



SE NEWSLETTER HIGHLIGHTS

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Letter from the Chairman

The Systems Engineering Department celebrated our 15th year anniversary this past fall. It is interesting how far the department has come in such a short time. The SE team has 43 faculty, researchers, and staff. A few of our faculty have been here from the start - see the article by Professor Bob Harney on the early history of the SE department. We have grown to now support nine separate programs with over 350 students.



Dr. Ronald E. Giachetti
Chair, Systems Engineering
regiache@nps.edu

We have continued to adapt to the needs of the Navy and Department of Defense by changing our programs, courses, and introducing new programs. We have a successful PhD program with about 20 students in the program. In December 2017 we graduated our fifth PhD student, CDR Katy Giles, who will join the faculty as a Permanent Military Professor and remain here until her statutory retirement.

The SE Department now serves every service branch. We have been serving the Missile Defense Agency (MDA) with a certificate program that can lead to the full MS in Systems Engineering. The December graduation had a large cohort from the MDA.

We have just earned approval on a new MS in the Systems Engineering Management program, developed for Army Acquisition Officers. The first entering class for this new program will arrive in June 2018. We are excited to offer this new program because it will increase our resident enrollment by delivering an in-residence degree, which was previously only delivered via distance learning in the PD21 program. We also expect all our students from the Navy and Army to benefit by interacting with officers from all the services within the SE programs.

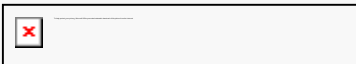
Now that we are getting on in our 15th year, many of our alumni from the early cohorts are reaching positions of leadership in their respective organizations. The newsletter contains a news item about CAPT Aaron Peters, a graduate of an early cohort. At a recent meeting of the CHENGs from NAVSEA, one of the participants told me she was an SE graduate. I expect to bump into more and more alumni as time goes on.

We welcome any news on our alumni and their work for the defense and security of our nation.

Here's wishing everybody a prosperous New Year!

SE Department's 15th Anniversary

A History of the Systems Engineering Department



Prof. Robert C. Harney

Systems Engineering has been a staple of DoD engineering and acquisition since the publication of MIL-STD-499 System Engineering Management in July 1969. Not long afterwards, several curricula at NPS had systems engineering added as an ESR. This led to isolated courses in systems engineering such as:

- AA3272 Introduction to Systems Engineering
- EC4010 Principles of Systems Engineering
- CC4101 Systems Engineering for Joint C4ISR Systems
- MN4012 Management of Advanced Systems Engineering

These were taught by faculty in the departments offering the course.

Sometime later (in the 1980's?) NAVSEA sent Mike Melich to be a part-time faculty member in the Physics Department (who owned the Weapons Systems curriculum) to make sure that students in that curriculum got an exposure to systems engineering. He put together and taught two courses:

- SE2020 Combat Systems Requirements and Design (1-0)

- SE4021 Combat System Project Integration (4-1)

to address that desire.

Also in the late 1980's NAVSEA recognized they had problems with the stovepiped nature of ship design and entered into discussions with NPS (specifically Matt Kelleher in ME among others) about creating a Total Ship Systems Engineering (TSSE) program. This was approved in 1990 and Chuck Calvano was hired in 1991 as an Associate Professor in the Mechanical Engineering Department to run the program. The TSSE program consisted of 6 lecture courses (1 SE, 2 ship systems, 2 combat systems, and 1 power systems) and 2 project courses. Students selected from the ME, ECE, and PH curricula would take these courses as a one-year track. The culmination was a project report and a public outbrief that detailed the design of an entire warship. This was the first major systems engineering activity at NPS. Bob Harney was hired in 1995 as Associate Professor of Physics to run the combat systems part of the program.

Both Professors Calvano and Harney recognized that TSSE could never satisfy more than a tiny fraction of the Navy's systems engineering education needs. In 1996 Dick Elster (Provost at the time) was convinced to sponsor an Ad hoc Committee on Systems Engineering. The committee deliberated for about a year and published a report: C. Calvano, R. Harney, and C. Newberry, with concurrence of R. Dell, K. Kang, F. Levien, R. Ball, M. Kelleher, C. Schleher, and D. Wadsworth, "Report of the Ad Hoc Committee on Systems Engineering", Naval Postgraduate School report to the Provost (2 July 1997). The report recommended establishing a systems engineering degree program as soon as possible. The current MSSE degree curricula are loosely based on the course structure proposed in that report.



Prof. Harney presenting the history of SE at NPS during a special 15th anniversary department meeting.

At around the same time, Wayne Hughes of the OR department started pushing for a Warfighter Curriculum (for URL officers – who might become requirements setters in OPNAV) that would combine technical courses and analysis courses. As a short dry run of this idea, Mike Melich received funding from ONR to study an Enemy Area Denial System. A one-quarter project course CC4200 Enemy Area Denial System was taught by multiple faculty in Spring AY98 and briefed to the CNO Executive Panel. A formal proposal to OPNAV in 1998 led to formation of the Systems Engineering and Integration program in October 1999. This 6-quarter program was essentially Hughes' curriculum but with more technical content. It was initially run by a Systems Engineering and Integration Academic Committee (headed by Dean Peter Purdue). The first students started in October 1999 and graduated in March 2001. A second group of 15 students graduated in December 2001. Both of these groups had significant participation from Singapore students. Although Singapore dropped out of SEI when they formed their TDSI program with NPS, Singaporean students still participate in SE Department programs. In 2002, the SEI program became the SEA (Systems Engineering and Analysis) program as a joint effort between the OR Department and a new SE Department. The SEA program was run by a Systems Engineering Academic Coordinating Committee (SEACC) chaired by Phil Depoy.

In this same time frame, Wally Owen of the business school at NPS was able to get permission for NPS to join the Product Development for the 21st Century (PD21). This program had a significant systems engineering content and the curriculum came into the SE Department for oversight.

In the Summer of 2000, Dean of Research Dave Netzer, Wally Owen, and Bob Harney wrote a proposal to NSWC Port Hueneme for a distance learning program in systems engineering. Port Hueneme funded a cohort of students, the first of which entered in July 2001 and graduated in June 2003. With Wally Owen overseeing the business plan, the Distance Learning SE program (Curriculum 311) has never looked back.

In 2001 NPS was looking for ways to increase its participation in bigger navy research programs. The Institute for Defense Systems Engineering and Analysis (IDSEA) was informally established with Gordon Schacher as director. This became the Meyer Institute for Systems Engineering the following year when NPS formally established three institutes (MOVES, Cebrowski, and Meyer).

All of these activities predate the formation of the Systems Engineering Department in 2002. Once it

was established it gradually brought most of the existing systems engineering activities under its direct control or the de facto control through its faculty. The first Chair was Chip Franck. Besides hiring numerous faculty members and undergoing the normal progression of Chairs and turnover of faculty over the past 15 years, several milestones are important.

First, the curricula and the Department initially had no laboratories for research or education. In 2005, Dave Olwell provided initial money from his departmental budget to start to equip labs and a small amount of laboratory space was wrested away from ECE in Bullard. By 2006, the Department had been included in the annual budget process for laboratory recapitalization and significant progress has been made in providing a high-quality laboratory experience to our students. This was helped immensely by the first Dean of GSEAS (Jim Kays, who was a tenured Professor in the SE Department).

Second, in 2006, the resident MSSE degree program (Curriculum 580) was approved by our sponsor. The first students arrived in July 2006 and graduated in 2008.

Third, in 2010 the department formally proposed a Ph.D. program in Systems Engineering to the Academic Council. This was approved and the first 10 students were admitted in October 2011. In December 2015, the first of these students, CDR Jorge Garcia, successfully defended his dissertation on "Un-Building Blocks: Developing a Model of Reverse Engineering and Searching for Applicable Heuristics", and was awarded the first PhD in Systems Engineering from NPS.

Finally, several 4-course certificates were developed and continue to be taught to satisfy the Navy's need for non-degree education in systems engineering.

It is also noteworthy that the current Provost of NPS is a tenured Professor in the SE Department.

Narrative by Dr. Robert C. Harney
Department of Systems Engineering, Naval Postgraduate School

Photos from the SE 15th Anniversary Dinner



From left to right: Nancy Weigle, Sponsored Programs Financial Analyst; Professor Oleg Yakimenko; Mrs. Tatiana Yakimenko; Professor Fotis Papoulias; Mr. Jonathan Lim, Administrative Support; Lecturer Joe Sweeney.



From left to right: Assistant Professor Karen Holness, Lecturer Brigitte Kwinn, Associate Professor Kristin Giammarco, and Lecturer Bonnie Johnson



Senior Lecturer Mark Stevens and Lecturer Joe Sweeney



Assistant Professor Karen Holness, Professor Cliff Whitcomb, and Senior Lecturer Barbara Berlitz



Systems Engineering Analysis Update

The Systems Engineering Analysis (SEA) program is sponsored by OPNAV N9I and jointly executed by NPS SE and OR departments. Its purpose is to provide unrestricted line officers the technical and analytical skills to conduct fleet requirements generation. Under advisement from Dr. Fotis Papoulias (SE) and Dr. Robert Dell (OR) the 26th cohort of SEA students completed their cross campus integrated study and provided their final report this December.

The SEA 26 report outlines a design methodology and provides a recommendation for an alternative fleet architecture to the United States naval force for 2030-2035. While there are many methods and techniques to generate future fleet alternatives, Set-Based Design (SBD) is used in the SEA report to generate a future fleet architecture. SBD principles maintain multiple requirements and design options open late into the development cycle without committing to any specific designs. The purpose of leaving multiple design options open until the very end is to reduce the amount of rework and cost overruns if requirements change. As the design timeline concludes, SBD uses empirical data to collapse focus to the final design solution.



Jeff Kline, Chair, Systems Engineering Analysis



To implement set based design in their report, the team developed a computer model to optimize ship and platform choices simultaneously across eight critical warfare areas based on multiple user defined inputs. This theoretical 'optimized fleet' is measured against unique measures of effectiveness to verify its validity for future operations. Using the method, the SEA team proposes a future fleet architecture consisting of 297 fighting ships, 88 military sealift command ships, and 566 unmanned vehicles. The alternative fleet increases mission capabilities over the current 2017 in all major missions as soon in the figure below. Requests for the SEA 26 report should be sent to the SEA Chair Jeff Kline at jekline@nps.edu

The SEA 27 cohort is beginning work with a large section of TDSI students on their project concentrating on the use of unmanned systems in distributed maritime operations. Advised by Dr. Paul Beery (SE) and Dr. Michael Atkinson (OR), this team will report out in June 2018. Cohort SEA 28 will receive their project topic in the summer of 2018.

For SEA graduates, consider joining the SEA alumni group at <http://www.nps.edu/web/alumni>. We update project work and request personal updates to let your classmates know where you are now and how you are putting your SEA degree to work!

RESEARCH

SE DL Students Evaluate and Validate Simulation Software for Predicting Wave-Induced Loads on Underwater Vehicles



Assistant Professor. Joseph Klamo

For their capstone project, a group of Systems Engineering distributed learning students from Cohort 311-162O investigated four unique software packages that are commonly used in Navy labs to make predictions of the loads on surface ships and underwater vehicles due to waves. The students were Robert Bartnicki, Alison Bell, Matthew Bolen, Nathan Rice, and Andrew Zirkelbach.

First the students focused on the level of effort required to learn and then run the various simulations. This included not only learning to create program specific input files and run each simulation program itself but also to create the various required vehicle geometry input files and to post-process and analyze the different output files that each program created.



Photo showing the submerged UUV model in the tow tank at NPS. The experimental set-up was used to generate the data set for validating the simulation software. The UUV model was a four inch diameter circular cylinder with hemispheric end caps and had a total length of 40 inches. The polycarbonate model was 3D printed using rapid prototyping capabilities at NPS.



Sample rendering of a geometry mesh required by one of the simulation software. The rendering shows the discrete representation of the physical model used in the tow tank tests. The geometry is defined through (x, y, z) coordinate values at a finite number of longitudinal and vertical locations.

The second aspect of the project was the students performed a sample validation of the software packages against experimental load measurements taken on a small model in the tow tank at NPS. The specific situation the students validated against was a fully-submerged UUV operating near the surface in a wave field.

The results of this project will assist program managers make optimized choices considering cost, schedule, and code accuracy when selecting simulation software to make load predictions. At the end of the project, the students briefed their results to simulation software subject matter experts at the Naval Surface Warfare Center who will utilize the codes. This project was led by Profs. Joseph Klamo and Greg Miller along with support from Rushen Dal who installed and maintained the four software packages on the SE Modeling and Simulation Lab computers used by DL students.

Images and article by Prof. Joseph Klamo
December 19, 2017
Department of Systems Engineering, Naval Postgraduate School

Professor Oleg Yakimenko leads development and field-testing of new aerial delivery systems

Professor Yakimenko with his students and collaborators from the University of Missouri-Kansas City continued developing and field testing of novel affordable aerial delivery systems. In September his tests took place in U.S. Army Proving Ground where multiple prototypes his team has developed were demonstrated and evaluated being deployed from a Bell UH-1 "Huey" helicopter.

These prototypes pursue different objectives and address different capability gaps. The parafoil-based system tackles the issue of touchdown precision when deployed from high altitudes and large standoff distances. These systems exhibit 3:1 glide ratio on the average (3 units of horizontal displacement per 1 unit of altitude loss) and the developed guidance navigation and control algorithms assure unbeaten performance of about 10 ft Circle Error Probable. Moreover, the developed algorithms allow delivering payload (sensors, supply) even onto a moving platform (in this case the onboard avionics suite includes camera to detect and track this moving platform).

The parachute-base system addresses the problem of precise aerial payload delivery to the ground units operating in the urban environment. In this condition, a vertical penetration becomes a real issue. A low glide ratio (on the order of 0.5:1) and a limited control authority (utilizing a single actuator deforming the shape of parachute canopy) allows solving the problem.

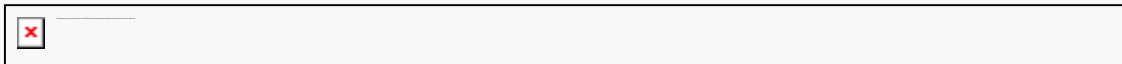
To make both systems affordable both systems utilize commercial-of-the-shelf components, simplified control schemes requiring less actuators, and novel parachute canopies like a single-skin parafoil and cross-type parachutes. These measures allow to drop a price of these systems by the factor of 4 and make them affordable for a variety of applications.

Dr. Yakimenko has been involved in the area of aerial payload delivery for almost 20 years and took part in all major demonstrations that occurred in the early 00's. He and his colleagues hold six patents in this area. More detail can be found here <http://my.nps.edu/web/adsc>.

Story by Prof. Oleg Yakimenko
January 1, 2018
Systems Engineering Department, Naval Postgraduate School



Dream team comprised of faculty and students of the Naval Postgraduates School and University of Missouri-Kansas City, along with pilots and test officers from the U.S. Army Yuma Proving Ground Air Delivery & Soldier Systems division.



U.S. Army UH-1 Huey helicopter landing after deploying multiple aerial delivery systems.

Blanket interim flight clearance for NPS unmanned systems



While unmanned aerial systems (UAS) continue to be at the forefront of development for many industries including homeland security and military, testing these systems at the Naval

Pictured above is a DJI Matrice 600 unmanned aerial platform

Postgraduate School has always been a challenge. One out of many other challenges is that operation of Navy-owned UAS (even those tiny ones assembled by our students from scratch) outdoor requires Interim Flight Clearance (IFC) to be issued by NAVAIR AirWorks.

In the past, this was a reason that only a few researches on campus could afford this lengthy and costly process. This also kept many students off being involved in hand-on experience of UAS design, development and testing.

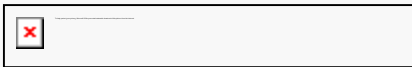
A major breakthrough on this front has happened this year. Prof. Yakimenko met with the entire AirWorks team earlier in February presenting NPS UAS-related teaching and research and making the case the urgent need to have a blanket IFC covering UAS operations at NPS.

It then took quite an effort and several months of paperwork preparations but now NPS has two IFCs: Category 3 IFC for Group 1 and Group 2 fixed-wing UAS and the blanket Category 3 IFC for Group 1 and Group 2 and multi-rotor UAS! These two IFCs cover a variety of commercially available and designed from scratch UAS, which enables a wider involvement of students and faculty and a faster turnaround. These IFCs authorize the use of NPS UAS not only at Camp Roberts but also in other locations, including Class G airspace.

Adding a new UAS is very easy, so that the researcher could proceed with flying/testing it just days after this new system was purchased or built (compared to 6...10 months in the past). The details can be found at <https://my.nps.edu/web/ast/outdoor-uas-testing>

Story by Prof. Oleg Yakimenko
January 1, 2018
Systems Engineering Department, Naval Postgraduate School

SE Department Meets with Korean Researchers



Dr. Donoh Choi and Prof. Ronald Giachetti

Drs. Donoh Choi and Chansun Lee of the Korean Agency for Defense Development (ADD) visited the Systems Engineering department to discuss cost estimation of defense projects. Dr. Donoh Choi is the head of the Division of Analysis and Evaluation at ADD.

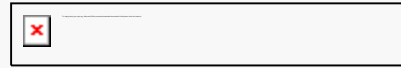
The Korean Agency for Defense Development is the national agency for development of defense technology in Korea with the goal of achieving self-reliable defense. The role of Dr. Choi and Lee in the ADD is to conduct the cost and benefit analysis of the research and development projects in ADD's portfolio.

During the visit they described the cost modeling and analysis they do for the agency. The Naval Postgraduate School supports the Navy's mission of promoting international cooperation in military research, development, testing, and evaluation. The Systems Engineering department has previously hosted a researcher from Korea and is welcoming a new Korean researcher this year. Additionally, a Korean officer recently graduated from the systems engineering program.

SWaP-C Analysis for Installing Solid State Lasers on Ships



Lecturer Bonnie Johnson



Senior Lecturer Mike Green

Lecturer Bonnie Johnson and Senior Lecturer Mike Green are advising a capstone project sponsored by SURFLANT to analyze the size, weight, power, and cooling (SWaP-C) requirements for installing high energy lasers on ships. The objective is to identify what SWaP-C modifications will need to be done on each ship to increase laser capability up to 300 kW and to analyze what additional capabilities the laser would provide to the ship. The capstone project is tied to a research effort being lead by Professor Joseph Blau of the Physics Department. The SE Student Team includes LT Scott Gildemeyer a NROTC Instructor at Auburn, Dale Hager from NSWC Corona, Dean Liensdorf from SSP, Adrien Malone from Naval Air Warfare Training Center, and Kelly Mugerditchian from SSP.

Two major current Navy HEL programs are ONR's Solid State Laser Technology Maturation (SSL-TM) and NAVSEA's Surface Navy Laser Weapon System (SNLWS). SSL-TM is an ONR-led program to advance laser technologies for future weapon systems. The prime contractor is Northrop Grumman. The near-term goal is to develop a 150 kW class HEL incorporating new technologies such as an off-axis beam director and spectral beam combining. This system is scheduled for delivery in 2018, and will be tested against a variety of targets.

SNLWS was recently designated as an Accelerated Acquisition by CNO and ASN(RD&A). The goal of this program is to accelerate fielding of laser weapon systems out to the fleet. PEO IWS is the Program Office for SNLWS, with NSWC Dahlgren as the Technical Direction Agent. The first increment, known as High Energy Laser with Integrated Optical-dazzler and Surveillance (HELIOS), will be a 60 kW class HEL with a C-ISR dazzler. The first two deliveries are to be in FY20; one of them is planned for deployment on a DDG51. A key aspect of HELIOS will be ship integration. Future increments of SNLWS are expected to boost power output up to 100s of kW, incorporating technology advances from the SSL-TM program.

Bonnie Johnson, other faculty, and students at NPS have been contributing to the Navy's efforts at developing directed energy weapons. Previous capstone projects include the report by cohort 311-1330 titled, "Increasing the kill effectiveness of High Energy Laser (HEL) Combat System" and many student theses such as Ching Na Ang's thesis titled "Analysis of high energy laser weapon employment from a Navy Ship" . All SE theses and capstone reports are available electronically from the NPS library.

SE Faculty and Students Participate in Directed Energy Symposium



Lecturer Bonnie Johnson, Senior Lecturer Mark Stevens, and Associate Professor Andy Hernandez

The 2017 annual meeting of the Directed Energy Professional Society was held in September in Monterey, CA. Systems Engineering faculty of Mark Stevens, Bonnie Johnson, and Andy Hernandez participated in the event representing the SE Department's interest in developing directed energy weapon systems.

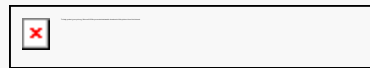
Several capstone projects have investigated how to incorporate directed energy weapons into concept of operations, how to integrate onto existing platforms, and the challenges associated with energy storage.

Most recently, a NAVAIR cohort (Team AADL) proposed a concept of operations with an associated system architecture for an airborne defensive laser against short-range missiles. The student's capstone report describes a laser mission pod that can be installed on the wing of a F/A-18 aircraft and provide defense against incoming missiles. They addressed the technical challenges of generating sufficient power for the laser via a ram air turbine. While the Navy is still some years from deploying such a system, technical reports such as the AADL teams report contribute to the Navy's growing body of knowledge on how to develop and deploy such technologies.

The AADL team was Cesar Rios, Eric Wright, Greyson Siegel, Jeremy Smith, Nathan Lautzenheiser, Stephen Cannon, and Timothy Kaniss. The faculty advisors were John "Mike" Green and Mark Rhoades.

SE Participation at 2017 NDIA Conference on Joint Undersea Warfare Technology

NPS faculty Dr. Gene Paulo and RDML Rick Williams (ret.) participated in the 2017 NDIA Conference on Joint Undersea Warfare Technology held in Groton, CT.



Dr. Gene Paulo

RDML Williams discussed how NPS Distance Learning Systems Engineering students conduct group projects to meet degree requirements. Current projects were "Mine Warfare after LCS" and "Next Generation MIW UUV's". There are about 17 students in these two groups, most students are from NSWC, PCD. Rear Admiral Williams gave a quick overview of the student progress thus far and discuss their plan for completion by DEC 2017.

He also provided information on how interested persons can attend the students' final presentation (in person or electronically) and/or be added to the final written report distribution list.

At the same meeting, Professor Paulo presented student project results on Mine Counter-Mine (MCM) Studies at Naval Postgraduate School. The project addressed the application of Systems Engineering to the Design and Analysis of Current, Planned and Possible MCM Systems, Tactics, and Technologies.

The Systems Engineering Department faculty and students at Naval Postgraduate School have examined a number of aspects of Mine Counter-Mine (MCM) operations over the last several years through the implementation of Systems Engineering. Recent MCM studies have focused on comparing legacy and near future (Littoral Combat Ship (LCS)), various autonomous unmanned mine detection systems, and a collection of mine neutralization systems launched from various ship platforms.

Alumni News

SE Alumni Delivers Navy Birthday Ball Keynote in Panama City



Navy Explosive Ordnance Disposal Officer Capt. Aaron Peters, USN, served as Panama City, Florida's 242nd Birthday Ball Keynote Speaker Oct. 14, 2017 at the Sheraton Bay Point. Peters, who took command of Naval Surface Warfare Center Panama City Division July 28, 2017, joins a robust cadre of leaders stationed at the U.S. Navy's Home of Military Diving located aboard Naval Support Activity Panama City.

A native of Oregon, Ohio, Peters is a graduate of the 1990 U.S. Naval Academy. He holds a Master of Science in Systems Engineering and Integration at Naval Postgraduate School (NPS) and a bachelor's of science in mathematics (Operational Analysis). Captain Peters is a qualified Surface Warfare Officer, Explosive Ordnance Disposal Officer, Master EOD Technician, Diver, and Naval Parachutist. His personal decorations include the Meritorious Service Medal (with four gold stars), Navy Commendation Medal (with two gold stars), Navy Achievement Medal (with two gold stars), and various service awards.

Port Hueneme senior manager pursues excellence with acceptance to prestigious leadership academy



Photo by Esthela Mckenzie

Naval Surface Warfare Center, Port Hueneme Division's Mike Horton is a graduate of the first Systems Engineering Cohort from the Naval Postgraduate School.

[Click here for full article](#)

NAVAL SURFACE WARFARE CENTER, PORT HUENEME, California— John F. Kennedy once said, "Leadership and learning are indispensable to each other." Taking this to heart, Naval Surface Warfare Center, Port Hueneme Division's (NSWC PHD) Michael Horton will hone his skills January 2018, during the Federal Executive Institute's (FEI) Leadership for a Democratic Society (LDS) program.

As one of several development courses offered by the Office of Personnel Management, the LDS program provides Senior Executive Service and GS-15 executives the opportunity to embrace a broader perspective of governance and new leadership capacity to better serve and support the American people.

Upon notification of acceptance to the program, Horton, who is the Senior Systems Engineer for NSWC PHD's Air Dominance Department, took advantage of the opportunity, believing people in influential positions should continually develop their skills in all areas.

"I have an obligation to not only grow my competencies in the leadership that I provide to all of the teams I work with," he said, "but to help groom and set up those who will eventually take my position. One good way to do that is through programs like this."

Along with 25 to 30 other federal service representatives, Horton will spend a total of four weeks at the FEI training center in Charlottesville, Va., where he will learn more about the U.S. Constitution as the basis for federal service, enhance his leadership skills, learn to leverage the diversity of his team at NSWC PHD, and expand his professional networks. In addition to the core curriculum, participants, through a selection of learning environments and topics, tailor their learning experience to meet self-determined goals and interests. Each executive completes several introspective assignments, at least one action learning project, and produces plans to transform themselves and their organizations.

Horton began his more than 28-year career as a Mark 41 Vertical Launching System Instrumentation Test Planning and Execution engineer for the station. He came to the command with a bachelor's in mechanical engineering from San Jose State University. A few years later, he earned a master's in systems engineering from the first cohort to be offered by the Naval Postgraduate School before completing an 18-month Management Succession Program hosted by the government.

“One thing I’ve learned working for the government,” he said, “is that as long as you have a desire to apply yourself, get involved, and take on leadership activities, the door for opportunities will open. The opportunities are there, it’s just a matter of people desiring and preparing themselves adequately to take them.”

NSWC PHD is a field activity of Naval Sea Systems Command and provides the global United States Navy fleet with integration, test and evaluation, life-cycle logistics, and in-service engineering for today’s and tomorrow’s warfare systems. Located at Naval Base Ventura County, Calif., NSWC PHD employs more than 2,500 personnel.

Story by Nichole Suskana
October 3, 2017
Naval Surface Warfare Center, Port Hueneme Division

Summer Quarter Graduation



Photos by NPS PAO Office

Vice Chief of Naval Operations Adm. Bill Moran addresses the graduating class during the 2017 Summer Quarter Graduation ceremony, Sept. 22. Moran assumed duties as the Navy’s 39th Vice Chief of Naval Operations on May 31, 2016 and serves as the senior naval advisor to the Secretary of the Navy and the Chief of Naval Operations.

[Click here for the full article.](#)

Master of Science in Systems Engineering

SGT. Matthew Won, USMC
LCDR Matthew Phillips, USN
SGT. Walter Merriman, USARNG
Mr. Raymond Aguirre Jr
Mr. Larry Alford
Mr. David Arteché
Ms. Jennifer Baker
Mr. Joseph Boyle
Ms. LaShonda Carroll
Ms. Addie-Malissa Chinn
Mr. David Chinoski
Mr. Kenneth Chivers
Mr. Ange Cizaless
Mr. Curtis Cummings
Mr. George Haka
Mr. Bryce Howard
Mr. Amos Kabui
Mr. Eric Lady
Ms. Lisa Laurendine
Mr. Nathan Lautzenheiser
Mr. Terrell Long Jr.
Mrs. Mariel Ludwig
Mr. John McFadden
Mr. Anthony Padilla
Mr. Edwin Patchet
Ms. Latoyna Pettway
Ms. Rose Pichardo
Mr. Andrew Pinto
Mr. Jonathan Preston
Mrs. Lindsey Puckett
Mr. Cesar Rios
Ms. Cheralynne Robinson

Master of Science in Engineering Systems

Mr. Keng Siew Aloysius Han
Mr. See Hongze Alex *
Mr. Jeremy Kang
Mr. Lai Wee Leong
Mr. Ying Jie Benjamin Toh
MAJ. Yuan Wei Soh, Singapore Armed Forces *

Master of Science in Engineering Systems

LCDR. Ryan Mcallister, USN
CDR Christopher Zito, USN
CPT. Wee Kion Ang, Singapore Armed Forces *
Ms. Erneiliza Brown
Mr. Stephen Cannon
Mr. William Ireland
Mr. Timothy Kaniss
Mr. James Krenn
Mr. John Masco
Mr. Jeremy Smith
Mr. Stenson Smith

Master of Science in Systems Engineering Management

LT. Stephan Mathos, USN
CDR. Matthew Russel, USN
CAPT. James Abellana, USAF
Mrs. Heather Burke
Mr. William Carlson
Mr. David Coyle
Mr. Steven Crosson
Mr. James Dorris

Mrs. Elizabeth Sheth
Mr. Greyson Siegel
Mrs. Cynthia Squire
Mr. Dylan Sran
Ms. Erica Sturgeon
Mr. Paul Tady
Mrs. Victoria Thomas
Mr. Matthew Thomas
Mr. Wesley Wilhelm
Mr. John Wills
Mr. Dion Wilson
Mr. Eric Wright

Mr. Josef Jordan
Mr. Ernest Lemmert
Mr. Bryan Long
Mr. Thomas Moulds
Ms. Arlene Payne
Mr. Michael Payne
Mr. Stephen Rambikur *
Mrs. Theresa Thomas
Mr. Erik Webster
Mr. George Winstead

* Student recognized for Outstanding Thesis



Admiral Bill Moran and Mr. Alex See



Admiral Bill Moran and SGT. Matthew Won, USMC

Meyer Award Winners

The Meyer Award for Outstanding Student in Systems Engineering (Distance Learning) is presented to an outstanding Department of Defense graduate of each Distance Learning Systems Engineering degree program who has demonstrated superior academic performance. This quarter, the award was presented to LCDR. Matthew Phillips, USN; Mr. John McFadden, Army Research, Development, and Engineering Command; Ms. Cheralynne Robinson; Missile Defense Agency; and Mrs. Theresa Thomas, Naval Air Systems Command.



Senior Lecturer Brigitte Kwinn, Mr. Dennis Mays, Ms. Cheralynne Robinson, and Professor. Ronald Giachetti



Professor of Practice. Ron Carlson, Associate Professor. Kristin Giammarco, Mrs. Theresa Thomas, Professor. Ronald Giachetti, and Associate Professor. Ray Madachy

Fall Quarter Graduation



Photos by NPS PAO Office

NFL Chief Security Officer, Cathy Lanier served as commencement speaker for the Fall Quarter Graduation Ceremony, December 15, 2017. Ms. Lanier was also the former Chief of the Metropolitan Police Department of the District of Columbia and a graduate of the Naval Postgraduate School's Center for Homeland Defense.

[Click here for full article](#)

Master of Science in Systems Engineering

LT. Carlos Maldonado, USN
LT. Brandon Nichols, USN
LT. Nathan Rice, USN
LT. Timothy Uchida, USN
Mrs. Tina Baxter
Mr. Matthew Bolen
Mr. Jason Boxerman



Ms. Cathy Lanier and LT. Alexander Samaniego, USN



Master of Science in Systems Engineering Analysis

LT. David Alessandria, USN
LT. Eric Clow, USN
LT. Jeremiah Medina, USN

Mr. Thomas Johnson and Mr. Daniel Herrington



Master of Science in Systems Engineering

MAJ. Matthew Einhorn, USA **
LCDR. Stephan Brock, USN
LT. Devon Cartwright, USN
LT. Justin Davis, USN
LT. Kristopher DeVisser, USN
LT. Geoffrey Fastabend, USN
LCDR. Kyle Kobold, USN
LT. Alexander Samaneigo, USN
LCDR. Alexander Williams, USN *
Mr. Miguel Camacho Jr.
Mr. David Galindo
Mr. Christopher Harrington
Ms. Lauren Hawkins
Ms. Susan Johnson
Mr. Benjamin Mitchell
Mrs. Ali Olinger
Mr. James Sovel
Mr. Jeffrey Wade
Mr. Peter Walker
Ms. Lisa Winsett
Mr. Andrew Zirkelbach
Mr. Robert Bartnicki
Ms. Alison Bell
Mr. Daniel Herrington
Mr. Thomas Johnson
Ms. Deana Pellend
Mr. William Stith IV

Senior Lecturer Matt Boensel and LT. Timothy Uchida

Master of Science in Systems Engineering Management

Mr. Brandon E. Payne
LT. Isa Aljawder, Bahrain Navy
Mr. Howen Fernando

* Student recognized for "Outstanding Thesis"

** Student recommended for "With Distinction"



Ms. Cathy Lanier and MAJ. Matthew Einhorn, USA



Distance Learning graduates from Naval Surface Warfare Center, Panama City Division

Meyer Award Winner

The Meyer Award for Outstanding Student in Systems Engineering (Distance Learning) is presented to an outstanding Department of Defense graduate of each Distance Learning Systems Engineering degree program who has demonstrated superior academic performance. This quarter, the award was presented to Mr. Daniel Herrington.



Professor. Ronald Giachetti and Mr. Daniel Herrington

Faculty News

CDR. Katy Giles completes her PhD and joins SE as military faculty



CDR Katy Giles recently completed her PhD research in swarm UAV systems focused on mission-based composable architectures. As a PhD student at NPS for the past 3 years, she has supported the ARSENL research group. She will remain at NPS serving as a Permanent Military Professor in the Systems Engineering Department. Prior to NPS, she began her career as a P-3C Naval Flight Officer. Following Test Pilot School, she transitioned to the AEDO community where she served three tours in developmental and operational flight test. Her flight test work involved P-3C and S-3B mission system upgrades, developmental testing of the P-8A, and operational testing of the RQ-21A. CDR Giles has worked in program management to support avionics upgrades for Navy and Marine Corps aircraft to meet civil airspace requirements, served as the P-3C Production Officer in charge of phased depot maintenance, and deployed as an individual augmentee in support of the NATO ISAF mission in Afghanistan.

Length of Service Awards



SE Professor of Practice, Dr. Rama Gehris, received her service award for 25 years of service.

Dr. Rama Gehris

After graduating from New Mexico Institute of Mining and Technology with B.S. and M.S. degrees in mathematics, Dr. Rama Gehris began her professional career in civil service in July 1989 as a 'Junior Professional' at the then Naval Warfare Center (now Naval Air Warfare Center), China Lake in the Research Department where she worked on computational fluid dynamics and burn rate modeling for Trident.

In 1995 she moved to NAVAIR/Patuxent River, Maryland to work on coding flight software for E2-C Mission Computer Upgrades. Also at Patuxent River, Dr. Gehris worked software acquisition support for AH-1 (Huey/Cobra) helicopter upgrades and PMA 208 (on a variety of platforms).

While working for E2C, she earned her Dr. Sc. in Systems Engineering from the George Washington University. Dr. Gehris joined the NPS faculty in February 2011. She has also taught as adjunct faculty at St. Mary's College of Maryland and Cerro Coso Community College.



Dr. Warren Vaneman

SE Professor of Practice, Dr. Warren Vaneman, received his service award for 30 years of service.

Dr. Warren Vaneman began his government service in October 1986 as a Navigational Scientist at the Defense Mapping Agency (DMA), Bethesda, MD.

In 1988 he went on a military furlough due to the Navy Reserve activating him for service as a Surface Warfare Officer. He returned to his career at DMA in 1992, and quickly changed career fields to an emerging career field (within DMA) – Systems Engineering. He served as a systems engineer on several system development programs, and was an early adopter, and modeler of the C4ISR Architecture Framework (the precursor to DoDAF) from static and dynamic perspectives.

In 2002, he left the National Geospatial-Intelligence Agency (NGA) (previously known as DMA), to join the Central Intelligence Agency (CIA) where he was assigned to the National Reconnaissance Office (NRO). While at the NRO, Warren was the Chief Architect for the Ground Enterprise, a large, world-wide System of Systems. In 2010 the Navy Reserve once again activated him for service in Afghanistan, and later at the Space and Naval Warfare Systems Command (SPAWAR). Warren joined the NPS Systems Engineering faculty in 2012.

FACULTY AWARDS



Professor of Practice Don Muehlbach

Don Muehlbach

SE Professor of Practice, Don Muehlbach was presented the Meyer Award for Teaching Excellence in Systems Engineering (Distance Learning) for the

AY17 Summer Quarter and the AY18 Fall Quarter. The award is presented to an outstanding faculty member of each Distance Learning Systems Engineering degree program who is recognized by the students for teaching excellence and/or exceptional contributions to the student's overall learning experience.



Lecturer Brigitte Kwinn and Prof. Ronald Giachetti

Brigitte Kwinn

SE Lecturer, Brigitte Kwinn was presented the Meyer Award for Teaching Excellence in Systems Engineering (Distance Learning) for the AY17 Summer Quarter. The award is presented to an outstanding faculty member of each Distance Learning Systems Engineering degree program who is recognized by the students for teaching excellence and/or exceptional contributions to the student's overall learning experience.



Lecturer Mark Rhoades and Prof. Ronald Giachetti

Mark Rhoades

SE Senior Lecturer, Mark Rhoades was presented the Meyer Award for Teaching Excellence in Systems Engineering (Distance Learning) for the AY17 Summer Quarter. The award is presented to an outstanding faculty member of each Distance Learning Systems Engineering degree program who is recognized by the students for teaching excellence and/or exceptional contributions to the student's overall learning experience.

Request for Alumni News!

The SE Department is interesting in hearing how our alumni are doing. Please feel free to send the [editor](#) news items for inclusion in future newsletters.

Please visit our [NPS SE Website!](#)

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This newsletter is a quarterly publication of the Department of Systems Engineering, NPS. Its contents do not necessarily reflect the official views of the U.S. government, the Department of Defense or the U.S. Navy, nor does it imply endorsement thereof. Information may be subject to change without notice.

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