

NPS Grad Returns to Monterey as XO of USS Mobile Bay

By Amanda D. Stein



It takes a lot of qualified men and women to operate the San Diego-based guided missile cruiser USS Mobile Bay CG53. The crew of 320 take their responsibilities seriously aboard the most technologically advanced cruiser in the world. Recently upgraded with a cutting edge computer system and more advanced missile capabilities, the Mobile Bay made a rare

visit to the Monterey Bay to greet the 297 recipients of the Science, Mathematics and Research for Transformation (SMART) Scholarship for Service award.

Originally commissioned in 1987, the Mobile Bay is a Ticonderoga class cruiser developed with extensive capabilities for anti-air warfare, surface warfare and strike warfare. On April 19, the Mobile Bay completed a ten-month upgrade process, making it the second ship in the Navy to undergo such extensive upgrades. Most of the renovations, noted Cmdr. Joey Frantzen, executive officer of the Mobile Bay, can't be seen from the outside, but involve the internal computers and combat systems.

"There are a couple of new radars and guns. But the primary

thing that they have upgraded is the computer system that we call the Aegis Combat System," explained Frantzen. "The displays, they have upgraded those to color to have more features, rather than just a black and orange screen with little symbols. The engineers are always upgrading the algorithms, and overall it has really taken the ship from 70s technology up to like the 2000s."

The engineers are always putting upgrades in to make the algorithms and fighting power better."

Frantzen is fully aware of the importance of computer capabilities to operational success, having received his Masters degree in computer science from NPS in 2001. The Mobile Bay is the second ship that Frantzen has served aboard as an Executive Officer, and he is slated to be promoted to Commanding Officer of the USS Ingraham (FFG 61) in 2012. Even in his short time aboard the Mobile Bay since it completed renovations in April, he has seen firsthand how education can translate to the real world application of capabilities such as the Aegis system within the fleet.

"Over time, we start to see computers becoming more and more part of our lives," explained Frantzen. "Not just for civilians, but also in the Navy. I think that having a background in computer science specifically has helped me when we have different issues come up, not only in using the equipment, but in understanding how it works. So if something breaks, and I have a young technician come up and talk to me about the Local Area Network and what's happening with it, I can relate and understand in a way that someone without a background in computer science might not. That has been a great advantage." Because of the criticality of having systems that can be operated by a diverse crew with different backgrounds and expertise, it is important that Department of Defense (DoD) scientists and engineers have a chance to see

firsthand the applications of the technology they will help develop. SMART, a DoD program, allows students not only the internships and scholarships to study science and mathematics at the college and postgraduate level, but it also provides them opportunities such as the Mobile Bay visit to see the kinds of systems being developed for the Navy.

"I think the SMART program is a great program to bring fresh new ideas into the workforce. They are the future," said Capt. Jim Housinger, Mobile Bay Commanding Officer. "We have to have an incoming stream of new younger people to replace the people who have been doing those sorts of jobs for a long time. I think with the ship being here, it gives them a chance to see the end product of the kind of work that they will be doing once they emerge from the SMART program. I think an investment in education and development of peoples minds is a strategic imperative for our nation. We have to invest in that upfront so that we can meet challenges in the future."

In order to meet those challenges should they arise, the Mobile Bay crew regularly practice Naval Surface Fire Support Exercises, shooting scenarios and weapons testing. The crew, like a small community, labor together to make the Mobile Bay an exemplary member of the fleet, and a prominent anti-aircraft warfare force for the Navy.

"We have an absolutely tremendous crew. Maybe I'm a little bit bias because I am the commanding officer," said Housinger. "But I am extremely proud of this group. It's a very diverse crew, and I think that's one of the things that make us great. Using the diversity of backgrounds, and where people came from to expand our ability to think and innovate and inform. It's pretty exciting to have that kind of workforce that's so dedicated, that's so good at what they do. We're a global navy and we have been a global navy and we will remain a global navy. By networking our ships and aircrafts together even tighter and better, we are more capable of defeating an enemy, recognizing threats and situations and being able to fight and win our nations wars."

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The guided missile cruiser USS Mobile Bay made a rare stop in the Monterey Bay to give Science, Mathematics and Research for Transformation (SMART) Scholarship recipients a chance to see DoD technology first-hand. Cmdr. Joey Frantzen, is Executive Officer aboard the Mobile Bay, and graduated from NPS in 2001 with a master's degree in computer science. He is slated to become the Commanding Officer of the USS Ingraham in 2012.

Full Steam Ahead for NPS' Committee on the Future

By Joan Ackerman

As the world continues to change rapidly, higher education institutions must expand the frontiers of knowledge creation and scientific inquiry. "While our current strategic plan governs our near future, we must understand what lies beyond, knowledge absolutely critical in determining our direction," said university President Dan Oliver.

To meet this end, Oliver commissioned a year-long group called the Committee on the Future and charged them with looking "beyond the boundaries of the present into the possibilities of the future." Chaired by NPS' own Undersea Warfare Chair Rear Adm. Jerry Ellis, the committee will examine some of the trends across the higher education landscape, the Department of Navy and Department of Defense, and provide guidance on how NPS can fully realize its potential as a central resource to its students, sponsors and the nation.

"NPS must predict and enable the future in the most efficient and productive way," said Ellis. How NPS should be shaped — such as academic resources crucial to national security, technology development, multidisciplinary synergies, supported research, alternate resourcing, setting priorities — will all be topics studied by the committee. The campus community, NPS sponsors, leaders from various federal agencies, higher education and our global partners will also join in discussions that will help "set the scene for creating the committee's report, which will be used to develop the school's next strategic plan," added Ellis.

"The true value of the Committee on the Future will not only be in answering questions that I have posed, but also in answering questions we have yet to think of," noted Oliver.

On August 11, the committee will convene its first meeting on the NPS campus. Joining Ellis will be NPS representatives Dr. Doug Moses, Vice Provost for Academic Affairs; Dr. Christine Haska, Vice President, Information Resources and Chief Information Officer; Dr. Karl van Bibber, Vice President and Dean of Research; Colleen Nickles, Vice President, Finance and Administration; Professor Frank Giraldo; and Maj. Kris Zhea, President, NPS Student Council.

Additional members of the committee are Michael Bayer, President/CEO, Dumbarton Strategies and member of the NPS Board of Advisors; Mark Breckenridge, Deputy Director, Defense Manpower Data Center; Sunder Ramaswamy President, Monterey Institute of International Studies; retired Capt. James Durham, Vice President and Director, Undersea Systems and Technology Systems Planning and Analysis, Inc.; James M. McGarragh, Director, Information Technology and Telecommunications Laboratory at Georgia Tech Research Institute; Mark Gorenflo, SES Principal Deputy and Senior Director for Future Capabilities for the Deputy Under Secretary of the Navy for Plans, Policy, Oversight and Integration Office; and retired Navy Capt. Karl M. Hasslinger, Director, Washington Operations, General Dynamics Electric Boat.



NPS Chair for Undersea Warfare retired Rear Adm. Jerry Ellis — along with a collection of leaders from NPS, defense, industry and academia — will convene the inaugural meeting of the Committee on the Future this month.

General Apichart Inducted

On July 30, NPS President Daniel T. Oliver inducted Thai General Apichart Penkitti into the Hall of Fame, placing him in a distinguished group with 11 other NPS alumni whose photos line the wall in Herrmann Hall. The inductees over the years have all made significant contributions to the NPS community and the global defense structure.



"The footprint of our university continues to grow with the success of our alumni, and I firmly believe that we are only just beginning," said Oliver. "Our graduates are occupying top levels of leadership throughout the world and this is a trend that will only continue... General Apichart Penkitti is an exemplary officer and general, and more than worthy to stand beside all of our hall of fame alumni."

General Apichart was selected for the honor based on his years of service as a military officer in Thailand, and his work as an advocate for military partnerships with the U.S. He received his degree in Mechanical Engineering in 1976 from NPS and currently serves as the Permanent Secretary of Defense in Thailand.

"I cannot begin to explain how wonderful it was to receive a call from NPS about me earning a place in the NPS Hall of Fame," said General Apichart. "I wish NPS every success in offering graduate education in support of national and international security in the future."

A Message from Sivaguru Sritharan

Dean of the Graduate School of Engineering and Applied Sciences



Network Centric Warfare (NCW) relies on computer processing power and network communication technologies to provide a shared awareness of the battle space and superiority in information dominance for the U.S. forces. However, directed energy weapons such as high energy lasers and microwave weapons as well as cyber attacks were long considered as major vulnerabilities for NCW, in particular, for the unmanned (autonomous) systems in the tactical networks. It is therefore not surprising that the Chief of Naval Operations (CNO) has raised the strategic importance of unmanned systems and warfare in the cyber realm. The Graduate School for Engineering and Applied Sci-

ences (GSEAS) is in a unique position to provide the leadership for the U.S. Navy in research and education to support the CNO's vision with our world-class core competency in electronic and information warfare, unmanned systems, communications, control and signal processing and directed energy weapons. The re-emergence of the strategic importance of undersea warfare provides an additional impetus to a number of GSEAS traditional strengths including the above-mentioned subjects as well as hydrodynamics and ocean acoustics. The newly formed academic group on undersea warfare (USWAG) will be expected to assume international leadership in maritime security research and education.

In 2010, GSEAS had over fifty million dollars in available reimbursable funding and a number of our faculty have achieved international recognition and awards. Organizational efficiency and employee recognition are among our top priorities. This year we have expanded our GSEAS annual awards system introducing administrative and technical staff categories as well as a new category for faculty entrepreneurship bringing the total number awards to twenty-four.

Academic programs of meteorology, oceanography, applied mathematics and

physics were externally reviewed this year with excellent results. The systems engineering department is well on its way in obtaining ABET accreditation for their MS degree program. Moreover, the NPS Academic Council has voted to approve Ph.D. degree granting status to the systems engineering department and this has been a monumental achievement in the eight-year history of this department.

The GSEAS Distinguished Lecture series as well as a number of other regular seminars within individual departments give a vibrant academic climate for the school. GSEAS has taken aggressive measures to improve laboratory and workplace safety awareness and has started developing systematic plans for employee safety training programs. Strategic planning discussions are being carried out at several levels addressing a range of academic and organizational issues and to align with the NPS vision to grow as a research university.

GSEAS is an organization with a core purpose to educate the future leaders of U.S. defense establishment and a core set of values representing high standards for academic and organizational excellence. Our strategies and initiatives constantly adapt to the rapid changes and needs of Navy's mission and national security.

Announcements

Profs. I. Michael Ross from the Department of Mechanical & Aerospace Engineering and **Fariha Fahroo** from the Department of Applied Mathematics (currently on leave as a Program Officer at Air Force Office of Scientific Research) have been awarded the 2010 American Institute of Aeronautics and Astronautics (AIAA) Mechanics and Control of Flight Award. This award is the highest award given by the AIAA for the mechanics and control of flight and is jointly awarded by

three technical committees of the AIAA: the Guidance, Navigation and Control Technical Committee, the Astrodynamics Technical Committee, and the Atmospheric Flight Mechanics Technical Committee. They won this award for their contributions to optimal control theory, "for the development and implementation in software of pseudo-spectral methods for the solution of complex nonlinear optimal control problems."

Faculty Notes

Graduate School of Business and Public Policy Assoc. Prof. David R. Henderson spoke on "How Prices Help You Plan and Why High Prices Can Be Good" at the Winning Ideas Weekend, a conference sponsored by the Free to Choose Network in San Francisco. The audience was largely high-school economics teachers and high-school and middle-school students.

In July, **Assistant Prof. Sophal Ear** of the National Security Affairs department participated in a poster presentation, "Towards Effective Emerging Infectious Diseases Surveillance in Cambodia and Indonesia" at the 4th Ditan International Conference on Infectious Diseases, Beijing International Con-

vention Center, Beijing, China. The abstract was published in the well-regarded (Impact Factor 2.167) *International Journal of Infectious Diseases*, 14 (supp. 2), July 2010, the official publication of the International Society for Infectious Diseases, and won an AGD Prize at the conference.

Donald Stoker of the U.S. Naval War College's NPS program recently published his sixth book, *The Grand Design: Strategy and the U.S. Civil War* (Oxford University Press, 2010). It is the first book to examine the Civil War from a strategic perspective and has been chosen as a main or alternate selection in a number of popular book clubs.

Undersea Warfare Academic Group Re-established at NPS

By Amanda D. Stein

As the military branch tasked with protecting our nation's waterways, the Navy remains diligent in areas of maritime security and undersea warfare. In 1971, as the Cold War continued and the perceived threat of Soviet submarines loomed into the deep seas, NPS responded with the development of the first academic group on campus. The Undersea Warfare Academic Group (USWAG) was established to create a curriculum focused on an interdisciplinary approach to Undersea Warfare in a way that would prepare naval officers for the challenges of the time. The group downgraded to a committee in 2001 after it seemed the end of the Cold War also meant the end of sub-sea threats against the U.S.

"During the Cold war, we were best at it in the world ... far superior to anyone else," explained Undersea Warfare Chair

retired Rear Adm. Jerry Ellis. "We have let a lot of our skills atrophy, and now we've got to build those skills back up. So it's not necessarily that we don't have the right equipments or the right submarines. It's more about the training, proficiency and knowledge. And it's going to take some time to get us back to where we were. I would still say that in the world today, no one is better. But that edge that we had is really down to a very small margin."

With the recent development of advanced submarine and sea mine technologies around the world, the Chief of Naval Operations and Secretary of the Navy have begun to stress the importance of vigilance and training in the Undersea Warfare field. There is a growing need for the Navy to strengthen those skills and prepare seamen for the potential challenges that lie ahead. In response to the need, NPS re-established the USWAG

as part of the Graduate School of Engineering and Applied Sciences (GSEAS), allowing them once again the funding, staff and status needed to ensure students are receiving the most relevant undersea warfare education.

"Clearly having this kind of a group come together is one of the real strengths of the Naval Postgraduate School," noted Rick Williams, Mine Warfare and Expeditionary Warfare Chair, and also a retired Navy Admiral. "Only NPS can structure advanced educational programs for the officer corps of future generations that are based on world class academic rigor and are applied by our students to research that is relevant to current Navy needs and that addresses current Navy problems."

Williams consistently works with leaders in the fleet to implement the most relevant curriculum with the common goal of proficiency in undersea warfare.

CALENDAR

August 3-6

Capt. (Ret.) Paul Rinn
Former Commanding Officer, USS Samuel B. Roberts
Menneken Lecture
POC Rear Adm. (Ret.) Rick Williams Ext. 7702

August 6

Inside NPS, August Edition debut
POC Alan Richmond Ext. 3649

August 12

Dean Sivaguru Sritharan
OR Seminar
POC Kyle Lin Ext. 2648

August 12

Andrew Coon
DARPA Program Manager
Menneken Lecture
POC Rear Adm. (Ret.) Jerry Ellis Ext. 2488

August 16-17

Admiral (Ret.) James Hogg
Strategic Studies Group: Candidate Selection: King Hall
POC Phillip Gonda Ext. 2291

August 17

Richard Clarke
Former National Coordinator and Special Assistant to the President for Counterterrorism, Security, Global Affairs and Cyber Warfare
Secretary of the Navy Guest Lecture
POC Lt. j.g. Patricia Bouldin/Protocol Ext. 7773

August 19

Capt. Robert Burke
Commodore/COMSUBDE VRON 12
Menneken Lecture
POC Rear Adm. (Ret.) Jerry Ellis Ext. 2488

HISTORICAL HIGHLIGHTS

Following a six-month long contest in 1970, the Naval Postgraduate School Insignia Committee announced the winners of the competition to create a logo and motto for NPS.

The five members of the judging committee – consisting of a student, staff officer, professor, civilian employee and enlisted sailor – reviewed 145 entries (75 in design and 70 in motto), awarding first place to Lt. Cmdr. Floyd Sykes for his design, similar to the crest pictured here, and first place in motto to Lt. Harold Ziehms.

The winning motto, "Nil sine magno labore" or "Nothing [can be] achieved without great effort," was subsequently replaced in early 1971 with the university's current motto of "Praestantia per scientiam" (Excellence through knowledge) which had been submitted in the competition by Lt. R.D. Jones.

Rear Adm. Robert McNitt, then NPS superintendent, stated in a memorandum that the change in motto had come "after a great deal of discussion, advice, consultation and participative endeavor" to meet four main criteria, and have "a rhythm or phrasing that is pleasing and satisfies the classical scholar or Latin expert."



Historical Highlights are provided by the Dudley Knox Library.