



Calhoun: The NPS Institutional Archive

DSpace Repository

Administrative Publications

Strategic Plan

1997

Naval Postgraduate School Strategic Plan 1997

Monterey, California, Naval Postgraduate School

https://hdl.handle.net/10945/44061

This publication is a work of the U.S. Government as defined in Title 17, United States Code, Section 101. Copyright protection is not available for this work in the United States.

Downloaded from NPS Archive: Calhoun



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

> Dudley Knox Library / Naval Postgraduate School 411 Dyer Road / 1 University Circle Monterey, California USA 93943

http://www.nps.edu/library

NAVAL POSTGRADUATE SCHOOL STRATEGIC PLAN



TABLE OF CONTENTS

MISSION, VISION		3
GUIDII	NG PRINCIPLES	4
1997 STR	ATEGIC PLAN	5
INTRODUCTION		7
BACK	GROUND	9
THE 1997	INITIATIVES	11
INTRODUCTION		13
ONE:	Position NPS to meet challenges of RMA	15
TWO:	Increase efficiency and effectiveness of NPS	17
THRE	E: Position NPS to lead the way in developing the	
	"University of the Future"	19
FOUR	Develop and sustain a healthy enrollment	21
FIVE:	Obtain the resources needed to accomplish	
	our mission	23
SIX:	Create the correct balance between current	
	operations and reinvestment	25
SEVEN: Recruit, develop and retain a high-quality staff		27
EIGHT	Recruit, develop, and retain a high-quality faculty	29
CONC	LUSION	31

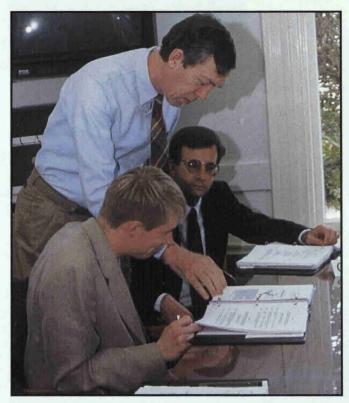


MISSION, VISION

Marine Capt. Tom Langolis works on one of the magnetic switches in the simulated Surface Combatant 21 power distribution system.

NPS MISSION

Increase the combat effectiveness of U.S. and Allied armed forces and enhance the security of the USA through advanced education and research programs focused on the technical, analytical, and managerial tools needed to confront defense-related challenges.



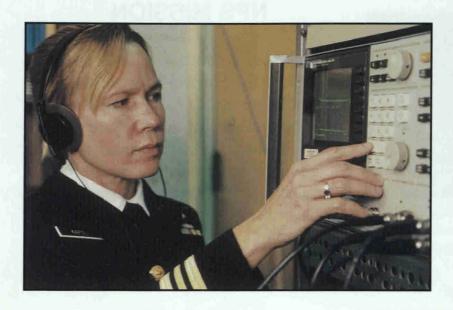
Above: DRMI Prof. Steven Hurst discusses distribution of resources with two students. Right: A student tests his flying skill on the NPSNet virtual-reality simulator.

NPS VISION

- To be the world leader in defense related graduate education and supportive research
- To prepare the intellectual leaders of tomorrow's forces
- To lead the way in developing the university of the future



GUIDING PRINCIPLES



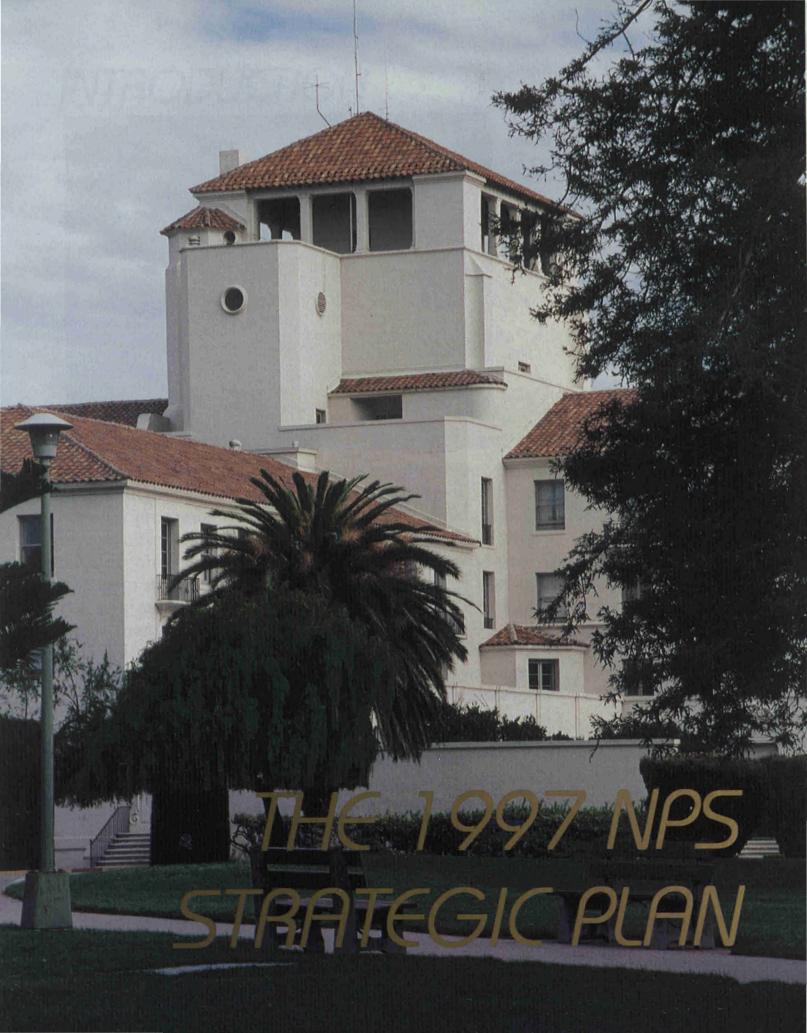


We are committed to:

- Creating braggingly happy customers
- Treating everyone with respect and dignity
- · Honesty, integrity, and commitment
- Creativity, innovation, teamwork and high quality performance
- Developing the full capabilities of all our students, staff and faculty
- Investing in the technology and facilities needed to fulfill our mission

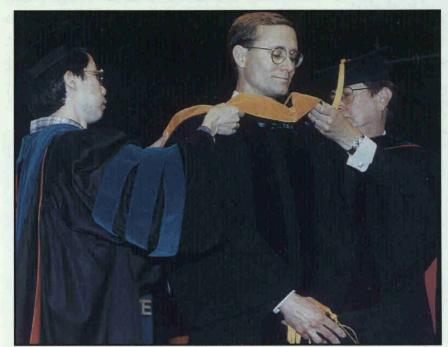
Top left: Doctoral candidate Lt. Cmdr. Daphne Kapolka listens to the noise levels of a U.S. submarine. Kapolka is conducting research to make subs quieter. Top right: A research laser fires from Moss Landing during an experiment. Right: Information Warfare Curriculum students participating in the Advanced Architecture for Command and Control exercise get familiar with a war-game program.







INTRODUCTION



A graduate earns his doctoral robes.

The Naval Postgraduate School is unique among institutions of higher education: we are tasked with creating educational programs that will increase the combat effectiveness of our armed forces. Over the years we have carried out this mission with a high degree of success. But the two worlds in which we must operate, the academic world and the military world, are both undergoing rapid and traumatic changes.

The academic world is grappling with the problems of effectively creating interdisciplinary programs while maintaining the integrity of existing disciplinary structures, and the even larger issue of the most effective and creative ways of exploiting the promises of high technology, particularly information and communications technologies.

The military world is facing fundamental changes in the processes of warfare resulting from advances in several technologies, including information and communications technologies. Many military thinkers are predicting a Revolution in Military Affairs based upon information, communications systems and precision weapons.

The official guide to changes we should expect is provided by the Chairman of the Joint Chiefs of Staff in the recently published "Joint Vision 2010". This document foresees a

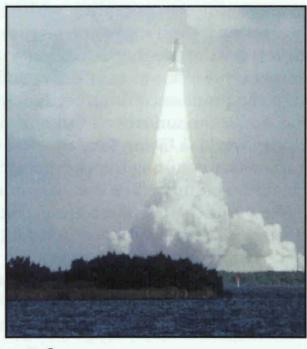
INTRODUCTION (CONT.)

time when information age technologies will give our forces almost complete battlefield knowledge, the communications systems needed to link sensors to shooters, and the weapons and organizations that will allow the precise application of overwhelming power when and where it is needed. And, of course, there is the political reality of what it takes to balance our nation's budget.

The message for NPS is very clear: in a time of decreasing budgets we must put in place the educational system that will support the information, communications, weapons and organizational needs of our nation's military, and that will provide the skilled, capable officers who can leverage future technologies. And we must position ourselves to take full advantages of the potential efficiencies new technologies offer the academic world.

Along with a Revolution in Military Affairs we are caught up in a Revolution in Academic Affairs. We should also not forget that revolutions imply rapid, violent, and unpredictable change. *The status quo will not be an option*. We must continue to transform NPS into an organization that can meet these challenges.

The space shuttle Columbia, carrying NPS graduates Cmdr. Kent Rominger and Lt. Cmdr. Michael Lopez-Alegria, lifts off for its October 1995 mission.

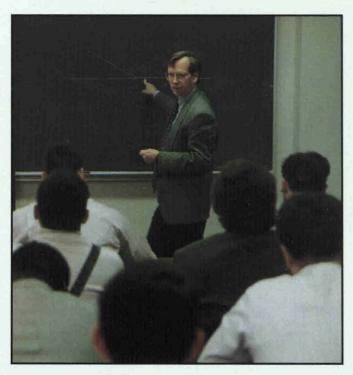


BACKGROUND

The process of change at NPS began in 1995, resulting in our first "Strategic Business Plan." This document identified six vital issues:

- To improve the quality of education
- To increase the number and mix of students
- To market NPS better to increase budget and enrollment
- To increase our financial flexibility
- To become the experts on Navy/DoD graduate education
- To create a quality working environment.

These still remain important today, and are fully integrated into our revision of the 1995 plan.





Adm. Joseph Prueher, commander-in-chief of the U.S. Pacific Command, talks with NPS students during his November 1996 visit to the campus.

We have seen a number of changes already. In 1995 we gained JPME Phase I certification for curricula in the National Security Affairs Department; we must work to extend this important program to our other curricula. We have established Joint Warfare tracks in some of our curricula, and are in the final stages of establishing a new Joint Warfare curriculum. The Academic Council recently approved an innovative new curriculum in support of modeling of virtual environments; this is a critical step in supporting the educational needs of Joint Vision 2010. We have completed a successful first year involvement with the Navy's Strategic

Professor Donald Walters discusses the properties of sonar during a class.

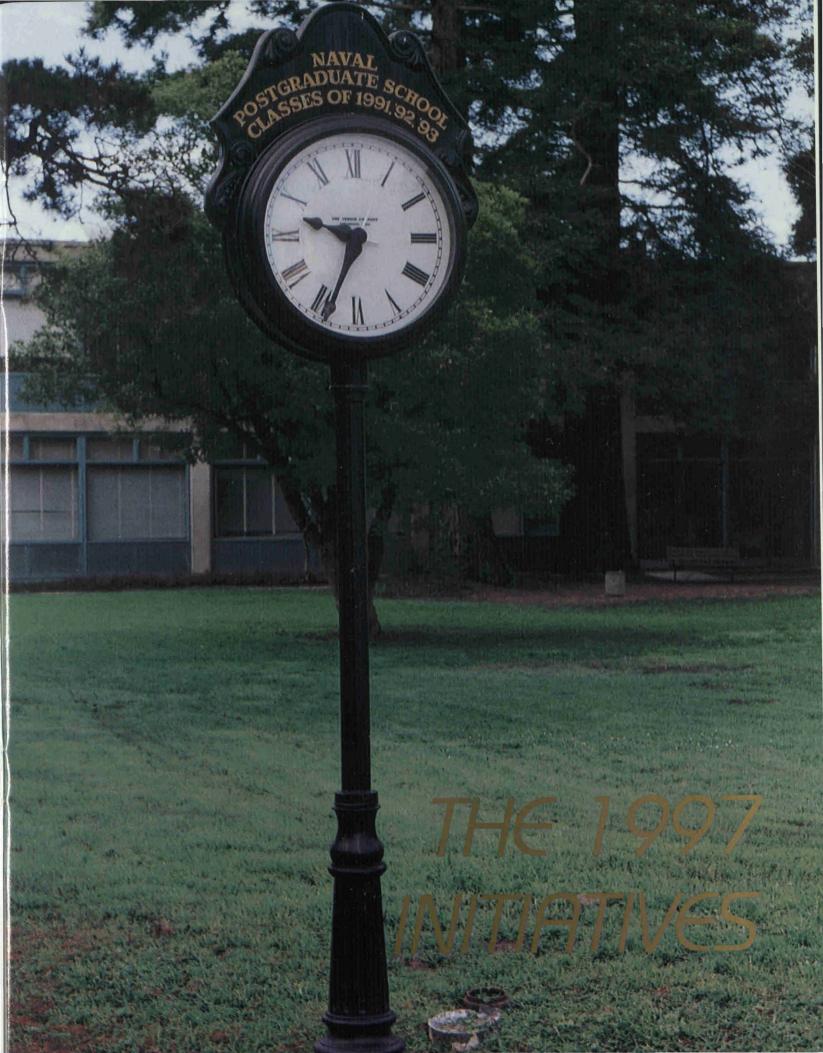
BACKGROUND (CONT.)

Studies Group (SSG); eight of our students were appointed as junior fellows and made important contributions to the SSG's work on developing innovative ideas for future naval warfare. We also have established a new program with the Office of Naval Research to support developments in naval warfare. We have set up a Marketing



Group to see that NPS' strengths and capabilities are made known to the Navy's leadership. We have established the Naval Support Activity -- Monterey Bay (NSA-MB) to bring additional focus and talent to base support and quality of life operations. Changes in travel and supply areas have made modest improvements in our efforts to establish a quality working environment; this is an area overdue for radical change.

Clearly, a number of changes have resulted from last year's plan, but we must expect to see an acceleration in the reengineering of NPS if we are to be proactive and not just reactive in our responses to the revolutions going on around us. (From left to right) NPS Superintendent Rear Adm. Marsha Evans, Assistant Secretary of the Navy for Manpower and Reserve Affairs Dr. Bernard Rostker, Naval Support Activity -- Monterey Bay Commanding Officer Capt. Mary Jayne Meyer, and Deputy Public Works Officer Jay McElderry unveil the NSA-MB logo at the command's stand-up ceremony July 7.





INTRODUCTION

We have identified eight initiatives that must concern us in 1997. These are a natural focusing of the six areas we identified in last year's plan. The initiatives that must be addressed in 1997 include:

- Positioning NPS to meet the challenges of the "Revolution in Military Affairs" (RMA)
- Increasing the efficiency and effectiveness of NPS
- Positioning NPS to lead the way in developing the "University of the Future"
- · Developing and sustaining a healthy enrollment
- Obtaining the resources needed to accomplish our mission
- Creating the correct balance between funding current operations and reinvestment
- · Recruiting, developing and retaining high quality staff
- · Recruiting, developing and retaining high quality faculty

These eight areas are interconnected, and involve all members of the NPS community. In this section we will briefly review the issues involved.



A U.S. Navy and a Polish army graduate talk before the commencement ceremony.



POSITION NPS TO MEET THE CHALLENGES OF THE REVOLUTION IN MILITARY AFFAIRS (RMA)

JCISS CO-HOSTS REVOLUTION IN MILITARY AFFAIRS CONFERENCE

James Blaker, a top adviser to U.S. military leaders, broke the ice in a big way at the "Revolution in Military Affairs (RMA)" conference held August 26-29 at the Embassy Suites Hotel.

Co-hosted by <u>Security Studies</u> journal and the Joint Center for International Security Studies (JCISS), the four-day conference brought together civilian scholars, military professionals and corporate planners to explore future U.S. military strategy in the increasingly complex global security environment. JCISS is a joint effort of NPS and the University of California, Davis Institute of Governmental Affairs.

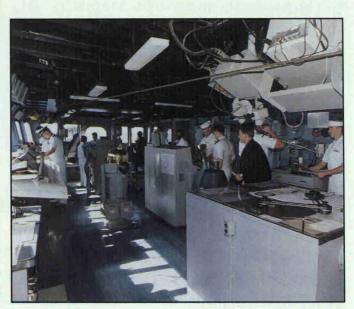
Blaker, who gave the keynote address, opened the conference promising to be controversial, and was.

"I think we should control the world," he said matter-of-factly. "The technological information revolution will make it possible for the U.S. to see real-time, all the time over a large area of the globe, the keystone to enabling us to achieve precision weaponry and a highly adaptive military force...The question, of course, is should we do it? Yes, the U.S. should do it, even if it means changing the organization, doctrine, hierarchy and culture of the military."

This bold "maximalist" view, which Blaker acknowledges goes against the "stewardship" thinking of the last half century, matters. Until recently, he was senior civilian adviser to then vice chairman of the joint chiefs of staff, Adm.

continued

There is an emerging consensus among military thinkers and planners that our forces will continue to get smaller, but will be highly dependent upon information technologies. Our challenge here is to focus the many strengths of our faculty in the technology areas into coherent programs that can provide our students with the skills needed to understand and exploit developments in the information, communications and precision weapons arenas. These programs will need to be very interdisciplinary, with a stress on systems integration and systems engineering. To properly respond to the



The bridge of *USS John Young* (DDG 973) is busy as the ship prepares to get underway from its home port of San Diego, en route to a Monterey port visit.

INITIATIVE ONE (CONT.)



Secretary of Defense William Perry (center) meets with students during a visit to NPS.

RMA challenges we will need to make sure our faculty is aware of the implications of the RMA, and familiar with Joint Vision 2010 and supporting service documents. Institutionally we must examine our departmental and divisional structure for responsiveness to these challenges.

The demands of the Seaman-to-Admiral program and the developments that are taking place in JPME suggest that we increase cooperation among the three Navy schools: NPS, the Naval Academy and the Naval War College. By creating a virtual Naval university that links all three institutions electronically, we can exploit the unique strengths of each, and avoid expensive duplications of faculty and courses. We must explore this idea with each of the other institutions.

RMA CONFERENCE (CONT.)

William C. Owens. Blaker also has the ear of longtime colleague and the "godfather of RMA thinking," Andrew Marshall of the Office of the Secretary of Defense/Net Assessment, who attended and provided funding for the conference.

NPS Prof. John Arquilla also focuses on the vital importance of information dominance in future wars. In his conference paper, he cites a key Chinese military publication which defines "Information War" as a "complete contest of time and space" in which speed and surprise are paramount. "At its center is the fight to control the information battlefield," the Chinese source continues, "and thereby influence or decide victory or defeat."

By no means was everyone attending the conference, however, a "RMA maximalist." Speakers questioned the wisdom, some even the constitutional legitimacy, of the Marshall-Blaker view, one even going so far as to propose that such talk could exacerbate official insecurity in China or Russia and thereby trigger a resumption of the Cold War.

In addition to providing a forum for the exchange of views on revolutions in military affairs and military technical revolutions, one purpose of the conference was to familiarize participants with JCISS's Virtual Research Center (VRC). The VRC will use the latest computer technology, provided by SUN Teaching and Research Excellence Center and the Internet to link military and civilian policymakers with academic researchers, and provide both with an open forum to debate topics of interest.

Anyone interested in more information about the Virtual Research Center and other programs can contact JCISS at http://jciss.suntrec.ucdavis.edu/pub/index.html>.

TWO TWO TWO

INCREASE THE EFFICIENCY AND EFFECTIVENESS OF NPS



Recent graduate Lt. Cmdr. Fred Beach checks out the power cable to the rail gun he built for his thesis project.

The organizational health and continued existence of NPS depend on our ability to demonstrate that our educational programs contribute to the effectiveness of DoN/ DoD, and that we operate an increasingly more efficient organization. Key elements in this strategy are to: search for new markets, develop tailored new products for present and future customers, exploit distance learning technology, establish stronger links with existing sponsors, and explore opportunities for non-degree graduate education to supplement our existing graduate education programs.

We must also find and adopt innovative approaches to providing infrastructure services such as supply decentralization, travel reinvention, management information system improvements, and staff restructuring. We need to provide incentives and support to allow managers to discover and implement efficiencies in both aca-

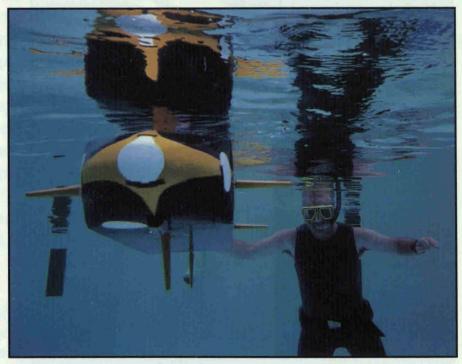
demic and mission support activities. Making our initial operations more efficient is not optional! The entire NPS community must understand the need, desirability and feasibility of major changes throughout NPS in pursuit of significant improvement in efficiency.



THREE THREE THREE

POSITION NPS TO LEAD THE WAY IN DEVELOPING THE "UNIVERSITY OF THE FUTURE"

The academic world is very actively examining how best to exploit developments in information and communications technologies. The key issue is the use of technology in the delivery of instructional processes. This includes smart classrooms using networked computers and high-quality projection systems, distance learning centers, multimedia materials, computer laboratories, just-in-time learning systems, and entire graduate programs offered over the Internet and video-teleconferencing. We face a number of potentially very serious challenges here unless we address the issue vigorously and with focused attention.

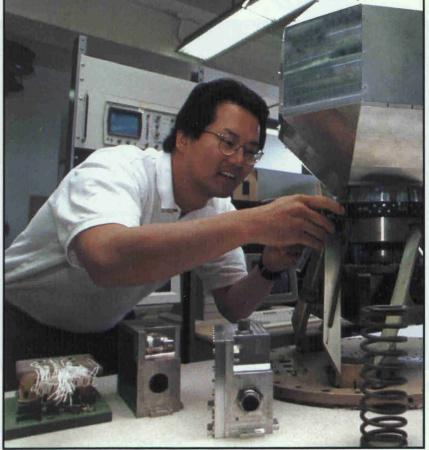


The Phoenix autonomous underwater vehicle, developed by NPS, goes for a test cruise in the NPS pool.

INITIATIVE THREE (CONT.)

We also need to recognize that the entry price in terms of infrastructure investment is very high. Nevertheless, we must invest in developing a base wide broadband network system. We must explore the already introduced concept of a virtual naval university linking all three Navy educational institutions together. We must establish the feasibility of students accessing our courses (at least those courses in the refresher quarters) from their many different work environments, to reduce the total time spent in residence at

NPS. We need to determine the feasibility of offering complete graduate-degree programs to government employees using distance learning. We expect considerable competition in this area, but we must market our well-honed ability to create militarily relevant and tailored programs that cannot be duplicated elsewhere due to a lack of appropriate faculty at other universities.



Space Systems Academic Group engineer Dan Sakoda works on the student-thesis-driven Petite Amateur Navy Satellite. The satellite is scheduled to launch from the space shuttle in late 1997 or 1998.

FOUR FOUR FOUR

DEVELOP AND SUSTAIN A HEALTHY ENROLLMENT



Left: A DRMI student makes a point during discussion. Below: A graduate celebrates with his family following commencement.

The NPS student body represents many different services and countries. We have different degrees of influence over these various sources of students. But, in all cases two things are key: the quality, relevance and uniqueness of our programs; and the quality of the educational experience our students receive. We must produce "braggingly happy" graduates! This involves all aspects of the school from the classroom to housing to MWR, to the whole support infrastructure. Our students must experience a Total Quality institution.

We must take every opportunity, formal and informal, to sell flag and general officers and senior executive service members from all the services on the responsiveness, quality and relevance of our programs. As the CNO's advisor on graduate education, the Superintendent will continue to stress the ever grow-

ing importance of graduate education to the Navy. We need to develop and invest in a marketing strategy to support this effort. We do not have a focused marketing strategy aimed at civilian DoD workers; clearly we must develop one.



BUSH TERMON - PUON - PUON



OBTAIN THE RESOURCES NEEDED TO ACCOMPLISH OUR MISSION

We have laid out a clearly articulated mission for NPS. To execute this mission we must obtain adequate resources, and we must use those resources as efficiently as possible. Given today's budgetary realities, we must be able to demonstrate that investing in quality, focused educational programs produces a tangible Navy-wide benefit. It is essential that we provide the Navy leadership with well-defined, prioritized requirements that can be defended throughout the entire budget process. New resources will have to be linked to new requirements which in turn must be linked to clearly defined fleet needs. We must be alert to new sources of students and new educational opportunities.

A DRMI professor discusses supply and demand during a lecture.



INITIATIVE FIVE (CONT.)



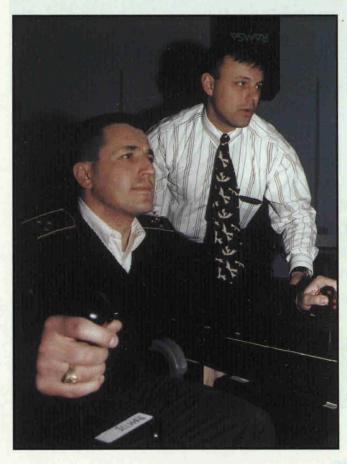
Students enjoy a lighter moment during a DRMI discussion.

We need to explore the trade-offs that are possible between investing in new educational technology, and the resulting savings in faculty and staff labor. We must determine whether we can afford to service all of the curricula we now support; perhaps efficiencies can be generated by reducing the number of curricula by consolidating closely related sub-specialties. A comprehensive study may identify areas of opportunity that will allow us to free up dollars for reinvestment into our infrastructure.

The DoD budget is very tight, and promises to be so for many years to come. To compete successfully for resources in this climate, we must have a clear commitment to providing the nation with the very best, most efficient graduate programs that are tailored to the unique needs of our armed forces. Our Strategic Plan reflects this commitment.

CREATE THE CORRECT BALANCE BETWEEN CURRENT OPERATIONS AND REINVESTMENT

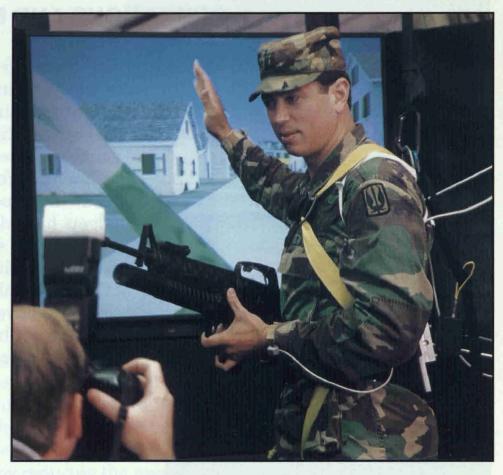
Over the past few years our budgets have not allowed us to make adequate investments in our infrastructure, or in recapitalizing our labs or faculty. This must change! Organizational effectiveness depends on the resources devoted to both current operations and investment. We have supported our current operations at the expense of long term investments. As budgets have declined, we have continued to support a relatively stable number of staff and faculty billets while cutting down significantly on the amount of OPTAR available for lab upgrades and recapitalization. We have maintained a stable level of teaching support but have neglected faculty and staff development investments.



A foreign defense attache takes the controls of the simulated helicopter on NPSNet.

INITIATIVE SIX (CONT.)

Army Capt. Russell Storms tests his virtual arm during a demonstration of the omni-directional treadmill.

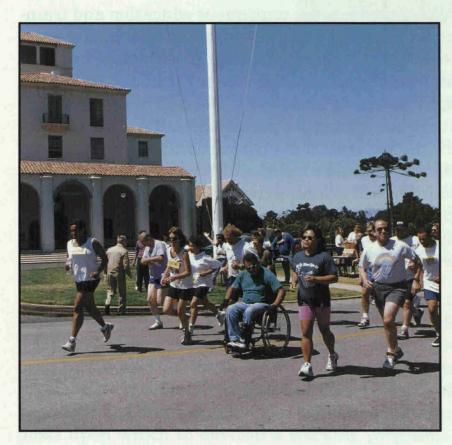


For FY97 we intend to create a small reinvestment fund from efficiencies in our teaching program. But this is only the beginning. We need to establish the true cost of each of our educational programs, and to consider competing only in those areas where we have both a clear comparative advantage and sponsor support to guarantee adequate funding for operations and investment. We also need to evaluate the return on investment for our supporting activities, and determine the optimal way of obtaining the needed support.

SEVEN SEVEN SEVEN

RECRUIT, DEVELOP AND RETAIN HIGH QUALITY STAFF

The present system used at NPS for recruiting, developing and retaining staff does not develop the full capabilities of our staff, encourage the retention of high quality staff, nor allow for the improvement (or departure) of low performers. The present civil service system is almost totally inadequate for hiring and rewarding high quality technical staff. Our very tight budget restricts monetary awards for outstanding performance, and allows very limited training opportunities. We have too few "career ladder" positions. Our supervisors and department chairs do not receive adequate training in the skills needed to be creative personnel managers. We cannot afford to continue this unsatisfactory situation.



Staff members from NPS and Naval Support Activity -- Monterey Bay participate in the Wellness Fair Fun Run in July 1996.

INITIATIVE SEVEN (CONT.)



Engineers from the Space Systems Academic Group show team spirit during a base-wide cleanup day.

We must invest in continuous education and training for all of our supervisors, to include: hiring practices, interviewing techniques, performance appraisals, discipline, handling low performers, TQL, staff motivation and incentives. We will review staff positions for "career ladder" designation where appropriate. We will form an Awards Board to design an awards program consistent with our budget and mission. We will examine the use of graduate education opportunities as a hiring and retention device. We must also improve the two-way communications between staff and the administration.

EIGHT EIGHT EIGHT

RECRUIT, DEVELOP AND RETAIN HIGH QUALITY FACULTY

Aeronautics and astronautics Professor Conrad Newberry (middle) discusses design criteria for a project with two of his students.



NPS needs a unique faculty, combining both scholarly and military expertise to support its mission. The basic job of recruiting and developing faculty largely belongs to the academic departments who tend to recruit faculty for their disciplinary expertise.

This is almost inevitable for young (that is recently graduated) faculty, since they are usually recruited directly from the top academic programs in the country. We have generally recruited our senior faculty also directly from the academic world; we have certainly recruited excellent faculty, in general, but faculty lacking any real exposure to military problems.

This has led to problems when we need faculty to participate in the interdisciplinary activities of the Academic Groups. As we reduce the size of our tenure track faculty in response to declining budgets, we need to formulate a carefully articulated hiring strategy that provides more balanced hiring.

Once faculty members are hired, we must provide them with an effective orientation and professional development program. We do not have such a program now. A faculty committee chaired by Prof. Fremgen recently issued a report on a possible faculty development program; this provides us with a firm basis upon which to develop a working program. One component of a viable faculty development program must include an exposure to the great ideas that

INITIATIVE EIGHT (CONT.)

Meteorology Professor Phil Durkee (left) explains the function of a solar sunphotometer, a device that measures optical range, to some of his students. The meter is mounted on the nose of NPS's Pelican unmanned aerial vehicle.

are forming the military forces of tomorrow. Faculty need this knowledge to develop proactive curricula.

> Along with a faculty development program we also need a strong and effective mentoring program. We have the basis for such a program now, but we need to modify the existing program to make it more focused and supportive of both faculty and administrative needs. This will form the basis of a more rigorous program of faculty promotion and reappointment.

PILOTLESS PLANE LANDS AT NPS

At first glance, it appears as a somewhat odd-looking airplane. The propeller is in the back and the nose is far too long. But these aesthetic anomalies are just the beginning. This Cessna 337 is missing something that most planes need. . . a pilot.

The Naval Postgraduate School in Monterey acquired such a plane last March and according to Meteorology Professor Phil Durkee, a pilotless plane dedicated to data collection can be as important as a piloted one in military operations or other potentially-dangerous situations.

"There's obviously going to be a lot of dangerous situations where you wouldn't want to put a pilot, whether it's reconnaissance, or collecting data in a hostile environment," says Durkee. Durkee says the development of the plane is being accomplished in conjunction with the Center for Interdisciplinary Remotely Piloted Aircraft Studies (CIRPAS) located at NPS.

"CIRPAS is the first of its kind. There's no other facility dedicated to developing remotely-piloted aircraft for scientific research. NPS is in the position to exercise real leadership in this area," explains Durkee.

"Our first science mis-

sions with the plane were very important. We learned a lot about the aircraft, both in how well the instrumentation works and how well the plane flies, and we got to do good science at the same time," he says.

The "pilotless" plane is currently in transition to remote flight. The NPS crew is working with NASA and another vendor to install a remote flight control system.

CONCLUSION

This is our revised Strategic Plan. It will take the cooperation of all members of the NPS family to make it a reality. In many areas we will have to completely change the way we have done business for many years. It will affect every one of us in one way or another.

But it must be so. The world around us is changing at an ever increasing pace. The military services, in particular, have undergone almost unbelievable changes since the end of the Gulf War.

Just think, if the Revolution in Military Affairs comes to pass it will touch almost every aspect of the military establishment. We may envision a world in which cruise missiles and unmanned aerial vehicles replace fighter and attack planes.

What would replace today's fleets, air wings, etc.? What new organizations would arise? What are the implications of C4ISR and Precision Weapons? What new educational requirements would we be facing? Our students are the ones who must face these issues; are we preparing them to do so?

FOR MORE INFORMATION ABOUT THE NAVAL POSTGRADUATE SCHOOL, CALL (408) 656-2511 OR E-MAIL: GRAD-ED@NPS.NAVY.MIL

