security work for the government,” he said.

STEM Internship Program Manager Alison Kerr has worked closely with Gutierrez-Villareal throughout his time at NPS.

“He walked through a variety of doors that were presented to him, worked hard and has made us very proud,” said Kerr. “Francisco’s story reflects how the DOD benefits from embracing diverse communities.”

Interns “Speed Date” with Faculty

By MC3 Michael Ehrlich

Potential Hartnell Community College summer interns participated in a “speed dating” event at the Cebrowski Institute, March 12.

Ensign Chris Halcon, a Hartnell graduate himself, participated in NPS’ STEM internship program before commissioning in the Navy to pursue a career in naval aviation.

“My internship was definitely a stepping stone towards my commissioning,” said Halcon. “When I was an intern here with the Space Systems Academic Group, I was able to work with a lot of pilots and bounce ideas off them. The answers I received molded me towards getting my commission.”

STEM Internship Coordinator Alison Kerr has worked with Hartnell for several years.

“It was during my time there that I knew I wanted to pursue a career in naval aviation,” said Halcon. “I was able to work with a lot of pilots and bounce ideas off them. The answers I received molded me towards my commissioning.”

The professors were great and I have gained some interesting experiences that have led me to do cyber security work for the government,” he said.

“We have had more than 120 Hartnell interns come through NPS and 95 percent of those students have completed their bachelor’s degree, or are on track to complete them, in a STEM field,” said Kerr. “[In comparison], the percentage is closer to 22 percent for community college graduates actually completing their four-year degrees.”

Casi Martin is a former NPS intern, now she’s a student in the Scholarship for Service Computer Science program working toward her master’s degree. She noted the value of the computer science curriculum.

“They could be assets to the Navy due to the increasing demand for properly trained people in the cyber field,” she said.
IDARM Acquisition Program Builds Bridges

By Shawn J. Stewart

NPS’ International Defense Acquisition Resource Management (IDARM) program continues to be recognized for its valuable contributions to the defense acquisition processes. Since its inception, the program has gained a wealth of supporters from students, professors and even North Atlantic Treaty Organization (NATO) officials.

“I believe in this program strongly,” said Tom Herway, Chief of Contracts at NATO Communications and Information (NCI Agency) Brussels. “It does something unique that I haven’t seen any other program do. It reaches out across a large geographical location to teach the basic principles of acquisition and everything associated with it.”

IDARM was initially created by a team of NPS faculty to help allied nations improve their defense acquisition processes and business practices.

“We are unique to other programs around the world because we focus on the understanding of global best practices, global trends, and key concepts,” said IDARM Program Manager Kathleen Peggar. “We aren’t teaching solely the U.S. system; we recognize that the U.S. is unique and that every country will have their own set of circumstances, requirements and resources.”

The program is tailored to each student’s national government’s organizational structure, acquisition statutes and regulations. Students are expected to show competencies in strategic issues in a round-table seminar-formatted learning environment.

“What we give to the students is solid theory, ideals, and concepts to help them consider the practicalities of implementing and applying these ideas into their own national context,” said Peggar.

“It is really important [for students] to see how they can use the information in a real world setting,” said IDARM guest lecturer and Assistant Professor from the University of Federal Armed Forces in Munich, Germany Michael Ruediger. “We put students into small teams and force them to make decisions.”

According to faculty, each course brings together an abundance of experience and knowledge but it is the communication between students and faculty that really makes the program shine.

“This program is very important, not just because we exchange information, but because we establish relationships,” said IDARM Associate Professor Magdi N. Kamel.

“It’s also rewarding to see people transcend the limitations that may have served as a barrier to their success,” added Peggar. “It’s a great feeling when you see that some of what they learned here has helped them through their career and has ultimately affected positive change to their countries’ procurement systems.”

Focus On … Health Care Readiness

A Monthly Look at Names and Faces on Campus

Health Benefits Advisor Jalpa Zambrano is a 10-year-veteran of the military administrative health care field. She recently set up shop at Herrmann Hall.

“I put military first, they should have the best. They go out every day and risk their lives. I feel that I can help a little bit in my small way,” she said.

Zambrano has deep ties to the military. In addition to her personal career, her husband of 22 years recently retired from the Army.

“It’s very personal [to me]. My husband did 22 years first as a Marine then as a Soldier, so I have this big respect for the military and what [service members] do for the country,” said Zambrano.

While at the Presidio of Monterey’s Medical Services and Army Health Clinic, Zambrano worked as a secretary for behavioral health and as a Council Tracking Coordinator (CTR).

“I used to work with active duty at DLI and on the civilian side with insurance agencies processing claims and now I am doing similar work with the international students at NPS,” said Zambrano.

“I like that each case is unique, that I get to communicate individually with everyone as a person.”

Zambrano looks at her work at DLI and NPS as stepping-stones.

“Health Benefits Advisor Jalpa Zambrano

“This was the job I wanted the first time I stepped into DLI,” said Zambrano. “This is the job I set as a goal toward my future.”
Any Day at NPS ...

Lt. Aaron Steward is the Chairman of the President’s Student Council.

“One if by land, two if by sea,” was the phrase said along the Charles River to alert colonists to the coming of British troops.

Paul Revere gave these instructions to Robert Newman, April 18, 1775. The people of Charleston saw two lanterns shine later that night.

Revere traveled to Lexington to warn John Hancock and Samuel Adams the British were coming to arrest them. Along the way, he alerted militiamen to prepare for a fight.

It was believed that the British were on their way to Concord to capture a weapons cache. Revere, William Dawes, and Dr. Samuel Prescott were sent to Concord to warn the militia, but Revere, Dawes, and Prescott were detained by the British. Only Prescott made it to Concord.

On April 19, 1775 the first skirmishes of the American Revolutionary War would take place, first on the Lexington Commons and then at the Concord North Bridge. Big things start with small beginnings.

You may think that your thesis work is of little significance, but the small problems we solve today may lead to revolutionary change in the future.

Like the light of a lantern or the warning of a rider on a horse, small events can set in motion one of the most important events in American history, let your thesis be the light for big things in the years to come.

Professor Roberto Christi with the NPS Department of Electrical and Computer Engineering presents certificates to two honorees during the 2015 Monterey County Science and Engineering Fair held at California State University, Monterey Bay, March 15. (U.S. Navy photo by MC2 Shawn J. Stewart)

NPS alumnus retired Navy Cmdr. Everett Alvarez, Jr., unveils his photograph at a ceremony welcoming him to NPS distinguished Hall of Fame. Alvarez was recognized for his many accomplishments both within and outside the military. (U.S. Navy photo by MC2 Shawn J. Stewart)
On Campus this Month

**April 9**
Campus Communication with NPS President retired Vice Adm. Ronald A. Route and NFFE Local 1690 “The Union”
1:00 p.m. at Glasgow 102

**April 9**
CRUSER’s 5th Annual Robots in the Roses
Lab tours from 11:00 a.m.-2:00 p.m.
Research Fair from 2:00 pm.-5:00 p.m at Ingersoll Plaza

**April 9**
Campus Communication with NPS President retired Vice Adm. Ronald A. Route and NFFE Local 1690 “The Union”
1:00 p.m. at Glasgow 102

**April 10**
Sexual Assault Awareness and Prevention Run
3:00 p.m. in front of Herrmann Hall

**April 14-16**
CRUSER Robo-Ethics 2015
12:30 p.m. - 3:30 p.m. via the Internet
cruser.nps.edu

**April 25**
International Day
12:00 p.m.-4:00 p.m. at the Academic Quad

**April 25**
115th Submarine Birthday Ball
6:00 p.m. at the Barbara McNitt Ballroom

---

**Historical Highlights**

This month’s celebration of International Day marks a tradition that was established more than 50 years ago by the International Committee. The early observances were dinner-dance parties called the International Buffet. As reported by The Classmate magazine in April 1965, the buffet was organized by spouses and held twice each year. “Each of the International wives is asked to bring a main dish familiar in her country serving 8-10 people. The American wives are asked to bring such food as is needed to round out the menu,” noted Willie Boice, chairman of the International Committee.

By 1975, the twice-yearly buffet had become a festival called International Weekend, which included a daytime program of international cuisine and an evening program of music and dance performances. The event was renamed International Day sometime in the early 1980’s and the cultural performances were moved to the lawn on the academic quad.

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