By Amanda D. Stein

Full Steam Ahead for NPS’ Committee on the Future

The guided missile cruiser USS Mobile Bay made a rare stop in the Monterey Bay to give Science, Math, Engineers and Research for Transformation (SMART) Scholarship recipients a chance to see DoD technology first-hand. Cmdr. Joey Frantzen, Executive Officer of the Mobile Bay, can’t be seen from the outside, but involves 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 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 2003. 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.

"Our 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.

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 Flaaka, 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. Kira 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; Sundeep Raman, President,_defense_manpower_data_center; Colleen Nickles, Vice President, Finance and Administration; Professor Frank Giraldo; and Maj. Kira Zhea, President, NPS Student Council.

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, Executive Officer aboard the Mobile Bay, and graduated from NPS in 2003 with a master’s degree in computer science. He is slated to become the Commanding Officer of the USS Ingraham in 2012.
Undersea Warfare Academic Group Re-established at NPS

By Amanda D. Stein

As the military brands ranked 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 sea, 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 was re-launched in 1975 by Rear Admiral Jerry Ellis. “We had a lot of our skills atrophy, and now we’ve got to build those skills back up. It’s not that we don’t have the right equipment or the right sub-marinans. 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 say that in the world today, no one is better. But that kind of edge that we had is really down to a very small margin.”

With the development of advanced submarine and sea mine technologies around the world, the Chief of Naval Operations and Secretary of the Navy have been at the forefront of the importance of training and vigilance in training the Undersea Warfare field. There is a growing need for the nation’s defense to retain skills that are critical to 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) 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, undersea systems, communications, control and signal processing and directed energy weapons. The re-emergence of the strategic importance of undersea warfare is an example of how our national security is dependent on a number of GSEAS’ traditional strengths including the above-mentioned subjects as well as naval 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 series introducing administrative and technical categories in addition to the established classes for faculty, graduate student and entrepreneurship bringing the total number of awards to twenty-four.

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 robotics, have been identified 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 Sciences (GSEAS) is an organization with a core mission to provide the leadership for the U.S. Navy in research and education. And as the NPS vision to grow as a research university, GSEAS is working to ensure that the NPS mission to grow as a research university.

By Prof. I. Michael Ross from the Department of Mechanical & Aerospace Engineering and Farzba Fahnoda from the Department of Applied Mathematics (currently serving as a Program Officer at Air Force Office of Scientific Research) have been awarded the 2010 American Institute of Aeronautics and Astronautics (AIAA) Mathematics 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 Aerodynamics 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.”

Dean of the Graduate School of Engineering and Applied Sciences

Message from Sivaguru Sthitharan

Toward Effective Emerging Infectious Diseases Surveillance

“Toward Effective Emerging Infectious Diseases Surveillance” was the theme of a conference sponsored by the Free to Choose Network in San Francisco. The audience was largely high-school students. Ideas Weekend, a conference sponsored by the Free to Choose Network in San Francisco. The audience was largely high-school students. The audience was largely high-school students. The audience was largely high-school students.

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 Richardson Ext. 3649

August 12
Dean Sivaguru Sthitharan
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 Fogg
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 Ziehm. 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 “Praesentia per scientiam” (Excellence through knowledge) which had been submitted in the competition by L.D. Jones.

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“During the Cold War, we were best at it in the world… far superior to anyone else,” explained Undersea Warfare Chair retired Rear Adm. Jeff Ellis. “We have a lot of our skills atrophy and now we’ve got to build those skills back up. It’s not that we don’t have the right equipment or the right sub-marinans. 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 say that in the world today, no one is better. But that kind of edge that we had is really down to a very small margin.”

With the development of advanced submarine and sea mine technologies around the world, the Chief of Naval Operations and Secretary of the Navy have been at the forefront of the importance of training and vigilance in training the Undersea Warfare field. There is a growing need for the nation’s defense to retain skills that are critical to 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, Marine Warfare and Expeditionary Warfare Chair, and also a retired Navy Admiral. "Only NPS can structure the solution of complex nonlinear optimal control problems."