



NAVAL POSTGRADUATE SCHOOL

2009 ANNUAL REPORT | CENTENNIAL EDITION



A YEAR OF TRADITION, CELEBRATION AND DISCOVERY



A MESSAGE FROM THE PRESIDENT

By Daniel T. Oliver

This past year has been a year much like any other.

That statement may surprise many of you who are a part of the Naval Postgraduate School family. This past year marked the beginning of a yearlong celebration honoring the university's 100th anniversary. We rejoiced in our accomplishments, educational excellence and advanced research with direct relevance to national security. We paid tribute to extraordinary graduates and served as advisors to defense leadership on the country's most critical issues. We held first-ever reunions and gatherings in key locations; created lasting monuments that visualize our impact on the world; and reached out like never before to share the story of NPS.

So how can this year – a year of honored tradition, glorious celebration, and eager discovery – be a year like any other? Because I believe our institution accomplishes so much, faces challenge with great resolve, and has the talent and foresight to create lasting legacies worthy of celebration every year.

As I noted, we honored some extraordinary graduates this year, Adm. Mike Mullen and Gen. Michael Hagee, for example. But I would state with confidence that every year we graduate people who make a difference in the world. Our graduates will do remarkable things. They will create freedom for those who did not have it before; they will save lives; they will share our values and invigorate communities across the world; and they will lead nations at all levels, including our own.

We have reflected greatly on our growth since NPS' creation, but we expand and evolve every year ... some years may find that growth in student population, some in sponsored research programs, or some in new countries added to the already 100 that have sent students here. But regardless of where growth may manifest itself, our university has always and will continue to evolve in scholarly sophistication and academic prowess.

I encourage you to read ahead, and learn more about the Naval Postgraduate School and our proud accomplishments in 2009. While our Centennial compels us to honor our past, celebrate our present, and envision what is next, it is exactly what we will continue to do next year, and the years following. Indeed this year is much like any other.

“As NPS moves into its next century, we will continue to provide the highest quality graduate education and research for those individuals engaged in the national security of the United States.”

A MESSAGE FROM THE EXECUTIVE VICE PRESIDENT AND PROVOST

By Dr. Leonard A. Ferrari

This has been an inspiring year for the academic and research communities of the Naval Postgraduate School, with much to celebrate in honor of our Centennial Anniversary. As each month of 2009 passed, I learned of new honors our faculty were achieving, tributes at the highest levels of prestige in academia for accomplishments both in the classroom, and in the laboratory.

As just one of many examples, the year began with two more of our faculty elected to lifetime membership in the National Academy of Engineering, joining a third member inducted last year. The National Academies are the society's most trusted advisory bodies, and this is a tremendous honor – but truthfully, these are just three of the many faculty across every school who were elected fellows of their various professional societies, served as editors of prestigious academic journals, or presented with distinctive, international awards.

Designation as a Distinguished Professor is a mark of highest faculty achievement on our campus, and five deserving professors were given this honor during 2009, recognizing their commitment to research as well as the quality of their teaching. For NPS to effectively carry out its mission, it must be strongly committed to both of those endeavors – excellence in graduate education, and excellence in the research required to support it.

Our strategic plan emphasizes academic quality, and we expanded our efforts in program improvement and faculty recruitment and retention. Our strategic plan emphasizes education of the total force, and we expanded distance education in several programs and began the first advanced Foreign Area Officer graduate program in the country. Our strategic plan emphasizes research in national security, and we expanded our reach to a number of universities and national laboratories with collaborations such as the National Security Institute. We also created the Global Public Policy Academic Group, and expanded our focused research in cybersecurity, field experimentation, national security affairs, directed energy, remote sensing and all of the applied defense sciences.

As NPS moves into its next century, we will continue to provide the highest quality graduate education and research for those individuals engaged in the national security of the United States. We will continue to expand our outreach so NPS will become more recognized within and beyond the defense community as one of the pre-eminent institutions in the U.S. And we will act decisively in proving NPS is just what we have all known it to be, the nation's security research university.



REJOICING IN OUR FIR



It was December 16, 1907, when then President Theodore Roosevelt sent a fleet of 16 freshly-painted white Naval vessels on an unprecedented, 43,000-mile circumnavigation of the world. It would come to be known as the Great White Fleet – it was a movement of peace, a display of strength, and quite frankly, a great challenge in maritime engineering.

By its return on February 22, 1909, Naval leadership had learned a difficult lesson – that advanced technical education could prove very beneficial to their service. It was less than four months later that Secretary of the Navy George von L. Meyer signed General Order No. 27, establishing the School of Marine Engineering on the campus of the Naval Academy, and thus, the Naval Postgraduate School was born.

Over the course of the following 100 years, the university would evolve significantly since those 10 students began their studies in a small attic space in Annapolis. This past year, we began a yearlong celebration, reveling in what NPS has become, and eagerly anticipating what lies ahead.

We held our first-ever campus-wide reunion, inviting all alumni back to Monterey for a weekend of reuniting with old friends and their alma mater. We took a snapshot of faculty and students to our nation's capital, and shared these stories with senior leadership throughout the Departments of Defense, State, Homeland Security and Energy. And we honored some extraordinary graduates, inducting Admiral Mike Mullen and General Michael Hagee into the Naval Postgraduate School Hall of Fame.

ST, AND NEXT, 100 YEARS

NPS proudly welcomed several of its NASA astronaut alumni back to campus during Air & Space Week to share their experiences in space, educate the campus on current initiatives, and learn more about the university's footprint in the final frontier. We created the Centennial Timeline, memorializing our 100-year history in 48 large panels that stretch the entire 1/8-mile façade of Root Hall in the Academic Quad. And our celebrations will continue through the first half of 2010, culminating in our second Reunion Weekend in May.

A centennial anniversary is certainly an appropriate time to rejoice in our current accomplishments and celebrate our history, but perhaps our proudest achievements are those that lie ahead in our next 100 years.



During the university's Centennial Showcase in Washington, D.C., Vice Chief of Naval Operations Adm. Jonathan Greenert was introduced to some of NPS' best ambassadors – its students. Here, he engages Meteorology student Air Force Maj. Louis Lussier in conversation regarding his thesis work in typhoon formation.



A handful of exceptional leaders have walked the stage of King Auditorium to receive a degree from the Naval Postgraduate School, including more NASA astronauts than any graduate institution in the world. Several of them, including retired Navy Capt. Winston Scott shown here during one of his space walk missions, returned to campus for the Astronaut Reunion during Air & Space Week.

“How proud I am to be a part of the Naval Postgraduate School, right now ... I cannot stress enough how much our university has grown over its century of life, how much we have evolved to respond with agility and strength to the issues of the day, and how our products, our students, change the face of the world on a daily basis.”

Daniel T. Oliver
President, Naval Postgraduate School

PROFESSIONALS HAND-SELE

The Naval Postgraduate School is, in many ways, quite similar to any other graduate level educational institution – it is driven by academics, detailed research, and an extraordinary faculty population. But there is one significant and glaring difference between this university and its various peers across the nation, its students.

You will not find young men and women searching for a career path at NPS, that path has already been defined. You will not find students disengaged from their areas of study, they are instead wholly devoted to their crafts with discipline and intelligence.

And there is great diversity in the approximately 1,500 students on campus during any given quarter. While a Naval command, NPS students come from all the uniformed services ... in fact, nearly one half of all students are not Naval officers. In addition to U.S. military students, the university has seen a striking increase in DoD civilians on campus, recognizing that not all national security leaders will be in the armed forces.

But beyond diversity, beyond a drive to succeed, is a simple and distinctive professional approach to learning. Students bring operational experience and integrate it into their learning experiences.

Cmdr. Daniel Pfeiff, an Operations Research student, flew S-3 Vikings looking for semi-submersible submarines used for narcotics transport before coming to NPS. For his research project, he developed a highly detailed and intricate search optimization model that outlines how to utilize current search assets to achieve the best results. And he has briefed this model directly to the task force in charge of searching for these stealthy craft.

Lt. Brian Schultz, an Information Warfare officer in an E-3 squadron, experienced flight delays on recon and surveillance missions as sensor packages would

need to be changed depending on the mission. For his joint thesis along with Marine Corps Maj. Bronchae Brown, Schultz is testing a revolutionary multi-mission sensor pod that could drastically reduce these delays.

The examples are many, actually about 1,500 per year.



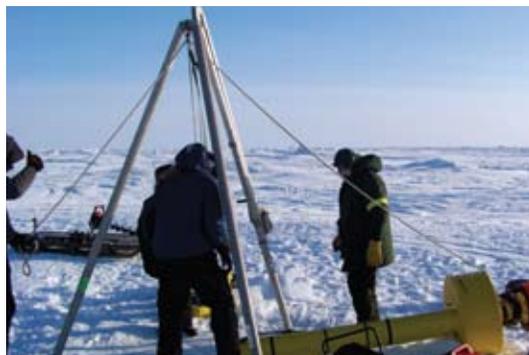
CTED TO LEAD THE NATION



The Naval Postgraduate School enhances the United States' relationships with countless allies across the world. During any given quarter, some 50 countries will have students at NPS, fully integrated into the university's traditional curriculum. In total, more than 100 nations have sent their future leaders here.



Student recognition goes far beyond the campus of NPS in Monterey. Lt. Trevor Ritland, shown second from right, is a dual master's degree student in Business Administration and Operations Analysis and a recipient of three bronze stars. He was one of 19 service members honored at the 2009 White House Fourth of July celebration.



Student research also extends far beyond the campus. Navy Lts. Steve Col and Russ Ingersoll spent several weeks stationed at the Applied Physics Lab Ice Station on the Arctic Ocean performing research for the respective theses topics. Col and Ingersoll, students in the Undersea Warfare and Meteorology/Oceanography programs respectively, are studying the levels of arctic sea ice, how these levels have been changing, and exploring some of the reasons why the changes have occurred.

MENTORING THE NEXT GENE



The driving force behind any institution of higher learning is the Quad, the heart of the academic enterprise where the faculty give life to the various educational structures within it.

At the Naval Postgraduate School, 100 years of faculty development and recruiting have resulted in a cadre of mentors that guide our student population. But one factor that is quite unique about NPS is the close interaction between students and their professors. Class sizes are modest and there are no teaching assistants – students are closely counseled directly by their faculty advisors.

Of course, these mentors are only as qualified as their expertise in each given field, and NPS' group of professionals are widely-recognized as world-renown authorities in their select disciplines.

Take Operations Research Distinguished Professors Don Gaver and Alan Washburn, for example, who joined colleague Distinguished Professor Gerald Brown this year as lifetime members of the National Academy of Engineering, one of the most respected advisory bodies in the nation. Few universities can boast three members with this illustrious distinction, let alone three over the course of a single year.

Then there is Dr. Cynthia Irvine, a well-recognized expert in the fields of cybersecurity and information assurance. Irvine led the effort this year for the

university's designation as a Center of Academic Excellence in both Education and Research by the National Security Agency and Department of Homeland Security. The selection is not only a mark of true prestige in the cybersecurity realm, but also allows NPS to implement several scholarship programs that make the university a hub for tomorrow's generation of cyber security experts.

Of course, the selection of faculty as fellows in their respective discipline societies, or the bestowment of awards, are testaments of stature in academia. And there were several such honors bestowed on faculty across campus – Distinguished Professor Brij Agrawal and Assistant Professor Marcello Romano of Mechanical and Astronautical Engineering were elected as a Fellow and Associate Fellow respectively of the American Institute of Aeronautics and Astronautics; Professor Kevin Smith of Physics was elected a Fellow of the Acoustical Society of America; and, Physics Research Associate Professor John Lewellyn was awarded the U.S. Particle Accelerator School Prize for Accelerator Physics, one of the most prestigious awards in the field.

These are but a few of the many honors bestowed upon the university's faculty across campus.

RATION OF DECISION-MAKERS



Dr. Jomana Amara is an up-and-coming faculty member of the School of International Graduate Studies' Defense Resources Management Institute. Dr. Amara is currently in Jordan on a Fulbright Scholarship where she is researching governmental decentralization, or the transfer of power from a single authority to smaller, individual municipalities.



Many faculty at NPS are well recognized experts in regional and cultural studies, including one of the most tumultuous regions in our current world, Afghanistan. Director of the Program for Culture on Conflict Studies Research Professor Thomas Johnson, shown left, is a frequent contributor to mainstream media like CNN, but more importantly, is also an impassioned advisor to senior officials on policy and strategy and is a member of General Stanley McChrystal's "red cell" of select top advisors.



Retired Rear Adm. James. Greene of the Graduate School of Business and Public Policy knows full well the challenges that impede the defense acquisition process. He is now the Chair of NPS' Acquisition Research Program, whose annual May conference has become a hotbed of innovation in streamlining DoD's acquisition processes.

"The Naval Postgraduate School has long placed a high value on the recruitment of extraordinary faculty. From senior professors with long, distinguished careers in their fields, to rising stars earmarked for success, our academic community can stand beside that of any university in the nation, and stand tall."

Dr. Leonard A. Ferrari
Executive Vice President and Provost

DISCOVERY ON BEHALF O

Research is a critical component to any graduate level academic institution, and the Naval Postgraduate School is certainly no exception. Sponsored research programs at the university pushed over the \$200 million threshold in 2009.

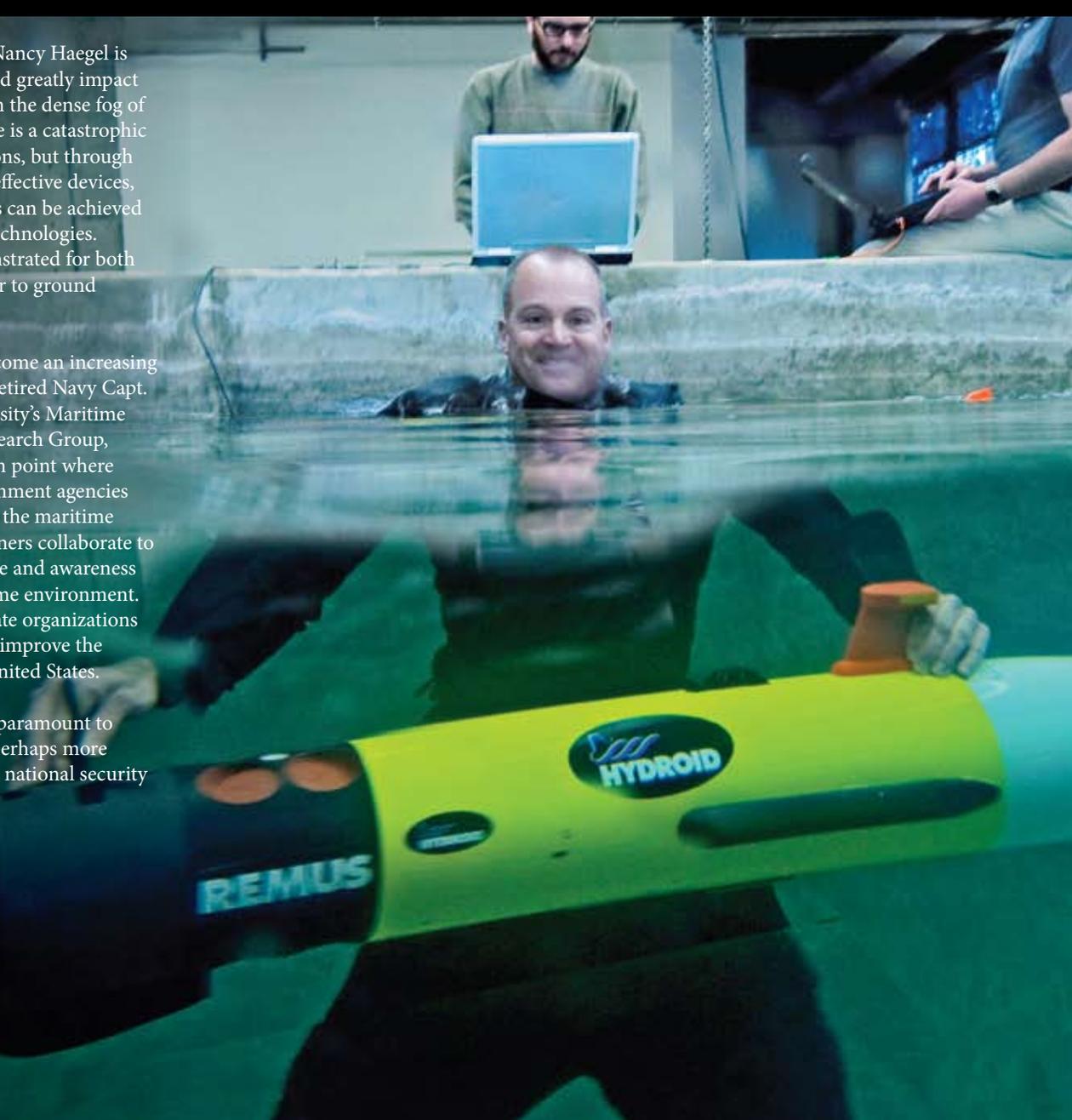
While NPS students play a significant role in developing their own research interests while applying operational experiences, there is another hallmark of the NPS research program – it's direct relevance to improving the national security of the United States.

NPS' Field Experimentation, or FX, program is a rapidly growing effort that develops concepts, creates prototypes and field tests new tools and technologies for operational use in a fraction of the time of typical acquisition processes. Take the SIGEAGLE, for example. Students at NPS recognized that by modifying the widely-used ScanEagle unmanned aerial system, they could achieve a significant improvement in surveillance and situational awareness capabilities. Within nine months, the idea went from concept, to prototype, to field testing, and is now being used by Marines operating in Afghanistan. The FX program has supported a dozen new technologies over the past year that have rapidly moved into the battlefield.

Distinguished Professor Nancy Haegel is leading an effort that could greatly impact the tragedy of fratricide in the dense fog of war. Injury by friendly fire is a catastrophic reality of defense operations, but through the development of cost-effective devices, identifying friendly forces can be achieved using existing targeting technologies. Devices have been demonstrated for both shooter on shooter and air to ground operations.

Maritime security has become an increasing priority in recent years. Retired Navy Capt. Jeff Kline leads the university's Maritime Defense and Security Research Group, an interdisciplinary fusion point where military, academia, government agencies of all levels, national labs, the maritime industry and foreign partners collaborate to create the most knowledge and awareness possible about the maritime environment. Never before have disparate organizations collaborated so closely to improve the national security of the United States.

While research at NPS is paramount to graduate education, it is perhaps more valuable to improving the national security of the United States.



F SECURING OUR NATION



In late 2009, Physics Distinguished Professor Bill Colson acquired Stanford University's free-electron laser (FEL) and now has a lab dedicated to student/faculty research into this futuristic weapon system. The FEL is widely recognized as a revolutionary technology with the potential to change the way Navy ships defend themselves.



Invaluable to the defense of the United States is the protection of our nation's most critical infrastructure systems. From power grids to pipelines, transportation systems to water delivery, several research projects have scrutinized these systems through adversarial eyes, developing detailed models on how best to mount an effective defense.



IEDs, or Improvised Explosive Devices, are one of the most common threats to operating forces in the Middle East. NPS partnered with the Joint IED Defeat Organization (JIEDDO) a number of years ago to actively research every aspect of this issue. More than 25 faculty, along with their students, from nine departments and institutes on campus are actively engaged in every facet of the problem – from monthly detailed analysis on network activity through IED Watch to extensive computer modeling in order to improve situational awareness and detection capabilities.

INNOVATIONS THAT REAC

When faculty and students embark upon their research endeavors, there are often discoveries which benefit mankind as a whole, extending far beyond the boundaries of the United States. While the mission of the Naval Postgraduate School is to enhance the security of the U.S through advanced education, residing in parallel with this is a core value of extending our hands to the world – creating relationships and fostering our nation's friendships across the globe.

Almost all nations suffer from natural disasters of varying forms and severity – predicting these catastrophic events can prove beneficial to families across the world. In May and June of 2009, a group of NPS researchers participated in VORTEX2, an extensive six-week exercise that is the largest tornado research experiment ever conducted.

Using NPS' MWR-05XP Mobile Weather Radar, one of a number of university radar assets used to advance military radar systems, these researchers accomplished something never before achieved. They captured, from creation to dissipation, the complete lifecycle of a tornado. And thanks to extensive upgrades to the radar system spearheaded by then Chair of the Department of Electrical and Computer Engineering Dr. Jeff Knorr, the detail of the data was extraordinary. This has been shared with universities and scientists across the world, and could lead to significant advancements in tornado predictability as this data is analyzed over the coming years.

The miracle of space exploration has been an exclusive endeavor for only a handful of select nations. Dr. Rudy Panholzer, a leader in space systems engineering, along with Visiting Professor and former NASA Astronaut Jim Newman, are guiding student-driven research into the development of a growing international effort, CubeSats. CubeSats are small, inexpensive satellites that are on the verge of revolutionizing space research, bringing low-earth application within the reach of just about anyone, anytime.

Panholzer and his students are innovators in this new field, developing the NPSCuL, or CubeSat Launcher, a unique launching vehicle that integrates a multi-CubeSat launching capability into existing rocket systems. This effort will provide opportunities for space research to governments, academia, and commercial entities across the world that could never have experienced it before.



H BEYOND ALL BORDERS

“So much of our science and technology is truly dual-use ... NPS faculty and students parlay their national security-inspired research into fundamental and applied knowledge that truly benefits human well-being. The Mobile Weather Radar project is a wonderful example – used to monitor theatre missile intercepts, it has now provided the world’s best three-dimensional tomographic movies of killer tornadoes, data that will have enormous impact in the field of meteorology.”

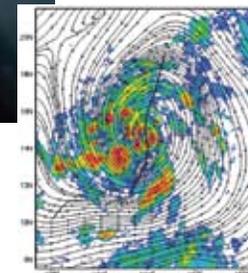
Dr. Karl van Bibber
Vice President and Dean of Research



Research Associate Professor Wieslaw Maslowski is a world-recognized leader in modeling arctic ocean warming and the subsequent ice cap melt, his research and detailed models have caught the attention of environmental experts across the world.



Professor Michael Montgomery is leading an effort into improving typhoon forecasting, and in fact, accurately predicted the location of Typhoon Nuri’s formation in 2008. Through continued analysis of his data, results indicate a strong opportunity to greatly improve typhoon forecasting in the Pacific.



CREATING AN ENVIRONMENT



Education at the postgraduate level extends far beyond the mastery of detailed textbooks or the intricacies of in-depth thesis research. A university campus is its own living environment, where students are not only taught, but are engaged to discover their own thoughts and ideas. Students are presented with differing perspectives from leaders on countless topics, and are encouraged to pursue the examination of their own points of view – in short, to become lifelong learners.

The Naval Postgraduate School is no different from any other university in the world in this regard. Throughout 2009, the institution hosted dynamic leaders from a wide variety of disciplines and backgrounds, providing our students with compelling reasons to pursue learning well after they receive their diplomas.

Top defense officials including Adm. Mike Mullen, Chairman of the Joint Chiefs of Staff and our nation's most senior defense official, engaged students during his acceptance into the NPS Hall of Fame. There were, in fact, countless senior defense leaders, and DoD experts, on campus this past year – Adm. Eric Olson, the highest ranking Navy SEAL ever; retired General John Jumper, former Air Force Chief of Staff; and Michael R. Gordon, *New York Times* Chief Military Correspondent, all spent time on the campus to share their experiences – and that was over the course of just one month.

Academic luminaries motivate our students to look beyond the DoD to a broader framework. Nobel Prize winners Charles Townes, Richard Moeller, Douglas Osheroff, and John Nash, Jr., who is widely recognized

as the subject of the Oscar-winning film, “A Beautiful Mind,” all delivered presentations to students this past year.

Beyond individuals, the university campus also hosts countless conferences throughout the year, most of which are open to NPS students and faculty. Everything from classified level symposia on DoD weapons systems to homeland security conferences, NATO events to regional security workshops take place on the campus, and provide myriad learning opportunities for students and faculty.

NPS, like any university, is an institution of higher learning, where students are not just taught but are encouraged to continue their studies far beyond the walls of classrooms and libraries.

T FOR LIFELONG LEARNING

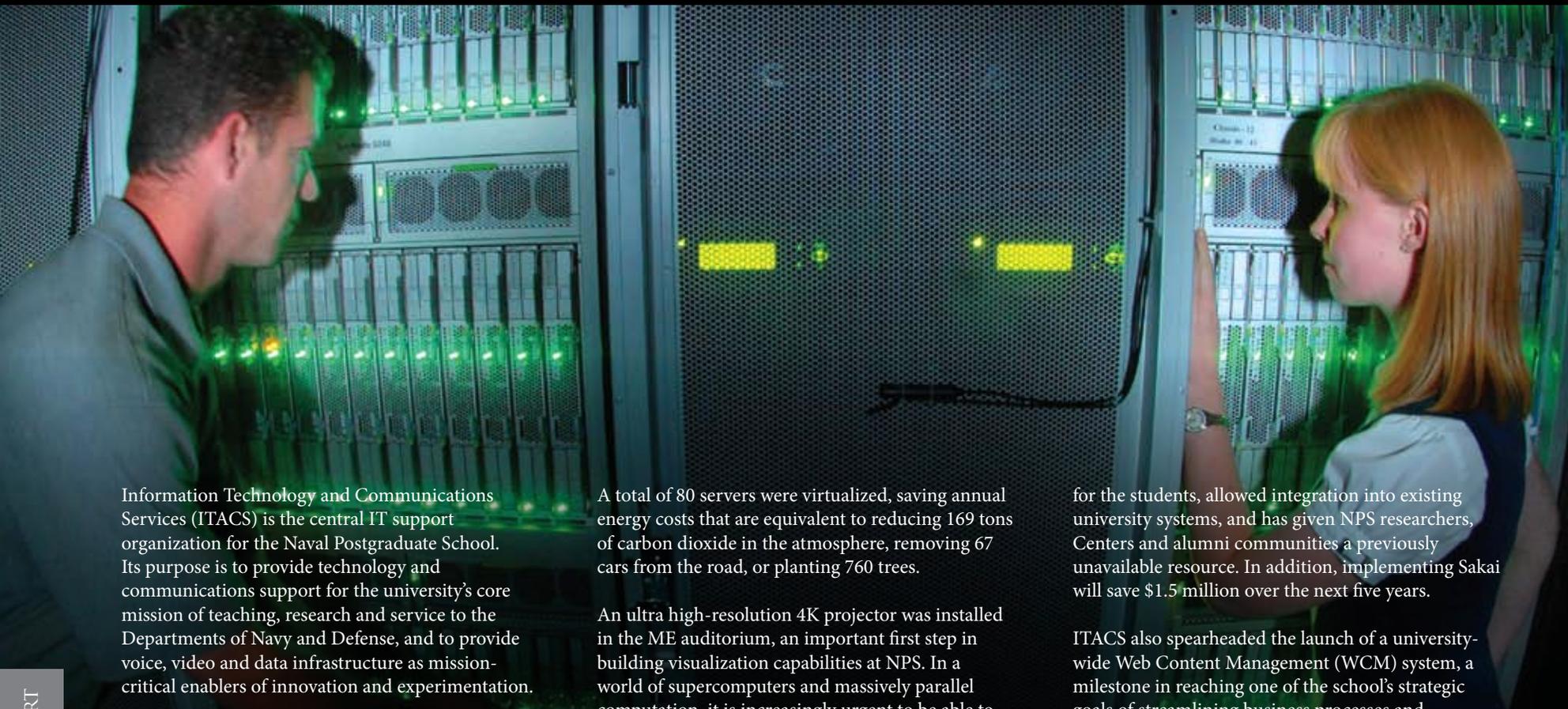


Author and Philanthropist Greg Mortenson and the Central Asia Institute have built 84 schools throughout Afghanistan and Pakistan, he is shown here with students at the Sitara School. During his visit to NPS in May, Mortenson met with National Security Affairs students to answer their questions on his work in this tumultuous region.



The Honorable Ryan Crocker served as the Ambassador to Iraq from March 2007 through February of 2009, and is a recipient of the Presidential Medal of Freedom, the highest civilian award given in the U.S. During his Guest Lecture at NPS in November, Crocker shared an intimate knowledge of the U.S. policies and efforts in Iraq.

PROVIDING THE TECHNOLOG



Information Technology and Communications Services (ITACS) is the central IT support organization for the Naval Postgraduate School. Its purpose is to provide technology and communications support for the university's core mission of teaching, research and service to the Departments of Navy and Defense, and to provide voice, video and data infrastructure as mission-critical enablers of innovation and experimentation.

ITACS had a productive year in 2009, completing the final phase of a three-year major redesign and upgrade to the school's Education and Research Network (ERN), ensuring that individual users now have 1Gbps (gigabit per second) speeds across the NPS network and 10Gbps throughput between buildings across the network backbone to resources on the school's internal network and beyond.

The department also launched a "Green IT" program, in which server virtualization factored prominently.

A total of 80 servers were virtualized, saving annual energy costs that are equivalent to reducing 169 tons of carbon dioxide in the atmosphere, removing 67 cars from the road, or planting 760 trees.

An ultra high-resolution 4K projector was installed in the ME auditorium, an important first step in building visualization capabilities at NPS. In a world of supercomputers and massively parallel computation, it is increasingly urgent to be able to visualize data to more fully understand its properties and dynamism.

Piloting the Sakai Collaboration and Learning Environment (CLE) management system with an eight-member faculty advisory group proved to be a compelling model for change. ITACS implemented Sakai in March 2009, and by October, there were over 270 unique Sakai sites operating at NPS, and 2,200 users in the system. The move to Sakai has improved flexibility and upload speeds for NPS faculty, usability

for the students, allowed integration into existing university systems, and has given NPS researchers, Centers and alumni communities a previously unavailable resource. In addition, implementing Sakai will save \$1.5 million over the next five years.

ITACS also spearheaded the launch of a university-wide Web Content Management (WCM) system, a milestone in reaching one of the school's strategic goals of streamlining business processes and practices. A multi-year project, it was a true case study in partnership – first and foremost with the Dudley Knox Library who volunteered to pilot the system, and then with every major administrative and academic area on campus. The new site now focuses on the great work of NPS faculty and students, an important story to share as the university takes its place among the truly great research institutions.

IES TO ADVANCE OUR MISSION

“Cyberinfrastructure is a crucial element of scholarship and scientific inquiry in 21st century research universities. NPS has a long and important tradition of being at the forefront of technological innovation, and our faculty and students continue to be early adopters and, in many cases, actual developers of new technologies in support of our research and educational mission.”

Dr. Christine Cermak
Vice President of Information Resources
Chief Information Officer



ITACS joined the university's Centennial celebration with its own contribution of programs, events and publications, showcasing the history of technology leadership over the last 100 years at NPS. Here, Professor Emeritus Doug Williams views the ITACS Centennial Timeline with President Dan Oliver, a visual display and testament to the history of information technology and communication services at the university and its critical importance to our institution's future.



Mrs. Wanda Hamming, widow of legendary mathematician Dr. Richard Hamming, joined Provost Leonard Ferrari and President Dan Oliver in a ceremony honoring the installation of the school's 10.7 teraflop Sun Microsystems supercomputer, also attended by Sun Federal President Bill Vass.



The installation of Hamming, named in recognition of one of the university's most lauded faculty, was a testament to the work of the IT Task Force and an example of true collaboration between the Vice President and Dean of Research, the Graduate School of Engineering and Applied Sciences and the Provost, and ranks among the top 1,000 supercomputing systems in the world.

A COLOR TO CAMPUS YOU



WOULDN'T HAVE EXPECTED

Any institution can replace light bulbs and adjust the thermostat, but true environmental stewardship goes far beyond the basic and simple. In fact, going green, as the catch phrase goes, is a cultural effort, and must be firmly rooted in the strategic efforts of the campus.

Environmental protection is not a new initiative at the Naval Postgraduate School. In 2003, the institution led a campus-wide effort to implement an aggressive energy management control system that has literally saved the Navy hundreds of thousands of dollars, and reduced campus energy consumption by 27 percent. Nor is this a new focal point for the Navy, Secretary of the Navy Ray Mabus has placed a high-priority on the Navy's role in protecting the earth.

Over the past year, NPS has led this challenge, undertaking several aggressive initiatives to greatly reduce its footprint on nature. Already underway are heating, ventilating and air conditioning (HVAC) modernization projects to three academic buildings on campus that will greatly reduce their energy requirements while improving efficiency. In fact, by 2011, nearly every academic and administrative building on campus will have highly efficient HVAC systems. And the university has already begun installing solar electricity panels to a number of academic buildings that will generate up to five percent of the institution's total energy requirements.

As a university, however, the Naval Postgraduate School has an even greater opportunity to lead the defense department in research into energy policy and environmental protection. For example, international student Klas Andersson is researching ultra efficient unmanned aerial vehicles that sense and exploit naturally-occurring thermal updrafts that can extend the flight time of these vehicles from just a few hours to all day, greatly reducing their energy requirements. NPS' Cebrowski Institute is supporting The Energy Conversation, a series of guest lectures that brings together energy stakeholders across government to build 'smart' sustainable energy policies and practices. Even futuristic possibilities, such as algae-based biofuels, are actively being researched on the university's campus.

The wide range of forward-thinking technologies, campus infrastructure improvements and research initiatives were showcased late this past year as part of a Centennial Energy Fair. Students, faculty and staff alike were given an opportunity to see how the campus as a whole impacts the environment both in direct footprint as well as fundamental research.

It is indeed part of the culture that has led the campus to add a shade of green to its Navy blue and gold.



Lake Del Monte on the university's campus does far more than provide aesthetic beauty and habitat for a number of freshwater fish, geese and ducks, it also provides 99 percent of the non-potable irrigation water required on campus, and acts as a buffer for the Monterey Bay Marine Sanctuary from storm water runoff.



The university has used a fleet of GEMs, or Global Electric Motors, for several years for facility maintenance staff to get around campus. While current government purchasing restrictions make a complete switch impossible, the Public Works department is pursuing the potential to become a field test site for non-gasoline powered vehicles.

THE VALUE OF PLANNING



This past year has been one of detailed strategic assessment and planning at NPS. The university's five-year *Strategic Plan: Vision for a New Century*, provided the opportunity for reflection on the previous several years and a framework for evaluation and defined goals and objectives moving forward.

The Strategic Planning Council, composed of administrators, academic leaders and faculty, has met quarterly to review each of the major administrative areas' strategic plans, and to evaluate and develop metrics and benchmarking statistics. The evolution

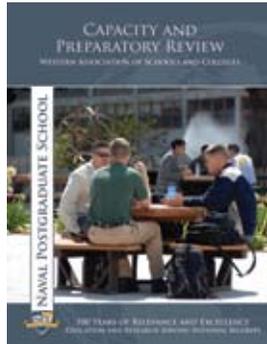
of detailed metrics for the institution is vital to the development of new programs and policies that are effective and productive, while also ensuring that alignment between strategic planning and resource allocation is intact.

The strategic planning process also prepared NPS for the comprehensive examination by the Naval Inspector General, the Navy's Advanced Education Review Board, and the Capacity and Preparatory Review visit of the university's regional accrediting body, the Western Association of Schools and

Colleges (WASC), last March. The second part of the reaccreditation process will occur in October 2010 with the Educational Effectiveness Review, and is expected to offer important recommendations in support of the school's overall mission, and testament to its success.

As NPS moves forward in both WASC accreditation and implementation of its strategic plan, we are focused on detailed metrics development at the academic department level. While sometimes a painstaking effort of extensive detail, it has proven invaluable in the university's ability to lead and evolve.

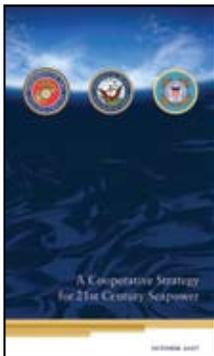
STRATEGICALLY



The university's five-year *Strategic Plan: Vision for a New Century*, has proven invaluable in guiding NPS through its accreditation processes. NPS is not only accredited by WASC, its engineering curricula are also accredited by the internationally-recognized ABET, Inc. In addition, the university's Graduate School of Business and Public Policy is one of only a few institutions in the world to have its graduate management programs accredited by both the Association to Advance Collegiate Schools of Business (AACSB), and the National Association of Schools of Public Affairs and Administration (NASPAA).



After three years of preparation by the university's financial leadership, the Kuali Financial System went live this past year and is now running in parallel with NPS' traditional management systems. Over the next fiscal year, NPS personnel will implement all required reporting functions needed while integrating Kuali with official Navy systems. The launch places NPS at the forefront of its higher education colleagues, implementing this cost-effective alternative to expensive Enterprise Resource Planning software systems.



A Cooperative Strategy for 21st Century Seapower was a historical effort, combining the three U.S. maritime services into a fully-aligned visionary strategy. It not only served as inspiration for NPS' efforts in strategic planning, but also provided a guiding document to ensure the university was fulfilling its role in ensuring the strategy was effectively implemented.

EXTENDING OUR PARTNERS



The Naval Postgraduate School is one of the largest organizations on the Monterey Peninsula – like many universities across the nation, it is a key player within the surrounding communities where its students, faculty and staff live and play.

There are thousands of people either employed by NPS or attending the university as students, and all of them collectively bring a significant contribution to the community's economic vitality and health. Behind agriculture and tourism, education and research is Monterey County's third largest industry, contributing hundreds of millions of dollars to the local economies. The county has embarked on a unique initiative, binding organizations in like industries together to create a unified, strategic approach to economic challenges. NPS has played a key role in this effort, and is in an honored position of leadership within its educational and research institution peers.

NPS students, faculty and staff are also critical contributors to the community through active volunteerism, dedicating an average of approximately seven hours per month per person to charitable service. This is a remarkable figure ... especially given the transient nature of a university's student population.

While the economic and charitable contributions to the local community are both impressive and important, this year has seen the expansion of an even more critical element of the university and the role it can play within the local community. Only 25 miles inland, but seemingly a world away, the city of Salinas wrestles with a tragic plague of gang violence that, from a per capita stance, places it as one of the worst cities for gangland warfare in the country.

Salinas Mayor Dennis Donohue has been at the front of this battle, publicly stating that he must find

a way to engage his community, for if you can win the populace, you may be able to win the war. NPS Provost Leonard Ferrari recognized the similarity with how faculty experts at the university talk about battling counterinsurgencies in Iraq and Afghanistan. NPS faculty advise the highest leaders in the Department of Defense and State, and internationally, on these critical issues, perhaps some of that intellectual capital can be used closer to home.

The university has thus embarked on a unique endeavor. On a voluntary basis, faculty experts and students are applying some of the same tools used to understand village insurgencies to understand gang dynamics, and are hopeful that the knowledge they acquire can help play a role in improving the community. If it is successful, efforts will be shared with cities across the world that suffer from this all too common affliction.

HIPS WITH THE PENINSULA

“NPS is the hidden jewel in the Federal crown of military and government education. Nowhere else does a single dollar of investment go so far in advancing America’s agenda of peace through strength. I am proud of the work done by faculty, staff and students at this institution.”

Honorable Sam Farr
Congressman, 17th District of California



Opportunities for partnership with the community come in many forms. In late 2009, NPS helped provide the backbone for a unique display of technology that could potentially change the way our oceans are researched. Several organizations, including NPS, the Monterey Bay Aquarium and City of Monterey, participated in Project 4K, a live, streaming of an ultra high resolution feed from the Aquarium to the California Institute for Telecommunications and Information Technology on the U.C. San Diego campus.



NPS’ annual Concert on the Lawn, held each Memorial Day weekend, is one of the few opportunities the university has in welcoming the community onto campus. It has proved to be a very popular event over the years, and will be the finale to the university’s Reunion Weekend and yearlong Centennial Celebration.

NAVAL POSTGRADUATE SCHOOL 2009 YEAR IN REVIEW

JANUARY

NPS creates the Global Public Policy Academic Group, pooling interdisciplinary academics to research and design educational programs that study the potential impact of globalization on national security, with a long-range goal of helping to inform and shape national security policy.

The Global Center for Security Cooperation (GCSC) and Defense

Language Institute Foreign Language Center (DLIFLC) sign a historic Letter of Accord, making DLIFLC the newest member of the consortium. Congressional Representative Sam Farr, attending the ceremony, states he is “excited about the global security initiatives that will grow and extend out to the whole world as a result of this agreement.”

To help stem the 50 percent decrease in undergraduate computer science enrollments since 2001, NPS’ Cebrowski

Institute sponsors a three-day working summit, “Rebooting Computing: The Magic and Beauty of Computer Science,” for over 200 representatives in academia, industry, media and government.



NPS celebrates completion of an extension of the network between the university’s main campus and the Golf Course Annex, which houses several unique research laboratories including the Free Electron Laser, Turbopropulsion, Rocket Propulsion and Flash X-Ray labs, all critical facilities to the educational mission of NPS.

FEBRUARY

Over 170 senior officials from 30 NATO member and partner countries as well as representatives from international and non-governmental organizations gather for an NPS-sponsored conference in preparation for the NATO’s 60th anniversary Summit in Strasbourg-Kehl.

A Regional Security Educational Program (RSEP) team of professors and regional experts deliver graduate-level, country/

region-specific cultural briefings to personnel aboard the USS Dwight D. Eisenhower (CVN69) Carrier Strike Group on route to its five-month deployment to the Middle East. Since its inception in 2002 following the USS Cole investigation, RSEP teams have visited every U.S. carrier strike group, reaching more than 150,000 participants worldwide.



MARCH

A signatory on *A Cooperative Strategy for 21st Century Seapower*, also known as the Maritime Strategy, Commander of the U.S. Coast Guard, Adm. Thad W. Allen, delivers the keynote address at the Winter quarter graduation ceremony. Adm. Allen, the first recipient of the Homeland Security Distinguished Service Medal, leads the largest component of the Department of Homeland Security: 40,150 active

duty, 7,000 civilians, 8,000 reservists and 34,000 volunteer auxiliaries.



NPS launches its completely revamped Web site, not only resulting in an overhaul of the appearance of the site, but also implementing a campus-wide Web Content Management system, streamlining content creation and management business processes, one of the core goals of NPS Strategic Plan.

NPS’ Center for Homeland Defense and Security co-hosts the third annual Homeland Defense and Security Education Summit in Washington, D.C., bringing more than 200 stakeholders in government and academia together to advance the discipline of homeland security.

APRIL

Featuring keynote speaker, Dr. David Chu, President of the The Institute of Defense Analyses and a former Under Secretary of Defense, the Foreign Area Officer (FAO) Association of Monterey holds its Third Annual FAO Conference “Today’s FAO: Warrior, Scholar, Diplomat.” The number of FAOs in all services has increased by 50 percent in the last three years, and within the next five years, DoD expects 1,100 more FAOs to enter the community.



The Center for Stabilization and Reconstruction Studies (CSRS), hosted its second economic recovery workshop for representatives of military, government, non-governmental and international organizations and agencies. One of five core themes the Center focuses on, CSRS economic recovery programs explore methods for creating jobs and rebuilding livelihoods in post-conflict environments, highlighting the important role economic recovery serves in maintaining peace and enhancing international security.

MAY

NPS leadership attend the inaugural meeting of the Advanced Education Review Board (AERB). Recognizing education as a “strategic investment in the future capabilities,” DoN established the AERB under the leadership of the VCNO, who provides guidance on the integrated governance of advanced educational policies, programs and institutions. The move aligns NPS with the Naval War College and the U.S. Naval Academy.

Dr. Paul Noble Stockton, professor and former Associate Provost at NPS, is confirmed by the U.S. Senate as Assistant Secretary of Defense for Homeland Defense and Security Affairs. Following the tragedy of 9/11, Dr. Stockton pioneered the notion that graduate-level education could greatly benefit homeland security and actively pursued a partnership between the U.S. Department of Justice and NPS that has become the university’s Center for Homeland Defense and Security.

Dr. William J. Perry, senior fellow at the Hoover Institution and former Secretary of Defense, tours several facilities on campus including the Space Systems CubeSat laboratory. The purpose of his visit was to deliver a special, exclusive lecture, “Dealing with Nuclear Dangers,” to the NPS Foundation Board of Trustees, members and invited guests.



JUNE

Director of the Center for Defense Management Research and former Dean of the Graduate School of Business and Public Policy Douglas Brook, who returned to NPS in January 2009 after serving as both the DoN Assistant Secretary for Financial Management and Comptroller and DoD Acting Under Secretary of Defense (Comptroller) / Chief Financial Officer, delivers the

keynote address to NPS graduates. While in Washington, Brook initiated a new Scholar-in-Residence program that brought NPS faculty to the Pentagon to conduct research.

Currently the only school in the nation that grants a degree in Human Systems Integration (HSI), NPS expands its residential program to include an HSI certificate program for distributed learning students. Started in 2003, the HSI program at NPS recognizes that “the human is

the one constant in the loop of critical components in any complex system,” and advocates a human-centered approach in the design, acquisition, testing and operation of human-machine interfaces.

NAVAL POSTGRADUATE SCHOOL 2009 YEAR IN REVIEW

JULY

Dr. Peter J. Denning, Professor, Chair of the Computer Science department and Director of the Cebrowski Institute, is awarded the Internet Society's 2009 Jonathan B. Postel Service Award in Stockholm, Sweden. Dr. Denning was recognized as one of the four principal investigators that conceived and built the Computer Science Network, or CSNET, one of the building blocks of the modern-day Internet.

NPS' Modeling, Virtual Environments and Simulation (MOVES) Institute opened its doors to the military, defense industry and academia during their 9th Annual MOVES Research Summit. Research Associate Professor Amela Sadagic demonstrates just one of the institute's cutting-edge tools, the Virtual Sand Table, which is used for urban warfare operations training rehearsals. "Advances in modeling, simulation and synthetic environments enable us to significantly improve readiness; have a more flexible, adaptive force; reduce risk

much earlier in the acquisition process, and choose design elements for leap-ahead capabilities without having to buy everything of value," noted keynote speaker Dr. John Tangney, Director of the Human and Bioengineered Systems Division at the Office of Naval Research.



AUGUST

Eight civilian students enroll in master's and doctoral programs at NPS under the DoD-sponsored Science, Mathematics and Research for Transformation (SMART) program, bringing the total number of SMART students at the university to 10. NPS is home to the system-wide SMART Program Office, an aggressive and generous scholarship program targeting the nation's premier minds. The effort is designed to help satisfy DoD's critical need for skilled,

educated leaders to fill various positions across the department.

A team of NPS students from the Mechanical and Astronautical Engineering department win the AIAA Region VI Rocket Launch Competition in Calif. With a primary goal of predicting overall performance, all eight teams were required to assemble, determine weights and balance, develop a reliable and safe return mechanism and predict their rocket's flight time to zenith and altitude.



SEPTEMBER

Commander of the U.S. Special Operations Command, Adm. Eric T. Olson visits NPS, and addresses the student population in addition to a more intimate conversation with Special Operations officers in the Defense Analysis curriculum. Adm. Olson is the first Navy SEAL ever to be selected as a four-star Admiral, and is a 1986 graduate of NPS.



The inaugural in-residence course of the Joint Foreign Area Officer Skill Sustainment Pilot Program is held at NPS. Developed in conjunction with the Defense Language Office, the new program is designed to provide the FAO community with the skills they need to promote U.S. goals for stability, community and growth in a challenging world environment. Residential instruction will be conducted both at NPS and the Defense Language Institute, and abroad as well. The program also includes FAOWEB, an online portal of

critical information and training in service to this growing officer community.

NPS celebrates the 10-year anniversary of the School's partnership with the Naval War College (NWC) in sponsoring Joint Professional Military Education (JPME). Seventy participants earned their NWC Command and Staff diplomas with JPME Phase I certification, bringing the total number of students to 2,000 since the program's inception.

OCTOBER

Recognizing her pioneering contributions to the field of Information Assurance, Defense Analysis Distinguished Prof. Dorothy Denning helps commemorate the official naming ceremony of the Dr. Dorothy E. Denning Center of Academic Excellence in Information Assurance Education, established in 2007 by the Professional Security Studies Department and recognized by the College of Professional Studies at New Jersey

City University. The Board of Trustees institutionalized the naming of the Center in February 2009 after receiving endorsements from the university's President and Senate.

The Wayne E. Meyer, DDG-108, is commissioned during a ceremony in Philadelphia at Penn's Landing. Rear Adm. Wayne Meyer, an NPS Hall of Fame Member, is widely-recognized as the "Father of Aegis," a revolutionary air-defense system now carried on over

100 naval vessels. Meyer, who passed away just one month prior, had always dreamed of a ship in "his Navy" bearing his name. Coincidentally, the ship's inaugural Commanding Officer, Cmdr. Nick Sarap, Jr., is also an NPS graduate.



NOVEMBER

Retired Air Force Gen. John P. Jumper, former Air Force Chief of Staff, delivers a Secretary of the Navy Guest Lecture to the NPS student body. He offered a solemn reminder to the audience of the costs of war in human lives before he discussed the costs in dollars and time. "It always is helpful to remind ourselves of the consequences of a world gone wrong," Jumper said. "Each service has its own set of numbers we should try to remember

when we talk about responsibilities. Responsibilities I have had, and responsibilities you will have."

Colombian General Freddy Padilla deLeon visits the Naval Postgraduate School campus with a small group of officials to learn more about the university. DeLeon is Colombia's equivalent to our Chairman of the Joint Chiefs of Staff. One of the U.S.'s oldest allies in Latin America, the Colombian delegation visited a small group of hand-picked commands. NPS

welcomes international delegations on a near monthly basis, and is in a position to greatly enhance the relationships the United States has with allied nations.



The California Chapter of the American Physical Society holds its annual meeting on the campus of the Naval Postgraduate School, one of several academic discipline organizations that hold meetings on the university's campus.

DECEMBER

Rear Adm. Nevin Carr, Jr., Chief of Naval Research, joins NPS leadership in a ceremony opening the Free Electron Laser (FEL) Laboratory. Carr, a 1986 NPS graduate, recently placed the FEL into the Innovative Naval Prototype program, an effort of the Office of Naval Research which dedicates 10 percent of its annual budget to advanced research on futuristic technologies.



Adm. Henry Mauz, Jr., an NPS Hall of Fame alumnus, delivers the keynote address during Fall graduation ceremonies, the final graduating class of the year. A former Commander in Chief of the Atlantic Fleet, Mauz was inducted into the NPS Hall of Fame in 2003. In addition to appointments to a handful of corporate Boards of Directors, Mauz now serves of the Chairman of the Board of the NPS Foundation.

NPS AT A GLANCE

STUDENTS AT THE NAVAL POSTGRADUATE SCHOOL

NPS averages approximately 1,500 resident students per year. More than 90% of resident students at NPS achieve graduation, with an average to time degree of approximately 20 months. NPS is also aggressively expanding its distance learning programs, which now serve more than 700 students per year.

STUDENTS BY SERVICE/COUNTRY

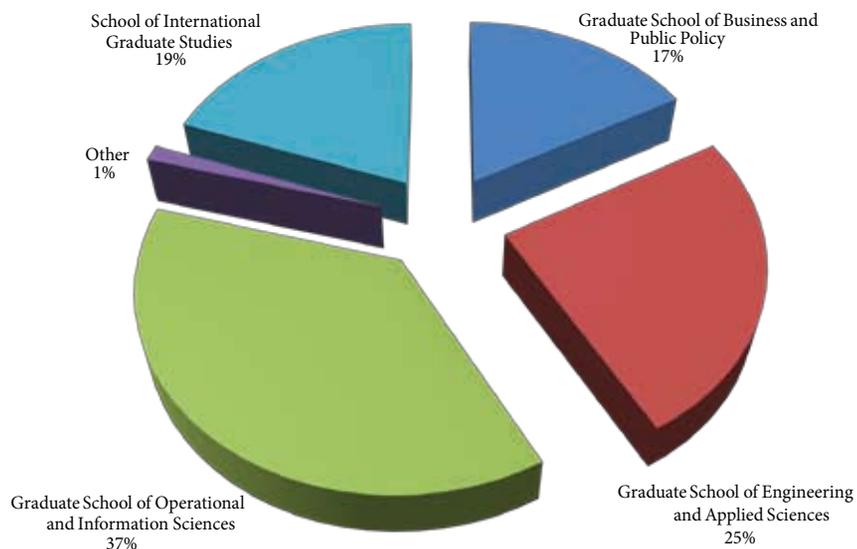
<u>TYPE OF STUDENT</u>	<u># OF STUDENTS</u>
U.S. Navy	675
U.S. Marine Corps	196
U.S. Army	173
U.S. Air Force	148
Civilian	105
Other	9
Albania	1
Australia	4
Azerbaijan	2
Bahrain	3
Bosnia-Herzegovina	1
Brazil	5
Cameroon	1

<u>TYPE OF STUDENT</u>	<u># OF STUDENTS</u>
Canada	3
Chile	1
Colombia	3
Czech Republic	1
Georgia	1
Germany	12
Greece	47
Hungary	4
India	1
Israel	1
Japan	1
Jordan	1
Kenya	4

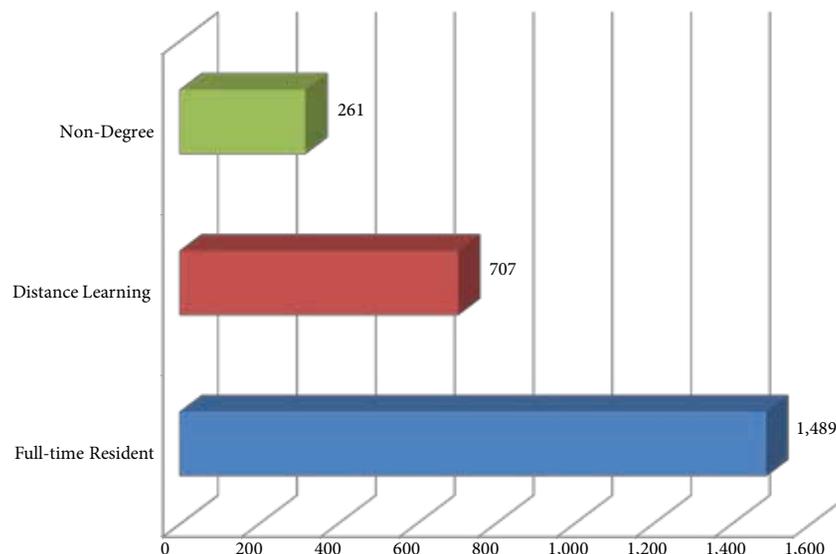
<u>TYPE OF STUDENT</u>	<u># OF STUDENTS</u>
Korea	12
Latvia	1
Mexico	3
Mongolia	1
Nepal	2
Nigeria	2
Norway	1
Pakistan	1
Philippines	1
Poland	1
Portugal	4
Saudi Arabia	4

<u>TYPE OF STUDENT</u>	<u># OF STUDENTS</u>
Singapore	30
Spain	2
Sweden	1
Switzerland	1
Taiwan	9
Tanzania	1
Thailand	2
Tunisia	5
Turkey	40
Ukraine	1
United Arab Emirates	3
United Kingdom	1

STUDENTS BY SCHOOL



STUDENTS BY TYPE



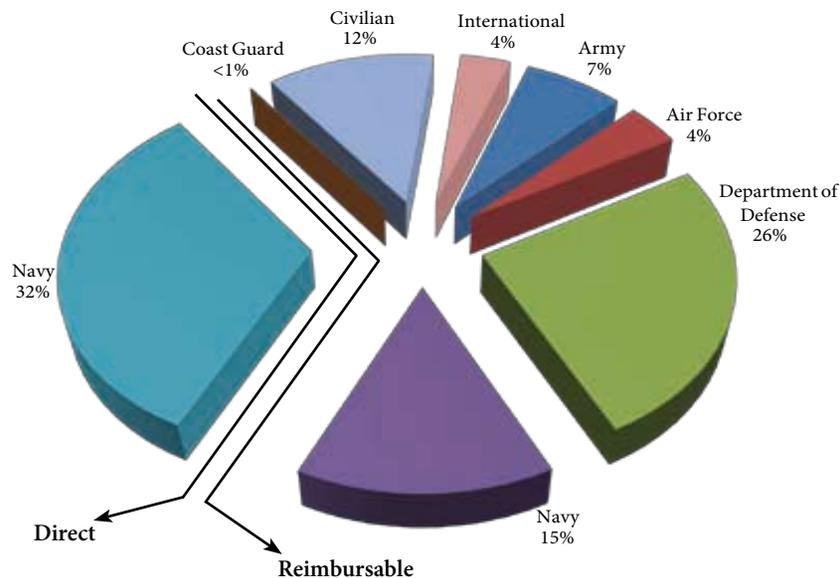
DEGREES CONFERRED

DEGREES	# OF GRADUATES	DEGREES	# OF GRADUATES	DEGREES	# OF GRADUATES	DEGREES	# OF GRADUATES
Master of Arts		Engineering Acoustics	7	Operations Research	68	Master of Computer Technology	6
Security Studies (9 specializations)	243	Engineering Science	5	Physical Oceanography	7	Master of Systems Analysis	37
Master of Science		Engineering Systems	14	Physics	7	Master of Systems Engineering	1
Applied Mathematics	12	Human Systems Integration	9	Program Management	13	Master of Business Administration	112
Applied Physics	31	Information Operations	13	Software Engineering	2	Engineer	
Astronautical Engineering	8	Information Systems and Ops.	5	Space Systems Operations	13	Electrical Engineer	4
Combat Systems Technology	6	Information Technology Mgmt.	36	Systems Technology (C3)	10	Mechanical Engineer	1
Computer Science	35	Information Warfare Sys. Eng.	9	Systems Engineering	80	Doctorate	
Contract Management	8	Management	29	Systems Engineering Analysis	18	Doctor of Philosophy (9 fields)	21
Defense Analysis (4 specializations)	72	Mechanical Engineering	31	Systems Engineering Management	20	<hr/>	
Electrical Engineering	42	Meteorology	15	Other Masters		Total	1,179
Electronic Warfare Sys. Engin.	8	Meteorology and Phys. Oceanography	12	Executive MBA	93		
		Modeling Virtual Enviro. and Sim.	16				

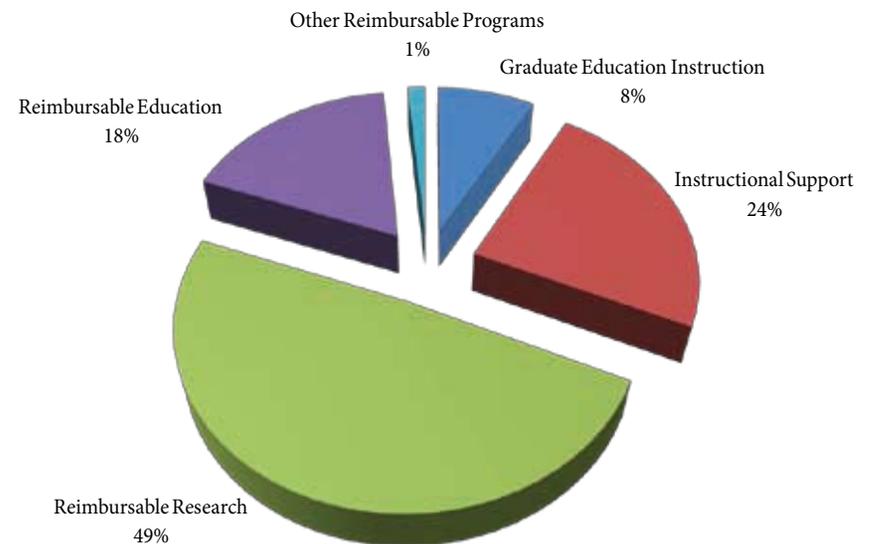
FISCAL INFORMATION

The total operating budget for the Naval Postgraduate School during fiscal year 2009 was \$303.1 million. Funding for NPS comes from two primary sources, direct funds are received for university's core teaching mission, received from the Department of the Navy. Reimbursable funds are provided from a variety of sponsors for the implementation of research or other unique educational programs.

NPS OPERATING BUDGET – REVENUES



NPS OPERATING BUDGET – EXPENDITURES



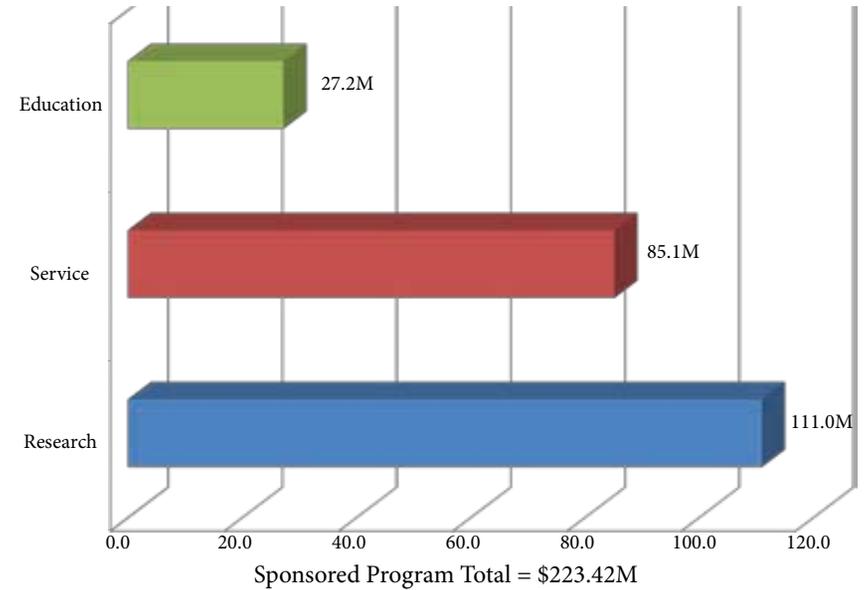
RESEARCH AT THE NAVAL POSTGRADUATE SCHOOL

Sponsored programs at NPS are an integral component of the graduate education experience, and have risen dramatically over the past decade. The primary purpose of sponsored programs at NPS is to conduct research, it is an imperative function to education at the graduate level, and its operational relevance is a hallmark of the Naval Postgraduate School. In addition to research, sponsored funding also supports educational programs as well as provided services.

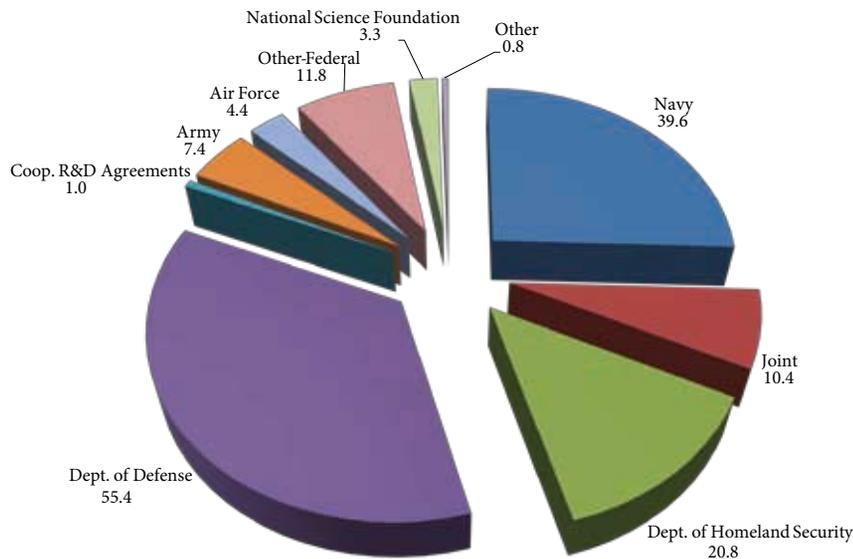
Educational sponsored programs include several multi-disciplinary, needs-driven degree or certificate programs directly funded by a supporting sponsor, such as space systems, combat systems, homeland security and defense and systems engineering.

Service sponsored programs include the implementation of programs on behalf of a sponsoring agency, such as the SMART (Science, Mathematics, and Research for Transformation) scholarship program funded by the Office of the Secretary of Defense.

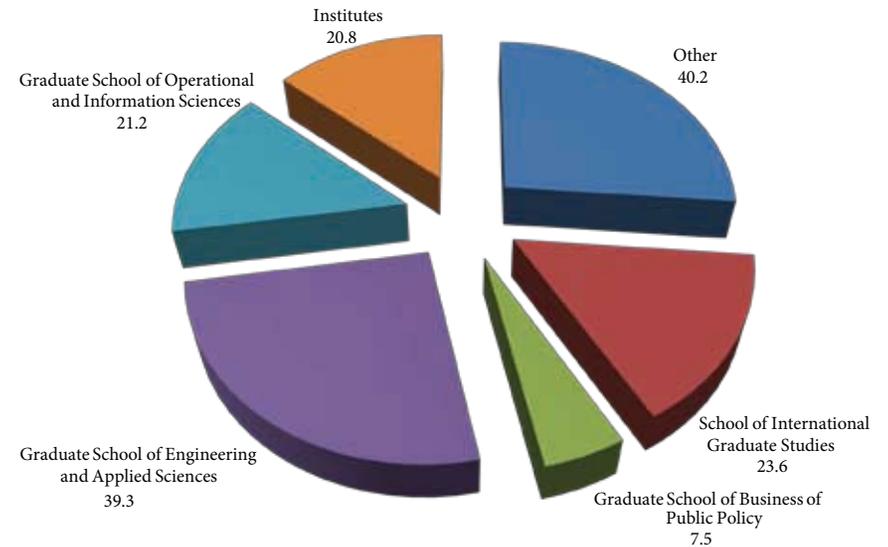
SPONSORED PROGRAM PROFILE (\$ in millions)



EXPENDITURES BY SPONSOR (\$ in millions)



EXPENDITURES BY ORGANIZATION (\$ in millions)



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“The best and brightest military officers from the United States and around the world come to the Naval Postgraduate School in Monterey, California, to work with world class faculty on real military and defense problems. At NPS, they gain both the intellectual know how and the practical skills for improving defense technologies, systems and programs.”

George H.W. Bush
41st President, United States

THE MISSION OF THE NAVAL POSTGRADUATE SCHOOL IS TO PROVIDE HIGH-QUALITY, RELEVANT AND UNIQUE ADVANCED EDUCATION AND RESEARCH PROGRAMS THAT INCREASE THE COMBAT EFFECTIVENESS OF THE NAVAL SERVICES, OTHER ARMED FORCES OF THE U.S. AND OUR PARTNERS, TO ENHANCE OUR NATIONAL SECURITY.



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