UPDATE NPS

Naval Postgraduate School Monterey, California

In This Issue: *NPS Team Tests Revolutionary Recon System, Message from Dean of Students, Lake Del Monte Renewal*

June 2009

Happy Birthday NPS! *University Celebrates 100 Years of Excellence*

By Barbara Honegger

With flying banners and ribbon cuttings, the Naval Postgraduate School exuberantly celebrated its Centennial Kick-Off and Alumni Reunion Weekend, May 22-25.

Launching four days of historic 100th-year anniversary celebrations was President Oliver's State of the University address, followed by Provost Leonard Ferrari's overview of the university's first century of world-class, military-relevant research.

"Thank you for joining us on this special day as we celebrate the 100th year anniversary of the Naval Postgraduate School," Oliver told the audience in King Hall. "As we honor NPS' past and celebrate its current accomplishments, the future before us promises even more and greater contributions to our nation's security and the world's prosperity."

Following the presentations, visiting alumni and students, faculty and staff moved to the Ingersoll courtyard for the dedication of the new NPS Centennial Timeline – 48 large panels displayed along the entire length of the outside of Root Hall covering all aspects of NPS' history.

"It was a privilege to work on this [Timeline] project," said Kari Miglaw, NPS Director of Alumni Relations and Centennial Director, who was applauded by Oliver for her leadership in presenting this "remarkable and enduring gift" to the campus. "Erica Olsen's words brought a long and complex history into focus, and Matt Rose's inspired design brought the project to life," she continued.

Saturday kicked off with an alumni golf event and was capped by the festive Centennial Gala ball in the Barbara McNitt Ballroom. President Oliver opened the Gala by inducting only the tenth member into the NPS Hall of Fame – former Marine Corps Commandant Gen. Michael Hagee (Electrical Engineering, 1969).

"General Hagee was and is a tireless advocate for military higher education," Oliver told the guests at the sold-out black tie event. "As Maj. Gen. Mel Spiese, who is on our Board of Advisors, said so well, 'General Hagee is a model of advanced education in the armed forces and the value it brings to the service member and the service."

On Monday, NPS flung open its gates to the Monterey community for a special Centennial rendition of its popular annual Memorial Day Concert on the Lawn. In addition to Congressman Sam Farr, Monterey Mayor Chuck Della Salla and other officials, the university welcomed countless families to enjoy the concert, special kids' events, informative open houses, and the Glasgow Hall and Dudley Knox Library rededication ceremonies.

But it was perhaps Oliver's words at the Gala two nights prior that is reflective of the entire historic weekend. "These extraordinary celebrations marking the 100th anniversary of the Naval Postgraduate School signal the beginning of a year-long tribute to the legacy that has been created by this wonderful institution over a full century of its life. We honor NPS for the magnificent university it has become and the even greater university it will be 100 years from now." Happy Birthday Naval Postgraduate School!

From visiting alumni marveling at the Centennial Timeline, to welcoming one of our greats to the Hall of Fame, to a packed house at the Concert on the Lawn, Reunion Weekend kicked off the Naval Postgraduate School's Centennial Celebration in grand style. Keep a look out for several events throughout the coming year as the university continues to honor this extraordinary milestone.

NPS Team Tests Revolutionary Recon System

By Barbara Honegger

The Navy has tapped the Naval Postgraduate School to be the Operational Test Agent (OTA) for a new "tunable" multi-mission-capable, multi-sensor reconnaissance and surveillance system that could drastically cut costs while revolutionizing the way the military identifies and tracks targets on land and at sea.

A faculty-student team – led by NPS Distributed Information Systems Experimentation Research Group director Professor Shelley Gallup and OTA program manager Research Associate Brian Wood – has developed and will coordinate portions of the Joint Capability Technology Demonstrations (JCTDs) for the groundbreaking sensor package called the Joint Multi-Mission Electro-Optic System (JMMES).

"JMMES has the potential to be revolutionary for airborne surveillance and reconnaissance," said Gallup, Principal Investigator for the JMMES OTA project. "It could be a game changer for high-cost-savings, technical capabilities innovation because it greatly enlarges the mission area by changing the software instead of creating expensive new technical platforms to address each threat area," he explained.

JMMES enables ground or airborne operators to switch between eight critical mission-specific, real-time image processing algorithms to detect, classify, identify and track camouflaged and concealed targets during the day or night. The sensor suite includes electro-optic and infrared sensors, a laser designator/range finder and, in the future, a magnetic anomaly detector all in a single turret that can be mounted on piloted fixed- or rotary-wing aircraft and unmanned aerial vehicles (UAVs).

"Currently, if an operational commander has a UAV or manned aircraft out on a counter IED mission, for example, and needs it for an at-sea maritime interdiction operation, he has to either task a second asset or call it back and have a new MIO-mission-specific sensor installed, increasing reconfiguration downtime," Wood explained. "With JMMES, an operational commander may have the option to rapidly switch the IED-mission-specific software to MIO-mission-specific software on the fly."

Two NPS students, both with first-hand knowledge of the limitations of current sensor systems, are researching aspects of JMMES for their joint master's thesis. Information Warfare Systems Engineering students Marine Corps Maj. Bronchae Brown and Lt. Brian Schulz will analyze how JMMES impacts the Intelligence, Surveillance and Reconnaissance (ISR) process and compare and contrast JMMES and traditional ISR systems methodologies.

"As an Information Warfare officer in an EP-3 squadron, I noticed increasing flight delays on ISR missions because we didn't always have the right carry-on equipment installed," Schulz noted. "A multi-mission sensor system like this would be a huge cost and time saver for our operations."

"In my last tour in Iraq with a wing staff, I was tasked daily to do non-traditional ISR IED searches," Brown said. "It would be great to be able to switch the sensor suite on a single UAV or manned aircraft to do IED as well as other types of missions."

For more information about the NPS JMMES operational test and evaluation program, contact Wood at (831) 656-3736 or bpwood@nps.edu.

The NPS team evaluating a new, revolutionary reconnaissance and surveillance system reviews the upcoming test schedule. Shown (left to right) are student Lt. Brian Schulz, principal investigator Professor Shelley Gallup, Research Associate Brian Wood, and student Marine Corps Maj. Bronchae Brown.

IN BRIEF

- The NPS Beam Physics Laboratory generated its first photoelectron beam on April 17, 2009, and a formal "first beam" ceremony was held on April 18th – President Oliver launched the beam. This event marks the start of experimental free-electron laser physics at NPS, and the start of new capabilities for accelerator physics research at the School.
- NPS has been re-designated as a National Center of Academic Excellence in Information Assurance Education and designated as an IA Center for Academic Excellence in Research for academic years 2009-2014. A ceremony recognizing this achievement was held on June 3 at the 13th Colloquium for Information Systems Security Education in Seattle, Wash.
- The NPS Foundation will be laying Bricks on the Pathway to the Future in front of Spanagal Hall in June. If you would like to purchase a memorial brick as a mark of your accomplishments at NPS or to honor a friend or loved one, e-mail Trudy Ehrhart at trehrhar@nps.edu or call 656-2339.
- CED3's call for funded course proposals resulted in 23 submissions covering diverse topics. Seven proposals have been selected by an advisory board for funding by CED3 in AY09. For a full list of all the proposals with abstracts, go to http://intranet.nps.edu/announcements/documents/ced3_AY09_Proposals_FINAL.pdf.
- The Independent Television Service (ITVS), along with its partners at Geneva University, NPS and the U.S. Mission to Geneva will present the Geneva Forum on Social Change, June 5 and 6 at the Geneva International Conference Centre in Geneva, Switzerland.

UPDATE NPS
Naval Postgraduate School Monterey, California
June 2009

Message From

Dean of Students Capt. Janice Wynn

Greetings! I've been the Dean of Students for a graduation cycle, and am pleased as punch to be serving in this capacity. A lot of things have changed since I was a student here, but the fact remains this is a wonderful institution dedicated to "excellence through knowledge."

The recent Memorial Day weekend was packed with Centennial and annual events, culminating with the Monterey Bay Symphony's performance during our Concert on the Lawn. Special thanks to all of the student and spouse volunteers. Your energy and enthusiasm contributed greatly to the success of these festivities. During the student life panel discussion and interaction with the alumni, it was very apparent that the memories made here last a lifetime. Good news, we will have a full year of Centennial events to look forward to.

Speaking of those memories, I ask that students please keep a steady hold on your work-life balance. If you're feeling overwhelmed by course material or a personal matter, talk it over. Your professors, program officers and my staff are standing by to assist. There's a time for midterms, finals and the elusive green card hunt, but there's also plenty of time for family, friends and exploring this beautiful region. Discover San Francisco and the wine country; find out how MWR can get discount entertainment and hotel pricing for you and your family; learn to SCUBA dive (or at least flop around in a kayak); or consider being a sponsor for an international family. If that's too much of a commitment, we're looking for "Ambassadors" to meet arriving international students during the summer break. Volunteer opportunities abound – we'll have our semi-annual new student information fair on June 30. Even if you're not a new student come on over to the Barbara McNitt ballroom for an afternoon of information, fun (and surprises).

Regarding the journey of reaffirmation of accreditation with WASC, we're focusing now on the Educational Effectiveness portion. Although this seems a long way off, just like your time here, it flies by quickly. Student learning outcomes, evidence of educational achievement, and alignment with the program sponsors' ESRs are all important aspects of assessment. The Educational Effectiveness Steering Group will be working campus wide to gather best practices, organize our evidence and tweak course journals and syllabi in order to map program requirements down to the course level. Student input is welcome and encouraged!

In closing, I would like to pass on a Bravo Zulu to the President's Student Council. They are your conduit to change and have represented you well! Do not underestimate your voice. Student observations and suggestions lead to improvements all across campus. Keep up the good work!

Calendar

June 7-9
Prof. Lorenzo Marconi
University of Italy, Bologna
Control Theory & Control Systems Research
POC Prof. Wei Kang Ext. 3337

June 9
Quarterly Awards Ceremony King Hall
POC Sonya Solomon Ext. 2075

June 13-20
Mr. Richard Williams
Director General
The Technical Cooperation Program Science and Technology DND/DRDC
POC Protocol Ext. 2466

June 18
Graduation Rehearsal and New Alumni Reception
POC Sonya Solomon Ext. 2075

June 19
Graduation Ceremony and Reception
King Hall
POC Sonya Solomon Ext. 2075

June 30
New Student Orientation
POC Sonya Solomon Ext. 2075

July 3
4th of July holiday observed

July 6
Classes begin

Faculty Notes

Associate Prof. Ron Fricker was selected as a 2009 Fellow of the American Statistical Association for his contributions to the statistical profession. Fellows will be presented with their awards on August 4, 2009 in Washington, D.C. during the Joint Statistical Meetings award ceremony.

Prof. Art Krener of MA has been selected as a Fellow of the Society for Industrial and Applied Mathematics.

Prof. Uday Apte was awarded the Distinguished Service Award for 2009 by the Production and Operations Management Society at their Annual Conference in Orlando, Fla.

Distinguished Prof. Chih-Pei Chang was appointed Co-Chief Editor of World Scientific Series on Earth System Science in Asia, a project cosponsored by the World Meteorological Organization (WMO). Prof. Chang chaired the 4th WMO workshop on monsoons in Beijing, China last fall and is editing a book titled *The Global Monsoon System: Research and Forecast* for WMO.

Profs. Moshe Kress and **Johannes Royset** won the MOR Journal Award for their paper "Aerial Search Optimization Model (ASOM) for UAVs in Special Operations" *Military Operations Research Journal*, V. 13, No. 1, pp 23-34, 2008 which will be presented at the 77th MORS Symposium.

Brigadier General Feroz Khan (Retired-Pakistan), Visiting Professor in the Department of National Security Affairs, co-authored a monograph entitled "Pakistan and Israel." The report, written in conjunction with Brigadier General Shlomo Brom (Retired-Israel), analyzes the nuclear weapons perspectives of Pakistan and Israel, who view nuclear weapons as vital to offsetting potential or actual capabilities of adversaries, and studies approaches necessary for nuclear disarmament negotiations. The report is the third in a new series of Stimson Center publications which provides important contributions about how to rid the world the dangers of nuclear weapons. The monograph is available at: http://www.stimson.org/nuke/pdf/PAKISTAN_ISRAEL.pdf.

Lake Del Monte Renewal Benefits the Campus, the Bay, Native Species

The Naval Postgraduate School's Lake Del Monte was created soon after the construction of Charles Crocker's Hotel del Monte that opened in 1880, for recreation and the esthetic enjoyment of the hotel's guests. Currently the lake serves multiple purposes including functioning as a storm water detention basin, a source of irrigation water for campus landscaping, a wildlife habitat, flood water control and esthetic enhancement.

While the base benefits by having a free source of non-potable irrigation water, we all benefit from the lake's ability to protect the Monterey Bay Sanctuary. The major sources of water resupplying the lake are storm drain water and groundwater seepage from the watershed south of Highway 1. As water flows through the City of Monterey storm drain system, it picks up debris, sediment, litter and other contaminants. These contaminants, if not adequately collected in a buffer like Lake Del Monte, can flow directly into the ocean, providing one of the largest sources of pollution to the Monterey Bay Sanctuary. The lake and two others operated by the City of Monterey protect the sanctuary by allowing the contaminants to settle before flowing into the bay. Over time, as contaminants and sediment accumulate on the lake bottom, the system loses its ability to hold and filter out contaminants, thus requiring periodic removal of sediment to restore the lake's capacity to protect the sanctuary.

While no special status plants or animals designated as threatened or endangered are known to occur in Lake Del Monte or in its immediate vicinity, the lake does provide habitat to a number of freshwater fish species, non-native turtle species, migratory Canadian geese, mallards and coots. Mosquitoes are managed by keeping the lake stocked with mosquitofish. The dominant aquatic plant species in the lake is bulrush, commonly referred to as tule. Filamentous and planktonic algae are also present but can have a negative effect on the overall health of the lake.

The current lake renewal project was undertaken to perform aquatic plant control and to remove sediment from the lake bottom. Control of aquatic plants will enhance water quality by reducing the plants that cause oxygen depletion in the water and allowing the mosquitofish to better control the mosquito populations by gaining greater access to the shoreline breeding areas. Dredging the lake will remove the accumulated sediment, restoring the lake to its original depth and contaminant removal capability, thus preventing potential wildlife and human health disasters associated with direct contaminant release into the bay. Restoring the lake's water capacity will also provide flood prevention for the adjacent commercial and residential areas and allow extension of non-potable irrigation to the Navy Annex. Final restoration of the landscaped areas around the lake will be done to maximize erosion control and to restore native plants and trees to the area.

Controlling aquatic plant life, increasing lake capacity and restoring a more natural landscape will ultimately create a more desirable habitat for wildlife and native plant species. The management of Lake Del Monte and the surrounding areas will be the subject of future and continuing studies. The goal of these studies will be to manage non-native and invasive plant species and develop a more suitable ecology for native animal and plant species.

UPDATE NPS is a monthly newspaper for NPS personnel. For information contact Joan Ackerman, jeackerm@nps.edu.