



AVAL POSTGRADUATE SCHO

'Network in a Box' on Display at Fleet Week

By Amanda D. Stein

In honor of the 30th year of San Francisco's Fleet Week, Oct. 6-11, the Naval Postgraduate School took the opportunity to support the theme of this year's events — humanitarian assistance and disaster response (HA/DR) — with a display featuring some of the school's research projects in the field.

Working completely off of solar power, NPS students and faculty manned three booths featuring battlefield medical technologies, a nuclear port detection project, and the Hastily Formed Network's Emergency Operations Center (EOC).

"DoD is kind of reinventing themselves in HA/DR, as it's now a major function within DoD," NPS Researcher Brian Steckler explained. "HA/DR is on par with our major warfighting specialties, surface warfare, air warfare and submarine warfare."

"DoD is kind of reinventing themselves in humanitarian assistance and disaster response, as it's now a major function within DoD." - Brian Steckler, NPS Researcher

Through research and technology, NPS is looking to help further the DoD's HA/DR capabilities. One way is the EOC — a self-contained command center that can be fit into airline-checkable boxes weighing less than 100 pounds each. The system is at the ready to be deployed, delivering alternate power, self-contained communications, and a virtual server, should disaster strike, as it did most recently in Haiti and the cities of Bay St. Louis and Waveland, Miss. on the U.S. Gulf Coast from Hurricane Katrina.

Many people don't think about the communications side of a disaster, Steckler noted, which, in many cases, means phone lines are down, 911 call centers are inoperable, and a lack of network connectivity leaves first-responders unsure of which local hospitals are still up and running. Coordinating rescue efforts without communication tools is incredibly difficult, if not impossible.

"You might not be all comfy in a building, you might be sitting in a trailer some place or you might be in a tent," explained NPS Information Sciences lecturer Albert Barreto, a leader in developing the EOC-in-a-box's network capabilities. "You might be exposed to the elements, but if you have connectivity, and access to your communications system and to your emergency management system that can track your resources, then you are able to at least get by."

Air Force Doctoral Graduate Edits Book on Hybrid Conflict

Oceanography Department Utilizes Coastal Radar Network

New Center Examines DoD Trends Mathematically

NOVEMBER 2011

A Message From ...

U.S. Air Force Col. Zöe Hale, Naval Postgraduate School Chief of Staff



Early this summer, I welcomed the opportunity to join the Naval Postgraduate School's team as your Chief of Staff. This follows on the heels of my previous assignment working for another Vice Admiral, serving under the command of Vice Adm. Robert Harward who was then commander of Combined Joint Interagency Task Force 435 (CJIATF-435). In that organization, and in partnership with the Government of the Islamic Republic of Afghanistan and U.S. interagency and international partners, CJIATF-435 conducts detention, corrections, judicial sector and biometrics operations. While promoting rule of law practices, CJIATF-435 worked closely with the Afghan government toward the responsible transition of detention operations which began January 2011. Many of the interagency lessons learned at CJIATF-435 provided an important and interesting context as I embarked on my journey to understand the many facets of the NPS mission.

My 'welcome aboard' to the campus has included visits from and to many of the academic departments, support facilities and centers at NPS ... and I am not done yet. With its diverse academic programs supporting our critical mission, it is clear that I will still be learning more about NPS faculty and facilities, both in Monterey and beyond, through my last days of this tour.

I have learned this one truth, however... The intellectual vitality and contributions to research and education by our faculty are breathtaking. I have been especially pleased with the civility and clarity with which folks explain to me the different subjects and terms used here. As P.M. Sorni in "The Civility Solution"

notes, "When the healthy pursuit of self-interest and self-realization turns into self-absorption, other people can lose their intrinsic value in our eyes and become mere means to the fulfillment of our needs and desires." Further, as is often attributed to Lady Mary Wortley, "civility costs nothing and buys everything," and I could not agree more. Just as translators worked diligently to move between multiple languages represented by the more than 40 nations of the International Assistance Force, so have the executors of the impressive education and research activities of our institution striven to communicate to me across departmental and administrative areas.

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School of International Graduate Studies Dean Jim Wirtz has stated, and I have to agree, that he has "often thought that, if our university did not exist, it would have to be created." Nowhere else can one find such outstanding faculty, motivated research sponsors, and dedicated and experienced students addressing issues of national and international security.

On a final note, as a self-confessed 'bookophile,' I have thoroughly enjoyed visiting the Dudley Knox Library — even without the much anticipated Starbucks. This resource's print to online content is incredibly impressive — I already have my library card, and have read through my first set of books. And I am proud to note that many NPS folks have graciously allowed me to peruse their personal libraries as well. I invite any and all to suggest their favorite recommendations, although I might not engage on Afghanistan-related content for a bit, as I recently finished reading my 200th book on that topic.

In closing, I welcome your input, your invitations to learning more about your particular areas of study and research, and any other happenings around campus. I am, and will always continue to be, eager and ready to learn more and contribute to the invaluable work underway, everyday, at NPS.

"Update NPS" is a monthly publication for students, faculty and staff of the Naval Postgraduate School produced by the Office of Institutional Advancement. For additional copies, comments, or to suggest story ideas, contact the editorial staff at update@nps.edu.

Air Force Doctoral Graduate Edits Book on Hybrid Conflict

By Kate Oliver

Air Force Maj. Paul Brister, a special tactics officer and graduate from the doctoral program in security studies at the Naval Postgraduate School Department of National Security Affairs, recently co-edited a book titled "Hybrid Warfare and Transnational Threats: Perspectives for an Era of Persistent Conflict."

The book is a compilation of essays from a broad spectrum of security professions, from scholars and researchers to military professionals with years of field experience. The book examines new and emerging aspects of the U.S. security environment.

"The book looks at concepts of future warfare, what we can expect and how we can respond to the threats that confront us," said Brister.

Brister's chapter, along with the introduction by lead editor Dr. Robert Tomes, sets the stage for later chapters by framing the debate and establishing context for the contributor's essays. Hybrid warfare is an emerging term within the security com-



Air Force Maj. Paul Brister, a special tactics officer and doctoral graduate from the NPS Department of National Security Affairs, displays the book he recently co-edited, "Hybrid Warfare and Transnational Threats: Perspectives for an Era of Persistent Conflict." (U.S. Navy photo by Javier Chagoya)

munity. Proponents of the term claim today's security threats come from a more diffuse group of actors, thereby increasing the complexity of the security environment and requiring a more resilient and adaptable response from security professionals. Detractors claim today's security threats are not radically different from unconventional and guerilla warfare of the past, and therefore do not require new strategies or terminology to define them.

"We really get into the concept of hybrid warfare, presenting viewpoints both for and against. We definitely have authors that take both sides of the debate. We explore theoretical, conceptual, and operational aspects of hybrid warfare," said Brister.

"I'm really just a set-up guy for the rest of the contributors. My chapter essentially outlines the various sides of the debate that the other authors explore in more detail providing examples from current and historical conflicts," Brister said of his 18-month involvement with seeing the book grow from a simple idea to a published manuscript.

The book is designed to frame the discussion for policy makers faced with decision-making on security issues and future structure of the armed forces and other organizations involved in national security.

"This collection of essays highlights the ongoing debate about the way globalization and the information revolution are transforming the nature of war," said Dr. James Wirtz, Dean of the NPS School of International Graduate Studies, which houses the Department of National Security Affairs. "The authors explore how all sorts of actors are integrating technology, social networks, and violence to achieve their political objectives."

The book was published by the Council for Emerging National Security Affairs (CENSA), which is a non-profit research organization that strives to contribute to the national security policy conversation. The other editors were William H. Natter, III, the former Deputy Under Secretary of the Navy for Plans, Policy, Oversight and Integration and current member of the CENSA Board of Directors, and Dr. Robert R. Tomes, an adjunct professor at George Washington University and member of the CENSA Board of Directors.

from the **MEZZ**

In early October, the Executive Council held their quarterly meeting. Led by President Dan Oliver, council membership includes NPS' administration and academic deans, senior organizational directors, Naval Support Activity Monterey leaders and the NPS Foundation. The Executive Council provides an opportunity to synchronize and unify university initiatives through communications, and inform the campus community of critical efforts, visitors and topics of interest.

On Oct. 13, Army leadership met with President Dan Oliver to discuss the relocation of the Civil Affairs Center and School to the Monterey Peninsula. NPS faculty and leadership briefed the visitors on the school's potential contributions to the center.

On Oct. 19, Washington Congressman Adam Smith visited NPS for a series of briefings with NPS leadership on the university's research departments, and the new energy degree programs. Smith toured various labs across campus and engaged with professors on current research projects.

On Oct. 20, Project Lead for the Herrmann Hall Renovation, retired Rear Adm. Steve Loeffler, briefed NPS leadership on the final design and progress of the building's first floor renovation.

On Oct. 27, President Dan Oliver presented the university's Fiscal Year 2012 budget with support from Vice Provost of Academic Affairs, Dr. Doug Moses, and Vice President for Finance and Administration, Colleen Nickles.

From the Mezz provides a brief report on the activities of NPS' senior administration. For more details on any of these reports, please contact the Office of Institutional Advancement at pao@nps.edu.



NPS Oceanography student, Portuguese Navy Lt. Ricardo Vicente, stands beside one of NPS' high-frequency radar systems. (U.S. Navy photo by Javier Chagoya)

Oceanography Department Utilizes Coastal Radar Network

By Amanda D. Stein

Up and down the coast, a network of transmitters and receivers that is the largest-of-its-kind in the world dot the beaches of California, silently reflecting high-frequency radio waves off of the surface of the water to help researchers map local currents. At the Naval Postgraduate School, faculty and students help maintain nine of the 54 observing stations throughout the state, and utilize the data gathered to provide a map of the current patterns along the West Coast.

These maps are key for a number of institutions and agencies, including the State of California as they look at potential oil spill dispersion, and for the U.S. Coast Guard to help locate missing swimmers. The data is also made available to the public.

Since getting involved in current monitoring using high frequency radar back in 1993, NPS has acquired four observation stations with the support of the Navy, and also works in conjunction with the University of California, Santa Cruz to monitor the systems. NPS maintains the systems from Point Sur in the South to Half Moon Bay in the North. The land-based stations look a lot like simple metal antennas, which send out radio waves to be reflected off the surface of the water, delivering real-time data of the ocean's movement.

"We are not as interested in the real-time data flow, as much as looking at the historical data to determine what the patterns of circulation are like in different seasons — for example, summer versus winter in the Monterey Bay," NPS Professor and Chair of Oceanography,

Dr. Jeff Paduan explained. "So the analysis has a lot of impact on the local biology."

The historical data can also provide valuable information to responders in the event of an oil spill or pollutant off the coast. In 2007, the current patterns and predictions from the West Coast Radar Network helped crews determine the dispersal path of over 53,000 gallons of oil when the COSCO Busan container ship hit the Bay Bridge.

In addition to the local projects fostered by the West Coast Radar Network, the thesis research conducted by Oceanography students at NPS has addressed larger issues of interest to the U.S. Navy, and its international partners. Oceanography student Lt. Ricardo Vicente, a Portuguese Naval officer, explained how his thesis work with Synthetic Aperture Radar (SAR) will help prepare him for his duties in the Oceanography department of the Hydrographic Institute in Portugal.

"My thesis will be an effort of characterizing SAR image features of the ocean as a function of wind speed," Vicente explained. "To accomplish this, I'll overlap wave mode SAR images with High-Frequency Radar (HFR) data.

"The ultimate goal is to develop our knowledge of the oceans. SAR and HFR systems create synergies that have a direct impact on a range of maritime operations such as search and rescue, oil spill tracking, ship routing, offshore engineering and fisheries."

Distinguished Professors Selected for Career Achievements



Pictured clockwise from left, Distinguished Professors Peter Chu of Oceanography, Larry Jones of Financial Management, Douglas Porch of National Security Affairs and Yun Xiaoping of Electrical and Computer Engineering hold the medals they will now wear as part of their academic regalia with their recent selection into

the exclusive and honored group of select faculty. There are currently 23 active faculty that hold the title of Distinguished Professor.

The title of Distinguished Professor is an honor conferred upon a small number of NPS faculty in recognition of exceptional and sustained scholarly accomplishments that have made, and continue to make, outstanding contributions to the NPS mission. During September's graduation ceremony, the four NPS professors were selected and honored for their extraordinary accomplishments in their fields of expertise.

Cebrowski Hosts Renowned Computer Science Professor

By MC1 Leonardo Carrillo

The Naval Postgraduate School's Cebrowski Institute recently hosted guest lecturer Dr. Tim Bell, the founder of Computer Science Unplugged, an interactive educational program designed to teach young people the principles of computer science (CS).

Bell, an Associate Professor of Computer Science and Software Engineering at the University of Canterbury in New Zealand, delivered an entertaining presentation to students at Hartnell College, and local middle schools in Salinas. Without the use of a computer, Bell taught binary code and other complex CS concepts through fun and engaging exercises, methods that he has implemented in classrooms worldwide over the past 20 years.

The presentation and concepts introduced are part of a National Science Foundation sponsored research project called "Field Guide for the Science of Computing."

"What we're trying to do is rethink the way we present the field of CS," said Computer Science Chair, and Director of the Cebrowski



Computer Science Unplugged's Dr. Tim Bell, engages students in a 'sorting networks' game that demonstrates how networks organize data during a presentation at Hartnell College in Salinas, Oct. 18. (U.S. Navy photo by MC1 Leonardo Carrillo)

Institute, Dr. Peter Denning. "We want to spark the interest of students and get them to follow the path to science."

Statistics reveal a continuing decrease in computer science graduates, despite a notable growth in computing jobs available. The CS Unplugged presentation is one of many learning concepts being explored in the development of a project that Denning adds has a simple but critical goal. "It's about helping the younger generations get interested," said Denning. "We want to recover the magic and beauty of computer science."

Ribbon-Cutting Ceremony Celebrates Completion of P-197

By MC1 Rob Rubio

A cloudless, sunny afternoon welcomed local Congressman Sam Farr and several officials for the ribbon-cutting ceremony recognizing the completion of Military Construction Project 197, or P-197, a \$7.9 million project resulting in a 12,000 sq. ft. facility near Ingersoll Hall that provides high-tech classroom, conference and meeting spaces for NPS.

Capt. Marko Medved, Operations Officer for Naval Facilities Engineering Command Southwest, noted the focus on environmental sustainability that will eventually award the facility with a prominent achievement in stewardship circles.

He noted, "Two key elements were the audio-visual system and the sustainable design features ... the LEED [Leadership in Energy and Environmental Design] certification that will be attained on this building," he said. "This building has a few extra trinkets in it that make it more sustainable than your average building. It provides more open space, storm water filtering and manage-

ment, photovoltaics on it for renewable energy, a high-efficiency HVAC [heating, ventilation and air conditioning] system, [we] diverted 75 percent of the debris away from local landfills by recycling it and 20 percent of the building is made up of some type of recycled content."

Congressman Sam Farr remarked that he is a strong advocate for investing in military institutions on the Monterey Peninsula, "because I don't ever want, under my watch, to see us losing more military from this area," noting the closure of Ft. Ord in 1994.

He closed by complimenting the Naval Postgraduate School community and the institution's mission within DoD. "I'm very excited about the mission of this institution, excited that Leon [Panetta] is now Secretary of Defense... and I want to continue to build," he noted. "You are the family of this campus and it is your work every day that makes this a world renowned class act... a diamond jewel in American military installations."



GSBPP Associate Prof.
Rene Rendon presented his research on "An Assessment of Navy Contract Management Processes" at the AIAA Aviation Technology, Integration, Operations and Naval Aviation Conference in Virginia Beach, Va.

The Defense Resources Management Institute (DRMI) conducted its first mobile course ever in Yerevan, Armenia, Oct. 3-14. The DRMI team included Dr. Bob McNab (team leader), Dr. Ryan Sullivan and Lecturer Luis Morales. The course included a variety of topics ranging from program budgeting, multi-year costing, and evidencebased decision making. Twenty-two participants, including members of the Armenia Ministry of Defense, Ministry of Policy, Ministry of Territorial Administration, National Security Council, and General Staff, attended the course.

NPS welcomed two new academic chairs to the campus community. Navy Capt. Wayne Porter was named Chair of Systemic Strategy and Complexity under the Global Public Policy Academic Group. Porter previously served as special strategic assistant to former Chairman of the Joint Chiefs of Staff, Adm. Mike Mullen. He also co-authored a paper titled, "A National Strategic Narrative." NASA Astronaut **Steven** Frick, a retired Navy Captain, has taken over as NASA Chair professor within the Space Systems Academic Group. Frick earned his master's degree in Aerospace Engineering from NPS, and has served as pilot and crew commander on two space shuttle missions, STS-110 and STS-122 respectively.



Have a story to share? Institutional Advancement is constantly seeking interesting news and stories for Update NPS. Send your tips to update@nps.edu.

New Center Examines DoD Trends Mathematically

By MC1 Leonardo Carrillo

Reinforcing its role as a defense-relevant research institution, the Naval Postgraduate School has established the new Center for Decision, Risk, Controls and Signals Intelligence (DRCSI) as part of an effort by the university and DoD to promote advanced mathematical research to meet and overcome the technological challenges of the future.

"The goal of the center," said DRCSI Director and Research Professor of the Office of the Dean of Research, Dr. Sivaguru S. Sritharan, "is to look decades into the future and ask the question, what are the cutting-edge science and technology frontiers that will keep the U.S. the leader in defense-related disciplines?"



Research Professor of the Office of the Dean of Research, Dr. Sivaguru S. Sritharan, pictured lecturing to one of his current classes, is the director of the recently-launched Center of Decision, Risk, Controls and Signals Intelligence. (U.S. Navy photo by MC1 Leonardo Carrillo)

Sritharan noted the research could have broad and far-reaching impact on the future of the nation. "Long-range thinking will naturally lead to scientific questions," he noted.

The mathematical nature of the center gives it a unique vision, said Sritharan, because it overlaps with several academic departments, centers and institutes. Primarily focused on two driving themes — strategic systems of the future and signals intelligence — the center reaches into diverse areas, such as economics, energy security, global security policy and strategy.

Sritharan said the research center has a long-term vision of building a group of faculty and students who would be adequately cleared to work on high-level, interdisciplinary projects of strategic importance to national security, while at the same time be able to work in the open domain keeping NPS at the scientific leading-edge.

Like most centers, it will run in concert with the existing operations of different academic departments, so that faculty with the most relevant expertise in strategic systems and signals intelligence can come together to address long-term, high-risk research in these technical areas.

Sritharan has high aspirations for the center — a forum where researchers from multiple disciplines can put forward ideas or problems, and through collaboration, find solutions for the obstacles they might encounter in their particular specialties.

"This will bring a broad range of disciplines together," said Sritharan, "Cyber, unmanned systems, ASW [anti-submarine warfare], space systems operations ... directed-energy weapons systems which are not only operationally-connected but also underpinning scientific disciplines such as signal analysis, control science, electromagnetics, etc.," he said.

Sritharan, a longtime advocate of the continued growth of NPS' civilian Ph.D. student population during his tenure as Dean of the Graduate School of Engineering and Applied Sciences, proudly noted the center's role in graduating its first Ph.D. student, Nathan Moshman, completing his dissertation this past September.

Focus On ... A Fit Community

A Monthly Look at Names and Faces on Campus

For the enthusiastic team at the Monterey Bay Athletic Club, fitness is not just a job, it's a way of life. Fitness and Sports Director Tunde Ridley, a new addition to the group, feels very lucky to be able to work in a fun environment, while promoting health and fitness for the club's military and civilian members.

"I really love the fact that it is at a military base, and we can provide for our sailors something that's mission essential. Health and fitness is important across the board, but these guys need to make sure that they are tiptop ready to go."

Ridley has had no shortage of support in his efforts. In addition to Sports Specialist Sue Robinson and Fitness Specialist Marcello Dutra — both of whom have been working at the club for over 10 years — the team has a number of recreational aids who are also college students studying various components of health and fitness.

"I'm trying to tap into their

passion and tap into their education and experience," Ridley said. "Not to mention, they know so many of our members by name. I'm still working on learning more about our members, who they are, where they come from."

The club offers everything from intramural sports and fitness classes, to special Physical Readiness Training sessions for the club's military members. The



Fitness and Sports Director Tunde Ridley, second from right, with members of the Monterey Bay Athletic Club team. (U.S. Navy photo by Javier Chagoya)

staff is also trained in Cardiopulmonary Resuscitation and First Aid, should an emergency arise.

"A gym is a gym, but this one is for the Navy," said Ridley, "so whatever we can do to have them mission ready, we're all about."

Any Day at NPS ...



IT2 (SW) Eric Crago, CS2 (SW) Ben Gregoire, IT2 (AW/SW) Lance Bloodworth, IT3 Matt McCarthy and CS3 (SW) Brian Hairston pick up litter on Rio Road in Carmel, Oct. 26, part of the Enlisted Recreation Committee's (ERC) participation in the local Adopt-a-Roadway program. The ERC commits a day each month to supporting the Adopt-a-Roadway program, part of the community relations efforts emphasized through ERC participation. (U.S. Navy photo by MC1 Rob Rubio)

NPS' Modeling, Virtual Environments and Simulation Research Associate Jeff Weekley demonstrates the potential of 4K video as a research tool to a group of Remote Sensing Program students, Oct. 4. Recently, Weekley performed observational experiments during Hurricane Irene and the Virginia earthquake, where an NPS team recorded damages from aloft with what is most likely the highest-resolution camera in the world. (U.S. Navy photo by Javier Chagoya)



Remote Sensing Center program Research Assistants — from left to right Michael Laielli, Christina Mayberry and Jason Sucksdorf — study GPS readouts during a class exercise introducing the applications of geocaching, Oct. 12. (U.S. Navy Photo by Javier Chagoya)

Newly-appointed Commander, Navy Region Southwest, Rear Adm. Dixon Smith, left, sits down with NPS Senior Lecturer John Mutty for a one-on-one course to assist in transitioning to his new position. Dixon attended two days of courses at NPS, Oct. 6–7, as part of the Transition Support Program, a Navy-wide senior officer support program operated through NPS' Center for Executive Education. (U.S. Navy photo by MC1 Rob Rubio)



A small group of NPS students in the inaugural Autonomous Systems Laboratory Course got hands-on experience with the lab's diverse collection of robots while also getting an introduction to the overall design of unmanned intelligent systems. Pictured from left to right, Lt. Travis Bateman, Lt. j.g. Kerri Ackman, Cmdr. Lan, show-off a few of the lab's robotic rovers, which the students by Javier Chagoya)



STUDENT voice

By Lt. Matthew Yokeley Chairman, President's Student Council

We already find ourselves halfway through another quarter, yet there is still so much more to do! Aside from classwork however, your Student Council members have been working hard to address the concerns of the students around campus. Recently we've taken up the issue of bettering Enrichment Week here at NPS.

Enrichment Week was introduced by the school last year, but in its short year-and-a-half, E-Week has already undergone some significant changes. After talking with many of the students around campus, and deliberating within the council itself, the consensus we've come to is that these changes have not been enough. As such, we on the Student Council are now working to establish the first NPS Enrichment Week Committee.

The idea behind this committee concept is to establish a group of individuals, both student and faculty, who will provide more organization and direction to E-week activities. It is important that the ideas of E-week and the options available to students be equal across all curricula.

We believe that E-week and its activities should be tailored, as much as they can, to meet the needs of the students. We're working to ensure this E-week committee makes these needs and interests a reality.

Unfortunately, working to develop such concepts requires time and commitment of the students to make them a success. We are currently seeking many new members to fill positions on the council and if you're interested in being part of the solution, please join us on the Student Council!

Lt. Yokeley is the Chairman of the President's Student Council. Visit the PSC on the intranet at http://intranet/psc/index.html.

On Campus this Month





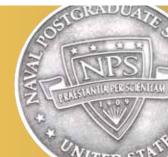
Nov. 9NPS Alumni Gathering on the Green in Coronado, Calif.
POC Kari Miglaw, Ext. 2077



(U.S. Navy photo by Leonardo Carrillo)

Nov. 24 Thanksgiving Day

Dec. 2 NPS Hall of Fame Induction Ceremony POC Kari Miglaw, Ext. 2077



(U.S. Navy photo by Javier Chagova)

Historical Highlights

Retired Adm. Stanley R. Arthur is a 1964 NPS alumnus who oversaw the build up of the nation's largest naval armada since World War II. Arthur served as deputy chief of naval operations for logistics during preparations for *Operation Desert Storm* and subsequently assumed command of 7th Fleet and U.S. Naval Forces Central Command.

Arthur directed the tactical movements of more than 96,000 Navy and Marine Corps personnel as well as 130 U.S. Navy and



Allied ships, including six aircraft carrier battle groups, two battle-ships, two hospital ships, and combatant and amphibious ships.

In recognition of his exceptional leadership, the Navy established the Admiral Stan Arthur Awards for Logistics Excellence in 1995. He received an NPS Distinguished Alumni Award in 2003. He will also be inducted into the NPS Hall of Fame in early December of this year.

Historical Highlights are provided by the Dudley Knox Library.