The Navy has been thinking about materials research for a very long time. It is a discipline intrinsically linked to maritime history. Ships, and the sailors that travel upon them, rely upon materials research to survive the ravages of war, seawater and weather.

NPS’ Center for Materials Research (CMR) was born out of collaborative measures between faculty and administrators to meet the materials challenges of a modern naval force. Distinguished Professor Emeritus Dr. Terry R. Mc Nelley and Distinguished Professor Dr. Nancy Haegel spearheaded an effort to bring together top young scholars from across the academic spectrum to create the CMR.

“We envisioned a center where we could bring together dynamic, new talent in the materials research field and partner them with seasoned researchers,” said NPS Executive Vice President and Provost Dr. Leonard Ferrari.

“The creation of this competitive, new center demonstrates NPS’ on-going commitment to defense-centered, scientific research in a time when demand for innovative Navy materials solutions has never been greater.”

— Dr. Leonard Ferrari, NPS Executive Vice President and Provost

“The need for sensors and new materials is very important to the fleet,” said Haegel. “The Navy’s needs drove our desire to hire new researchers from a variety of disciplines that could work across the varied fields that encompass materials research.”

“The emergence of the center has enabled us to work across department boundaries and we have managed to strengthen materials activities here at NPS,” said Mc Nelley. “We no longer work in isolation, we have found ways to pull together … You could say that the sum of what we have done is much greater than its individual parts.”

Those “individual parts” include a host of new faculty recruited to reinvigorate materials research at NPS. “The reason that the CMR has coalesced in the manner that it has, is due to the new people that we have brought in. They have begun their own research which has led to new ideas and interests being explored,” said Mc Nelley.

Increased coordination and new minds became necessary as the materials research field advanced at NPS. Modern materials research includes a mind-numbing host of academic specialties — metallurgy, corrosion analysis, nanomaterials, new materials, composites and physics to name a few.
A Message From ...

Executive Vice President and Provost Dr. Leonard Ferrari

As a new academic year begins here at the Naval Postgraduate School, the continuing evolution and development of several educational and research endeavors provides compelling proof of our institution's ability to respond to national security's most critical needs. And it is a response firmly rooted in the niche that this university effectively fills — advanced, unique and relevant graduate education.

A recent example that has rapidly become a strong success is the advancement of NPS' institutional capabilities in the materials sciences. The collaborative approach taken by leadership and select faculty within the NPS Departments of Mechanical and Aerospace Engineering, and Physics has resulted in a vastly improved deliverable to our students, our research enterprise, and our sponsors.

Split between the two departments, a cadre of top young scholars, along with the research and expertise brought with them, has quickly established NPS as an outstanding institution for applied research in this critical maritime discipline. With the establishment of the Center for Materials Research (CMR), under the guidance of some of our most distinguished faculty, NPS can celebrate a true success story of interdisciplinary collaboration for the collective good of the university.

Another critical program that is now beginning to gain strong momentum is NPS' energy program. While the university has an existing, robust research enterprise supporting the Secretary of the Navy's renewable energy initiatives — some of which are underway through the aforementioned CMR — there are now some exciting developments in the creation of educational programs supporting these aggressive initiatives.

Through the dedicated effort of several key faculty and leadership, a matrix of core courses is beginning to take shape, with formal degree programs becoming an imminently reachable goal. While this is still an effort in development, the required resources are bringing clarity to this effort. With existing institutional knowledge and capabilities, the pending deployment of these programs should again prove that NPS has the ability to provide quality advanced education in a demand-driven environment.

The continuing evolution and development of several educational and research endeavors provides compelling proof of our institution's ability to respond to national security's most critical needs.

One of the most visible programs of late has been our efforts in the Cyber Academic Group where, once again, the dedication of an interdisciplinary team of faculty has led to another success story for NPS. The cyber systems and operations curriculum is well on its way to graduating its first core of students, and the program's second curriculum in applied cyber operations is beginning its own efforts, and bringing the NPS education to a new realm of students.

I have often stated that cyber is far from new at this institution. Faculty at NPS have been actively researching and educating on this topic for 15 years, if not more. And that foundation of knowledge, and existing research, has provided a strong backbone for the rapid development of these programs.

NPS' cyber programs are garnering a significant attention, both within the Navy's senior information dominance (N2/N6) and 10th Fleet leadership and through other services as well. A recent joint computer science and cyber systems and operations curricular review brought not only N2/N6 leadership onto campus for detailed discussions, but also included senior officials from the Marine Corps Cyber Command as well. In addition, the university has just welcomed the commanding general of the U.S. Army Cyber Command, Lt. Gen. Rhett Hernandez, onto campus for a very positive exploratory visit and series of briefings.

As each of these efforts continues, there are obvious and critical drivers to their success. Like many advanced universities, an immense collective of faculty knowledge provides an opportunity for NPS to impact a broad spectrum of immediate and future national security challenges. But with the complexities of modern defense needs, it is the interdisciplinary collaborative approach, and the special capabilities and contributions of our unique student population, that drive true success to our efforts. In each of these cases, our faculty have come together to meet the demands placed upon our institution, and I look forward to watching our continued success.

"Update NPS" is a monthly publication for students, faculty and staff of the Naval Postgraduate School produced by the Office of Institutional Advancement. For additional copies, comments, or to suggest story ideas, contact the editorial staff at update@nps.edu.
New NPS Professor Applies Philosophy, Ethics to the Complexities of War
By Amanda D. Stein

The Naval Postgraduate School Department of Defense Analysis (DA) welcomed a new face to the department—an ethicist and philosopher whose fresh perspective has students talking about the ethical implications of war. 

Assistant Professor Dr. Bradley Strawser helps students think critically about the important ethical questions surrounding war. Strawser, a former member of the Air Force, served as a professor at the Air Force Academy and the University of Connecticut before finding his way to the Naval Academy’s Stockdale Center as a postdoctoral research fellow.

And now since joining NPS, Strawser has begun teaching classes in critical thinking and ethical decision making, where students explore ethical challenges in an applied way, drawing from case studies and real-world examples to get to the heart of tough questions.

“I view my job as to push them, challenge them, and get them to wrestle over these deep questions. I hate war—war is a horrible thing. But I do think in some contexts war can be morally justified,” Strawser explained. “And wrestling through that is a complicated, difficult task. I think my main role is trying to push the students to engage in that process of taking the moral questions of what they do for a living seriously.”

As is often the case with conversations of ethics, the ethics of war has its fair share of scholarly debate, particularly once conclusions are reached on which acts of war may or may not be ethical. The DA department looks to empower the students in their ethical decision making, by giving them the tools and resources to explore a number of scenarios — such as the use of unmanned systems to deploy lethal force, or the facets of irregular warfare.

“We are very pleased that Bradley Strawser chose to join NPS,” said DA Chairman and Professor Dr. John Arquilla. “As a philosopher, he adds to the diversity of the DA department faculty. As someone interested in the ethics of going to war justly, and waging war in a moral manner, his expertise is much needed.”

“Students here, when they are not here, are the tip of the spear. They are very concerned, and rightly so, with being discriminate and careful and only engaging when they absolutely have to,” he added. “There really is this trajectory of significant moral improvement in our thinking about war.”

The month of September saw a flurry of curricular reviews held on campus with the change of the academic year. Throughout the month, senior leadership and academic program sponsors were on campus for a series of briefings with relevant faculty and students. During each review, university leadership participated, meeting with key stakeholders to participate in the discussions, and receive feedback from the varied group of program sponsors.

On Sept. 11–13, senior members of the Office of Naval Research Global leadership team met on the NPS campus for a semi-annual strategic review of the organization’s programs. In addition to exploratory meetings with campus administration, ONR Global leaders attended the three-day strategic review to assess the organization’s current status, define its long-range engagement strategy, set command goals for 2013. In between to meetings with NPS leadership, the group’s time on campus was spent touring NPS institutes and laboratories, seeking collaboration with university faculty and staff. Attendees at the strategic review came from all corners of the globe including London, Japan, Singapore and the Washington, D.C., area.

On Friday, September 14, several members of the NPS administration participated in a formal budget presentation in Ingersoll Hall. The meeting provides an open forum where senior leaders can outline the proposed university budget through a transparent presentation. The meeting also provides an opportunity for all faculty and staff understand, first-hand, the analysis and logic behind the development of the institution’s complex budgeting processes.

From the Mezz provides a brief report on the activities of NPS’ senior administration. For more details on any of these reports, please contact the Office of Institutional Advancement at pao@nps.edu.
When Naval Postgraduate School President Dan Oliver welcomed the summer graduation class to commencement ceremonies, Sept. 21, he was greeting one of the largest classes in recent history. More than 400 students earned their advanced degrees this past quarter, including nine doctoral graduates — more than any quarter in the school’s recent history.

The ceremony’s keynote speaker offered another unique aspect to the class … Vice Adm. Mark I. Fox, Deputy Chief of Naval Operations for Operations, Plans and Strategy (N3/N5), was not only the ceremony’s premier speaker, he was also a proud parent with his own son, Lt. Collin R. Fox, a member of this quarter’s graduating class completing a master’s degree in system analysis.

“I’m delighted to speak at the Naval Postgraduate School graduation ceremony … I had originally planned to attend the event only as a proud dad, but the opportunity to address the graduates — including one of my sons — of such a prestigious academic institution is a real honor. I completed the Aviation Safety Officer’s course at NPS in 1986, and appreciate the enduring partnership between the Navy and the local community. It’s always a treat to spend time on the Central California coast.”

Fox began his formal remarks noting that commencement marked the culmination of one phase of many lives, and the “beginning of a new and exciting phase filled with hope and anticipation” for the future alumni.

He recounted the remarkable levels of change that society has seen over the past several decades, but emphasized that advanced education provides the intellectual fuel for that evolution.

“‘We have seen the greatest increase in prosperity in human history in our lives, how has this happened?’ he posed. ‘Good work in hard science and engineering … tremendous growth in the analog to digital age and information technologies have come along. But the real driver, I would submit, has been the movement of goods and services around the globe,’” he commented, with institutions like NPS “representing the brain.”

He focused on the global commons, and the important roles of collaboration in protecting this critical driver of human prosperity.

“I appreciate the opportunity to see teamwork and partnership being formed here with the international students. It would not surprise me to learn that there are future leaders here today that will take their positions around the world and work this incredibly complicated and challenging world that we live in founded on a relationship that began in Monterey. Character and integrity are gardens in our lives that must be tended to every day. We are ultimately defined by our courage, character, and integrity,” he expressed.

A total of 410 students graduated earning 419 degrees this past quarter, including nine Ph.D.s, one mechanical engineer and 47 international students.

Oceanographer and Navigator of the Navy, and Director of Space and Maritime Domain Awareness Rear Adm. Jonathan White, and Naval Meteorology and Oceanography Command Commander Rear Adm. Brian Brown visited the NPS campus, Sept. 23–26, for a curriculum review of the university’s meteorology and oceanography academic programs.

During the visit, Brown and White, both NPS alumni themselves, reviewed student coursework and academic curricula, as well as meetings with leadership and key faculty from the university’s oceanography and meteorology departments. The two flag graduates also met with senior university leadership, as well as participation in student thesis and dissertation presentations. According to Brown, the curriculum review serves to strengthen the education provided to NPS students, as well as improve readiness of the Navy.

“The output of the curriculum review is important to the overall health of our officer community, and it’s also critical for the overall readiness of the Navy,” noted Brown. “How we educate our officers through the topics we cover, the breadth and diversity amongst the skills between oceanography and meteorology, is absolutely important for decision making out in the fleet.”
CHDS Founder Paul Stockton Returns to NPS for Briefings, SGL

By Amanda D. Stein

A familiar face returned to campus, Sept. 25, as NPS welcomed Assistant Secretary of Defense for Homeland Defense and Americas’ Security Affairs Dr. Paul Stockton for a campus visit, discussions with faculty and students, and a Secretary of the Navy Guest Lecture (SGL).

“I’ve had a chance to talk with many students and faculty over the last couple of days,” Stockton explained. “It’s so impressive how NPS is staying at the cutting edge of emerging security challenges for the United States.

“And the thing that impresses me most after having been away [from NPS] for many years is not the NPS that used to exist, but the NPS that exists today,” he added.

The idea of readiness was also at the heart of his message for the NPS community as he delivered the SGL. He hoped to convey the importance of being prepared for not only the kinds of natural disasters that our country has faced before, but also to be prepared for the unknown.

“We need to start rethinking the severity of the catastrophes for which the nation needs to be prepared,” Stockton said. “We are, I think, much more prepared now for a Hurricane Katrina-scale event, but it could be worse. We could face much greater challenges.

“It’s going to require thinking by the military, and collaborative partnerships above and beyond what we have ever had in the past,” he added.

Stockton joined the university in 1990, where he served as an assistant professor in the national security affairs department, director of the Center of Civil-Military Relations, and later, founder and acting dean of the School of International Graduate Studies. In 2002, he established the Center of Homeland Defense and Security, and served as the center’s director until 2006. He was nominated and confirmed for his current position in 2009.

NPS Distinguished Professor Awarded Prestigious OR Prize

By Amanda D. Stein

NPS Distinguished Professor Emeritus Donald Gaver has been announced as the 2012 recipient of the Military Applications Society of the Institute for Operations Research and the Management Science J. Steinhardt Prize. The award recognizes individuals for lifetime achievements in the field of operations research (OR).

“I am pleased and very grateful to have been selected for this award,” said Gaver. “The operations research field is a way of using mathematics and science to deal with operations, whether military or civilian. Its practical uses can include helping to provide scientific guidance into the procurement and employment of weapons systems, or civilian systems like highways and such. I got into this field because it just seemed like an ideal combination of objectives.”

The prize is named for Jacinto Steinhardt, a founding member of the Operations Research Society of America who worked extensively on the philosophy and application of military operations research. Gaver worked with Steinhardt during his time at the Operations Evaluation Group, which later became the Center for Naval Analyses.

The award is an exciting one for the NPS OR department as it marks the third time in a row, and the fourth time overall, that the university’s faculty have been selected for the honor. Past recipients were longtime NPS Professor of Practice Wayne Hughes, and Distinguished Professors Dave Schrady and Al Washburn.

“Distinguished Professor Gaver is most deserving of this award,” said OR Chairman and Professor Robert Dell. “He is a well-known name in operations research and has been so for more than four decades. He has made many substantive contributions to our nation’s military capability and he is still actively contributing. We are extremely fortunate to have had him in our professional and scholarly ranks so long, and have benefited greatly from his substantive contributions.”

From Sept. 7--9, Defense Resource Management Institute (DRMI) Senior Lecturer Allan Polley and Associate Professor Natalie Webb worked in Chisinau, Moldova, with participants from the Ministry of Defense (MoD) and General Staff of Moldova to assess MoD progress in developing and implementing a planning-to-resourcing system. The ultimate goal for the workshop was to provide useful information on how to allocate scarce defense resources among Moldova’s competing security needs.

NPS Spotlight — Distinguished Professor Xiaoping Yun was re-elected Vice-President for Finance 2013--14 for the Institute of Electrical and Electronics Engineers’ Nanotechnology Council.

Defense Analysis Assistant Professor Leo Blanken’s book, “Rational Empires,” was published by the University of Chicago Press earlier this year. The book explores imperialism through an analysis of the institutions of both the expanding state and its targets of conquest.
NPS Evolves Security, Stability and Development Studies for the Civil Affairs Community

By Kenneth A. Stewart

The Naval Postgraduate School has embarked upon an ambitious graduate program designed to educate members of the military's civil affairs community.

The Stability, Security and Development in Complex Operations (SSDCO) program is a graduate certificate program born from the realization that civil affairs studies are central to the prevention of conflicts.

“We are starting to understand that the civil affairs community is central to our strategies abroad,” said program founder, Assistant Professor Dr. Karen Guttieri. “It is important to think beyond war … After the experience in Afghanistan and Iraq, and the Balkans before that, we’ve learned the hard way how to manage civil military operations. We need to capture the lessons of that experience and build institutional knowledge for the future.”

The security and development program is designed to expose civil affairs, psychological operations and legal specialists to advanced legal, socio-political and behavioral concepts.

“Our military professionals work in complex environments with diverse civilian actors, including governmental and non-governmental agencies … Soldiers must understand the dynamics of the human domain, what measures are effective to prevent conflict and to respond when disaster strikes,” said Guttieri.

The SSDCO program prepares its students for these complex environments by combining “boots-on-the-ground” experience with advanced graduate studies — which the group hopes will eventually lead to a modular master’s in public policy with a focus on civil affairs and psychological operations.

“Some of our students complain that they are being placed in civil affairs roles that they were not trained to accomplish. If we can start to fill that educational gap, we can have real impact on the way the military conducts civil affairs operations,” said Graduate School of Business and Public Policy Dean Dr. Bill Gates.

SSDCO classes are interactive with students researching hot-button socio-political topics. On any given day, students debate everything from the affect of social network sites on the Arab Spring to human rights law and just conflict theory.

Guttieri utilized a multidisciplinary approach when developing the program. Her students focus on three core areas, security and stability operations, rule of law, and human behavioral dynamics. Certificates are offered in a modular format that combines in-house instruction with distance learning culminating in a graduate research project.

“The program is still in its pilot phase, but if all goes well, it will become a graduate degree program by fiscal year 2014,” said Guttieri.

Focus On … the Day-to-Day in DA
A Monthly Look at Names and Faces on Campus

Defense Analysis (DA) Administrative Support Assistant (ASA) Carly Capson wears many hats. In addition to serving as the assistant for DA Chairman Dr. John Arquilla, she does a little bit of everything, from payroll and budgeting to coordinating with visitors and guest speakers.

Capson is no stranger to keeping an office running smoothly. Before joining the DA department in 2008, she managed a hair salon, where she met an NPS professor who saw an opportunity to welcome her skills as the new department ASA.

“I like working for defense analysis because the faculty are really diverse in their academic backgrounds. We have historians, mathematicians, anthropologists, English teachers, political scientists, so it makes it interesting to have so many different personalities and backgrounds around you,” she said. “I think that’s my favorite part of the job.”

Capson is also the department’s designated safety officer, which makes her responsible for tracking training and delivering monthly safety briefs. Capson has earned herself a stellar reputation within the department for being proactive and committed to doing her best, according to former DA Chairman, Professor Gordon McCormick.

“Carly is outstanding in every way. I cannot imagine how she could be improved upon. She is smart, a problem solver, unflappable, very personable, and has enormous

initiative,” said McCormick, who was Capson's supervisor for the first three of her four years at NPS. “She solves problems before they become problems. She is also a great example for the rest of the staff; she sets the bar high and contributes to the department’s excellent work environment.”
Any Day at NPS ...

Distinguished Professor Brij Agrawal, left, demonstrates the diversity of research being conducted at the Naval Postgraduate School to Vice Chancellor of Banaras Hindu University Dr. R.P. Singh, center, and Director of the Indian Institute of Technology (IIT) Dr. Khananjay Pandey. Agrawal, himself an alum of IIT, is investigating possible areas for collaboration with his alma mater, Sept. 26. (Photo courtesy the NPS Spacecraft Research and Design Center)

Deputy Director for Information Dominance Advocacy, retired Rear Adm. Andy Singer, speaks with NPS faculty during a feedback session of the department’s curricular review on cyber systems and operations and computer science, Sept. 19. (U.S. Navy photo by Javier Chagoya)

NPS President Dan Oliver, left, presents the university’s Outstanding Academic Achievement Award for International Students to Yan Siong Tng, right, of Singapore’s Defence Science and Technology Agency during the summer quarter’s graduation awards ceremony, Sept. 11. (U.S. Navy photo by MC1 Rob Rubio)

Attendees of the Navy Warfare Development Command and NPS Consortium for Robotics and Unmanned Systems Education and Research Warfare Innovation Workshop (WTW) watch a video-recorded message from U.S. Navy Capt. Vernon Parks, Commodore of Submarine Development Squadron 12, kicking off the latest WTW, Sept. 17. (U.S. Navy photo by MC1 Leonardo Carrillo)

By Lt. Cmdr. Robert Kurrle
Chairman, President’s Student Council

We appreciate all the feedback we are receiving from the student body on ways to improve different aspects of student life. Keep the suggestions coming. Below are updates on Student Council activities:

Department Representatives: Every curriculum at NPS has a student council representative. To find out who your rep is, visit the President’s Student Council webpage on the NPS intranet. If you have any concerns or ideas concerning student life, these people are your first points of contact.

Committees: The Philanthropy Committee recently participated in the Sept. 15 beach clean-up. Future activities include a food and clothing drive to support local homeless veteran organizations. If you would like to get involved, please contact Ray Erickson at rrericks@nps.edu.

Social Events: Student Council is co-sponsoring the Pearl Harbor Remembrance Dinner on Dec. 7 with the Navy League and the Naval Order of the United States. Tickets go on sale Oct. 15 in the ITT office. If you have any questions, contact Meghan Gray (mgray@nps.edu) and Andrew Metzczus (ajmetzczu@nps.edu).

Future Projects: We are looking for some tech savvy students to form a committee that will help us develop a better way to share information. Improving the student check-in page would be the first order of business.

Lastly, we will be holding student council officer elections later this quarter. All three officer positions will be open (chairman, vice chairman, and recorder). Please contact me if you are interested in running for one of these positions.

Lt. Cmdr. Kurrle is the Chairman of the President’s Student Council. Visit the PSC on the intranet at http://intranet/psc/index.html.
A Monthly Look at Names and Faces on Campus

Focus On … Keeping GSBPP Organized

When entering the office of Graduate School of Business and Public Policy (GSBPP) Dean Bill Gates in Ingersoll Hall, Secretary Marie Lou Vossen is the friendly face that visitors see first. She has proudly served as the liaison between the dean and the GSBPP community for the past seven years. This year is a particularly interesting one for GSBPP as it celebrates 50 years of graduate business education at NPS.

In addition to maintaining Gates’ calendar and ensuring he is on time for his appointments, Vossen interacts with the GSBPP’s students and faculty as they advise students about their degree programs and various project proposals. “The faculty staff and students are the greatest,” Vossen noted. “I support them and they support me.”

She is also the go-to for the dean’s conferences, travel and project proposals. “I have access to all of the faculty and the students,” she remarked. “My job is to keep everything organized and make sure that things are moving along. If I don’t do it, little gets accomplished.”

Vossen enjoys interacting with students and the GSBPP staff. “I really enjoy working with them. They are wonderful people.”

Know an exceptional staff member? Have a great research support team? Tell us about them.

send suggestions to update@nps.edu

October 4
Oktoberfest: Beirgarten in the Rose Garden
POC Morale, Welfare and Recreation, 831-656-2170

October 8
Columbus Day

October 13
237th U. S. Navy Birthday Ball
Barbara McNitt Ballroom
POC navyballchairperson@nps.edu

October 15
Tickets available for the 70th Anniversary Pearl Harbor Remembrance Dinner
POC Information, Tickets and Travel Office, 831-656-3223

October 16
Capt. Frank Castellano
Former Commanding Officer of the USS Bainbridge
Secretary of the Navy Guest Lecture
POC Lt. Jenny Phillips, 831-656-2466

October 31
Terror in the Trident Room
POC Morale, Welfare and Recreation, 831-656-2170

Historical Highlights

NPS established two important new programs 25 years ago as it pioneered the development of interdisciplinary studies in electronic warfare and joint command, control and communications in 1977.

Austere defense budgets in the 1970s prompted a series of studies on the role and value of NPS and the Air Force Institute of Technology. Three major studies were completed in 1975, including one by a Department of Defense Select Committee on Excellence in Education chaired by Deputy Secretary of Defense W. P. Clements, Jr.

Clements noted that graduate education was “absolutely vital to defense programs.” His committee took a close look at the antisubmarine warfare and operational naval intelligence interdisciplinary programs NPS had created in the early 1970s — early experimental programs that had been designed to blend traditional academics with specialized warfare-oriented courses.

Historical Highlights are provided by the Dudley Knox Library.