



NAVAL POSTGRADUATE SCHOOL

IN REVIEW

APRIL 2007

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PROVOST'S MESSAGE



As this issue of *In Review* magazine was being prepared for publication, I had the privilege of turning over the NPS helm to the institution's first permanent civilian president, retired Vice Admiral Daniel T. Oliver.

Secretary of the Navy Donald Winter's appointment of Admiral Oliver brings a distinguished leader to our campus and begins an important new chapter for the Naval Postgraduate School.

Last year, Chief of Naval Operations Admiral Michael Mullen said of NPS, "The school rightly boasts an illustri-

ous past, but I am convinced that its future burns even brighter." I believe that Dan Oliver will provide exceptional leadership and steer the university toward that brighter future.

Vice Admiral Oliver retired from active duty in February 2000 after serving as Chief of Naval Personnel and Deputy CNO. In this role, he guided the service through a critical transition during the post-Cold War drawdown.

Early in his career, he piloted P-3 aircraft, completed eight operational deployments around the world, commanded a patrol squadron and a patrol wing, and served as commander of Fleet Air Forces Mediterranean. Vice Admiral Oliver also commanded air operations during the U.N. embargo of the former Republic of Yugoslavia.

In addition to his assignment as CNP, his flag appointments included leadership positions in four different divisions -- Total Force Training and Education, Assessment, Fleet Liaison and Programming.

After he retired from the service, Admiral Oliver became Executive Vice President of National Security Strategy at Apogen Technologies where he guided programs in both defense systems and homeland security.

This experience will serve NPS well. The U.S. has entered into a new era in national security and, as Admiral Mullen so aptly pointed out, "Knowledge and imagination are the keys to dealing with the challenges of this new era, and here at NPS those keys are forged."

We welcome Admiral Oliver as we continue to support our nation and coalition partners, and as we continue to address the security threats of this young century.

IN REVIEW

NAVAL POSTGRADUATE SCHOOL

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CNO Addresses Navy Corporate Business Course

By MCCS (AW/SW) Jacqueline Kiel

The Naval Postgraduate School's (NPS) Center for Executive Education (CEE) wrapped up another highly successful executive course in March, one which boasted high-level visitors, including Chief of Naval Operations (CNO) Adm. Michael Mullen.

The Navy Corporate Business Course (NCBC) for Captains and GS15 civilians has grown progressively since its inception in September 2004. NCBC is an intensive two-week course that includes weekend and evening meetings. "An important part of the agenda consists of setting up the Navy case, so we begin with as many of the Navy leadership as we can in the first week to understand their imperatives and issues," explained Ron Franklin, CEE director.

While the CNO almost always addresses the course, it is usually via a video teleconference. Having the CNO actually appear in front of the participants was a treat for them.

"In a time of change, a constant is leadership. Communication is critical. I owe you the right kind of pressure, informed pressure and informed guidance," Mullen told participants. "This is an exciting time. We

have lots of challenges and lots of work. I believe when the ground forces come back, fleet forces must deploy. We will learn a lot more about what the riverine force is going to be in the next year."

One participant, Prospective Commanding Officer of USS Theodore Roosevelt (CVN 71) Capt. Ladd Wheeler, found the CNO's discussion held to the theme that he has become quite familiar with, a focus he knew from his previous job as the chief of staff on a type commander staff. "That is the focus on the framework of the Navy Enterprise and the people, the money and the stuff aspect," Wheeler explained. "And that was the CNO's overarching theme that he used to give us worker-level definitions of some of the strategies in this most recent version of the 2007 strategy and vision."

CNO'S visit to the March NCBC was a huge plus for the group. "The feedback from the class was extremely enthusiastic," Franklin stated emphatically. "There's no alternative to having the chief of your business come and chat with you in person, and spend more time than he planned."

Executive Learning Officer of the Navy, retired Vice Adm. Philip Quast calls this group good, but believes all the past groups have been particularly sharp. "They're chosen by both their chain of command as well as their Enterprise leads, and they're chosen on the basis of potential growth in the Navy and leadership positions as well as promotional upward mobility," he explained. "As you can see, when you get the PCO of a carrier in here you're talking a major player."



Adm. Mullen speaks with Navy leaders.

Partnership Strengthens Higher Education for Naval Personnel

By John Sanders

A milestone partnership between Old Dominion University (ODU) and the Naval Postgraduate School was signed in Washington, D.C. on Feb. 12. The education and research agreement fosters greater collaboration between the two universities, increases access to higher education for naval personnel, advances scientific and engineering capabilities of the Navy, and is a catalyst for the development of new Navy technologies.

Vice Adm. John C. Harvey, chief of naval personnel and deputy chief of naval operations for manpower, personnel, training and education hosted Dr. Roseann Runte, ODU president; and Dr. Julie Filizetti, NPS associate provost for academic affairs, at the signing ceremony. The agreement strengthens an initial relationship that was established several years ago when ODU launched its Virginia Modeling, Analysis and Simulation Center (VMASC) in Suffolk, Va.

"We have had a good working relationship with Old Dominion on informal joint projects such as dissertation committee service and standards bodies," notes Dr. Rudy Darken, director of the Modeling, Virtu-

al Environments and Simulation (MOVES) Institute at NPS. There is already an ongoing shared project in joint battle management language and we now want to take this collaboration to a new level to include expanded joint research programs."



(L to R) Dr. Roseann Runte, Vice Adm. John Harvey and Dr. Julie Filizetti.

VMASC Executive Director Mike McGinnis concurs. "This is a strategically important relationship between two nationally recognized centers of excellence in higher education. The agreement will certain-

ly further the body of knowledge in technical areas vital to the security of our nation" said McGinnis, a retired Army brigadier general.

"Higher education enables our people to think critically," Harvey noted. "The Navy needs future leaders who are capable of leading and directing a global organization, working with other services and other nations in an environment characterized by uncertainty, risk and a wide range of cultural sensitivities," Harvey said.

He added that the Navy is now looking for more mission-related degrees and this partnership will bring together exceptionally talented and experienced faculty from both universities to deliver relevant education to officers on the waterfront and at sea.

"We can help our nation address security issues ranging from global terrorism to regional conflict and civil-military relations," stated Dr. Leonard Ferrari, then acting president and provost of NPS. "This new partnership with Old Dominion University will enable us to enhance our academic programs and deliver more mission-relevant courses to the Navy."

Northrop Grumman, NPS Renew CRADAs

by Barbara Honegger



NPS students examine Capstone Project ship design.

Northrop Grumman Ship Systems, Inc. (NGSS) and the Naval Postgraduate School have signed agreements strengthening and extending a partnership that has successfully injected realism into the academic study of ship systems engineering and encouraged innovation in ship design.

At a signing ceremony Feb. 6, NPS acting President and Provost Leonard Ferrari penned extensions of two Cooperative Research and Development Agreements (CRADAs) as NGSS company engineers, now systems engineering and analysis students at NPS, looked on.

"The relationship between the Naval Postgraduate School and Northrop Grumman Ship Systems is win-win," said NPS NGSS Chair Bill Solitario, who joined Ferrari for the ceremony. "Our engineering personnel get a lot out of being students in NPS academic and research programs, and Northrop Grumman's defense industry expertise injects a lot of realism into NPS ship systems design. And, by their very nature, our engineers' ship design studies conducted at NPS complement Independent Research and Development projects carried out at Northrop Grumman."

"We're excited to be able to continue our ongoing working relationship with Northrop Grumman Ship Systems," agreed Department of Systems Engineering Chairman Dave Olwell, who attended the ceremony.

The extended agreements were first signed in April 2003 and January 2004. They provide for cooperative research between the university and the defense contractor in ship

systems engineering and for NGSS sponsorship of the NPS Total Ship Systems Engineering (TSSE) program. They also provide for the company's engineers to enroll in NPS master's degree programs in Product Development for the 21st Century and systems engineering as both resident students and via distributed learning, and establish the NPS Northrop Grumman Ship Systems Chair for Systems Engineering, currently held by Solitario.

Also present at the CRADA extension signings was NPS Associate Professor of Mechanical and Astronautical Engineering Fotis Papoulias, director of the TSSE program and instructor of courses in naval architecture and ship design.

The Northrop Grumman employees attending the ceremony, Henry Nguyen and Mike Matson, are on assignment to NPS as master's students in systems engineering management.

NGSS Director of Contracts Michael Kitchen signed the agreements for the defense contractor, at Northrop Grumman.

The NPS total ship systems engineering program was instituted in 1991. It provides a master's level education in systems engineering methods and Navy ship design processes to students in the mechanical engineering, electrical engineering and combat systems engineering curricula. TSSE students participate as a team in an interdisciplinary capstone project to design an innovative Navy ship. 

Experts Hold Cyber Conflict Workshop

By John Sanders

Several notable experts gathered in March at the Naval Postgraduate School for a two-day workshop called "Cyber Conflict, International Cooperation and Deterrence."

The conference was governed by the Chatham House rule to encourage open information exchange while providing anonymity to participants.

One expert panel explored the cyberthreat posed by state actors and jihadists. While the panelists were split in their views of the threat potential and capabilities of state-sponsored and non-state sponsored hackers, all agreed that other countries are outpacing the U.S. in engineering education. "China graduates four times more engineers than the U.S.," one panelist observed.

Attendees also debated the role of cyber deterrence to mitigate use of the web by terrorist networks and discussed the evolving terminology used to define national security policy in the information domain.

Dr. Dorothy Denning, renowned information-security expert and NPS defense analysis professor, helped organize the conference and moderated one of the panel sessions. The workshop was co-sponsored by NPS, Norwich University and the Cyber Conflict Studies Association.



Navy Leaders View NPS Research

By Barbara Honegger

Seventy student-faculty teams manned poster stations and discussed their thesis projects with senior Navy leaders at a special NPS Research Showcase in the Barbara McNitt Ballroom, Jan. 19.

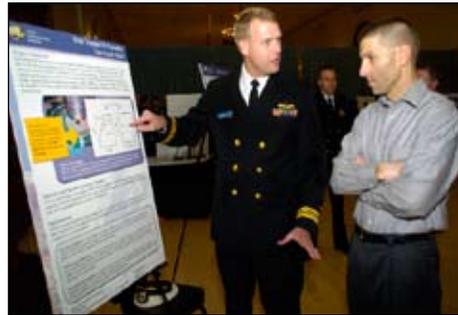
The Office of Research and Sponsored Projects coordinated the event with the Center for Executive Education (CEE) to give Navy captains and high-level Department of Navy civilians an opportunity to explore the broad spectrum and rich depth of NPS research in support of Navy programs. The military and civilian leaders were attending CEE's two-week Navy Corporate Business Course.

"These research showcases have become one of the hallmarks of our executive courses," said CEE Director Ronald Franklin. "The senior officers and GS-15s who are here represent all the warfare areas of the operational Navy including, engineers and technicians from the systems centers that design the Navy's ships, aircraft and submarines. This is the perfect opportunity for them to learn what we do in support of strategic Navy initiatives."

"When we held the first showcase in August, for flag officers, we had a lot of positive

response," said Executive Learning Officer retired Vice Adm. Phil Quast, who sponsored the CEE executive course. "Many came back and said, 'I didn't know this kind of research was going on at NPS,' and wanted to know more, which was exactly the goal."

The Chief of Naval Operations addressed the CEE executive course participants earlier in the day via a video teleconference.



Lt. Cmdr. Brian Harbison explains NPS research to Cmdr. Richard Correll.

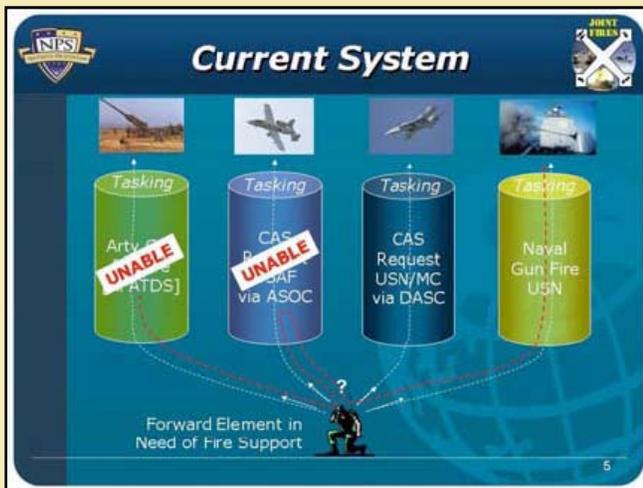
"The CNO reinforced the urgency for this leadership to be aware of the cost of doing Navy business and adopt best practices from the corporate world, because it's the only way we'll be able to afford the Navy of the future,"

said Franklin. "That's why we've reached 200 captains and GS-15s with our Navy Corporate Business Courses and one hundred O-7s and senior executive service civilians with our flag course, and made sure they have a chance to get more detailed information on examples of best corporate practices being applied to military missions at these events."

Examples of student-faculty thesis projects showcased in the poster session were "Thorium Ship Power," "Free Electron Lasers," "Networked Unmanned Aerial Systems," "Homeland Defense and Security Research," "Joint Fires 2020," "Maritime Domain Awareness," "Configurable Fault-Tolerant Processor for Space Applications," "Radar Weather Processing," "Bifocal Relay Mirror Spacecraft," and "Business Case Analysis of a Joint and Advanced Concept Technology Demonstration."

For more information on NPS research projects and programs, go to <http://www.nps.edu/Research/index.html>. To Request a CD of the faculty and student research projects showcased at the event, contact Director of Research and Sponsored Programs Danielle Kuska at (831) 656-2099, dkuska@nps.edu.

"911 for Fire Support"



Research conducted by students in Systems Engineering Department examined methods to develop integrated functional, physical, and operational architectures that efficiently link joint fires requests with weapon-system taskings.

FIRE Knowledge Management Team Wins Navy Technology Excellence Award

By Barbara Honegger

“FIRE has actively contributed to moving experimentation of new technologies ... closer to becoming programs of record.”

presented to Associate Research Professor of Information Sciences Shelley Gallup Jr., the team’s experimentation and analysis project leader, at the Armed Forces Communications and Electronics Association (AFCEA)/U.S. Naval Institute WEST Conference honors reception in San Diego, Jan. 31.

FIRE is a groundbreaking collaborative web portal supporting knowledge management (KM) and decision making for the real-time planning, execution, analysis and reporting of large-scale Navy and DoD experiments, for which NPS has played a key role for nearly a decade. The partially automated enterprise system uses non-proprietary, off-the-shelf hardware and software to deliver accurate, real-time, secure, assured information to authorized Navy, DoD and coalition users worldwide, including at sea. Web-enabled users anywhere in the world can log on, see the database and graphics, and participate in collaborative decisions in real time.

“The Naval Postgraduate School’s FORCEnet Innovation and Research Enterprise team has significantly advanced the Navy’s management of knowledge and effectiveness of decision making in large-scale experiments such as the Naval Network Warfare Command (NNWC) Trident Warrior series, the Navy’s premier FORCEnet sea trials,” the award citation reads. “The team has expeditiously and economically delivered highly sophisticated process improvements and a unique, advanced capability that substantially improves FORCEnet experimentation management of complex experiments.”

“It was a great thrill for me to receive this award on behalf of our group,” said Gallup. “It shows that a very small group working hard to produce useful, reliable results can have a very large impact. Acting Navy Chief Information Officer and Deputy Chief Information Officer for Policy John Lussier sought me out to tell me they had received stacks of nominations for the award, but that FIRE clearly stood out on top.”

“The history of large-scale Naval experimentation management can be divided into ‘before FIRE’ and ‘after FIRE,’” noted Gallup, a former surface warfare officer and 1986 NPS graduate in Space Systems Operations. “Before FIRE, constructing the goals, design, execution, data collection, results analysis and documentation of complex experiments was exceedingly manpower intensive and time consuming, because there was no set structure and little or no automation. FIRE now uses a seamless, comprehensive methodology to provide a single

A Naval Postgraduate School knowledge management team is the winner of a prestigious Department of the Navy Information Management/Information Technology (IM/IT) Excellence Award for 2006 for the creation of FIRE, the FORCEnet Innovation and Research Enterprise. The honor was pre-

authoritative structure that makes the experiment management, data collection, analysis and report development faster and easier with far fewer personnel, because everything is done via the Internet. The system significantly increases participation and shared understanding among as many as 200 planners, and the results of analyses are now available in half the time that they were before.”

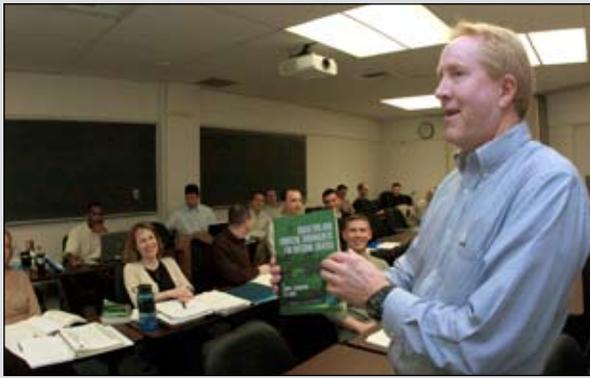
“The secret to FIRE’s success is finding and exploiting the ‘best of the best’ database, portal and collaborative software to provide a rigorous structure that forces people to do certain things in a certain way in a certain sequence that, in turn, ensures the experimentation process is well planned, well executed and well reported,” said KM team co-leader Research Associate Professor of Information Sciences Randy Maule, the key technical expert implementing the system’s architectural vision.

“FIRE has actively contributed to moving experimentation of new technologies, such as ship-to-ship laser communications, closer to becoming programs of record, as well as transitioning programs of record such as Automated Digital Network System and the real-time translation tool Common Chat Line into fleet acquisitions,” Gallup said. “Also, the Rapid Technology Transition acquisition cycle has now actually become rapid -- cut by about 75 percent, down to two to three years.”

In addition to Gallup and Maule, the other members of the award-winning team are senior mentor and KM team co-leader Professor Emeritus and former Physics Department Chairman Gordon Schacher, the original prime mover behind the project; senior mentor and technical writer retired Navy Capt. Jack Jensen; database software developers Information Sciences Research Faculty member Bryan McClain and Research Associate Diane Smith; Research Associate Bill Roeting; and Data Analysis Assistant Sharon Prichard. Naval Surface Warfare Center Corona, Navy reserve teams and Pacific Science & Engineering Group, Inc. also provided experts for the research and experimentation. 

FIRE knowledge management team member Bryan McClain provides a brief on FORCEnet methodology.





Defense Management Expert Elected to ASPA National Council

By Barbara Honegger

Lawrence R. "Larry" Jones, the George F. A. Wagner Professor of Public Management and an expert on defense budgeting and financial management, was elected to the National Council of the American Society for Public Ad-

ministration (ASPA) in February.

The largest public sector management, policy and administration professional association in the nation, ASPA has close to 14,000 members from academe and all levels of government, both in the U.S. and abroad.

"Being an ASPA national council member is, in effect, being a member of its board of directors, responsible for reviewing the policy and operations of the organization," Jones explained. "This is especially an honor, because national council members are elected by members from their region, by mail balloting."

He has been active in the ASPA since the late 1970s and is also the elected chair of the association's section on international and comparative administration. He is the author or co-author of 17 books, 15 written while at the Naval Postgraduate School, and more than 100 journal articles and chapters on international, national and state budgeting and policy, management and budget control, public financial management, and government reform.

Jones began his career as budget analyst and management auditor in the budget division of then Governor Ronald Reagan's State of California Department of Finance, serving from 1971 to 1973. He later served as budget and planning officer for the University of California, Berkeley, working in the chancellor's office.

"I came here as a visiting professor (in 1987) intending to leave after a year or two, and here I am about to hit my 20th year," he noted. "Working for the Navy at NPS with these great students who are officers inside the system, and alongside high-quality faculty as a peer team, is and continues to be the best thing that has happened to me in my career."

Pioneering Space Scientist Wins Hamming Award

By Barbara Honegger

Distinguished Professor of Mechanical and Astronautical Engineering Brij Agrawal is the winner of the Naval Postgraduate School Richard W. Hamming Faculty Award for Achievement in Interdisciplinary Activities for 2006. The award is presented annually in recognition of the NPS faculty member who has made the most significant contributions to integrating multiple academic disciplines in a single noteworthy project.

Agrawal is the founder and director of the NPS Spacecraft Research and Design Center and five state-of-the-art laboratories dedicated to spacecraft design, optical relay, spacecraft attitude dynamics, smart structures and fleet satellite communications. Each lab has unique tools and test beds providing students with guided, hands-on experience in spacecraft and space systems design, testing and acquisition; navigation and fine-pointing attitude control; jitter and thermal control; tracking; adaptive optics; communication systems and remote sensing; high-energy lasers and directed energy.

"I am greatly honored to receive this award, especially as it's given in the name of

Professor Hamming for whom I have high respect," Agrawal said. "It's extremely important, indeed essential, in today's research world to be interdisciplinary. In my field of space systems, all the big challenges can only be addressed by interdisciplinary solutions."

"Professor Agrawal has developed a unique, world-class interdisciplinary research and education program dedicated to solving critical classified and unclassified problems in contemporary military space systems," said Professor of Electrical and Computer Engineering Roberto Cristi in submitting the nomination. "He is a world authority on spacecraft systems design with years of experience in the space industry."

"On the teaching side, Professor Agrawal is the prime motivator behind two extremely successful multidisciplinary spacecraft design course sequences here at NPS and his dedication to students is exemplary," said Space Systems Engineering and Operations Program Officer and military instructor Navy Capt. Al Scott, a masters thesis student of Agrawal's.

Agrawal is the author of *Design of Geosynchronous*

Spacecraft, the first textbook on spacecraft design. The book, which covers all scientific disciplines involved in space systems research and development, is widely used as a textbook in universities and a reference in the space industry.

The Hamming Awards were established in honor of computer scientist Prof. Richard Wesley Hamming by his wife and partner of over 50 years, Wanda Hamming. Following a career that included critical work for the World War II Manhattan Project and Bell Laboratories, Hamming joined the NPS Computer Science Department faculty in 1976 where he proudly "taught future admirals" until his passing in 1998. 



Survivability Text Earns AIAA Book Award

By Barbara Honegger

“It shows that the book...has value.”



Distinguished Professor Emeritus of Mechanical and Astronautical Engineering Robert E. Ball, “The Father of Aircraft Combat Survivability Education,” has won the prestigious American Institute of Aeronautics and Astronautics (AIAA) Summerfield Book Award for his pioneering textbook, *The Fundamentals of Aircraft Combat Survivability Analysis and Design, Second Edition*, the only book to address all aspects of aircraft survivability.

Aircraft combat survivability addresses active and passive man-made threats to the successful operation of military and civil aircraft and missiles and how to design air vehicles to minimize the effectiveness of such threats.

Ball received the award at a ceremony attended by over 1,000 members at the 45th annual Aerospace Sciences meeting in Reno, Nev., Jan. 9. The honor is presented to the author of the book judged the best recently published by the professional association.

“I’m truly honored by this award,” Ball said in an interview after the ceremony. “It’s a good feeling, because it shows that the book, which grew out of the lectures and course notes for my aircraft combat survivability course at NPS -- the first course on the subject taught anywhere in the world -- has value.”

The creator and long-time editor of AIAA’s education series and former senior dean of the Air Force Institute of Technology, Dr. John S. Przemieniecki, underscored the importance of Ball’s book.

“Looking back at all the major AIAA book publications, I am convinced that Dr. Ball’s book made the most significant contributions to the state of the art in the aircraft industry, and specifically to improvements in survivability and reduction in vulnerability of the new generation of U.S. Air Force aircraft now entering the inventory for the new millennium,” Przemieniecki said in support of the nomination. 🏆

NRO Funds Smart Spacecraft Research

By Barbara Honegger

NPS Professor of Mechanical and Astronautical Engineering (MAE) I. Michael Ross may someday be known as the man who freed the robots.

Ross recently won two National Reconnaissance Office (NRO) Director’s Innovation Initiative (DII) awards -- and the more than \$700,000 that goes with them -- to test applications of his revolutionary integration of optimal control theory and autonomous systems. He and his partner in the effort, MAE research scientist Dr. Pooya Sekhvat, are perfecting “smart” chips that compute the real-time optimal controls for freely-moving autonomous craft in space and on Earth.

The first of the two awards is for applying pseudospectral control methods -- a mathematical technique developed by Ross and NPS Mathematics Prof. Fariba Fahroo -- to solve long-standing challenges in the agile steering of spacecraft, or attitude control. The second, shared with the Naval Research Laboratory, is to develop and test an electrodynamic tethered spacecraft system.

“This is a tough competition where only 10 percent of the proposals make the cut,

so receiving two NRO Director’s awards for the same year [2007] is both unique and a great honor for the Naval Postgraduate School,” Ross said. “The NPS Guidance, Navigation and Control Lab is engaged in leading edge research developing revolutionary approaches to autonomous systems in direct support of military and space needs, and these awards show this research is highly valued.”

“The big breakthrough was in realizing that we need to tell autonomous systems what to do, not how to do it, and keep humans out of the inner control loop,” Ross explained. “This means putting a lot more thought and effort into designing the ‘smart’ chip, or brains, of the inner control loop up front, but the payback for doing this is high. We’re continually amazed at the phenomenal feats these smart-and-freed autonomous craft can accomplish, and how much faster and better they reach optimal solutions, without humans getting involved providing constraints.”

The “brains” of Ross’ autonomous spacecraft is a software package called DIDO, used extensively in the defense and space industries and academe to solve

complex optimal control problems in astrodynamics, launch vehicle trajectory design, path planning for unmanned vehicles and missile guidance, and spacecraft control. NASA recently used DIDO to achieve the first-ever zero-propellant maneuvers of the entire International Space Station, saving the space agency close to a million dollars per maneuver.

In addition to Sekhvat, the other members of Ross’ team working on the NRO DII award projects are NPS Applied Mathematics Prof. Wei Kang and NPS Aerospace Engineering Research Associate Dan Sakoda.



Demos Show Modeling, Virtual Environments Research

“They’re a great way to educate the rest of the campus... and catalyze interdisciplinary research here at NPS.”

Naval Postgraduate School faculty, students and staff buzzed around some of the world’s most advanced visualization technology at the second annual Modeling, Virtual Environments and Simulation (MOVES) Institute in-house Open House, March 1.

A suite of rooms in Watkins Hall was dedicated to hands-on demonstrations of 20 MOVES thesis projects of practical use to the warfighter, including a tactile vibrator vest for pilots to counter visual and motion illusions, a helicopter cockpit simulator with surround-screen projection, and 3D visual simulations of terrorist attack scenarios on Pearl Harbor. Faculty-student teams demonstrated products developed at NPS that are now being used in the fleet and field.

“This is the second in-house MOVES open house we’ve held to reach out to NPS faculty, staff and students,” said MOVES Institute Director and Associate Professor of Computer Science Rudy Darken. “They’re a great way to educate the rest of the campus about what we do and to cross-fertilize and

catalyze interdisciplinary research here at NPS. Adding visualization to a project can be the key to explaining abstract concepts to users and sponsors, allowing them to fully grasp its meaning and value. And this, in turn, can make all the difference in funding.”

“What MOVES does is inherently interdisciplinary,” noted the institute’s curricular officer and military instructor Cmdr. Joe Sullivan. “And once faculty and students learn what we have to offer, we hope and expect to become even more so.”

“We want all NPS faculty and students to know that MOVES is willing to add our modeling and simulation expertise to almost every area of study here at NPS on a reimbursable basis,” said MOVES open house coordinator, Computer Science Research Associate and Executive Director of the MOVES Delta 3D Project Perry McDowell. “We’re able to keep the cost down relative to other modeling and simulation providers, and we can also help with video production for podcasting of faculty online courses.”

McDowell noted that NPS faculty are often surprised when they find out that MOVES can help with visualization services.

“I was talking with Information Sciences Research Professor Shelly Gallup, who’s

working on underwater robots searching ships’ hulls for improvised explosive devices,” said McDowell. “I told him about our visualization services and he said he didn’t know he could get that from MOVES. We want everyone here at NPS to know, ‘Yes, you can!’”

NPS students demonstrated a wide range of thesis projects in modeling, virtual environments and simulation.

Turkish Air Force Lt. Mustafa Azimel, an F-16 pilot, is doing his master’s thesis on aircraft flight simulation. “Our Air Force is going to buy new F-35 Joint Strike Fighters and a package of F-35 training and simulation to go with them,” he said. “With what I am learning at NPS, I’ll be able to help choose the right simulation training system for our pilots.”

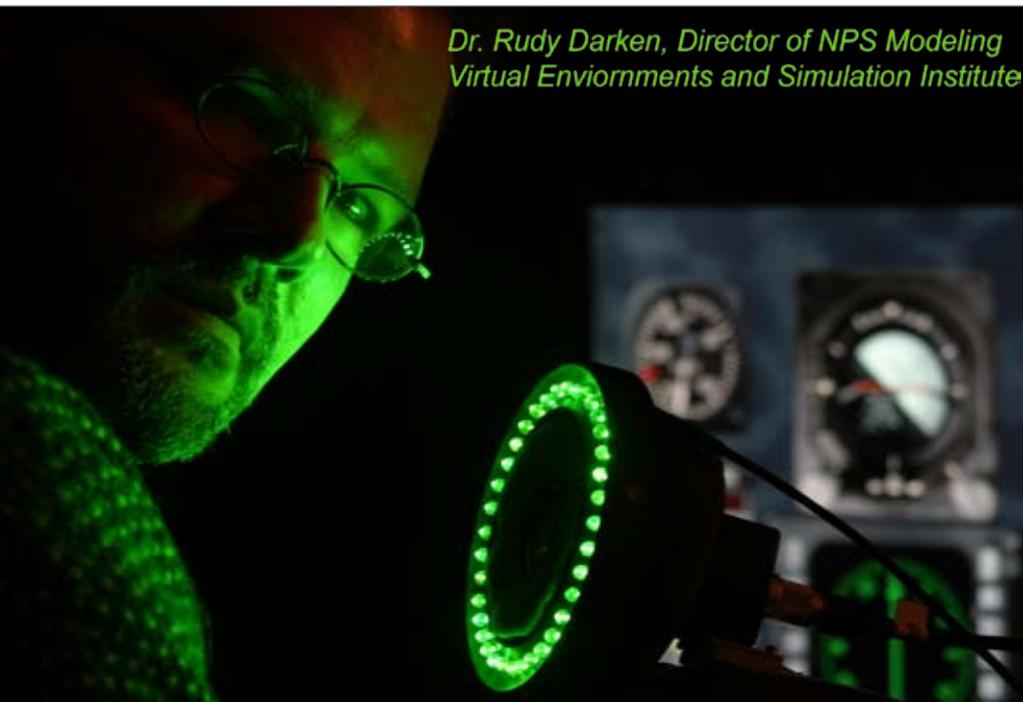
“One of the most important applications of 3D visualization technology is for deployable training,” Sullivan noted. “Pilots can enter a flight simulator in the hangar bay of a ship en route to their area of operation and not lose a minute of valuable training time while at sea.”

Lt. Cmdr. James Brown, a P-3 submarine hunter pilot, demonstrated the Tactor vest, whose tactile vibrators tell you which direction you’re moving in case of blindness, visual illusion or uncertainty. “Once you’ve learned it, it can save your life, and save planes that can cost up to \$2 billion each.”

Lt. Ryan Yusko, an E-2C Hawkeye pilot, showed how computer vision technology can recreate the flight paths of fixed-wing aircraft approaching an aircraft carrier landing. “This is definitely something I wish I’d had when I was learning how to land on a carrier,” he said.

MOVES Research Associate Terry Norbraten demonstrated the Waterside Security and Anti-Terrorism/Force Protection Project’s Scenario Authorizing Visualization for Advanced Graphical Environ-

Dr. Rudy Darken, Director of NPS Modeling Virtual Environments and Simulation Institute





ments (SAVAGE), a super virtual battlefield awareness simulator.

“SAVAGE began with the attack on the USS Cole,” Norbraten noted. “An officer on board said ‘Never again’ and asked ‘How can we prevent this from happening in the future?’ The result is SAVAGE, which we’re able to use to generate and run 3D visual simulations of thousands of permutations and combinations of terrorist red team attack scenarios to

see what the real vulnerabilities are and how best to deter and counter them.”

MOVES was founded by then NPS Computer Science Prof. Mike Zyda, who was its first director. According to Darken, Zyda invited the whole campus to an introductory meeting on how modeling, 3D virtual environment visualization and simulation can enhance research and teaching.

“The way Mike tells it, the whole campus

came,” said Darken. “Like in ‘Field of Dreams,’ MOVES is a true example of ‘Build it, and they will come.’ We have an open door. We hold these in-house open houses so our own faculty and students will know what we’ve built, and so that more and more will come.”

For more information about the NPS MOVES Institute, contact Darken at (831) 656-7588 or darken@nps.edu.

New Book Showcases Faculty Expertise in Military Program Management

By Barbara Honegger

World-class Naval Postgraduate School faculty members have authored more than half the articles in the only book on best practices and lessons learned in U.S. defense program management.

U.S. Military Program Management: Lessons Learned and Best Practices, co-authored by Graduate School of Business and Public Policy (GSBPP) Lecturer and retired Air Force Lt. Col. Rene Rendon, covers all aspects of Army, Navy and Air Force program management from both the government and industry contractor perspectives, including

specific recommendations for future improvements. The book was published in early 2007 by Management Concepts, a private corporation that trains management professionals and publishes articles and textbooks in the field.

"The U.S. Department of Defense and related defense industries develop and operate some of the most complex and expensive systems ever created, which present unique challenges that are systematically and exhaustively addressed in the book," said Rendon, who served for more than 22 years as an acquisitions contracting officer for the Air Force.

"There is simply no other book on military program management based on acquisition research written by experienced military acquisition and contract management practitioners.

"We wanted the book to be the most current and most defense-relevant, which is why so many of the chapters are written by NPS faculty members," Rendon explained. "Where else can you find retired military acquisition practitioners conducting defense-relevant, defense-focused acquisition research but at the Naval Postgraduate School Graduate School of Business and Public Policy?"

While in the Air Force, Rendon was an acquisitions contracting officer for such high-profile programs as the Peacekeeper ICBM, the F-22 Advanced Tactical Fighter and the Evolved Expendable Launch Vehicle. He also conducted research for the Office of the Undersecretary of Defense (Acquisition, Technology and Logistics) and the Navy.

Several NPS faculty had a hand in this endeavor. "Our team of professors has produced a terrific book that reflects the great collaborative strength and depth of scholarship that makes the NPS Graduate School of Business and Public Policy a world leader," said GSBPP Dean Robert Beck.

"The whole idea of the NPS Acquisition Research Program is to get the great work we're doing out to the entire school and the world by

encouraging the faculty to publish, and this book does that in a superb way," said Acquisition Chair Retired Rear Adm. Jim Greene. "It captures and synthesizes a lot of the key research that's been done at the Naval Postgraduate School over the last few years in the area of DoD acquisition management and program management and makes it available in one place. The book is an indispensable resource for everyone in the defense industry and a perfect example of the synergy that only NPS can provide."

The other NPS faculty contributors to the book are GSBPP Wagner Professor of Public Management Lawrence Jones; Professor of Public Budgeting Jerry McCaffery; Senior Lecturers and retired Army Cols. John Dillard, David Matthews and Michael Boudreau; and Senior Lecturer and retired Army Lt. Col. Brad Naegle.

"It's great that the outstanding research NPS acquisition and contract management faculty are doing is getting broader exposure and visibility," Rendon said.

Rendon's principal co-author on the book is Gregory A. Garrett, a highly decorated former Air Force officer and respected defense industry leader, who is currently senior principal at Acquisitions Solutions Inc. (ASI). At ASI, Garrett leads the consulting engagements for all U.S. federal government civilian agencies, including the U.S. Departments of State, Veterans Affairs, Commerce, Agriculture, Treasury, Energy and NASA.

Acquisition Research Symposium

For more information about the Naval Postgraduate School Acquisition Research Program, go to www.acquisitionresearch.org. The Program will hold its 4th annual Acquisition Research Symposium May 16-17 in Seaside, Calif., on the topic "Creating Synergy for Informed Change." Keynote speakers are Delores Etter, Assistant Secretary of the Navy (Research, Development and Acquisition); Shay Assad, Director, Defense Procurement and Acquisition Policy, Office of the Under Secretary of Defense (Acquisition, Technology and Logistics); and Dr. Jacques Gansler, former Under Secretary of Defense (Acquisition, Technology and Logistics).



Defense Innovators Hold Transformation Chairs Meeting

By Barbara Honegger

Defense innovators from the nation's military academic institutions met with senior Pentagon officials at the Naval Postgraduate School Feb. 12-14 for the quarterly meeting of the Transformation Chairs Network of the Office of Forces Transformation and Resources (FT&R), Under Secretary of Defense for Policy, Office of the Secretary of Defense.

"The Transformation Chairs Network is a self-governing, collaborative community spanning all DOD schools educating our future military leaders, with each chair becoming a node for stimulating defense transformation in response to globalization and the information age," said Sue Higgins, NPS transformation co-chair and deputy director of the school's Cebrowski Institute for Innovation and Information Superiority.

"The Office of Force Transformation was established in 2001 to stimulate a culture of innovation in the Department of Defense dedicated to developing and exploiting new concepts of operations," Higgins explained. "Transformation chairs identify and advocate the curricular and research changes needed at DOD educational institutions to realize the network-centric concept of operations for the 21st century."

"The goal of the initiative is to provide our future military leaders now attending DOD educational institutions with better insight into how the transformation process really works, how to make major decisions about resource allocation, and how to think about strategy in the context of transformation," said John Garstka, FT&R assistant director for concepts and operations.

"The first function of the chairs network is to get DOD academic institutions to talk about transformation, and to talk about it seriously," said Forces Transformation Chairs Program Manager Cmdr. Dale G. Fuller, who attended the workshop. "At these quarterly meetings, the chairs can share their successes and challenges in developing particular transformation-oriented courses and research pro-



Dr. Henrik Friman of the National Defence College, Sweden, (left) discusses force transformation issues with NPS Prof. Sue Higgins, deputy director Cebrowski Institute.

grams, as no one institution can develop all of these on their own."

The change-catalyzing network is already paying off.

"Members have been successful in getting blocks of transformation instruction into their core curricula, and many DOD schools now have electives on transformation-related topics like network-centric warfare," Garstka noted.

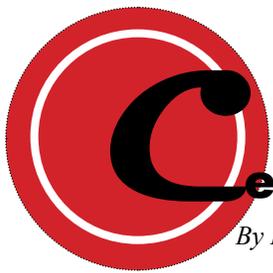
Top Defense Department officials actively participated in the presentations and discussions, including Acting Deputy Assistant Secretary of Defense Terry Pudas, who funds the FT&R's Education for Transformation and Information Age Leaders Initiative. Deputy Assistant Secretary of Defense for Policy Planning Dr. Thomas Mahnken gave the latest thinking on national security trends and potential shocks, and Principal Deputy Assistant Secretary of Defense for Networks and Information Integration Dr. Linton Wells and NPS Associate Professor

of National Security Affairs Dr. Karen Guttieri covered stability, security, transition and reconstruction operations.

Other topics included irregular warfare and information operations, and the future of sea, air and land warfare.

Transformation chairs from NPS, Army War College, Naval War College, Air War College, National Defense University, Defense Acquisition University, Army Command and General Staff College, Air Force Institute of Technology, U.S. Military Academy and U.S. Naval Academy attended the three-day meeting. In addition, the privately funded Marine Corps University chair for innovation and experimentation is a member by invitation. A chair for the Air Force Academy will soon be added.

For more information about NPS transformation programs, contact Higgins at (831) 656-3596 or shiggins@nps.edu. For information on the DOD Transformation Chairs Network, go to www.oft.osd.mil/.



Center for Survivability and Lethality Established

By Barbara Honegger

On Jan. 30, the Naval Postgraduate School announced the creation of the Center for Survivability and Lethality. The new research and education enterprise is the first interdisciplinary center dedicated to making the broad range of U.S. and allied military, homeland security and critical infrastructure platforms more survivable to attack and more lethal to hostile platforms and systems.

Twenty NPS faculty members from the departments of Mechanical and Astronautical Engineering (MAE), Physics and Electrical Engineering have already agreed to participate in the research and education activities of the new center.

"This is the start of something we expect to be huge," said center Co-Director and Associate Dean of the NPS Graduate School of Engineering and Applied Sciences Cmdr. Chris Adams. "The goal is to significantly expand survivability and lethality engineering as a formalized scientific discipline, and become a conduit for research and education funding focused on developing innovative survivability and lethality applications for industry, government and the military."

Survivability Fundamentals

The new center builds upon the pioneering work of Distinguished Professor Emeritus Robert Ball, who founded the first and

only course on all aspects of aircraft combat survivability at NPS in the 1970s and wrote the field's 'bible,' *The Fundamentals of Aircraft Combat Survivability Analysis and Design*.

"In standing up this center, we stand on the shoulders of Bob Ball who is truly the 'Father of Aircraft Combat Survivability Education' and the world's foremost authority in the field," said Adams, a former thesis student of Ball's at NPS. "We're extremely fortunate that Professor Ball has worked on both the aircraft and ship survivability aspects of our new MAE platform survivability course and generously agreed to help with the center."

Adams emphasized the value of extending survivability and lethality research across all platforms.

"Everything that can be built can be built better," said Adams, "and expanding the focus of the engineering discipline from aircraft to all platforms -- ships, missiles, submarines, satellites, tanks, trucks -- will enable us to move our military expertise out to the civilian automobile and aircraft industries."

"The center will support the ongoing NPS missile systems engineering track," said center Co-Director and Associate Chairman of the Department of Mechanical and Astronautical Engineering Knox Millsaps, "as well as pursue critical homeland security and military and civilian infrastructure issues that can benefit

from the same analytical framework."

"In the post 9/11 world, a lot of people are clamoring for survivability education," stressed Adams, who is currently teaching an NPS course on platform survivability and systems reliability, ME 4751. "We knew we were really onto something when this course became the most heavily subscribed ME 4000-level course here at NPS over the last two years. And there are a lot of air combat groups and civilian industry experts who also want to take it via distributed learning."

Some of the other courses which will be taught under the auspices of the center are platform signatures, ship systems, satellites, warheads, weaponeering, directed-energy weapons, electronic warfare, and modeling and simulation.

Industrial Consortium

According to Millsaps, the NPS Center on Survivability and Lethality will also include an industrial consortium through which industry representatives can support its research efforts, take short courses and receive up-to-date publications in the field.

Ball recently won the American Association of Aeronautics and Astronautics Summerfield Book Award for *The Fundamentals of Aircraft Combat Survivability Analysis and Design, Second Edition*.

For more information on the Naval Postgraduate School Center for Survivability and Lethality, contact Adams at caadams@nps.edu, (831) 656-2682; or Millsaps at millsaps@nps.edu, (831) 656-3382. 📧



Co-directors of the new Center for Survivability and Lethality, Associate Dean of the Graduate School of Engineering and Applied Sciences Cmdr. Chris Adams (right) and Associate Chairman of the Department of Mechanical and Astronautical Engineering Knox Millsaps.

Behind the Scenes of Battlestar Galactica

By MCCS (AW/SW) Jacqueline Kiel

There's only one way to get the real story, even if it's for a piece of fiction. Go directly to the source. In this case, the source is the Naval Postgraduate School, and the one seeking information was a scriptwriter.

Bradley Thompson, a scriptwriter and producer for the current version of *Battlestar Galactica*, held a lunchtime talk at NPS in January. He also sat down with students, staff and faculty for some closed-door, intimate discussions. He wanted to talk to real movers and shakers, those who deal with real conflicts and insurgencies. Many of the show's themes are about issues familiar to NPS scholars and students, including asymmetric conflict, civil military relations, religion in government and in war, terrorism and genocide to name a few.

Assistant Professor Karen Guttieri, who teaches in the National Security Affairs department just happened to be at the right place, at the right time, to make the visit happen.

"This isn't a case of me being cool, it's a case of my boyfriend being cool," she explained. "He's a photographer and he's been taking photographs of astronauts and science fiction writers for a book that he's doing on science fact and fiction."

According to Guttieri, he was going to the Nebula Awards in February 2005. Carla Robinson, David Weddle and Bradley Thompson were nominated for a Nebula award. The event held various panels and discussions. One particular panel had many people in attendance asking questions about science fiction. Guttieri asked about the show coming out after September 11th and how much of it reflects the time in which it was written. "I prefaced it by mentioning that I teach at the Navy school," she

explained."

Guttieri's plan was to approach them at an opportune time for a photo op later on. "They approached me," she recalled. "I was actually walking toward them to ask them to come get their picture taken and they approached me and said, 'we're very interested in what you and your students do.'"

Once here, Thompson gave the lunch presentation to a crowd, then held several small groups sessions. Defense Analysis Prof. John Arquilla was instrumental in setting up one of the more intimate sessions that resulted in some poignant and powerful conversations with students who had seen recent combat.

Thompson's girlfriend Peggy Sue Davis, a strategic communication consultant, knows just how important this event was. "Every question that was asked [by the students] was so smart and so relevant," Davis said. "My guess is that Bradley is probably taking away much more from this experience than he feels that he's giving back. What he learns from people like this really informs everything that he writes."

People had various motivations for wanting to see the presentation. "I watch the show sometimes, and just found the study of human nature to be very in depth and dark," said Jennifer Butler, the Flag Administration assistant. "I wanted to see what was behind it."

As a computer science student, U.S. Marine Capt. Byron Harder finds the program's subject matter is quite germane to today's issues. "One of the themes is that the Cylons are basically machines and computers, so they're able to infiltrate computers that might be on the human ship, which is why in the beginning when the Cylons attack in the first show, Cmdr. Adama had followed the

strict policy that there be no network computers on a warship," explained Harder. "Most of the other warships got away from that policy, to include wireless communication in their fighters. That's why they were all destroyed so quickly. It's relevant today, because the world is going more and more toward having everything being integrated, the internet for example. You can't just blindly go down that road without considering the security needs."

It's difficult to tell who got more out of the various sessions. Science fiction buffs were tickled to be able to speak with an actual creator of the program. "It was interesting to hear which of the many topics that the show discusses that other military people like me are interested in," remarked Harder, "and it's also,

as a huge fan of the show, really exciting to talk one-on-one with one of the show's creators."

Thompson was thrilled to be able to spend so much quality time with NPS students, faculty and staff. "It's just an absolute gift to be here and talk to these guys," he emphasized. "Just that room upstairs," he said referring to a small group of students who told war stories for about an hour. "I will be thinking about that for days."

The poignancy of what turned into a close-knit group discussion can't be emphasized enough. "You had to be there," Thompson stated. "They were really opening up, and I felt very privileged to be there. I am not a combat veteran. I haven't gone to those places, done those things. That they would trust me with those feelings is an honor." 🇺🇸



(L to R) Maj. Gregory Reck, *Battlestar Galactica* scriptwriter Bradley Thompson, Lt. Tony Waters and Maj. Cameron Sellers.

General Wallace Delivers Commencement Speech

By Chief Mass Communications Specialist

Martha D. Kennedy-Lindley

NPS awarded Ph.D. and Master's degrees to 233 students March 23 at the Winter graduation ceremonies. The keynote speaker was Gen. William Scott Wallace.

Wallace, commanding general of the U. S. Army Training and Doctrine Command, Ft. Monroe, Va., told the graduates "the challenge I place before you today is to take this world-class education and apply it to real world situations."

A 1979 NPS alumnus who earned a Master of Science degree in Operations Analysis, he spoke from experience. His thesis research led to the adoption of the 120mm gun for the Abrams M-1 Tank. Wallace also told the graduating class to use their education to answer the complex questions in the field.

Twenty-five international students representing eight nations joined members from all branches of military and civilians representing federal, state and local agencies in the graduation.

U.S. Coast Guard Lt. Cmdr. Russell Dash, received a Master of Science in Information Technology Management. The Yorktown, Va., native said, "I chose NPS for the military environment and the ability to learn from my peers in other services."

Dash's follow-on assignment is to Coast Guard Headquarters, Office of Command and Control Policy and Architecture. "My degree and thesis research are directly applicable to my follow on assign-



General William S. Wallace earned his master's degree at NPS in 1979.

ment," he said.

U.S. Army Special Forces Maj. Seth D. Krummrich received a Master of Science in Defense Analysis. He concentrated on Middle Eastern counter-insurgency. "This is a unique program for special operations," he said. "It is a great program and I will do my part to get as many special operation officers as I can to attend."

Medical Service Corps Lt. Richard Gilliard, Jr. was greeted by his family after receiving his Master of Business Administration with a concentration in manpower analysis. His wife spoke for the whole family when she said "We are so proud of him."

Federal Bureau of Investigation Special Agent Erin Beckman and Deputy Chief John E. Ball of the Indianapolis Metropolitan Police Department, both received Master of Arts in Security Studies (Homeland Security and Defense).

The program in security studies is unique according to Beckman, whose thesis involved looking at methods for sharing and tagging information for cross-referencing and cataloguing evidence of possible terrorist activity. "We come to NPS in Monterey

for two weeks every three months," she said. "The rest of the time we have our full-time jobs plus a full course load, but all that work is worth it."

Ball chose NPS because "this program offers advanced executive education – not just training." He is the first person from the state of Indiana to attend the program. He said he is encouraging others to attend, because "this program is by far the best available."

Students, Faculty Honored in Winter Quarter Awards

By Barbara Honegger

The Naval Postgraduate School paid special recognition to members of its faculty and students in its graduating winter quarter class at an awards ceremony March 13 in King Hall.

"This Winter Quarter Awards Ceremony recognizes faculty and students who have attained the highest levels of achievement in the areas of academics, instruction, research and community service," said Dean of Students Cmdr. Debora Monroe in her opening remarks at the event.

Three faculty members received awards for exemplary contributions to research and teaching at NPS.

Distinguished Professor of Mechanical and Astronautical Engineering Brij Agrawal was announced as the winner of the Richard W. Hamming Faculty Award for Interdisciplinary Achievement for 2006. Assistant Prof.

of National Security Affairs Michael Malley won the Lieutenant Commander David L. Williams Outstanding Professor Award, and Professor of Physics Nancy Haegel received the Naval Postgraduate School Foundation Research Award for Excellence in Scientific Research.

Student Awards

Twenty-six student awards were presented at the ceremony, including three dual honors.

Republic of Korea Air Force Maj. Jungsoo Kim received both the Jim and Tina Heldman Award for Excellence in Security Studies and the Naval Postgraduate School Outstanding Academic Achievement Award for International Students. Air Force Maj. Charles E. Westbrook III won the NPS Department of National Security Affairs Outstanding United States Air Force Graduate

Award as well as the Naval Postgraduate School Superior Service Award. Cmdr. Jeffrey F. Hyink was the recipient of the Monterey Council Navy League Award for Highest Academic Achievement and the Chief of Naval Operations Award for Excellence in Operations Research.

Other winter quarter class special honors went to:

Department of Defense civilian Peter P. Eacmen III for the Naval Postgraduate School Outstanding Academic Achievement Award for Department of Defense Student.

Marine Corps Capt. Garrett W. Hager for the Marine Corps Association Superior Service Award for Outstanding U.S. Marine Student.

Air Force Capt. Tiffany H. Bendorf for the Air Force Association Award for Outstanding U.S. Air Force Student.

Lt. Jamie Eden for the Military Operations Research Society Stephen A. Tisdale Graduate Research Award.

Department of Defense civilian Jane Lin for the Rear Admiral Grace Murray Hopper Computer Science Award.

Coast Guard Lt. Cmdr. Russell E. Dash for the Rear Admiral Grace Murray Hopper Information Technology Management Award.

Greek Hellenic Air Force Capt. Themistoklis Papadopoulos for the Commander George L. Phillips Modeling, Virtual Environments, and Simulation Award.

Lt. Jerry T. Kim for the Naval Sea Systems Command Award for Excellence in Combat Systems.

Turkish Navy Lt. j.g. Ali Onu Akar for the Naval Undersea Warfare Center Division Newport Award for Excellence in Undersea

Warfare Technology.

Cmdr. Doug Carpenter won the NPS Graduate School of Business and Public Policy Rear Admiral Thomas R. McClellan Award for Academic Excellence.

Lt. Kim Pizanti for Chief of Naval Personnel Award for Academic Excellence in Manpower Systems.

Air Force Maj. Dennis Curran for the Louis D. Liskin Award for Excellence in Business and Public Policy.

Turkish Army Capts. Kemal Kahraman and Ercan Sokmen co-won the Graduate School of Business and Public Policy Faculty Outstanding International Student Award.

Air Force Capt. John M. Chamberlain V for the Louis D. Liskin Award for Excellence in Regional Security Studies.

Army Lt. Col. Frank Zimmerman for the

Association of the United States Army, General Joseph W. Stilwell Chapter Award for Outstanding Army Student, in absentia.

Department of Veterans Affairs Col. Michael McDaniel for the Zimbaro Award for Graduates of Master in Arts National Security Studies.

Lt. Michael Steven Reed for the Joint Rear Admiral Jack Jarabak/Assistant Secretary of the Navy for Research, Development, and Acquisition/National Defense Industrial Association Award for Excellence in Undersea Warfare Technology.

Lt. Anne M. Laird for the Chief of Naval Operations Undersea Warfare Award.

U.S. Northern Command Cmdr. Michael Peterson for the Curtis H. "Butch" Straub Achievement Award. 🏆

Alumna Tells of Bright Future for IP Community and NPS Role

By Javier Chagoya

Vice Adm. Nancy E. Brown was honored with the Naval Postgraduate School Distinguished Alumni Award March 5. Her thesis advisor in 1982, now the Acting Dean of Research Dan Boger, nominated Brown based on her continuing work in improving the Information Professional (IP) field.

Nearly twenty-five years since graduating from NPS, Brown serves as the director,

Command, Control, Communications and Computer (C4) Systems and is the principle advisor to the Chairman, Joint Chiefs of Staff on all C4 systems matters within the DOD. Her visit to the Information Professional Center of Excellence here provided the opportunity to recognize her contributions to the Navy.

In addition she expressed her passion for the IP community. "When I first got into

the field, we were processing 50 words-a-minute on the teletype. Today data transmission occurs at the speed of light so it's absolutely exploded," said Brown. "It's unbelievable the changes that I've seen, not only in these communications capabilities but also in how we deliver them to the Fleet. The skill sets of the individuals and the growth of the information professional is a realization that it needs to be a Navy career field for our officers."

Brown's career in telecommunications spans 32 years and she explains that although it's her daily work, there is no way she could have the knowledge of the entire field. "It's just too broad," she said.

"I believe that the information professional is the best field in the Navy. We need to pursue the skill sets and develop the capabilities that the Navy needs to fight in this information domain," said Brown.

"In this way NPS is doing a great job in preparing officers and leads in many areas of C4 expertise, especially in the area of information assurance and how we prepare our network specialists to fight infiltrations," added Brown.

During Brown's career, she not only witnessed technological advances in her own field, but observed how the services saw the need for military joint tasking. "We've come a long way and the services are beginning to understand what joint C4 is all about, but we have a lot of work that needs to be done in order for us to realize the benefits technology is going to provide us in the next five to seven years," added Brown.



Former thesis advisor Dan Boger congratulates Vice Adm. Nancy Brown on receiving the Distinguished Alumni Award.

Former Monterey Mayor Inducted into Hall of Fame

By John Sanders

Growing up in the shadow of the famous Hotel Del Monte where his mother worked, Dan Albert and his childhood friends often talked about the remarkable beauty of Monterey.

They played stick ball on a wide sandy street that is now Sloat Avenue, rode their bikes through the sculptured grounds of the great resort, and collected fallen tree branches for firewood.

In February, this local boy who showed the nation how to govern a city with courage, dedication and compassion was inducted into the Naval Postgraduate School Hall of Fame. Albert is the ninth inductee and the first representative from the local community.

Adm. Hank Mauz, a 1965 electrical engineering alumnus and Hall of Fame member who served as commander-in-chief of the Atlantic Fleet during the first Gulf War, hailed Albert as a true NPS hero. He led the City of Monterey with exceptional distinction and honor, Mauz noted, and during the BRAC years, Albert effectively stated the national benefits of retaining NPS as a Navy institution and keeping it in Monterey.

Former White House Chief of Staff Leon Panetta agreed with Mauz. "NPS and DLI are essential to the security of our nation," he said.

Panetta congratulated Albert, who was Monterey mayor for a record-breaking 20 years. "Monterey offers a unique location that enables military families to enjoy their time together despite the intense pace of NPS academic programs," Panetta observed.

"Traveling with the president everywhere in the world, I discovered there is no place more beautiful," he added. "The quality of life here is truly unique and wonderful. It's a great place to work, play and raise your family."

Albert and his wife Joanne were joined by their children and grandchildren for the induction ceremony and dinner. The now-retired mayor spoke of his deep respect for the military services, NPS and DLI. "The military has been with the city of Monterey since the beginning. It's part of the culture, heritage and fabric," he said. "I'm very proud of that."

He said that his signature phrase, "It's a great day to be mayor of Monterey," was an adaptation of an Army general's saying. "I would go to meetings at Fort Ord with General Harrison. He would always end the meetings with the comment, 'It's a great day to be in the Army.' I liked the concept."

With the blue and gold ribbon and Hall of Fame medallion draped elegantly across his chest and shoulders, Albert ended the Hall of Fame evening with a knowing smile, a twinkle in his eye and a wave to his family saying, "It's a great night to be the former mayor of Monterey."

Albert Family.



NPS Hall of Famers Mayor Dan Albert and Adm. Hank Mauz.



Guest artist Erasmo Aiello and the Mike Marotta Band.



Former White House Chief of Staff Leon Panetta.



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House-Reg. John Sanders (Chair), John Sanders (Moderator), Communications & Collaboration: The Navy & USMC at Del Norte	February 22, 2007	Stream / Download / Download
House-Reg. Bradley Thompson (Emcee) for Ballistic Missile	January 22, 2007	Stream / Download



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