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Naval Postgraduate School Annual Report 2006

Monterey, California: Naval Postgraduate School

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NAVAL
POSTGRADUATE
SCHOOL

ANNUAL REPORT
2006

Excellence through Knowledge



WELCOME TO THE NAVAL POSTGRADUATE SCHOOL

In 2006, the Naval Postgraduate School continued to deliver timely, relevant education and research in support of defense and combat effectiveness, to ensure that both the United States and the allied Armed Forces remain dominant across the full spectrum of military operations.

Dr. Leonard Ferrari, a researcher, computer and electrical engineer with 30 years of experience in academe and industry, was appointed Provost of the Naval Postgraduate School in 2006. Dr. Ferrari's leadership has energized both the administration and the faculty to renew their dedication to the mission of the Naval Postgraduate School.

During the past year, 1,122 degrees in both resident and distributed programs were awarded by the Naval Postgraduate School, providing the militaries with well-educated and well-prepared officers and senior civilians. Enrollments in every area increased in 2006, as international, joint services and distributed learning students bolstered their intellectual development by completing executive, short-course, certificate and degree-granting programs.

By optimizing the integration of teaching and research, the Naval Postgraduate School continued to meet the current and future challenges of warfighting and battlespace by advancing concepts such as the development of a robot that can locate mines in beachheads; the creation of new designs in the defense of potential "9/11" attacks from the sea; and the exploration of uses for solar energy as a power source during combat.

In addition to its twenty-three acknowledged Centers of Excellence, in 2006 the Naval Postgraduate School was appointed by the Department of Defense (DoD) as the executive agent of a civilian scholarship-for-service program called Science, Mathematics and Research for Transformation/SMART, a service critical to maintaining the United States' scientific and technological edge in the DoD civilian workforce.

Please join Dr. Leonard Ferrari and the Naval Postgraduate School in celebrating another year of success in serving the United States' Department of Defense and its Allies throughout the world.

ORGANIZATIONAL STRUCTURE OF THE NAVAL POSTGRADUATE SCHOOL

Four Academic Schools

Each Graduate School provides the academic structure necessary to meet both current and future military challenges.

- Graduate School of Business and Public Policy (GSBPP)
- Graduate School of Engineering and Applied Sciences (GSEAS)
- Graduate School of Operational and Information Sciences (GSOIS)
- School of International Graduate Studies (SIGS)

Three Research Institutes

Institutes ensure that the academic skills taught in each school are applied to both current and future military challenges.

- Cebrowski Institute for Innovation and Information Superiority
- Wayne E. Meyer Institute of Systems Engineering
- Modeling, Virtual Environments, and Simulation Institute



The Mission of the U.S. Naval Postgraduate School is to provide relevant and unique advanced education and research programs in order to increase the combat effectiveness of U.S. and allied Armed Forces and to enhance the security of the United States.

The Naval Postgraduate School is accredited by the Western Association of Schools and Colleges (WASC).

GLOBAL IMPACT

- 16% of resident students are international, and represent over 50 countries
- Courses are taught in all corners of the globe, on ships via the web and through video-conferencing: NPS also reaches an average of 1,200 students each month in non-degree short courses

MILITARY VALUE

- In direct response to critical military needs, new educational programs such as the new Homeland Security MA program designed for USAF students that focuses on intelligence relating to air/maritime homeland defense are developed quickly
- Research focused on key defense areas such as homeland security, information sciences, modeling, robotics and more

RESEARCH

- Over \$54.8 million in sponsored research expenditures in 2006
- Ranked in the top 200 educational institutions in the U.S. for total research expenditures (*The Top American Research Universities, TheCenter, University of Florida, 2005*)
- 60% increase in total research dollars since 1994

EXCELLENCE

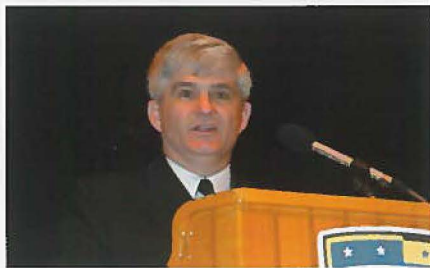
- Alumni advance to high-level positions in the armed services: 27 alumni received "Distinguished Alumni" recognition in 2006
- High-quality faculty are sought as experts in fields such as operations and national security analysis

CALENDAR HIGHLIGHTS

November 2005: *The High-Performance Computing Center opens; supports scientific cluster computing for various researchers and departments on campus*



December 2005: *Admiral Kirkland H. Donald, Nuclear Propulsion Program, speaks at the NPS fall graduation ceremony*



January 2006: *NPS showcases cutting-edge research for Navy leadership by displaying more than 60 research projects*



RESEARCH HIGHLIGHTS: GSEAS

Students in Dr. Nancy Haegel's physics class developed a revolutionary new Individual Identify Friend or Foe (IIFF) smart patch, designed to identify ground troops when scanned by night vision goggles.



Ensign Tom Dunbar works with an autonomous robot originally designed to maneuver in agricultural settings. The autonomous robot, dubbed AGBOT, has been modified to conduct its operations in the surf zone.



Radar expert Paul Buczynski troubleshoots a data output coupler on a mobile Doppler radar unit in preparation for an experiment with the research vessel at Point Sur. The NPS mobile weather radar (MWR-05XP) operated from NPS's beach lab to collect data to characterize propagation just above the sea's surface.

RESEARCH HIGHLIGHTS: GSBPP

Business and Public Policy research spans a spectrum of Department of Defense/Department of Navy management and policy issues including acquisition; financial management; logistics and operations; manpower, personnel, training and education; and management.

The acquisition research program has sponsored over 100 studies and an annual symposium. The 2006 plenary speaker, Hon. Ken Krieg, Undersecretary of Defense for Acquisition, Technology & Logistics, underscored the need for acquisition research to revamp defense business processes to enhance warfighting capabilities.



The unique combination of defense-oriented business with public policy education and research enables the students to quickly apply their GSBPP education to their next jobs. GSBPP is accredited by both the American Assembly of Collegiate Schools of Business (AACSB) and the National Association of Public Affairs and Administration (NASPAA).

March 2006: Nobel Laureate

Dr. Reinhard Selten visits NPS to discuss his work on game theory and its application to events in Kosovo



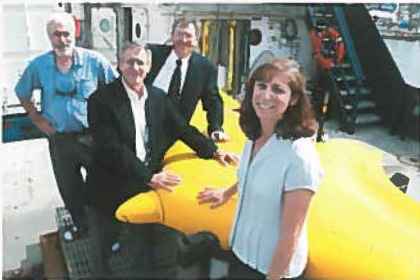
March 2006: Secretary of the Army, the Honorable Francis Harvey, speaks at the NPS winter graduation ceremony

Memorial Day: 7,000 members of the local community attend the Monterey Bay Symphony as RADM Richard Wells opens the campus to the public for the traditional Concert on the Lawn, which included tours of the campus



June 2006: Membership in *CENIC (Corporation for Education Network Initiatives in California)* is established at NPS, providing connectivity to both research and national high-speed networks such as *Internet2*

July 2006: Scientists from NPS, the Naval Research Laboratory, Scripps, University of Washington, Princeton and Monterey Bay Aquarium Research Institute deploy underwater gliders outfitted with sensors to study the Monterey Bay Canyon



August 2006: NPS conducts its first video-teleconference with the International Space Station (ISS) and NPS alumnus, Colonel Jeff Williams, Commander of the ISS

RESEARCH HIGHLIGHTS: SIGS

The National Security Affairs Department within SIGS conducts research on current and emerging security issues and defense policy and conveys its findings to U.S. and allied policymakers and military forces to assist them to better understand the requirements of statecraft, strategy, and leadership in a tumultuous world.

The faculty also contributes through the publication of scholarly books and other publications. Notably, Dr. Vali Nasr, Professor, Middle East and South Asia politics, published a book entitled *The Shia Revival – How Conflicts within Islam Will Shape the Future*. Dr. Nasr was named a Carnegie Scholar in 2006, appeared as an expert on Islamic societies on NBC's "Meet the Press", and briefed President Bush along with other top advisors in August.



RESEARCH HIGHLIGHTS: GSOIS

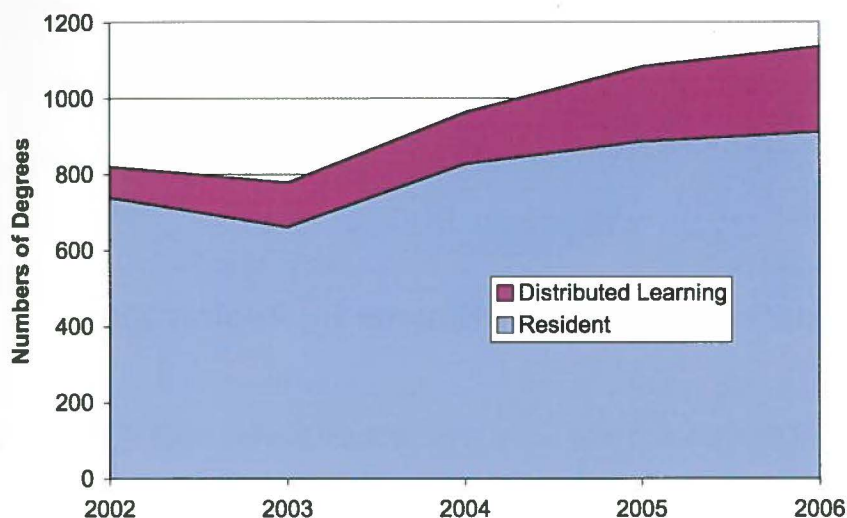
- Dr. Cynthia Irvine and her team introduce "CyberCIEGE"; an innovative computer-based tool that teaches computer and network security through simulation and resource management.
- The SecureCore project investigates the features required for trustworthy operation of mobile computing devices such as smart cards, embedded controllers and hand-held computers. The goal is to provide secure processing and communication for resource-constrained platforms without compromise of performance, size, cost or energy consumption.



DEGREE PROGRAM TRENDS AND DISTRIBUTED LEARNING

Overall enrollment in the degree programs continues to increase. Numbers of degrees awarded in programs taught through distributed learning accounted for 10% of all degrees granted in 2002, growing to 20% in 2006.

NPS Degrees Awarded 2002 - 2006

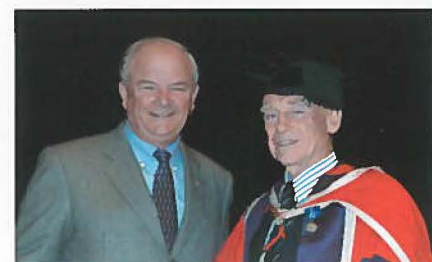


NPS Mechanical and Astronautical Engineering Distinguished Prof. Young Shin, Assistant Research Prof. Lt. Cmdr. Jake Didoszak, Electronics Technician Tom Christian and NPS students Lt. Cmdr. Hal DuBois and Lt. j.g. Hakan Ucar of the Turkish Navy examine an imploded cylinder in the department's Shock and Vibration laboratory.

August 2006: NPS hosts the "Boeing Technology Exposition and Exchange"



September 2006: Secretary of the Air Force, the Honorable Michael W. Wynne, speaks at the graduation ceremony

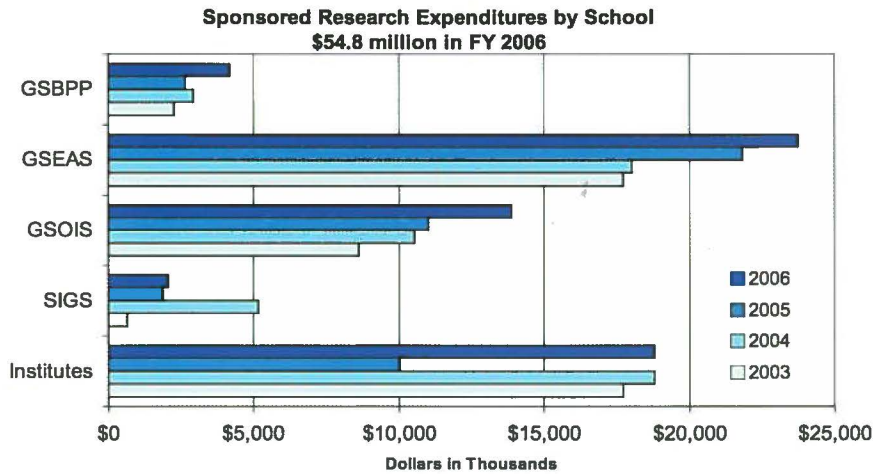


September 2006: Opening of the Glasgow Annex, new home of Computer Science and the Cebrowski Institute



September 2006: Reimbursable research and education tops \$81 million for 2006

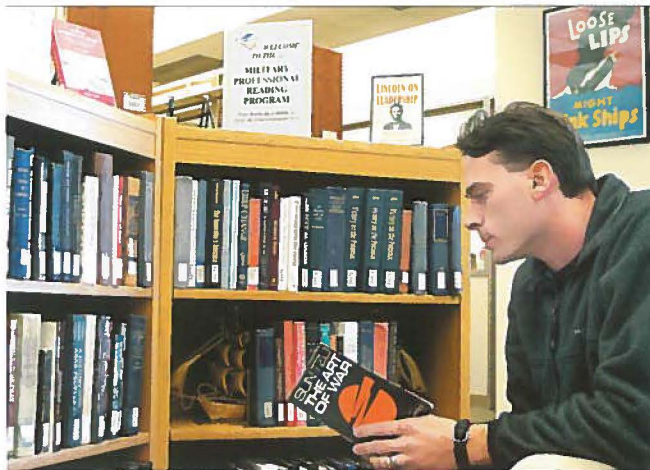
RESEARCH



DUDLEY KNOX LIBRARY

In September, the Dudley Knox Library launched a new web presence that also marked the implementation of a content management system. Staff utilize software tools to organize, manage, and publish content directly to the web. The Library also unveiled new web services that improve access to information, including browsing of e-journals, links to full-text articles, and inter-library loan/document delivery services.

The number of students who attended library courses grew 5% in 2006. Usage of all library services at NPS continued to increase in 2006, in opposition to national trends which show declining usage of in-house libraries.



DISTRIBUTED LEARNING

The Naval Postgraduate School's mission to educate the total force anytime, anywhere, took on new energy in late August when the university hosted the first annual Distributed Learning (DL) Summit. The conference brought together campus leadership, administrators, technical staff and faculty to develop online and video tele-education courses worldwide.

Development and Management:

- Thirteen fully online degree programs
- Ten certificate programs
- Regional International Outreach (RIO):
Lead role in content management, graphic design and user interface layout

Faculty Development:

- 200+ NPS faculty completed Interactive Distributed Learning (IDL) course
- 90+ Faculty/Instructors from other Defense/International agencies completed the online version of IDL
- Quarterly workshops and regular brown bag sessions offered to faculty to discover relevant topics and to share best practices
- A comprehensive Faculty Orientation/Faculty Development Program proposal developed in FY07 for all new faculty to promote "Excellence in Teaching"

Instructional Design and Development:

- Faculty are assisted in instructional design and development of web-based interactive materials for courses incorporating fully online and blended delivery approaches

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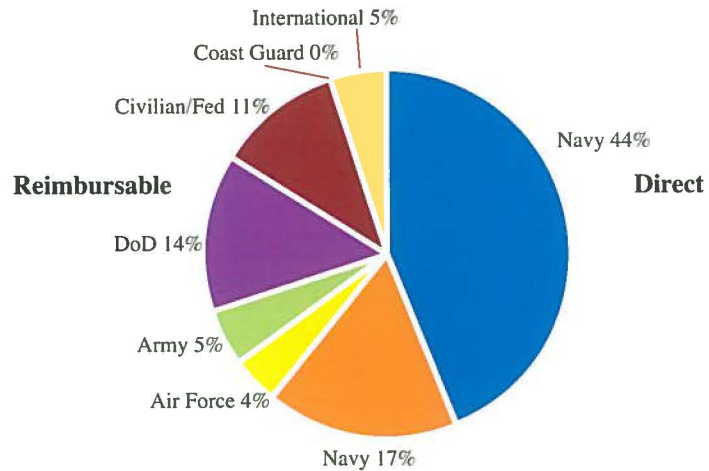
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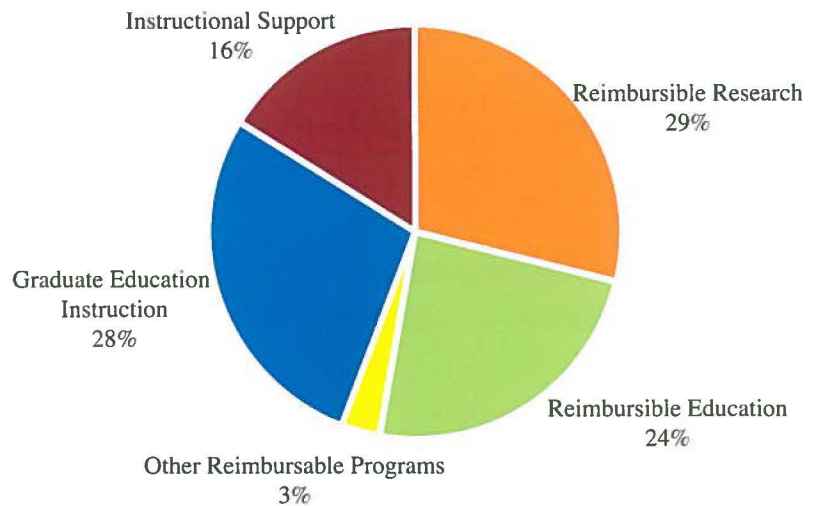
LG Frances C. Wilson

NPS OPERATING BUDGET

NPS FY 2006 REVENUES BY SOURCE DIRECT AND REIMBURSABLE
\$204.2 MILLION



NPS FY 2006 EXPENDITURES BY CATEGORY DIRECT AND REIMBURSABLE
\$204.2 MILLION



HALL OF FAME INDUCTION 2006

RADM Wayne E. Meyer, USN (Ret.) “Father of Aegis”



AWARD RECIPIENTS 2006

Don Brutzman, Information Systems -Richard Hamming Faculty Award for Interdisciplinary Achievement
George Lober, Defense Analysis - Rear Admiral John Jay Schieffelin Award for Excellence in Teaching
Rob Dell, Operations Research - Richard Hamming Faculty Award for Excellence in Teaching
Marcello Romano, Mechanical & Astronautical Engineering - Carl Menneken Faculty Award for Excellence in Scientific Research

DISTINGUISHED ALUMNI RECIPIENTS 2006

Captain Jeffrey Bacon
Vice Admiral Roger Bacon
Rear Admiral Stanley Bozin
Rear Admiral Michael A. Brown
Captain Daniel W. Bursch
Commander Sandra Chachula
Rear Admiral Philip J. Coady Jr.
Rear Admiral Dan Davenport
Rear Admiral James B. Green, Jr.
Vice Admiral Lee F. Gunn
Rear Admiral Charles S. Hamilton
Captain Sam Houston
Captain Wayne P. Hughes, Jr.
Vice Admiral Harvey E. Johnson Jr.

Lieutenant General Richard S. Kramlich
Rear Admiral William E. Landay III
Captain Donald M. Layton
Lieutenant General Chan Lee
Rear Admiral Michael A. LeFever
Vice Admiral Keith W. Lippert
Vice Admiral Justin D. McCarthy
Rear Admiral Timothy J. McGee
Rear Admiral Archer M. Macy, Jr.
Vice Admiral Stanley R. Szemborski
Vice Admiral Patricia A. Tracey
Major General Michael A. Vane
Captain John A. Zangardi



NAVAL
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SCHOOL



MISSION

To provide relevant and unique advanced education and research programs in order to increase the combat effectiveness of the U.S. and Allied armed forces, and to enhance the security of the United States

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