



NAVAL POSTGRADUATE SCHOOL

IN REVIEW

M A G A Z I N E

APRIL 2010

Responding to Disaster

Students and faculty share first-hand stories from Operation Unified Response

Inside:

NPS Spacecraft Design Center
Acquires High-Tech Telescope

FAO Program Provides Much Needed
Education to DoD's Warrior-Diplomats

The Honorable Juan Garcia
Keynotes Winter Graduation



Daniel T. Oliver
Vice Adm., United States Navy (Ret.)
President, Naval Postgraduate School

“It’s all part of the grand finale coming up in May when our second annual Reunion Weekend will take place. It will be with both reserved sadness and insatiable pride that we celebrate this Centennial Finale.”

PRESIDENT'S MESSAGE

As most friends and family of NPS are well aware, we have spent the last several months celebrating one of our university’s most significant historical milestones – our Centennial Anniversary. But like all great things, as the familiar cliché states, the revelry must come to an end.

With that noted, however, we are ending our Centennial Celebration in worthy and grand style. This month, NPS was one of just two institutions to receive an educational downlink from Space Shuttle Mission, STS-131. *Destination NPS: Education from Space* presented 8th grade students from across the Peninsula with an inspiring opportunity to learn from and actively engage members of the shuttle crew with their questions.

Also, later this year, the park and recreational spaces surrounding Lake Del Monte on campus will be renamed Centennial Park. The location already serves as a frequent spot for student, faculty and staff recreation, and will now also be a constant and cherished reminder of our 100th Anniversary, and how much this institution has changed over the course of its first century.

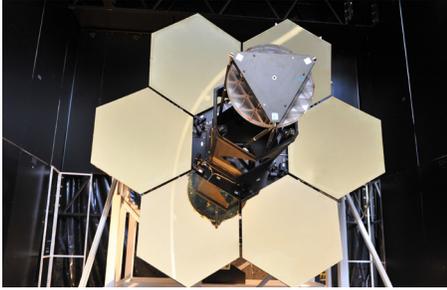
Speaking of change, I wonder what kinds of equipment, books and experiences students were sharing way back in 1909 when the School of Marine Engineering, NPS’ predecessor, opened for business on the Naval Academy campus. Historical records are slim, but when future generations of the NPS family celebrate the university’s 200th anniversary, they’ll have no doubt what campus life was like thanks to the NPS Centennial Time Capsule. The NPS Alumni Relations Office and Centennial Planning Headquarters has arranged for an air- and water-tight, gas-filled capsule that will be buried in Spruance Plaza in the Academic Quad. In 2109, this time capsule will be unearthed, and a diverse collection of artifacts and messages will be shared with our future colleagues. Items like personal letters, photos, keys, coins, newspapers, books, programs, brochures, CDs, thumb drives, iPhones and more will all be included. When NPS’ next generations want to know how much the university has changed in its last 100 years, they’ll have the answers in hand.

It’s all part of the grand finale coming up in May when our second annual Reunion Weekend will take place. It will be with both reserved sadness and insatiable pride that we celebrate this Centennial Finale. Like our first reunion last year, some extraordinary cannot-miss events will take place over the course of the Memorial Day weekend. For example, NPS graduate Navy Captain Alan Poindexter will be on campus to offer a special lecture on his latest Space Shuttle mission, the aforementioned STS-131.

In addition to several other educational events, fun will also be part of the program. Former guests of the infamous Hotel Del Monte will look down with fond remembrance given the splendor of our Centennial Finale Gala to be held in the hotel’s old ballroom. We will also be hosting a golf tournament, a wine and beer tasting, some extraordinary surprises, and much more.

I hope you will join me on campus for a truly memorable weekend as we honor the Naval Postgraduate School.

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ON THE COVER

U.S. Marine Corps Capt. Brandon Newell, an Electrical Engineering student at NPS, tests alternative power generation equipment with the partially-collapsed Haitian Presidential Palace behind him. Newell was part of the Hastily Formed Networks emergency communications team that deployed to Haiti just days after the devastating quake in support of Operation Unified Response. Photo provided by Foard Copeland.

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NSBE Chapter Gains Momentum on Campus

A critical component to success in advanced education is a support system that extends beyond the classroom. Perhaps that importance is even magnified at the Naval Postgraduate School, where students are already well established in their careers, have been selected as high-achievers, and are thus expected to lead and produce after graduation. Given those expectations, the support provided can be crucial to their success.

One part of what makes that support network successful is that it connects individuals with like experiences together, and in today's diverse world, that means diversity must be a priority. Dean of the Graduate School of Engineering and Applied Science, Dr. Sivaguru Sritharan, has placed an emphasis on developing this diversity in support.

"The true potential of tomorrow's workforce can only be realized by achieving diversity across the ranks," said Sritharan. "The Graduate School of Engineering and Applied Sciences, being the cradle of future leadership of the defense establishment, is uniquely

positioned to make an impact in achieving this vision."

As part of that vision, Lt. Henry Amadasu and several other students are leading an effort to establish a National Society of Black Engineers chapter at NPS. The student group is currently recruiting enough members to formally establish the chapter.

Manpower Systems Analysis Students Brief Chief of Naval Personnel

Six students from the Manpower Systems Analysis program traveled to the nation's capital in early March to brief their respective theses to Vice Adm. Mark Ferguson, III, Chief of Naval Personnel (CNP), and his staff.

The students met with Ferguson, an NPS computer science graduate, on March 1 for a detailed question and answer session regarding Navy manpower policy issues as well as their individual theses topics. A full briefing to CNP staff followed on March 2. During the brief, Lt. Jeremy McLaughlin was awarded the Chief of Naval Personnel Award for Excellence in Manpower, Personnel, and Training Analysis.

ISS Commander Engages NPS Students from Space

NASA Astronaut and NPS alumnus retired Army Col. Jeff Williams connected with approximately 25 Space Systems Operations and Space Systems Engineering students in a question and answer session directly from the International Space Station (ISS) in February. Williams is the Commander of the ISS, and nearing the end of his six-month deployment to the station.

Thanks to the efforts of Dr. John Phillips, astronaut and NPS' new NASA Captain Michael Smith/Commander William McCool Chair Professor in the Graduate School of Engineering and Applied Sciences, Williams agreed to engage the students during one of his rare, personal calls back to Earth. Students enrolled in NPS' space systems curricula were able to interact with the ISS chief over the course of the 30-minute teleconference.

Questions ranged from how astronauts stay fit, both physically and psychologically, when in space for such long periods of time to what types of experiments were currently underway on the

station. For the group of aspiring astronauts, the session provided a truly rare opportunity to interact directly with one of the ISS's most seasoned astronauts.

Systems Engineering Management PD-21 Grad Promoted to SES



Naval Postgraduate School graduate Thomas Irwin has been appointed to the Senior Executive Service and will be assigned as Enterprise Business Director for U.S. Joint Forces Command (USJFCOM) in Norfolk, Va.

Irwin will be attached to the Joint Concept Development and Experimentation (JCD&E, J9), one of the four USJFCOM mission areas, where he will lend his expertise to the development of emerging joint concepts, conduct and enable joint experi-

Asst. SecDef Paul Stockton Keynotes Annual CHDS Conference

Dr. Paul N. Stockton, Assistant Secretary of Defense for Homeland Defense and Americas' Security Affairs, was the keynote speaker at the 2010 Center for Homeland Defense and Security (CHDS) Alumni Continuing Education Conference at NPS, Feb. 3-4.

Stockton, a former professor and Associate Provost at NPS, spoke of a "unity of effort" at the home front and outlined five pillars of a direct support model that he hopes will increase state and federal inter-agency communication efforts. On January 13, 2009, a memorandum by Secretary of Defense Robert Gates approved a new major approach, which allows

for the inclusion of direct liaison in planning for DoD support to civil authorities in disaster responses. Federal forces will be able to operate much more closely in response to guidance from state authorities.

Stockton played a major role in establishing CHDS back in 2002, and he challenged the center's alumni to go back to their home states and prepare the necessary detailed documents essential for disaster preparation and response, which he called the "Trust Document." "We need to have a coordinated planning document in order to execute operations and commit forces," said Stockton. "I won't stand for falling into the

trap of 'playing the pick-up game.'"

He also noted that a "regional approach" of preparation will help build the larger nationwide template for pre-scripted mission tasks.



“Inside NPS” Debuts on the Pentagon Channel

The story of NPS was shared to more than 18 million potential viewers across the country and internationally when “Inside NPS” debuted on the Pentagon Channel in March. The television program is a monthly 30-minute broadcast that features a wide range of university news, from research projects and student efforts to distinguished visitors and faculty honors.

“This television broadcast presents a wonderful opportunity for our university to consistently share the NPS story to a vast audience,” said NPS President Dan Oliver. “I have often heard NPS referred to as one of our nation’s ‘best kept secrets’ by those who become familiar with us, this program will help remove that dubious distinction.”

“Inside NPS” is the result of an extensive effort by Alan Richmond, NPS Director of Media, Marketing and Community Relations. In his current position, Richmond serves as the campus’ primary contact for

all external news media coverage, but now brings an entirely new level of exposure to the university.

“For the past year I’ve been working closely with leadership and producers at the Pentagon Channel in Washington in an attempt to secure a regular monthly half-hour time slot for a new NPS feature to be aired as a part of their regular programming schedule,” Richmond said, who will serve as both producer and host of the program. “We’re very pleased to see this effort finally come to fruition.”



mentation, and coordinate DoD JCD&E efforts in order to provide joint capabilities to support the current and future joint force commander in meeting security challenges.

Having recently completed the joint executive Systems Engineering Management - Product Development Leadership Education for the 21st Century (SEM-PD21) program, Irwin will take his new position armed with the most current educational foundation needed by technical leaders to drive systems engineering innovations and help achieve acquisition excellence.

As a student, Irwin was exposed to the latest state-of-the-art concepts, tools and best practices, both private and public, in systems engineering and management. Of note, one of the key value propositions of the program is collaboration not only jointly within defense and across the services, but also with defense industry partners; experience sure to be of use at J9.

Irwin previously served as director Marine Air-Ground Task Force command and control, weapons and sensors department

and integration product group, Marine Corps Systems Command. For more information on the joint executive SEM-PD21 program, visit http://www.nps.edu/DL/Degree_Progs/PD21.asp.

NPS Celebrates 15 Years With HOPE

HOPE Rehabilitation Services is an organization that provides an array of support services that assist people with developmental disabilities to achieve their maximum potential. Thanks to a little-known federal program, HOPE Services was awarded a contract in 1995 to provide janitorial services to NPS, and now 15 years later, HOPE and NPS celebrate a partnership that has resulted in more than just clean facilities, but long-standing employment for people who often become marginalized, despite their capabilities.

HOPE Client and NPS janitor, Chris Rubrecht, has been with the university since the contract’s inception 15 years ago. Rubrecht says that one of the biggest benefits is that he likes the people he works with and they are good to him. “They have changed my life. I have a better job than before

with more hours and more money.” Rubrecht added that this allows him to be more independent.

“HOPE Services has been an outstanding partner for the Naval Postgraduate School! The HOPE clients take tremendous pride in their work, and are very responsive to the needs of this great university,” said Pete Dausen, NPS Base Director and Director of Naval Support Detachment Monterey. “Commensurate with the stand-up of Naval Postgraduate School as a Navy Flagship Institution, we have seen a real re-dedication of HOPE’s custodial efforts. It is truly special to have HOPE Services here on the job, and for us to be able to participate in this fine federal program.”

NPS Student, Professor Reunite in Afghanistan

Professor James Russell with the National Security Affairs Department arrived in Afghanistan in January only to be greeted by a good friend and former student – Capt. Bobby Davis, Commander of D Company 3rd Battalion 509th Infantry Regiment. Davis first met Russell back in the summer of 2006 when he was a graduate student at NPS.

“Professor Russell was very approachable. I spent a lot of time in his classes and in his office talking about my thesis and about his continuing research on the Army,” said Davis. “He is one of the few academics I have met that is able to take academic theory and articulate real-world applications for it.”

Russell is in Afghanistan embedded with elements of the 4th Brigade 25th Infantry Division. He is there collecting information for his ongoing research into military innovation and adaptation by U.S. troops engaged in counterinsurgency (COIN) operations.

“Captain Davis and I have kept in touch since his graduation, and he extended an invitation to embed with his unit, Company D of the 509th, so I could get firsthand exposure to a unit conducting COIN operations in an extremely challenging environment,” said Russell from Afghanistan.



FACULTY SHOWCASE



Oceanography Prof. Participates in Latest Oxford Round Table

Professor Mary Batteen of the Department of Oceanography recently participated in the latest session of the Oxford Round Table, a prestigious, invitation only event to promote various issues of education, art, science and more through academic discourse and scholarly publications.



This latest session, held March 14-19 on the university's campus in Oxford, England, focused on "Women in the Academy: Status and Prospects," discussing the issues of gender equality in the academic establishment.

A former Chair of NPS' Oceanography Department, Batteen's presentation to the group focused on the value of mentoring, and how the establishment of specific policies can help women achieve the highest ranks in academia. She outlined specific policy ideas, ranging from equal pay for equal rank and "slowing" down the academic promotion clock, to hiring couples as professors and start up funds targeted for women who have had an interruption in their research careers.

She referenced programs such as MPOWIR (pronounced empower), or Mentoring Physical Oceanography Women to Increase Retention, a National Sci-

ence Foundation and Office of Naval Research funded mentoring program that's core purpose is to help retain women in the field of physical oceanography – Batteen offered it as an example that could be applied to any discipline, but cautioned that there is still much work to be done at the higher levels of academic leadership.

"While programs like MPOWIR are working to help junior women until they obtain their first permanent job, there is a notable absence of women as Full Professors or in leadership roles [including Principal Investigators on research efforts]," Batteen noted. "An MIT report showed that junior women felt well supported by their departments, even though they struggled with work-family obligations. Senior women, however, felt 'invisible in the department.' The senior women did say that they had once felt supported by their departments. They stated that a 'system of largely unconscious choices' kept them from leadership roles."

She continued, "A logical next step for programs like MPOWIR is to investigate how to retain women all the way through to Full Professor ... Such a program will help to pave the way for women to survive to the highest ranks in academia."

She added that institutions like NPS play a critical role by having a diverse faculty, particularly in the STEM (Science, Technology, Engineering and Mathematics) subjects. "Having a diverse faculty at NPS sends an important message to our students. They have opportunity based on their abilities, their contributions in science and technology will be welcomed, and the Department of the Navy is serious about attracting the best and brightest without barriers based on race or gender."

The results of the Round Table

will be published in an upcoming edition of the "Forum on Public Policy, the Journal of the Oxford Round Table."

Acquisition Management Faculty Featured in Contract Management

Assistant Professor Rene Rendon and Military Assistant Professor Air Force Lt. Col. Timothy Hawkins, both of the Acquisition Management Department in the Graduate School of Business and Public Policy, were recently published in *Contract Management* magazine.

Their article, "A Test of Contracting Skill: Don't Jam a Square Peg in a Round Hole!" offers readers a test of their contracting skills, using several scenarios of customer requirements that must be matched up with the most appropriate contract type. "In short, we provided eight vignettes for readers to consider, and then match them with the most appropriate contract type or instrument," said Hawkins.

Contract Management is the official publication of the National Contract Management Association (NCMA), an organization of approximately 18,500 professionals formed in 1959 to foster growth and educational advancement of its members.

"NCMA, and *Contract Management*, would be considered the place for members of the contracts profession to share best practices. NCMA is the premier professional association for members of the contracts profession," noted Rendon. "In addition, the NCMA journal, *Contract Management*, is the profession's scholarly peer-reviewed journal."

Contract Management is distributed to all NCMA members and additional subscribers worldwide.

ECE Prof. Helps Off Campus Students Get "Virtual" Access to NPS Labs

A critical part of an education in engineering is the laboratory experience, especially at the graduate level. In fact, most of the courses in the NPS' Electrical and Computer Engineering (ECE) Department include laboratory hours involving various experiments in data analysis or hardware implementation, for example.

But for distance learning (DL)



students, access to laboratories and equipment was clearly a challenge given the student's separation from campus. That is until Professor Roberto Cristi challenged NPS' Center for Design, Development and Distribution (CED3) with providing remote access to laboratory equipment for nonresident students – a first at NPS.

"During the last few years we saw a considerable development of integrated software and hardware platforms based on well established software," said Cristi. "The goal was to shorten the 'distance' between theory, simulation and implementation and give the student a clear picture of engineering development.

"The issue we addressed is how to extend the laboratory experience to non-resident students taking distance learning courses.

FACULTY SHOWCASE



NPS Stands Up New C4I Chair

Assistant Professor of Systems Engineering and Electrical and Computer Engineering Dr. Rachel Goshorn officially became the Naval Postgraduate School's first Command, Control, Communications, Computers and Intelligence (C4I) Chair at a special signing ceremony with NPS President Daniel Oliver, Jan. 25. Goshorn also serves as faculty lead for the Network-Centric Systems Engineering Track and Director of the university's Network-Centric Systems Engineering Laboratory.

The main purpose of the Chair is to facilitate, advocate and synchronize NPS involvement with fulfilling the acquisition needs of Program Executive Office (PEO) C4I's Program Office for Science and Technology. PEO C4I is responsible for all C4I systems acquisition for the Navy.

"This is a huge task you've taken on, and it's very positive and exciting," Oliver told Goshorn at the MOA signing. "The efforts of the new Chair will enable us to use the full potential of NPS to advance the command, control, computers and communications and intelligence capabilities of both the Navy and Department of Defense."

"This feels like something I've been preparing for in all my past degrees and jobs and research, and is a high calling for me," Goshorn said. "I really believe in it and am excited to be able to help the Navy, PEO C4I and the school expand and synchronize their contributions to C4I."

"The new Chair is the main point of contact and coordination between NPS and PEO C4I," Goshorn explained. "Working closely with Dean of Research [Karl] van Bibber, one of the first and ongoing jobs is to map NPS' capabilities in basic and applied research, modeling and simulation, testing, systems engineering, acquisition, business and current sponsors onto the 37 portfolio areas of the PEO C4I's Master Plan, and then market the school's capabilities back to PEO C4I to grow student theses, capstone projects and NPS research in this critical area. This is a huge task, as almost every office there has an overlap with the School. I've already briefed most of the NPS GSEAS [Graduate School of Engineering and Applied Sciences] and



Electrical and Computer Engineering Assistant Professor Dr. Rachel Goshorn, right, briefs NPS President Daniel Oliver at the signing ceremony for the Memorandum of Agreement with the Navy's Program Executive Office C4I establishing the new position.

GSOIS [Graduate School of Operational and Information Sciences] department heads, communicated with all of the deans, and have been and will continue meeting with the research institutes, individual faculty, research centers and labs, and program officers as well," Goshorn added.

"Other key goals are to develop an NPS/PEO C4I concept of operations; create a new Web site with a monthly newsletter to highlight up-to-date research opportunities structured around the mapping and CONOPS; with other NPS faculty, set up a new NPS C4I Research Group or Forum – and perhaps later a Center – to synchronize NPS C4I-related efforts and sponsorship; and facilitate placing NPS graduates in C4I-related payback tours," she added.

"I love getting the right people matched up with the vision and the right jobs," Goshorn said. "If you can share a vision with people, they can get excited about where it's going and work together."

Currently in the ECE department there are a number of courses with a sizable DL population," Cristi added. "These courses have been offered as distance learning to remote sites with remote students either coming to NPS for the lab experience, or running experiments remotely with simulated data."

The ECE department's state-of-the-art Power Electronics lab's hardware is entirely controlled by a PC through field-programmable gate array or FPGA-based control-

ler. In order to make these hardware laboratories available to DL students, CED3 was consulted to make the lab available over the Internet.

"CED3 worked closely with Roberto Cristi and Dan Zulaica to create an interactive Web portal where distance learning students would be able to remotely access, operate and program NPS resident state-of-the-art lab equipment, including the programmable FPGA, Oscilloscope, and Waveform Generator," said Diane Jones, a Graphic

Design Specialist in CED3's Media Development department. "Through the Web portal, students are able to connect to the FPGA, download and test their programs, operate equipment, and view results on a real-time display of the actual NPS lab equipment. It's an exciting project!"

Dorothy Denning Named "Security Superstar - Visionary"

ChannelWeb released its 2010 list of Visionary Security Super-

stars, which included NPS Distinguished Professor Dr. Dorothy Denning.

According to the company's Web site, Visionary Security Superstars are "Professors, researchers and thought leaders: These people are pioneers in security and have helped to shape the industry and the technology that keeps companies safe. For more than a decade their insight has driven the conversation around security and risk management."

NPS Proud New Home for Giant Space Telescope

By Barbara Honegger

“The Segmented Mirror Telescope is a national treasure and the crown jewel of the NPS Spacecraft Research and Design Center that will give our faculty and students unique and unprecedented experience in the design, analysis and testing of the most advanced space systems for many years to come.”

Distinguished Professor Brij Agrawal

Director, NPS Spacecraft Research and Design Center

The Naval Postgraduate School is the proud new home of the Segmented Mirror Space Telescope (SMT), designed and developed for the National Reconnaissance Office (NRO) as a cutting-edge technical demonstrator and experimental testbed for space imaging technologies.

The telescope’s hexagonal mirrors, each with more than 100 actuators for surface control, unfold like petals of a giant flower upon reaching orbit. The multi-million-dollar asset represents a quantum leap in the research and educational capabilities of NPS’ Spacecraft Research and Design Center (SRDC), Department of Mechanical and Aerospace Engineering (MAE) and Space Systems Academic Group in the areas of high resolution adaptive optics, active vibration and jitter control, space system design and distributed satellite systems.

The telescope’s Jan. 12 ribbon-cutting ceremony was keynoted by NRO Deputy Director and Commander of the Air Force Space Command Element, Maj. Gen. Ellen Pawlikowski who addressed NPS and NRO leadership, and senior representatives from the aerospace industry, national laboratories and other academic institutions.

“It’s a thrill that the telescope is at the Naval Postgraduate School, which is the ideal place, as you’re our future generation of space scientists and engineers,” Pawlikowski said. “NPS is the heart and soul of what it’s all about – having science and technology research and education all in one place. At NRO, we look to the school to help us develop new technologies and integrate them in new ways to meet our ever-changing mission, and this telescope being here represents the next phase of your helping us to become more flexible. It’s a great accomplishment to move something of this scale and complexity all the way across the country, and I congratulate all of you on a great success.”

SRDC Director and MAE Distinguished Prof. Brij Agrawal oversaw the four-year effort to bring the high-tech imaging system 3,000 miles from Rochester, N.Y. to Monterey.

“The Segmented Mirror Telescope is a national treasure and the crown jewel of the NPS Spacecraft Research and Design Center that will give our faculty and students unique and unprecedented experience in

the design, analysis and testing of the most advanced space systems for many years to come,” the SRDC Director said.

“This was a huge project that required many highly skilled people from NPS, NRO and ITT [International Telephone and Telegraph] coming together and working like clockwork to make it happen,” Agrawal noted. “We couldn’t have done it without every one of them, especially [NRO SMT Program Manager] Lt. Col. Andy Adams, whose vision to have the system go to an academic research institution was critical; Tom Aquilina from ITT, which built the telescope for NRO and dedicated four engineers to getting it safely here; Dr. Ty Martinez from the Naval Research Laboratory, our close partner in the project; and Michael Heilpern of the Monterey [Calif.] Jet Center where the C-17 transport plane touched down on Dec. 18 carrying the telescope and 25 additional boxes that were unloaded by fork lift and driven to NPS in two long trucks.”

“It took hardheadedness and a lot of perseverance to get the telescope to the Naval Postgraduate School,” Adams agreed. “It was very important that it not get boxed up and left to gather dust in a warehouse some where, but be where S&T [science and technology] faculty and students can really use it for education and research. We looked at all the places where it could go, and decided NPS was the ideal place for research on the military applications of adaptive optics over the next 10 to 20 years.”

“It’s bitter sweet to see the SMT go, because this represents three years of my life,” Howerton added. “But I’m happy it’s going to a great learning institution. There’s a real synergy between the Naval Postgraduate School and the National Reconnaissance Office, with the number of students who graduate from NPS and come to work with us. I want to seed and speed the ideas of change by having them learn this technology while they’re at NPS. This is a great opportunity to expose the next S&T generation that comes to NRO to the future technology they need to know. The paramount technology is the active control system, and it’s a great achievement having this testbed capability at NPS.”

“At NPS, the person who really made this happen was Provost [and Executive Vice President Leonard] Ferrari,” Agrawal noted. “He said, ‘Go for it. I’ll give you the funds – just make it happen.’ And all along



A ribbon cutting ceremony officially welcomed the Segmented Mirror Space Telescope to NPS. Sharing the honors were, left to right: NPS Vice President and Dean of Research Karl van Bibber; Mechanical and Aerospace Engineering Distinguished Professor and Director of the NPS Spacecraft Research and Design Center Brij Agrawal; NRO Deputy Director and Commander, Air Force Space Command Element Maj. Gen. Ellen Pawlikowski; and NPS Executive Vice President and Provost Leonard Ferrari.

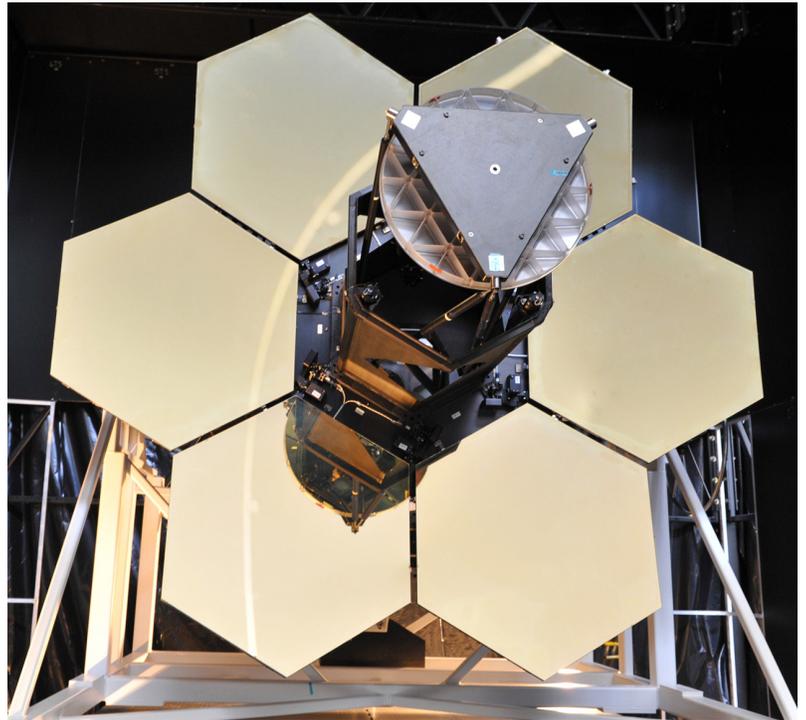
we had really strong support from NPS [Vice President and] Dean of Research Karl van Bibber; [then] Acting Dean of the Graduate School of Engineering and Applied Sciences Capt. Dan Burns; and Chairman of the MAE Department Professor Knox Millsaps.”

“It’s hard to overstate what this state-of-the-art system being here means for the Mechanical and Aerospace Department, and for the Naval Postgraduate School and the nation,” Millsaps said. “The new SMT Lab facility is one-of-a-kind. It’s absolutely unique.”

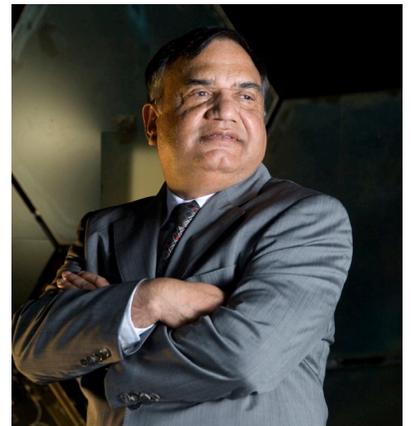
Following the telescope’s unveiling, participants gathered down the hall from the “dark tent” – the black-painted chamber that now houses it – for a cake cutting ceremony and networking. And in the afternoon, Agrawal led a tour of the Spacecraft Research and Design Center Laboratory.

On the tour, Astronautical Engineering doctoral student Air Force Capt. Melissa Corley briefed participants on her Ph.D. research on “Adaptive Optics Control in a Maritime Environment.” NRL Senior Scientist Dr. Ty Martinez demonstrated the lab’s adaptive optics testbed. Mechanical and Aerospace Engineering Research Assistant Prof. Dr. Jae Jun Kim discussed the jitter testbed. MAE National Research Council Research Associate Dr. Masaki Nagashima briefed on the High Energy Laser Testbed; and NRL Senior Scientists Dr. Sergio Restaino, Dr. Christopher Wilcox and Dr. Johnathan Andrews demonstrated the High Energy Laser Adaptive Optics Testbed and Redundant Spacings Calibration Testbed.

For the day’s capstone, Agrawal met with attendees to discuss SMT uses and potential areas for future collaboration. In addition to NPS and NRO leadership, participants included senior representatives from the aerospace industry, national laboratories and other academic institutions, including ITT, Lawrence Livermore National Laboratory, Lock-



NPS’ Spacecraft Research and Design Center is the proud new home of the National Reconnaissance Office’s Segmented Mirror Space Telescope – a state-of-the-art experimental testbed for space-imaging education and research. The acquisition of the high-tech hardware was the result of a four-year effort by Distinguished Professor Brij Agrawal.



heed-Martin and Northrup Grumman Corporations, the Naval Research Laboratory, NASA’s Jet Propulsion Laboratory, and the University of California at Santa Cruz.

“The group decided to form an advisory committee that will recommend areas for academic and research collaboration,” Agrawal said. “This opens up a huge potential for collaborative research and educational ventures with other academic institutions, the national labs and the aerospace industry.”

“I want to extend my personal congratulations to Brij Agrawal and his entire team,” Ferrari told the Space Systems students and gathered dignitaries. “Brij is the one without whom none of this would have happened.”

“These are exciting times at the Naval Postgraduate School,” Ferrari said in closing. “The National Reconnaissance Office is placing the most advanced and innovative of tools in the hands of military students who have come from, and will be returning to, operational assignments. This kind of facility takes the school to a whole new level in the breadth of research that can happen here and the scope of collaboration with the national labs, the aerospace community, the rest of DoD and the entire defense and national security community. It’s a really great time in our history, and it makes for a wonderful 100th birthday present for NPS.”

DoD's Warrior Diplomats Receive Essential Advanced Education at NPS

By Dale Kuska

The Foreign Area Officer is one of DoD's most rapidly expanding officer communities, and for good reason. Most experts agree that in today's global society, the United States must enhance its diplomatic relationships with nations large and small, many with incredibly diverse populations. And to do that, you must have an intimate knowledge of the people who live there.

"Relationships with different countries really come down to individual relations with the people in that country, and we look to the Foreign Area Officer to be the expert on the culture, the language, the history and the type of nation we're dealing with," said Pete Verga, Deputy Under Secretary of Defense for Policy Integration.

In late 2008, it was this very notion that compelled then Undersecretary of Defense for Personnel and Readiness, Dr. David Chu, to contact the joint chiefs of staff, all regional commanders, and all assistant and under secretaries of defense, among others, to strongly encourage them to support advanced continuing education for their respective FAO programs.

"It is not enough to build a cadre of FAOs," he said, "we must also support them throughout their careers and provide options for them

to sustain and enhance their expertise to meet the ever-changing demands of the global environment."

Just a short time later, Chu selected NPS to develop the Joint FAO Skill Sustainment Pilot Program (JFSSPP), a comprehensive educational and training program that provides this much-needed support through intensive educational programs, as well as engaging those FAOs stationed around the world via the Internet.

"This program is dedicated to the support of an essential core of regional experts across the armed services," said Dr. Tristan James Mabry, Executive Director of the JFSSPP. "We teach, we train, and we support a growing community of professionals, the Foreign Area Officer."

The program consists of two primary components, an intensive educational program – half held on the NPS campus and half in country – tailored to the specific regions FAOs operate in, and FAOweb, a blossoming online portal of critical and diverse cultural information and language resources.

"When a FAO is assigned to a Combatant Command, the Pentagon, the Joint Staff or the [Office of the Secretary of Defense] they have specific skills they've been trained in," ex-

plained Army Col. Robert Duggleby, FAO and U.S. Defense Attaché for Budapest, Hungary. "Specifically for senior FAOs, they have a tendency to get away from their basic FAO skills, like language. I think it's important that if they can't sustain those while they're in these busy jobs – [where] they just don't have the time – that they get an opportunity to break away," he added. Duggleby was part of the inaugural Eurasia track course held late last year.

"Overall assessment of the Joint FAO Skill Sustainment Pilot Program is highly positive," said Army Lt. Col. Edward Bonfoey, currently stationed at the U.S. Defense Attaché Office in Bogota, Colombia and a participant in JFSSPP's latest education program focused on Latin America. "This venue offers one of the only opportunities for all FAOs to take a step back from our current assignments and ponder the future of our region, careers, and the FAO service-based training and development programs. In the current global environment the demand for regionally-trained and culturally-aware political-military experts is crucial"

Another participant in the Latin American program, Army Lt. Col. Mathew Anderson, currently stationed at the Office of the Under Secretary of Defense for Policy in the Pentagon, noted, "High points for me were building and reinforcing professional contacts and relationships with U.S. services and host nation officers and the seminars in Peru that discussed relevant topics in the target language."

"A great thing about this program is that we can leverage the technology that's out there, use of the Internet, various programs the Defense Language Institute [also in Monterey] has, and great ways to collaborate to improve the training," said Air Force Lt. Col. Chris Moffet, FAO

Dr. Antonio Ramalho, left, of Brazil spoke on "Civil-Military Relations in Brazil: National Security Policy, Roles and Missions," during the in country portion of the Latin America-focused in residence program in Lima, Peru. During a break, he continues the discussion with Col. Robert Fagan and Lt. Col. Mathew Anderson.





Students listen intently as National Security Affairs Assistant Professor Christopher Twomey, shown below, offers a course on the history of Chinese influence in Latin America during the Monterey portion of the Latin America-focused in residence course in February.



“FAOweb is a breakthrough. It is exactly the right catalyst to create a joint community for Foreign Area Officers. At last, all FAOs from all Services in all duty assignments, anywhere, can access our professional world.”

***Army Col. Mark Chakwin
U.S. Army Foreign Area Officer Chair***

and Air Force Academy Instructor.

In addition to the education programs, invaluable information and training will be distributed to officers in the field and fleet via the program’s portal, FAOweb, which launched in full in February of this year. FAOweb will not only deliver self-paced, job-relevant education to FAOs worldwide, but will also foster a tighter joint community through increased and instantaneous interaction. And have it all available exactly where they need it, where they operate.

“This is what FAOweb is all about – providing critical resources to Foreign Area Officers in the field,” Mabry added.

Created by NPS’ JFSSPP office, with technical development by the university’s Information Technology and Communications Services (ITACS), FAOweb offers myriad professional networking and cultural education programs previously unavailable to this rapidly expanding community of warrior-diplomats.

“FAOweb is a breakthrough. It is exactly the

right catalyst to create a joint community for Foreign Area Officers,” said Army Col. Mark Chakwin, U.S. Army Foreign Area Officer Chair and NPS’ senior FAO. “At last, all FAOs from all Services in all duty assignments, anywhere, can access our professional world – for language, for professional exchanges, for education, or even for fun,” he continued.

“We are global and operate in foreign cultures to shape or support U.S. defense efforts. We need a common digital space to share best practices, to train at different paces, and to network our profession. Until now, FAO skills and knowledge were acquired only through long years in diverse assignments, this will raise the overall awareness and skills level of FAOs and we can start creating a common operating picture of our entire career field,” added Chakwin.

From the IT development team’s perspective, FAOweb provided a unique aspect to the work ITACS typically provides while supporting the educational quality at NPS.

“In IT’s role of supporting the educational mission of NPS, we often see the rewards for our efforts on campus, but are rarely in the position to see the benefits of our services with officers operating out in the field,” said Jon Russell, NPS Director of Academic and Media Systems. “FAOweb was an exciting contrast to this. We were able to create something that provided immediate impact to people performing critical work in some of the world’s most tumultuous regions. Before we even launched, FAOs operating in Afghanistan and Pakistan contacted us, imploring us to launch their portion of the site early. We were fortunately able to do that, and being able to support these officers was very satisfying for our team.”

Ultimately, the JFSSPP program is about connecting FAOs from every service, allowing the community to improve and unify through active engagement.

“For the FAOs from the different services to get together in an environment where they can openly talk about each other’s experiences, jobs, and then just enlighten each other with what they’re doing out there in the field – that’s the way we all get better at what we do,” said Duggleby.

Responding to Disaster

*The Naval Postgraduate
School's
Networks Research Group*

Article by Barbara Honegger
Photos by Foard Copeland

The Navy unveiled its new slogan, “A Global Force for Good,” at the end of last year, and was immediately given the chance to prove it. The powerfully-devastating earthquake that hit the poor island nation of Haiti on Jan. 12 led to a swift Humanitarian Assistance and Disaster Relief (HA/DR) response by all of the services. And one of the players at the civil-military boundary in that effort – serving as a bridge between on-the-ground medical personnel, the *USNS Comfort* hospital ship, and the international non-governmental organization (NGO) community – was the Naval Postgraduate School’s rapid response wireless communications team.

The seven-member NPS Hastily Formed Networks (HFN) team, led by its director and Information Sciences Research Associate retired Navy Lt. Brian Steckler, left Monterey for the island nation Jan. 18 after a hurried three days pulling together the orders, funding and equipment for the mission.

“When you think of what’s most needed in an emergency like this, water, food, shelter and medical supplies are what usually come to mind,” said Steckler, who volunteered to return to a major disaster zone for the third time in five years after responding to both the Southeast Asia tsunami and Hurricane Katrina. “But emergency communications should be at the top of the list, because without them, you can’t coordinate the others and can’t operate; and the communications situation in Port-au-Prince was really dire. For three days after the earthquake hit, even the president of the country couldn’t talk to President Obama because he didn’t have a working satellite phone.”

Responding immediately to this informational challenge, NPS’ HFN Team Haiti flew \$250,000 worth of emergency communications equipment from their labs to reconnect the people of Haiti to each other and the world.

“Our mission was to support the U.S. government and military by bringing satellite-enabled rapid wireless communications to the most

critical areas and functions, working with Joint Task Force-Haiti, which is in charge of the military side of the relief effort,” said Steckler, who was named a Red Cross hero for his emergency communications efforts in the wake of Hurricane Katrina. “Knowing our track record in the tsunami and Katrina, the Department of Defense immediately reached out to us and asked us to participate and contribute in our small way.”

The Hastily-Formed Networks Research Group is a Cebrowski Institute field-experimental research organization created in response to the 2004 tsunami. It is specially structured to respond to humanitarian disasters. “We’re entirely self-contained,” Steckler noted. “We go in with everything we’d need if deployed on the ground – portable light-weight tents, sleeping bags, MREs (meals ready to eat), water purification and filtration equipment, alternate power, cooking equipment, various communications devices – you name it.”

The team arrived in Haiti with eighteen 70- to 100-pound ‘fly-away kits’ in hard cases used both for this self sufficiency and to set up Internet access capabilities to enable voice/chat (Skype), video, e-mail and data communications, including telemedicine via satellite. The equipment in-



According to the Inter-American Development Bank, the per capita death toll of Haiti’s earthquake, which killed over 200,000 people and displaced 1.3 million, is four times greater than any other disaster in the past four decades.

The U.S. provided 12,000 forces and more funds, search-and-rescue crews, medical personnel, life-saving supplies and medical equipment than any other nation in response to the earthquake in Haiti.

Of those 12,000, more than 3,600 Navy personnel were on the ground and on ships off the coast within 72 hours of the disaster. By the end of the *Comfort’s* mission in early March, more than 1,400 Navy medical professionals and support personnel had participated in Operation United Response performing almost 900 emergency surgeries on survivors with life threatening injuries.

ate School's Hastily-Formed Group Deploys to Haiti After Devastating Earthquake

cluded four Broadband Global Area Network satellite units (BGANs) that can connect to the Internet via the International Maritime Satellite Network in five minutes and generate 100-meter wireless “clouds;” four foldable 9-foot-by-9-foot solar panel tarps that generate 800 watts of power when there’s sun, and a wind turbine when there isn’t, to run the equipment if needed; GPS devices, visualization systems to provide situational awareness in a command center-like configuration and four satellite phones, “which are like gold,” Steckler said.

“With the WiFi ‘clouds’ we can create temporary Internet ‘cafes’ in hospitals or field clinics, boat or helicopter landing zones, and key relief sites like the ones we set up in parking lots in the wake of Katrina,” he noted. “These ‘clouds’ can then be connected using WiMAX terrestrial long-haul wireless point-to-point networks that extend up to 30 miles, bringing links from one site to another in point-to-point mode or with multiple hops.

“The first five days I was on board the *USNS Comfort* – a converted oil tanker that’s the sixth largest hospital in the world. It looked like D-Day,” Steckler recalled. “There were two dozen international ships off shore, a large number of critically injured Haitians pouring onto the deck from helicopters landing every six minutes with more circling two or three deep nearby, and hundreds of doctors, nurses and medical personnel working 20-hour days to save lives and ease the suffering. The ship

had only two phone lines for MediVacs with the communications infrastructure down at hospitals and other shore facilities, so we set up a BGAN on the bridge deck to demonstrate how mobile/portable, airline-luggage-checkable communications equipment can support things such as MediVac communications from/to the helicopter and boat landings, and for coordinating medical supplies or personnel transits from ship to shore.”

Cebrowski Institute Research Associate Ramsey Meyer was among the first team members on the ground coming off the *Comfort* and became one of the “go-to guys” ashore to arrange critical-patient MediVacs out to the ship. “We used BGANs, a satellite unit called a SWE-DISH, and laptops to establish reliable wireless communications with the *Comfort*’s triage team,” he said.

NPS student Marine Corps Capt. Brandon Newell, right, solicits the help of a Sailor from the USNS Comfort to test solar power panels outside of the Presidential Palace in Haiti as part of the Hastily Formed Network’s participation in Operation Unified Response.



“The story of NPS’ communications response to the Haiti earthquake goes beyond the Navy and U.S. military, to our interface with the non-U.S. community and NGOs. We were directly involved in several NGO and U.N. activities, where we, along with many others, made a real difference in both aid to the Haitians and in simply working together better at the civil-military boundary than ever before. The response to this disaster has been unprecedented in that regard.”

***Brian Steckler
Research Associate, NPS Information Sciences
Director, Hastily Formed Networks Group***

Meyer was joined by retired Navy Supply Corps commander and Cebrowski Institute Research Associate Dave Nystrom; Electrical Engineering student Marine Corp Capt. Brandon Newell, and civilian Research Assistants Rosa Akbari and Foad Copeland. The group set up operations at Joint Task Force-Haiti headquarters, in a tent in the lot next to the U.S. Embassy about the size of the NPS academic quad.

“The first medical facility we went to was the field hospital at Terminal Vereaux, set up by the U.S. Department of Health and Human Services, where we set up a communications bridge to the *Comfort*,” Meyer said. “Though our original mission was communications, we were instantly thrust into the role of life savers, and every time we did a MediVac we were also doing our comms mission.”

“The conditions at the Haitian Community Hospital (HCH), like many others, were horrendous,” Steckler recalled. “Several dozen patients, including children and elderly women, lined the halls and covered the ground outside, some on stretchers made out of wooden doors, with squirrel-size rats running around at night. Eight out of ten days, due to shaky local ISP infrastructure, the hospital used our satellite phones and BGAN satellite Internet connection devices, and we coordinated live chat and voice over IP on laptops, which turned out to be key medical tools.

“We were at HCH doing communications assessments for only a couple of hours when the head nurse rushed in and said they had an urgent patient, but that all three cell phone calls that afternoon to the *Comfort* to attempt to arrange a MediVac had been dropped due to lousy satellite phone service,” Steckler continued. “We used our direct line to the ship’s command center and got them to agree to send a helicopter, waiving the usual requirement for passengers in Navy helicopters to be certified for night flights since this was an after-dark event. We loaded the patient, who’d been rescued from the rubble with his stomach in his chest and a hand respirator keeping him alive, into our car in the dark and got him to the chopper. In all, we used our vehicle as an ambulance four times to get patients to helicopters or port landings where they could be taken out to the hospital ship by boat or to



other facilities better equipped for a particular patient.

“This is the biggest disaster in modern times in terms of lives lost, now estimated at well over 500,000; and the urgent needs of persons and property affected has been the catalyst to bring all these communications challenges to a head,” Steckler added. “NPS’ HFN operations have become a model of how to do real-time communications for MediVac and other trauma support by quickly enabling the use of the Internet. By the time we left Haiti, wireless chat was up and running at hospitals, with plans in hand to set chat up in tent cities and schoolhouses, and with a sharp focus to connect health, education and shelter sites onto the Internet, then with by-sector live chat.”

The last two weeks of the first month’s deployment the remaining HFN Team Haiti personnel worked at the Joint Task Force-Haiti level, focusing on communications-oriented liaison with Haitian, U.S. and international nongovernmental organizations (NGOs), hundreds of which rushed to the country’s aid in the wake of the 7.0 earthquake.

“The story of NPS’ communications response to the Haiti earthquake goes beyond the Navy and U.S. military, to our interface with the non-U.S. community and NGOs,” Steckler said. “We were directly involved in several NGO and U.N. activities, where we, along with many others, made a real difference in both aid to the Haitians and in simply working together better at the civil-military boundary than ever before. The response to this disaster has been unprecedented in that regard.”

The NGO background of HFN Team member and Cebrowski Institute Research Assistant Rosa Akbari was a key to bridging this civil-military gap. Akbari, who is taking classes in the National Security Affairs Department’s Stabilization and Reconstruction track, operated the BGAN units at the Embassy compound and on board the *Comfort* and, with Research Assistant Foard Copeland, served as a bridge to communicate better with the United Nations and NGOs of all types, while still addressing the needs of military units supporting the relief efforts.

“My HA/DR experience in Haiti was invaluable,” Akbari said, “because it was an opportunity to bring all of this knowledge and experience to life. By interfacing among UN agencies, NGOs and DoD officials, I was able to exist as a chameleon, weaving through an unfolding HA/DR social network. While I’ve always been comfortable in different social groups, I never thought DoD or the military in general would be one of those groups, and little did I know the value of that connection. I also came away with an im-

mense appreciation for the NGO volunteers willing to work without fluid institutional support and resources like those provided by DoD. Because of research opportunities at NPS, young civilians like myself are now able to physically bridge this interagency civil-military gap.”

Capt. Bobby Gruber, a Marine Corps communications officer and NPS student who had been in charge of equipment and training for an Operation Iraqi Freedom communications platoon, was the next to last HFN team member to arrive in Haiti. He worked on setting up emergency communications at three locations: the Haitian Community Hospital, a medical field facility, and a small island at the main Haiti port/pier area from which U.S. Coast Guard reservists conducted port security.

“The NPS HFN effort was a bridge between the military and the NGOs,” said Gruber. “We worked with people and NGOs from all over the world and a lot of them were shocked when they found out we were from the military. It felt really good to break down those stereotypes.”

Marine Corps Capt. Brian Sullivan, an NPS Electrical Engineering student doing his thesis on using software to optimize solar cell performance, was the last team member to arrive on the island.

“One of the things that made it really rewarding was a big project we did for the Coast Guard Reservists on the island doing port security, to set up Internet access using the BGANs,” Gruber said. “They were struggling and were very thankful that we got it up and running for their day-to-day operations and e-mail.”

“A real morale booster was when the Coast Guard set up a big screen with benches outdoors on the island they lived and worked on and learned they’d be able to watch the Super Bowl live,” Gruber recalled. “Their comms officer was ecstatic that he could tell his guys they’d be able to see the game. In just two hours, we connected a laptop to Brian’s daughter’s Tivo back in California using ‘Sling Box’ technology to feed the game in live. They were so excited, we were absolute heroes. At half time, they called us all up to the front for a standing ovation for the whole NPS HFN Team Haiti!”

One team member, Capt. Newell, was able to apply his thesis research to the Haiti mission even before leaving NPS.

“While we were still here [at NPS], I ran the renewable energy optimization software tool called HOMER I’m using for my thesis research for the area around Port-au-Prince,” said Newell, whose thesis research is on evaluating the software as a Marine Corps pre-deployment planning tool. “It lets



Images from left to right:

Members of the HFN team unilaterally expressed awe at the level of devastation left in the wake of the powerful quake. Here, tags painted in orange on the Presidential Palace give future search teams instructions on areas that have already been scoured for survivors.

Cebrowski Institute Research Associate Dave Nystrom, a retired Navy Supply Corps commander working at the Office of Naval Research, stands next to a wind turbine at the group's camp near the U.S. Embassy.

The Hastily Formed Networks group set up operations at Joint Task Force-Haiti headquarters, in a tent in the parking lot next to the U.S. Embassy. The team travels fully self-contained – portable light-weight tents, sleeping bags, MREs, water purification and filtration equipment, and of course, power and communications equipment.

you know in advance how all your energy resources mesh together, so you can prioritize the best power generation equipment to take on a mission.

“The big take away from Haiti is that the military and NGO communities are very different animals with very different strengths and weaknesses and the concept of hastily-formed networks, at the intersection between them, can bridge the gaps to optimize how they can best work together for humanitarian assistance and disaster response,” continued Newell. “If we pre-positioned dedicated HA/DR equipment, the concept of HFN could be built into the military to more rapidly and agilely respond to humanitarian needs.”

In addition to the current Naval Postgraduate School faculty and students on the Haiti mission, a number of NPS alumni could be found in key positions around the country, including the Chief Communications Officer for the entire Joint Task Force-Haiti; the commander of Destroyer Squadron 40 embarked for the Haiti mission on board the *Comfort*; and the Joint Forces Maritime Component Command (JFMCC) Information Manager, and many others.

“These great NPS alumni coordinated our every move all along the way to get us to Haiti, supported us, and kept us quite busy when we were there,” Steckler said.

“The supply officer on board the *Comfort* happened to be a former classmate of mine, who provided whatever we needed in terms of logistics,” said Nystrom, a Cebrowski Institute Research Associate working at the Office of Naval Research who was part of the NPS HFN team. “My background as a Navy Supply Corps officer helped us plug into the available logistics support and supply chain coming into Haiti.”

The NPS Hastily Formed Networks team is already looking forward to applying the lessons learned from Haiti and to collaborating with other military departments, U.S. government agencies, the United Nations, and international NGOs on future HA/DR missions.

Not surprisingly, Steckler is already on it. In mid March he met in Washington with a broad spectrum of U.S. government agencies which have learned of HFN’s research and expressed interest in future collaboration. “We’re trying to get a group workshop to bring them all together to talk about HFNs and the HA/DR mission set,” he said.

With his knowledge of the French language, Capt. Brandon Newell, right, was able to establish some direct communication with local Haitians. Here, a man on board a ‘tap-tap,’ or taxi, happily poses for a photo.

“HFN is operationally-oriented research, where researchers explore the civil-military boundaries,” said Deputy Director of the Cebrowski Institute and Information Sciences Research Associate Sue Higgins. “The Navy and DoD missions are changing to include more humanitarian assistance and disaster response involving civil-military interactions like Operation Unified Response in Haiti. The NPS HFN research effort helps explore the gaps in this interface and makes recommendations to Navy and DoD leadership about how best to fill them.

“NPS research can also deepen understanding of how social and technical networks can enhance HA/DR efforts. Additionally, we are learning that when research bridges operational areas, it can be messy and challenging. The rules and procedures aren’t yet written, offering many learning opportunities about the importance of quickly gaining clarity in requests, offers, roles and missions to enable effective coordination in fast-paced, overwhelming situations. We are grateful to the broad Navy/Joint team who were willing to work with our NPS HFN team during Operation Unified Response,” she added.

Although the Navy and Marine Corps effectively completed their missions in early March – the *Comfort* has discharged its last patient and the Seabees, Navy/Army divers and Army engineers have completed their round-the-clock repairs to finally reopen the port allowing relief supplies by ship – the real work in Haiti has only just begun.

“We have to let the world know that we can’t put this country, the poorest in the Western hemisphere, on the back page any longer,” Steckler stressed. “There are still around a million people without shelter, thousands of amputees who need wound care and prosthetics, and whole new health and related crises just around the corner as the monsoon rainy season has already started with rain swamping the tent cities and indigenous displaced persons camps followed by the hurricane season, making shelter paramount to avoid perhaps double the number of deaths they’ve already seen.”

“Pray for the people of Haiti,” said Newell, “and give generously to the charity or NGO relief organization of your choice that’s still responding to the crisis, because they’re going to be needed for a long time.”

University Expertise Showcased During CENIC Conference

By Joan Ackerman

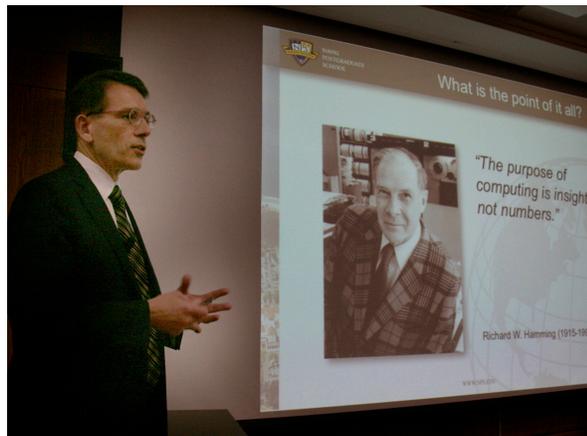
The Corporation for Education Network Initiatives in California (CENIC), which designs, implements and operates CalREN, the California Research and Education Network, a high-bandwidth, high-capacity network that is specifically designed to meet the unique requirements of California's education and research communities, hosted its 14th Annual Conference "Full Speed Ahead" at the Hyatt Hotel in Monterey from March 8-10, and NPS participated fully in the entire slate of activities.

Emphasizing the importance of participating in "Full Speed Ahead," Dr. Christine Haska, Vice President of Information Resources and Chief Information Officer said, "Conferences such as CENIC strengthen our partnerships with organizations that are vital to our collective efforts, ensuring even greater success in the future."

An entire afternoon of presentations at NPS and a tour of the MOVES Institute, followed by a reception and poster session on the Quarterdeck, were included as part of the program. On Monday, March 8, CENIC guests filled the Mechanical and Aerospace Engineering Auditorium to capacity, where Dr. Karl van Bibber, Vice President and Dean of Research, began his plenary address by quoting the late Dr. Richard Hamming, after whom the NPS supercomputer is named. "The purpose of computing is insight, not numbers," he said. Offering his reflections on high-performance computing, visualization and networking, Dr. van Bibber concluded by stating, "Computation is one of the pillars – along with theory and experiments of scientific discovery – that has been elevated out of the category of being just a tool of modern high-performance computing."

From Operations Research, Dr. Paul Sanchez discussed *Data Farming - Getting the Most Out of Moore's Law and Cluster Computing*, showing how NPS efforts, particularly the SEED Center for Data Farming, combine statistical design of experiments with computer simulations on high-speed/high-bandwidth computing to "grow" data in such a way that it will maximize understanding of the system being studied.

Dr. Jeff Haferman, Director of Research Computing, and Jeff Weekley, Research Associ-



ate, described visualization on the "hamming" supercomputer using the Maya 3D modeling package with Pixar's RenderMan software, the same package used by Hollywood studios to develop popular animated feature films. They noted how NPS used them together to create realistic visualizations in a format suitable for projection on the NPS Sony 4K display and for ultra-high resolution streaming media over CENIC networks. The team also demonstrated how these advances have benefited researchers at NPS who are working on scientific visualization and streaming media in support of the school's academic and research missions.

Dr. Karl van Bibber, NPS Vice President and Dean of Research, opened the conference's Monday session by quoting the late Dr. Richard Hamming, after whom the newest NPS supercomputer is named. Offering his reflections on high-performance computing, visualization and networking, Dr. van Bibber concluded by stating, "Computation is one of the pillars, along with theory and experiments, of scientific discovery."

The Extensible 3D (X3D) Earth project, presented by Dr. Donald Brutzman of MOVES and student Lt. Dale Tourtelotte, is based on a standards-based 3D visualization infrastructure for visualizing all manner of real-world objects and information constructs in a geospatial context. Dr. Brutzman stated that the ultimate goal of the project is to support "any country, any university, anybody to take their own data" and develop their own contexts, "perhaps engendering 3D as part of their archival publishing methodology, which already works in scientific community."

Laurin Herr, President of Pacific Interface, Inc., and Jeff Weekley not only discussed the technical challenges and successes, and the partnerships that emerged from a broad spectrum of entities to produce the live streaming event at the CineGrid Workshop and the artistry of capturing and exhibiting an underwater habitat in 4K, but also demonstrated a live streaming event from Yokosuka, Japan.

At the start of the reception, NPS Execu-

ative Vice President and Provost Leonard Ferrari thanked CENIC "for allowing the Naval Postgraduate School to participate in the 2010 CENIC Annual Conference," recognizing that "NPS is one of many institutions in the region that benefit from CENIC." He also acknowledged the member institutions who were participating in the poster session.

The *ePortfolioCA Project* and *Noyce Scholar Program* were presented by the K-20 Educational Technology Collaborative through California State University at Monterey Bay. Provost Donald Fischer of the Defense Language Institute, Dr. Jack Franke of Emerging Languages and Dr. Tamas Marius, Language Technologies Manager, presented *Scaffolding Language Learning with Technology*, *Technology Tools in Proficiency-Based Syllabi for Foreign Language Education*, and *Online SCOLA Services in Support of Foreign Language Education*, respectively. Mike McCann on *X3D Earth for Ocean Exploration*, Danelle Cline on *AVED Application* and Paul McGill on *Ocean-Bottom Broadband Seismometer to a Seafloor Cabled Observatory: A Prototype System in Monterey Bay*, headed the team from the Monterey Bay Aquarium Research Institute. Bob Cole and Lynn McDonald of the Monterey Institute for International Studies presented on *TEDx Monterey: Be the Solution*, and Dr. Sharon Colton of Monterey Peninsula College summarized the Microsoft-endorsed *Communicating with SharePoint*.

NPS was well-represented in the mix as well. Posters covering areas of interest for CENIC guests included everything from modeling the arctic ice melt and maritime research to cyber protection and turbopropulsion.

“NPS has demonstrated what the conference is all about – a sense of community, a sense of sharing, examples of experimentation ... and the opportunity for presenters to share with others what they have learned.”

At breakout sessions during the conference, Dr. Simson Garfinkel of Computer Science discussed *Fast Disk Analysis with Random Sampling*, a new method for rapidly characterizing the forensic contents of a hard drive or other storage devices using random sampling, making it possible to rapidly determine with a high degree of confidence whether or not large storage devices have been properly cleared of data from previous use.

Dr. Alex Bordetsky, Associate Professor of Information Systems and an Associate Chair for Research at the Department of Information Sciences at NPS, and Director of the NPS Center for Network Innovation and Experimentation (CENETIX), presented *Testbed for Tactical Networking and International Collaboration in Maritime Interdiction Operations* discussing the core of the Tactical Network Topology (TNT) experiments high-value target and Maritime Interdiction Operation (MIO) experimentation. Bordetsky outlined the unique testbed that provides a platform for the collective learning of achieving synergy between man and machine through ubiquitous networking and collaboration, enabling sustainability and evolution of the TNT experimentation campaign.

Dr. Tristan James Mabry, NPS Executive Director of the Joint Foreign Area Officer Skill Sustainment Pilot Program and a Research Assistant Professor in the Department of National Security Affairs, and Jonathan Russell,

Director of Academic and Media Systems presented *Building FAOweb: Developing Regional, Cultural and Language Expertise Through the Web*, which outlined the goals, timeline and design of FAOweb, developed using open source technologies like Sakai Collaborative Learning Environment and LifeRay.

At the conclusion of the conference, Hasaka said, “The work that was showcased by the NPS presenters clearly underscores NPS’ world-class reputation as an institution of higher education.” Jim Dolgonas, President of CENIC, acknowledged the tremendous changes made since CENIC held its third annual conference in Monterey in 1999, when NPS wasn’t even a member of the organization. Today, as he looks towards CENIC’s fu-

ture, Dolgonas says he sees “an increase in fiber to provide higher bandwidth to institutions in remote regions, low-cost and scalable cloud infrastructure and computing services, and an upgrade on our backbone from 40 to 100 gigabits.”

While noting the technology sponsors, major technology industry and higher education representatives that filled the seats at “Full Speed Ahead,” Dolgonas also emphasized the value of NPS to CENIC and to this particular conference when he said, “NPS has demonstrated what the conference is all about – a sense of community, a sense of sharing, examples of experimentation ... and the opportunity for presenters to share with others what they have learned.”

*James Dolgonas
President, Corporation for
Education Network Initiatives in California*



A highlight of the conference included two demonstrations of ultra-high-resolution video streaming – a recorded video stream of otters in Monterey Bay and a live stream from Japan with Atsushi Takahara of Nippon Telegraph and Telephone Network Innovation Laboratories, inventors of the only three cameras in the world capable of recording at this resolution.

Powerful Lessons Offered Through Distinguished Lecture Series

By MC3 John R. Fischer

Four speakers, with a combined holding of eight stars and two senate seats, each told their stories to students, faculty and staff of the Naval Postgraduate School on three occasions of the winter quarter's Secretary of the Navy Guest Lectures.

Highlighting personal experiences and lessons learned about leadership, policy, current operations and ways to forge ahead in the world today, each orator distilled the essence of the changes that today's up-and-coming military leaders can expect, how to affect change in a positive manner, and how to get their people through it all.

"A bridge is a place where the human experience meets an obstacle and overcomes it," said Adm. James G. Stavridis, the NATO Supreme Allied Commander, Europe and the Commander, United States European Command. "A bridge is something that connects us."

The bridges Stavridis, a published author of works on leadership and command, refers to are metaphorical bridges – the connections between people and the ones they build during the course of a lifetime.

"A cross-generational leader needs to be able to have a shared, common experience," said Air Force Gen. Stephen R. Lorenz, Commander of the Air Education and Training Command at Randolph Air Force Base, Texas.

"You have to be able to understand what they're thinking, what they're talking about."

Lorenz, who graduated from the Air Force Academy and holds a master's degree in public administration, spoke intensively about the leadership principles he had learned and developed throughout his career.

"It's an interesting time to be in Washington, but it's a much more interesting time to be in your shoes," commented Sen. Saxby Chambliss, R-Ga., who sits on the Senate Armed Services Committee and the Senate Caucus on Military Depots, Arsenals and Ammunition Plants.

Accompanied by Sen. Lindsey Graham, R-S.C., Chambliss discussed the processes going on in Washington and the differences between policy-making decisions and command and leadership decisions.

Each of the three engagements led the audiences through different paths of thought: knowing what you've got, and how to communicate in a strategic way to move forward; knowing your people and yourself, and how to maintain positive interaction; and a glimpse

into the minds of the people who write our laws and our policies.

Stavridis, the first major speaker of the quarter, dis-

cussed the challenges and opportunities he's presented with in his role as both a U.S. and NATO leader in Europe.

He shared a brief philosophy, not unlike Plato's cave allegory, with the student officers whose experiences he already knew well – that knowledge is only gained through brief moments of enlightenment. "Life is illuminated by lightning," said Stavridis. "You're only exposed to brief packets of information at a time."

Stavridis highlighted several key areas of concern he is involved with: the situation in Afghanistan, Kosovo and the Balkans, the efforts of various nations against piracy, protecting the European energy infrastructure, population and immigration issues, and trade and research opportunities in the arctic north.

Terrorism and cyber security were two of the major points he stressed as well. While cyberspace is another arena, a "global landscape," that presents vulnerabilities, the admiral displayed his confidence in the U.S. 10th Fleet, the U.S. Fleet Cyber Command, which after being dormant since World War II had been reactivated two days before his visit to Monterey.

"We incarcerated more than 500 terrorists last year," he stated. But a concrete end to terrorism is still far from being realized, he said.

Sens. Chambliss and Graham, engaging the NPS audience a few short weeks after Stavridis, made their feelings on the war on terror clear.

"We need to be able to detain, interrogate and neutralize the enemy," stated Chambliss.

Currently under NATO policy, a person may be held for 96 hours – essentially like putting a kid in time-out for being bad. The senators made the point that after that time period the person is right back in the streets, better educated about what we do than we are about what they do.

"We're at war, and we need international rules of engagement to follow our troops out there," argued Graham, who served more than six years of active duty in the Air Force Justice Advocate General (JAG) Corps, and is now a colonel, still serving in the reserves as a senior instructor at the Air Force JAG School. "Reading Miranda Rights to a guy who just tried to blow up an airplane doesn't make much sense. I'm not worried about prosecut-

Offered referred to as a 'Renaissance Man' by those who know him, Adm. James Stavridis offered students a compelling visual tour through his history and current world as Supreme Allied Commander, Europe, and Commander, U.S. European Command.





Above: Senators Saxby Chambliss (R-Ga.), left, and Lindsey Graham (R-S.C.), right, offered strong comments about the war on terror during their presentation. “We’re at war, and we need international rules of engagement to follow our troops out there,” stated Graham.



Left: Air Force Gen. Stephen R. Lorenz, left, Commander of the Air Education and Training Command and NPS President Daniel Oliver, right, engage in conversation following Lorenz’s discussion about the leadership principles he has learned and developed throughout his career.

ing him; I want to know where he was trained, how, and by whom.”

Another concern brought up by the senators was the welfare of native peoples in Afghanistan and Iraq. They raised the issue of the extended conflicts’ effect on the development of the nations. The difference in rebuilding these nations and helping the people to stand on their own feet again has to do with the standing culture’s views on education, they said.

The collateral effects of conflict are much worse in Afghanistan, which has been without any long-term peace for more than 30 years, than they currently are in Iraq, a nation that valued education and scholarly efforts even during the height of Saddam Hussein’s regime.

“It appears the literacy rate in Afghanistan is only about 20 percent,” commented Graham. “What that means is that only one in five of the people we train there can understand written orders.”

Lorenz, as the head of Air Force educa-

tional matters, gave the audience some guiding lights on what they can do to help affect the situations as leaders in these areas.

“There are two things I believe in – one is to make a difference with everything you do, and the second is leave the campground cleaner than you found it,” he said. It doesn’t matter if you’re a seaman or airman, a lieutenant or captain, or a general or admiral, the differences an individual makes can have much greater effects than the individual realizes, he said.

“You’ll never have enough time, manpower or money,” he said, to accomplish everything in perfect, textbook fashion.

The key to getting things done and balancing these shortfalls is to say yes to people, Lorenz said.

“It’s easier to say no to balance the shortfall,” he said. “But saying yes builds your credibility. At the least, take the time to look into whatever it is you want to say no to. If you start saying yes to others, you’ll find that they start saying yes to you.”

All of these combined lessons are but brief moments of illumination for those students, faculty and staff at NPS, as Stavridis would say.

“In this 21st century we must capably launch ideas,” Stavridis said. “You will come of age professionally in a very different world than I encountered when I was in your place. The success we collectively achieve will be tied to the ability of your generation to read, to write, to think and to understand.”

“Life’s a marathon, not a 50-yard dash,” Lorenz told the audience during his closing. “It’s all about getting up every morning and making it through to the end. Don’t stop short.”

The Secretary of the Navy Guest Lectures held at Naval Postgraduate School are a series of professional lectures designed to help students and faculty link their study, teaching and research efforts to the defense needs of the nation. The lectures are by high level authorities and are scheduled at regular intervals throughout the year, and whenever possible.

Bronze Stars, Navy Assistant Secretary Juan Garcia Headline Winter Graduation Ceremonies

By Barbara Honegger

NPS President Daniel Oliver kicked off the ceremony by introducing the keynote speaker, Assistant Secretary of the Navy for Manpower and Reserve Affairs, the Honorable Juan M. Garcia, III.

"It's my honor and privilege to introduce Assistant Secretary Garcia, who truly appreciates the power of graduate education and the value of the Naval Postgraduate School," said Oliver. "We are extremely fortunate to have him in this position of leadership in the Navy today."

Garcia was quick to return the compliment to a kindred spirit.

"In my career, I got to stand on Admiral Oliver's shoulders in the P-3 community, where

he was an icon," Garcia said. "I followed him to Harvard, to a White House fellowship, and I'm now privileged to play a role in managing the Navy he helped to shape as Chief of Naval Personnel."

Garcia then turned to the Winter class.

"It's an honor to be here 100 years into what's been called the Navy's 'crown jewel,'" he said. "In these halls and classrooms have passed heads of state, astronauts, the [current] Chairman of the Joint Chiefs of Staff, chiefs of naval operations, commandants of the Marine Corps, the 'father' of the nuclear Navy, and the architect of the Aegis Navy. Today, you've become a part of that incredible legacy. You were chosen for this prized opportunity because you

are the best, and because you've demonstrated personal potential for making critical contributions to our Navy and our nation ... You are the new leaders of a military that will provide a state-of-the-art anti-ballistic missile defense over the entire free world, but also maintain the capability to take out three pirates with three bullets. Congratulations on your selection and congratulations on graduating from this elite, world-class institution."

Crossing the stage was the first Ph.D. candidate to receive a doctoral degree from NPS' National Security Affairs Department, Korean Air Force F-16 pilot Major Jungsoo Kim. Kim was also the recipient

of the International Student Award for Excellence in Regional or Security Studies and the Kiwanis Club Outstanding International Student Award.

The about-to-be graduates had gathered earlier in King Hall for the Winter Quarter Awards ceremony to recognize outstanding fellow students and faculty who had attained the highest levels of achievement in academics, instruction, research and community service.

Kicking off the Mar. 16 ceremony was the awarding of two Bronze Star Medals to Lt. Hak J. Kim and Cmdr. Joe C. Shipley. Kim received the honor for meritorious achievement in connection with combat operations as a Joint Task Force intelligence officer in support of Operation Iraqi Freedom in which he "ensured the success of numerous ground combat operations resulting in the capture of several high value individuals and the capture or elimination of hundreds of enemy personnel." Shipley, who served with U.S. Navy Headquarters and Headquarters Company, 13th Sustainment Command (Expeditionary), also received his medal for exceptionally meritorious service during Operation Iraqi Freedom which "contributed to the overwhelming success of the command's mission."

The top student award, the Monterey Council Navy League Award for Highest Academic Achievement, went to Marine Corps Major Jonathan Price, who also received the Louis D. Liskin Award for Excellence in Business and Public Policy and the Chief of Naval Personnel Award for Academic Excellence in Manpower Systems Analysis.

"I highly encourage anyone with the opportunity to come to the Naval Postgraduate School," said Price. "I had a great experience at NPS, which is a top-notch university with a great reputation, and I'm really impressed with



Assistant Secretary of the Navy for Manpower and Reserve Affairs, the Honorable Juan M. Garcia, III, keynoted this quarter's graduation ceremony, telling the class of nearly 250 graduates, "You were chosen for this prized opportunity because you are the best, and because you've demonstrated personal potential for making critical contributions to our Navy and our nation."

the quality and professionalism of the faculty, who are extremely adept at applying theory and principles to real-world military issues. I've already put these to good use assisting with current Marine Corps manpower issues and will definitely employ them in my next assignment." After graduating, Price reports to Headquarters Marine Corps, Manpower and Reserve Affairs as the Reserve Plans Officer in Charge.

A special and historic moment in the student awards ceremony was the presentation of the Armed Forces Communications and Electronics Association Award to Engineering Duty Officer Lt. Nathan P. Geisinger. Along with the award, Stanford University Professor Emeritus of Engineering Dr. Thomas Kailath presented Geisinger with a copy of the pioneering textbook "Principles of Communications Engineering" co-authored by NPS' former Dean of Research and Distinguished Professor Dr. John Wozencraft and Wozencraft's MIT alumnus colleague Dr. Irwin Jacobs, which is still in use today. The book bears inscriptions by Jacobs, and by Kailath on behalf of Wozencraft.

Highlighting the faculty awards presentations was the Richard W. Hamming Award for Interdisciplinary Achievement, which went to National Security Affairs Associate Professor and member of the NPS Space Systems Academic Group (SSAG), James Clay Moltz. For two decades, Moltz' research has focused on the dynamic and complex interplay between international politics and military technology.

"In strengthening NPS' and SSAG's impact on the space community, Associate Professor Moltz exemplifies Professor Hamming's commitment to interdisciplinary scholarship and is thus well deserving of this prestigious award," NPS Executive Vice President and Provost Leonard Ferrari said in announcing the selection.

Two faculty awards were announced in absentia. The Wayne E. Meyer Award for Teaching Excellence in Systems Engineering (Distance Learning) went to Lecturer Gregory Miller, and the Lt. Cmdr. David L. Williams Outstanding Professor Award went to Dr. Christopher Bellavita, an expert in special and international events security.

After graduation, the Winter 2010 class gathered in the Barbara McNitt Ballroom in Herrmann Hall with excited family members



and friends to celebrate and witness the cutting of the class cake. The honor of cutting the first slice with the ceremonial sword went to Navy League Award winner Price.

"NPS has world-class instruction in a place that is steeped in history and tradition," said Operations Research graduate Lt. Robert Robinson following the ceremony. "A degree from NPS definitely enhances your career opportunities and helps you advance within your service."

Homeland Defense and Security (HDS) program graduates Lt. Vinicio Mata of the Sunnyvale, Calif. Department of Public Safety and Capt. John Terry of the City of Scottsdale, Az. Fire Department celebrated together after the cake cutting.

"That's [the Scottsdale Fire Department] via the New York City Fire Department," Terry emphasized proudly, "where I was on the HazMat team on 9/11."

Asked if he'd recommend the distance learning security studies program to other first responders, Terry didn't miss a beat. "Do it," he said. "There's no other program like this, where practitioner-scholars are bringing forth ideas that will change the next generation of Homeland Security leaders. I almost can't imagine not being here," he added, "as there's no part of the program that hasn't touched my life."

"Doing the NPS Homeland Security and

Defense program was one of the best decisions I've ever made," agreed Mata. "It was extremely challenging, but the outcome is awesome and the results benefit not only yourself in your career, but your entire department, region and nation."

"What I enjoy most about graduations is talking with the students and finding out what they've accomplished, where they're going, and how they're going to use the expertise they gained here at NPS in their next duty assignments," said NPS Vice President and Dean of Research Karl van Bibber. "As just one example, I talked with a German naval officer who will be immediately applying what he learned in his master's in public policy program to a major reorganization of the German Navy."

Of the 246 graduates, 112 came from the Navy, 21 Marine Corps, 22 Air Force, nine Army and one each from the Coast Guard, National Guard and U.S. Naval Reserve. The class also included 60 Department of Defense civilians and 19 international students from allied and coalition countries. Degrees awarded were two Ph.D.s, 109 Masters of Science, 76 Masters of Arts, 54 Executive Masters of Business Administration, seven Masters of Business Administration, one Electrical Engineer, and three dual degrees. Sixty-five degrees were awarded to students unable to attend due to operational commitments.

Cobra Gold

Presents Physics Faculty, Students 'Golden' Opportunity

By MC3 John R. Fischer



Left: NPS Physics student Lt. Karl Burnett gives Thai Gen. Apichart Penkitti, Thailand's Permanent Secretary of Defense and an NPS graduate, a hands-on briefing and explanation of a prototype Vehicle-Mounted Identification Friend or Foe (VMIFF) device at a technology demonstration during the international Cobra Gold exercise held by Thailand annually. (Photo courtesy of Lt. Karl Burnett.)



Above: Physics Distinguished Professor Nancy Haegel briefs a Marine on the workings of the VMIFF prototype device as they prepare for a live-fire exercise at the Marine Corps Base in Twentynine Palms, Calif., during warm-ups for February's Cobra Gold Exercises. (Photo courtesy of Lt. Karl Burnett.)

A professor, two current students and one alumnus from the Physics Department of the Naval Postgraduate School were recently afforded a great opportunity – to perform field experiments with a device they have developed that could mean the difference between life and death for troops during combat situations. The experiments were part of the international Cobra Gold exercises held in Thailand in early February.

Distinguished Professor Nancy Haegel of the Physics Department, part of NPS' Graduate School of Engineering and Applied Sciences (GSEAS), along with students Lt. Karl Burnett and Lt. Aaron Woolsey, and former student Maj. Eric Rose, traveled to Thailand at the invitation of the U.S. Marine Corps Forces Pacific Experimentation Center to take part in this 29th installation of the annual combined, joint exercise.

"Our team led a demonstration and assessment effort for a Vehicle-Mounted Identification Friend or Foe (VMIFF) device," Haegel explained. "It's a prototype device designed to mitigate fratricide – a triggered warning

signal for pilots and forward air controllers to prevent from engaging friendly vehicles."

The research team and device caught the personal attention of even the Thai Permanent Secretary of Defense, NPS graduate ('75) Gen. Apichart Penkitti.

"We had the benefit of briefing a lot of the top Thai people," said Burnett. "The briefings kept going up and up until we received a surprise visit from Gen. Penkitti. He appeared to be very happy seeing the U.S. and Thailand keeping such an open, healthy relationship." Penkitti is the equivalent of the America's Secretary of Defense.

Cobra Gold offers a chance for more than 20 nations to focus on multilateral peacekeeping operations, humanitarian assistance and disaster relief responses, as well as technology demonstrations. The exercises and technology demonstration provided a golden opportunity for Haegel and her team to put one of their newest devices to work in the field.

"It was more successful than we imagined," remarked Burnett. "Having the results from the Cobra Gold exercise will be invaluable."

The device is intended to prevent blue-on-blue, or friendly fire, engagements during close air support. The NPS VMIFF is simultaneously more covert and more recognizable than other existing devices designed for the same purpose, Haegel said.

The NPS team demonstrated the effectiveness of the device when F/A-18 Hornets, which are equipped for air-to-air and air-to-ground combat, observed and activated the VMIFF during a simulated close air support scenario.

The VMIFF produces a mid-wave infrared (MWIR) signal that can be observed during both day and night operations. NPS' VMIFF work is sponsored by the Rapid Reaction Technology Office within the Office of the Secretary of Defense.

NPS CENTENNIAL FINALE

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the next hundred years.

SCHEDULE OF EVENTS



THURSDAY, MAY 27

10:00AM

STATE OF THE SCHOOL ADDRESS

11:30AM

TIME CAPSULE DEDICATION

FRIDAY, MAY 28

1:00PM

ENRICHMENT LECTURES

7:00PM

WINE AND BEER TASTING

SATURDAY, MAY 29

6:00PM

CENTENNIAL GALA

SUNDAY, MAY 30

11:30AM

SERVICE OF REMEMBRANCE

MONDAY, MAY 31

10:00AM

MEMORIAL DAY CENTENNIAL
CONCERT ON THE LAWN



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Moltz Honored With Annual Hamming Award

Associate Professor James Clay Moltz has been selected as the recipient of the 2010 Richard W. Hamming Annual Faculty Award for Interdisciplinary Achievement. Moltz holds a dual appointment as a professor in both the Department of National Security Affairs (NSA) and the Space Systems Academic Group (SSAG). As an active contributor to both the NSA and SSAG departments, Moltz adds a unique point of view to the discussions and deliberations of each group.

“In strengthening NPS’ and SSAG’s impact on the space community, Associate Professor Moltz exemplifies Professor Hamming’s commitment to interdisciplinary scholarship and is thus well-deserving of this prestigious award,” noted Executive Vice President and Provost Leonard Ferrari in his announcement of the award.

Moltz expressed true surprise when he learned of his recognition, but was quick to credit his departmental colleagues for allowing him to explore his diverse interests.

“I see my award as a tribute to the NSA Department’s willingness to let me develop a course on space policy and also to the Space Systems Academic Group, and especially Chairman Rudy Panholzer, for welcoming a social scientist into their midst,” Moltz said. “NPS has given me wonderful opportunities to work across disciplines and to interact with talented students from both curricula.”

And ultimately, as with any institution of higher learning, it’s the students that should benefit the most. “I find that students in technical fields benefit from having a greater appreciation of the role of politics in shaping outcomes,” Moltz said. “Similarly, students of international relations are on stronger ground when they understand technology and how it can create problems but also stimulate new solutions.

“It’s also very humbling to receive this recognition from persons as highly accomplished as my NPS colleagues,” Moltz added.



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