ADM Wayne E. Meyer (ret.)
"Father of Aegis"
Visits Meyer Institute

On June 17-18,2004 a very special visit was made by the "Father of Aegis", ADM Wayne E. Meyer (ret.), for the Spring quarter graduation of SEA5 and NSWC - Port Hueneme cohorts. ADML Meyer presented the Wayne E. Meyer Institute of Systems Engineering and the Northrop Grumman awards to the SEA5 and NSWC - Port Hueneme students at the Naval Postgraduate School graduation ceremony.

Satellite for Naval Undersea Capability

The Wayne E. Meyer Institute is involved in undersea warfare research — from TACMEMO development to technical research. This month we highlight one of our technical programs, the Satellite for Naval Undersea Capability.

The Satellite for Naval Undersea Capability program at NPS was recently asked to evaluate satellite altimetry data assimilation's value on Naval undersea capability. Satellite data assimilation impact was investigated using two sets of ocean hydrographic data: the Navy's Global Digital Environmental Model (GDEM) which provides a monthly mean, and the Modular Ocean Data Assimilation System (MODAS) which provides synoptic data.

The two environmental datasets provide the input into the Weapon Acoustic Preset Program which determines the suggested presets for a Mk 48 torpedo. The acoustic coverage area generated by the program was used as the metric to compare the two sets of outputs.

The output presets were created for two different scenarios, an anti-surface warfare (ASUW) and an anti-submarine warfare (ASW), and three different depth bands, shallow, mid, and deep. After analyzing the output, it became clear that there was a great difference in the presets for the shallow depth bands: and that as depth increased, the difference between the presets decreased. Therefore, the MODAS data with the satellite data assimilation was optimized in the shallow depth band. The ASW presets also seemed to be slightly more resistant to differences in the presets than was the ASUW scenario.

This project is led by Professor Peter Chu (chu@nps.navy.mil) of the NPS Oceanography Department and is a joint effort among NPS, SPAWAR, NRL, and NUWC. The results have been published in the Marine Technology Society Journal. For more information, please look at website: http://www.oc.nps.navy.mil/~chu).

Professor Charles N. Calvano
Honored with
Superior Civilian Service Award

In honor of his impeccable service to the Naval Postgraduate School, Provost Richard Elster presented the Superior Civilian Award to Professor Emeritus Calvano during the June 2004 graduation reception.

Professor Calvano has provided his expertise and mentored many students during his 12 years at NPS. He developed and nurtured the Total Ship systems Engineering (TSSE) curriculum. This curriculum has been spectacularly successful at providing a broad-based and design oriented systems engineering education to naval officers. The program has focused on warship design, and the integration of hull, mechanical, electrical, and combat systems. A long time advocate for systems engineering education, Professor Calvano was instrumental in the design of the current systems engineering and analysis curriculum.

 As the project leader for the 2002 integrated campus research project on expeditionary warfare, he supervised the activities of students and faculty to develop creative and integrated solutions to the challenges the Navy will face in 2020.

As the associate director of the Meyer Institute of Systems Engineering, Professor Calvano made substantial contributions to the excellence of all the NPS systems engineering programs. He also helped promote and improve the distance learning programs in systems engineering to Navy laboratories, which currently have 116 students enrolled, as well as the systems engineering management curriculum.

In addition, Professor Calvano was presented by ADML Wayne E. Meyer, an award on behalf of the institute honoring his genuine accomplishments. During his role as Associate Director of Education, his academic contributions gained continual success for the institute without measure.

As he continues on his road to success, he has accepted a position with the Office of Naval Research, London, UK and will be departing for England in mid-July.

THE LOGBOOK

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www.nps.navy.mil/meyerinstitute

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Congratulations Graduates

June 2004 Graduation Awards

Graduation with Distinction: ENS Bryce Abbott, USNR

Meyer Institute Awards

Outstanding Student in Systems Engineering (Integrated Project)
Neo Hock Huat, TDSI
Van M. Anglim, NSWC- Port Hueneme
Matthew J. Parry, NSWC- Port Hueneme

Outstanding Student in Systems Engineering (Distance Learning)
Mustafa Yaglidere, NSWC- Port Hueneme
Brendan J. Applegate, NSWC- Port Hueneme

Most Valuable Team Member (Integrated Project):
LT R. Matt Holmes, USNR

Teaching Excellence, Integrated Project
Associate Professor Fotis Papuolias

Teaching Excellence, Distance Learning
Associate Professor Steven Pilnick

Northrop-Grumman Awards

Excellence in Systems Engineering:
LCDR Quoc Tran, USN
LT Chad Graham, USNR
ENS Marlin (Rob) Smith, USNR
ENS Edward (Scott) Poitevent, USNR

Teaching Excellence in Systems Engineering (Faculty)
Associate Professor Tom Huynh

SEA5

NSWC Port Hueneme

SEA5
Systems Engineering and Analysis—Cohort 5
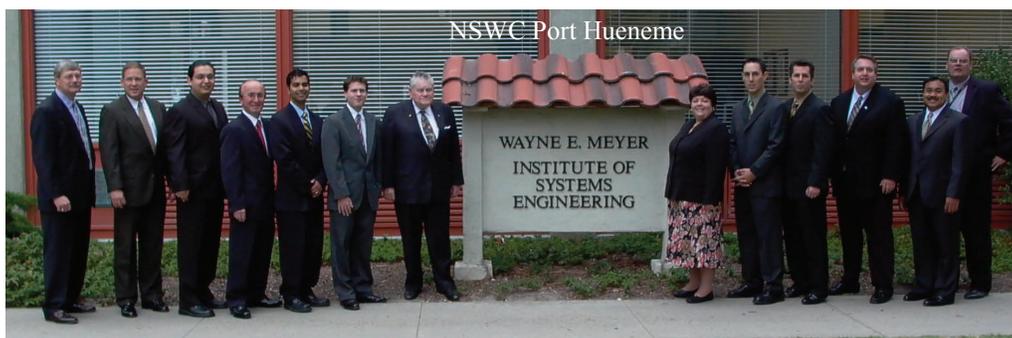## Summary Report

In 2003, NPS students at the Wayne E. Meyer Institute for Systems Engineering addressed the growing challenge of maritime regional threats to blue-water forces. In this AY 2004 integrated project, Systems Engineering and Analysis-Cohort 5 (SEA5) was tasked to define alternatives for a conceptual system of systems (SoS) consisting of manned and unmanned systems, and to recommend a future SoS along with its concept of operations (CONOPS) that would enable SEA BASING and SEA STRIKE for maritime dominance in the littorals. The SoS development was required to take into account cost, risk to personnel, and its maritime dominance mission effectiveness.

SEA5 developed a project management plan (PMP) to manage the integrated project and employed the Systems Engineering Design Process (SEDP) to design a recommended SoS. Three SoS alternatives were considered: a system of only manned platforms, a system of primarily unmanned platforms, and a balanced hybrid system of manned and unmanned platforms. A cost analysis and a simulative analysis, supported by EXTEND software tools, Autonomous Littoral Warfare Systems Evaluator (ALWSE), Shallow Water Acoustic Toolset (SWAT), and Microsoft Excel, led to the selection of a balanced hybrid system of manned and unmanned systems that uses distributed communications network architecture and a decentralized command and control structure. A system of purely unmanned platforms does not provide a comprehensive solution to the problem of maritime dominance in the littorals in the year 2020 timeframe because unmanned platforms complement but cannot replace manned systems. Manned platforms will still be required to implement command and control and make crucial operational decisions. Furthermore, limited in endurance and thereby requiring manned system support, unmanned vehicles cannot completely keep personnel out of harm's way, yet they greatly reduce the level of risk to which personnel are exposed.

The SEA5 report will be available in summer of 2004 at
http://www.nps.navy.mil/sea/maritimedominance/
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