



U.S. Navy Photo by Javier Chagoya

Provost Ferrari Outlines State of NPS During SGL

By Amanda D. Stein

Naval Postgraduate School Executive Vice President and Provost Dr. Leonard Ferrari presented the State of NPS address to students, staff and faculty on Jan. 18 as part of the Secretary of the Navy Guest Lecture (SGL) series. Ferrari offered a brief overview of some of NPS' noteworthy departments, projects, and faculty accomplishments from 2010. As exciting as the past achievements have been, he noted, there is only more to come for 2011.

"Our greatest asset is definitely our students," said Ferrari. "And I say that not because you outnumber me terribly in this audience, but because I haven't been at an institution where faculty consider students to be colleagues. You truly are colleagues to our faculty. You bring so much to the table – so much more than in civilian universities, and I am speaking from 35 years of experience in civilian universities."

As an institution known as the nation's premier national security research institution, Ferrari explained, NPS offers an entirely unique learning environment, rich with research opportunities that directly impact the Navy. Some examples that he gave included small satellites being developed in the Space Systems Academic Group under the direction of Jim Newman, research in modeling ice melt in the Arctic Ocean, and the advancement of weather processing capabilities.

"We teach, we do research, we provide operational support, and we serve the nation," explained Ferrari. "I hope this talk will give you a better understanding of NPS and sufficient reason to keep in touch with us."

Partnerships are critical to the success of the Defense Department, Ferrari noted, as President Obama and Secretary of the Navy Mabus have expressed numerous times when discussing national security. One way in which NPS does that is by welcoming international students from over 50 nations to study in Monterey each year.

Their experiences and cultures enrich the diversity of the NPS community while providing international military leaders with a defense-based education that they can implement in their own countries to promote national and global security.

"I like to think of us not only as a defense and national security institution, but also an international security institution," said Ferrari.



NAVAL POSTGRADUATE SCHOOL

UPDATE
NPS

p3 NPS Advances Networked Medicine

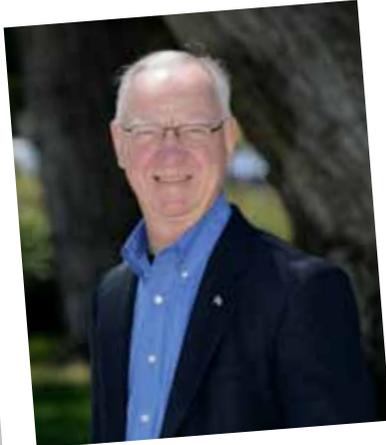
p4 NPS Professor Leads Ground Breaking Hurricane Research

p8 Historical Highlights

FEBRUARY 2011

A Message From ...

Rear Adm. Jerry Ellis (Ret.), Chair, Committee on the Future



Rear Adm. Jerry Ellis (Ret.)
Chair, Committee on the Future

As President Oliver has said, the future of the Department of Navy and Department of Defense is one of budget reductions and greater demands. Despite those challenges, imagining the future and NPS' role in that future is an exciting opportunity, one that the Committee on the Future is actively engaged in considering as it helps shape a vision of what is possible and what is imperative as it forges new pathways to support the Schools' strategic planning process.

In January, the committee and its 10 working groups met to assess their progress in collecting and evaluating research, benchmarking data, consultations with peer organizations and personal interviews, and the results were impressive – a rich mix of internal and external information that provoked thought and invoked lively discussions that will form the basis for the committee's final report to campus leadership in August 2011.

"Whether it be new inventions, tools, discoveries or academic programs, NPS is a testbed of experimentation and innovation, an institution with academic quality and a commitment to academic excellence as its enduring values."

In early February, Dr. Christine Haska and I will travel to Washington, D.C. to conduct interviews with key DoD and DoN leaders, including Adm. Michael Mullen, Gen. Keith Alexander, Adm. Gary Roughead, Adm. Jonathan Greenert, and General James Amos. On February 22, 2011, the NPS Strategic Planning Council will be briefed on the activities and achievements of the committee to date. In April, Dr. Haska and I will travel to the Air Force Institute of Technology to conduct more interviews. All of these efforts will provide valuable feedback for the committee as they prepare their final drafts for the report.

As the committee already knows, the school's distinctive role is in challenging the status quo. Whether it be new inventions, tools, discoveries or academic programs, NPS is a testbed of experimentation and innovation, an institution with academic quality and a commitment to academic excellence as its enduring values. Although we have challenges ahead, the Committee on the Future is using the springboard of the school's legacy of exceptional education and research programs to demonstrate the school's value and impact to those it serves, and to support in a persuasive and compelling way the continuation of our mission as we advance into another century of serving the DoD, DoN and our nation's security.



Committee on the Future members (top left to right): retired Rear Adm. Jerry Ellis, Vice Adm. Jody Breckenridge, retired Capt. Karl Hasslinger, NPS Executive Vice President and Provost Leonard Ferrari, Mr. Mark Garenflo and Dr. Karl van Bibber; (lower left to right) Prof. Frank Giraldo, Ms. Colleen Nickles, Dr. Christine Haska, Dr. Sunder Ramaswamy, Dr. Doug Moses, retired Rear Adm. James McGarrah and retired Capt. James Durham. (U.S. Navy photo by Javier Chagoya.)

NPS Advances Networked Medicine

By MC1 Leonardo Carrillo

With advanced personal protective equipment, innovative one-handed tourniquets, and quick-clotting bandages, many lives have been saved that would otherwise have been lost in today's conflicts. Yet even with those modern advances, aiding a wounded soldier in battle is one of the most difficult tasks a doctor or medical technician can do, especially if they are not able to reach their patient.



A Special Forces medic simulates activating a nano patch on a 'wounded soldier' played by a manikin during NPS' Tactical Network Test-bed (TNT) Battlefield Medical Experiment at Camp Roberts. (U.S. Navy photo by MC1 Leonardo Carrillo.)

NPS is tackling this challenge head on with innovation and ingenuity as part of its Tactical Network Test-bed (TNT) and Field Experimentation program. At the request of the Air Force Special Operations Chief Surgeon, and in collaboration with Salinas Valley Memorial Healthcare System (SVMHS), tests are being conducted to develop networked-controlled, unmanned systems to assist medics in delivering medical assistance to casualties in the battlefield.

"We started battlefield medical networking experimentation upon request from the Air Force," said NPS Associate Professor Alex Bordetsky. "They wanted to explore how to benefit from network controlled systems to assist medics in delivering medication to a casualty site under fire or otherwise hazardous conditions."

The idea, as explained by Bordetsky, is that future soldiers would wear a nano patch that would be attached to their body, or as part of an advanced battlesuit, that would send a soldier's vital signals and administer medicine if he or she were injured in battle. A medic or an unmanned vehicle would get close enough to the soldier to establish a network link that would send the vitals to a Tactical Operations Center (TOC) where

it could then be sent to any location in the world. Doctors monitoring the patient's vitals live can make medical decision and take action by controlling the nano patch remotely.

"What we know right now is how to read information from the casualty, and direct unmanned vehicles to assist by injecting and activating nano devices," Bordetsky noted.

The question, then, is what happens to the patient when the injection happens? This challenge is very critical in deciding how to proceed in administering medication, and what medication to use or how much, and that's where the SVMHS has provided crucial assistance.

The SVMHS Experiential Learning Center focuses on hands on learning by applying practical application to classroom theory. One of their tools is a technologically-advanced manikin that accurately simulates a patient's vital signs and reactions when hurt and treated – and it's exactly what Bordetsky needed.

In a recent experiment at Camp Roberts, Bordetsky simulated a casualty in a remote location and established a network link to a medic on the ground then to a UAV flying over the casualty site. Finally, these readings were transmitted to the TOC, then on to the SVMHS manikin where it simulated the vital signs of the casualty.

"The whole tread of the experimentation is under the assumption that a medic cannot get to the casualty," said Bordetsky.

Of course the military is not the only entity to benefit from this research. Civilian application for this system has considerable potential. "I find it personally interesting as a nurse," said Rachel Failano of SVMHS. "Even though this is being developed for military purposes, having the ability to visualize and receive information about somebody who is sick or injured is not limited to the military."

from the
MEZZ

At the end of January, the Strategic Planning Council met for its annual all-day, off-site meeting. Each school and administrative area presented annual reports for FY 2010. The reports can be found on the Strategic Planning Sharepoint at <http://sharepoint/stps/default.aspx>.

President Oliver spoke on "The Military and Higher Education" at a symposium on innovation held at the University of Hawaii. The symposium was attended by national and community leaders and focused on the growth of Hawaii's innovation ecosystem.

The Committee on the Future held an all day, off-site meeting on January 19. Committee member Mark Gorenflo, Principal Deputy and Senior Director for Future Capabilities for the Deputy Under Secretary of the Navy for Plans, Policy, Oversight and Integration presented data on demographic trends in the U.S. and international communities and its impact on the U.S. military.

Team Monterey, the association of DoD entities located in Monterey County, toured the facilities of the Fleet Numerical Meteorology and Oceanography Center.

NPS is pleased to welcome a new Dean of Students, Navy Capt. Alan Poindexter. Capt. Poindexter was previously assigned to NASA and was the commander of the STS-131 mission which participated in the Teaching from Space event at NPS in King Auditorium this past April.

Vice Provost for Academic Affairs, Dr. Doug Moses, has relocated his office from Root Hall to Herrmann Hall M4A.

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.



The NSF/NCAR Gulfstream V research aircraft prepares for a data collection flight on St. Croix in the U.S. Virgin Islands.

NPS Professor Leads Ground Breaking Hurricane Research

By MC1 Grant P. Ammon

One Naval Postgraduate School professor and his colleagues believe they have uncovered a critical piece of the complex jigsaw puzzle of tropical cyclogenesis, and recently took to the storm-entrenched Northern Atlantic Ocean to test their overarching hypothesis.

“We’ve uncovered a key ingredient in the birth of hurricanes,” said Dr. Michael Montgomery, professor of meteorology at NPS, and principal investigator and lead scientist of the Pre-Depression Investigation of Cloud-systems in the Tropics (PREDICT) research project.

Supported by funding from the National Science Foundation, PREDICT researchers based an operations center on St. Croix in the U.S. Virgin Islands during the height of hurricane season in hopes of collecting information that would identify precursors to which storms would bring danger and which ones would dissipate over the ocean.

At the core of PREDICT research was an investigation of tropical waves and sub-tropical disturbances and their role in producing “sweet spots.” These so-called pockets of air are thought to protect growing storms from conditions that could lead to their demise.

“The overarching hypothesis is that the tropical waves that come off the African continent or are spawned in the Atlantic somewhere provide some protection in a particular region of the wave called the moist critical layer,” said Montgomery.

This concept, known as the “marsupial paradigm”, was brought forth

in a 2009 study published by Montgomery and research colleagues Dr. Zhuo Wang and Dr. Timothy Dunkerton. It hypothesized that storm clusters moving at a similar speed to surrounding air flow in the lower troposphere are largely protected from being torn apart.

The study and understanding of cyclogenesis can help forecasters and scientists better track and forecast these precursory conditions held within these pouches. These clues to hurricane formation can lead to earlier notification and storm tracking times, ultimately, saving lives.

“Better tracking and forecasting the precursors to storms gives more lead time and awareness. It’s this situational awareness that is invaluable to military leaders while operating in theatre,” said Montgomery.

To maximize sampling, PREDICT utilized the NSF/NCAR Gulfstream V research aircraft also known as HIAPER (High-performance Instrumented Airborne Platform for Environmental Research). Additionally, global positioning system (GPS) dropsondes, parachute-borne instrument packages, and National Oceanic and Atmospheric Administration’s (NOAA) WP-3D aircraft aided in data collection efforts.

Exceptional research methods and tools, coupled with near-perfect meteorological conditions in the area surveyed, proved to have monumental impacts on the collection of important data regarding storm formation, prediction and modeling.

Alumnus Named Honorary Commander of the British Empire



(Photo courtesy of John D. Butler.)

Retired Rear Admiral John D. Butler (Engineering Acoustics, '86, pictured left) was named an Honorary Commander of the Most Excellent Order of the British Empire. The British Ambassador, Sir Nigel Sheinwald (pictured right), presented the award during an investiture ceremony at the British Embassy in Washington, D.C.

Her Majesty Queen Elizabeth II conferred the honor upon Butler, vice president of the Fleet Ballistic Missile program for Lockheed Martin Space Systems Company, in recognition of his contribution to the Royal Navy’s Submarine Flotilla. The award honors civilians and service personnel for public service and other distinctions.

An Update on the Kualu Financial System

By Colleen Nickles

NPS held a Faculty Brown Bag session on January 11 to discuss the issues end users are having with KFS, and we will continue the discussion with the next **Faculty Brown Bag, to be held February 15 at 12:00 in the ME Auditorium.** All interested faculty and staff are invited to attend.

The KFS team and I will answer questions raised at the January Faculty Brown Bag, provide a current status report on remaining open items, and address any new questions or concerns raised about KFS. Additionally, we will provide a timeline for the remaining functionality improvements that are slated for this spring.



Colleen Nickles
Vice President, Finance & Administration

In the mean time, end user reports are now available through KFS, and can be accessed through the KFS website on the Intranet at <https://intranet.nps.edu/ITACS/KFS/>.

I also wanted to take this opportunity to inform the campus on the initiatives we have in place as we work toward improving KFS and address the issues raised during our January discussion.

As suggested at the Faculty Brown Bag, I have established an **Ombudsman Office** with Laura Cole leading people drawn from the Comptroller's Office and the larger campus. The office was created to work across organizational boundaries to resolve discrete issues and elevate systemic KFS concerns, look for improvements to NPS' business processes, and understand the resources that support them. End users will

receive e-mail alerts from the Ombudsman Office about specific issues related to KFS. End users can contact the office about immediate and specific problems as well as make suggestions for improvements, and will work in conjunction with the JIRA issue reporting process currently available via the KFS intranet website.

In addition, Comptroller Kevin Little and Budget Director Jim Hall will be convening the **Configuration Control Board** to work with KFS administrators to consider and make recommendations for system improvements to KFS. The Research Board and the Faculty Council will provide membership to this Board. Recommendations about changes to KFS will be considered in light of available resources.

We are also creating the **KFS User Community Wiki** to improve communications, provide more timely information, and encourage collaboration among KFS users. Jim Hall will be responsible for maintaining this collaborative resource, and we intend to have the first version running before the end of February.

And finally, we will continue to offer topical and general **KFS Training Sessions** in classroom settings, as well as individualized training at worksites. Check the KFS intranet site for classroom training sessions or contact Laura Cole at kfsombudsman@nps.edu to request worksite/desktop training.

We will also continue to hold regular **Faculty/Staff Brown Bag** sessions to ensure seamless communication exists in providing updates and receiving feedback about KFS and our business processes.

NPS adopted the Kualu Financial System as its financial management information system and began using it on a limited basis starting in October of 2009. During FY2010, NPS used KFS to perform parallel entry of purchase requisitions and to prepare the campus for full implementation through use of and training on KFS. NPS "turned off" its legacy information system, DORS/DMAS, for FY 2011. Since October 2010, all purchase requisitions and budget transfers are recorded and processed in KFS, and information about labor and travel transactions are captured and reported in KFS. DORS/DMAS no longer provides current information to end users about FY 2011.

FACULTY news & notes



On February 4, GSBPP Prof. George R. Lucas, Jr. will lead a faculty colloquium on the topic "Military Technologies and the Resort to War" at Cal State Polytechnic Institute in San Luis Obispo. In late January, Prof. Lucas delivered a paper on "Ethics and Industrial Challenges of Military Robotics" as part of the annual meeting of the International Society for Military Ethics in San Diego, Calif., and also led a symposium on teaching topics in military ethics for the NROTC Commanding Officers and students at the annual Stockdale Symposium at the University of San Diego.

NPS would like to congratulate all new tenure-track faculty. Former MAE professor Dr. Oleg Yakimenko and former OR Research Professor Timothy Chung are now with the Systems Engineering department. The Global Public Policy Academic Group welcomed Associate Prof. Mie-Sophia Augier and MAE welcomed Associate Professor Claudia Luhrs.

Prof. Bret Michael was awarded the Institute of Electrical and Electronics Engineers Reliability Society's 2010 Engineer of the Year Award, honored for "achievements in applying practical formal methods for assurance of large complex distributed systems."

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



UPDATE NPS

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

Defense Educators Gather for 3rd Annual Global Center Consortium Directors' Conference

By Amanda D. Stein

The Department of Defense's top international partner educators gathered in Monterey from Jan. 11-13 to share ideas and practices at the 3rd Annual Global Center Consortium Directors' Conference. The Conference, hosted by the Global Center for Security Cooperation (GCSC), allowed the directors of the consortium member institutions to present their programs and areas of expertise. The GCSC connects these institutions, allowing them to collaborate ideas and materials, and to come away with a network of support for their academic undertakings.



The three-day Global Center Consortium Directors' Conference allowed leaders from various defense institutions to meet and collaborate on projects, curriculum and ideas through lectures and panel discussions. (U.S. Navy photo by Javier Chagoya.)

"The greatest thing about the conference is it gives our members the ability to collaborate on projects," explained GCSC Operations Officer Warren Hoy. "And that's really what we are all about – collaboration. The directors all have a chance to share what they do, what they are working on, what their capabilities are, and what their needs are. It brings people together so they can work collaboratively and be more efficient at what they do."

The institutions represented in the Consortium include several Monterey area schools – the Defense Language Institute Foreign Language Center, Defense Resources Management Institute and the Center for Civil-Military Relations – as well as institutions from around the country and abroad.

"The Consortium members all have one thing in common," explained GCSC Director Jim Wirtz. "All of these schoolhouses deal with the education and training of international students. It's an effort to build partnership capacity, to engage and build networks of cooperation, to facilitate U.S. foreign and defense policies, and national security in general."

During the conference, the GCSC welcomed their newest member, the North Atlantic Treaty Organization (NATO) School. Because of their extensive work with international students, the NATO School brings a comprehensive global perspective to the consortium.

"We have about 25 institutions on board, and the number grows all the time," said Wirtz. "One of our missions is to facilitate communications between the Department of Defense and the schoolhouses. Another mission is to transmit best practices across the schools. So if one entity comes up with a better way of doing business, we can make that visible to everyone."

The conference featured panel discussions between representatives from the United States Combatant Commands, as well as a session on alumni outreach at NPS. The event gave the member institutions a chance to share ideas and thoughts on their curriculum and programs, as well as sharing subject matter experts with other member institutions that may be in need of additional support.

"When the conference is over, we will have a more tightly knit community of international partner education providers," said Hoy. "They will be more willing to share information and resources because they will understand what each other brings to the table."

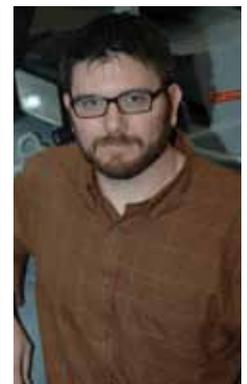
Focus On ... Unmanned Systems Lab

A Monthly Look at Names and Faces on Campus

Lab Manager Aurelio Monarrez (pictured left), along with Research Associates Sean Kragelund (pictured center) and Tad Masek (pictured right), support several faculty through the operation of the Unmanned Systems Lab, part of NPS' Center for Autonomous Vehicle Research (CAVR). Founded to educate future DoD leaders on unmanned system technologies, CAVR focuses on advanced control research of unmanned systems through thesis and dissertation research.

Some of the lab's assets include seven Scan Eagle UAVs, two Rascal UAVs, 10 Quadrotors, two highly-specialized Hydroid REMUS 100 AUVs, and two Northwind Marine USVs. CAVR also teaches a number of classes in robotics using the vehicles to experiment and demonstrate concepts.

Cool toys, indeed, but it's the behind-the-scenes efforts of the lab's support researchers and staff that keep all of these advanced systems operational



and ready for use – a critical education coordinated through component to the research and CAVR.

Any Day at NPS ...



Members of your NPS Color Guard are: QM2 Bernard Morris, ITSN Matt McCarthy, ET2 Daniel Guse, OS2 Josh Sarmiento, ET2 Darry Pilkington, AT2 Joshua Coon, STG2 Phil Slocum, MA2 George Yonitch, MC1 Rob Rubio and YN3 Caleb Little. (U.S. Navy photo by Javier Chagoya.)

Incoming students, new to the NPS community, and seasoned campus veterans alike attend the New Student Information Fair, held Wednesday, January 5, in Herrmann Hall's Barbara McNitt Ballroom. (U.S. Navy photo by MC1 Rob Rubio.)



Entrepreneur, founder and former CEO of Tesla Motors Inc., Martin Eberhard, talks to NPS students about his all electric Tesla Roadster during a special seminar on battery electric vehicles sponsored by the Department of Mechanical and Aerospace Engineering in Glasgow Hall Jan. 27. Eberhard's comparisons of alternative fuels, including hydrogen to electric cells sparked a lively discussion with students and faculty. (U.S. Navy photo by Javier Chagoya.)

NPS student Lt. j.g. Mark Bergem demonstrates 'Real Caller ID' during the Cebrowski Institute's third Military Wireless Communications Research Group Invitational Workshop, Jan. 12. Real Caller ID is a voice recognition project that recognizes a user and allows him to make and receive calls over a network through any wireless device. (U.S. Navy photo by MC1 Leo Carrillo.)



Current and prospective members of the Monterey Navy Flying Club (MNFC) gather for a group photo with two of the organization's aircraft during MNFC's Open House on Friday, Jan. 21, at the Monterey Peninsula Airport. (U.S. Navy photo by Javier Chagoya.)

STUDENT voice

By Maj. Randy Staab

So you are a U.S. military officer, a graduate student attending the Naval Postgraduate School, and you are earning a master's degree (or two master's degrees like me) whilst receiving your full military pay and allowances. Bully! My question to you then: What are you going to do with your Post-9/11 GI Bill?

For those of you not intending to use the Post-9/11 GI Bill for furthering your personal education goals and have a spouse or children who could use some help with the ever-increasing costs of a college education, you need to know about TRANSFERABILITY. Transferability allows service members to transfer unused Post-9/11 GI Bill education benefits to your spouse and children. The Post-9/11 GI Bill offers a very generous education benefit, and now this special provision of transferability allows career service members the opportunity to share their education benefits with immediate family members. Allowing the transfer of benefits to family members has long been one of the most requested items among military family readiness and advocacy groups – now it is possible.

For more information about the Post-9/11 GI Bill and transferability, please visit www.gibill.va.gov or contact your NPS Veterans Affairs Coordinator, Lisa Acuna, at lmacuna@nps.edu or (831) 656-7878.

The President's Student Council needs your input; please consider joining Vice-Chairman Capt Jim Gerber, Recorder LTJg Kerri Ackman, and me on the student council by contacting rjstaab@nps.edu. The PSC is the venue for your actionable ideas and suggestions to become a reality.

Maj. Staab 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

February 1

Imagination Conversation
Imagine a Safer Community 2021
POC Mark Fish Ext. 1927



February 15

Peter Singer, Brookings Institution
Speaker, SGL Series
POC Lt. j.g. Patricia Bouldin Ext. 7773

February 6

Super Bowl Party
Trident Room

February 23 - 25

NATO Building Integrity Conference
POC Lois Hazard Ext. 6219



U.S. Navy photo by Javier Chagoya

February 8

Tops in Blue Performance
Golden State Theatre

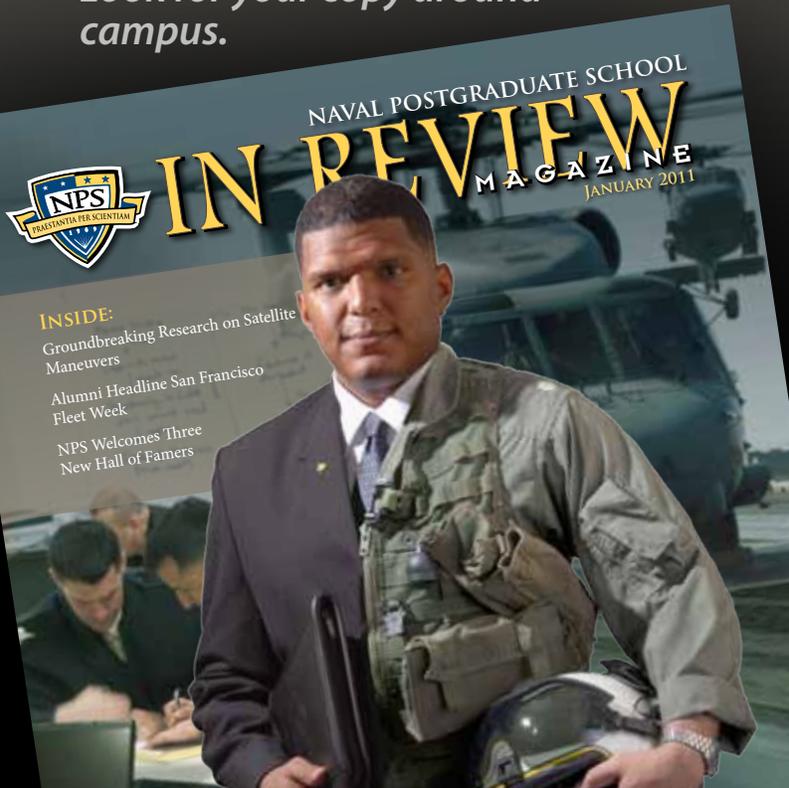
February 28 - March 3

USPTC Partnership for Peace Working Group Meeting
Monterey Hyatt
POC Tom Hazard Ext. 3777

Royal Air Force photo by Airman 1st Class Lausanne Morgan

In Review Magazine

Look for your copy around campus.



Historical Highlights

The lead story in the February 15, 1945 edition of "Technavian," the newspaper for the Naval Technical School Del Monte, reported the arrival of Lt. Max Blackford as new XO. Blackford would later become CO and the point person with local leaders as the Navy worked to purchase the Hotel Del Monte.

A small entry on page seven in the column called "Scuttlebutt" is perhaps even more noteworthy for the student editor spotlighted in it, Seaman Second Class Don Gaver. Following the war, Gaver earned master's and doctoral degrees from MIT and Princeton respectively, and returned to Monterey as a member of the NPS faculty. In 2009, Gaver was elected to the National Academy of Engineering and received the Navy's Distinguished Civilian Service Medal from the Secretary of the Navy.

Historical Highlights are provided by the Dudley Knox Library.

