



SYSTEMS ENGINEERING  
ESTABLISHED 2002



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September Newsletter

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- New Faculty & Staff in the SE Department
- The SCOOP on what's been happening in Systems Engineering
- Faculty & Staff News





Clifford Whitcomb  
Department Chair

Robert Hamey  
Associate Chair for Research

Matthew Boensel  
Associate Chair for Operations

Wally Owen  
Associate Chair for Distributed Learning & Outreach

Gene Paulo  
Associate Chair for Instruction

**Curriculum 308  
Systems Engineering Analysis**

Mark Stevens  
Academic Associate

Douglas Burton  
Program Officer

Sandra Stephens  
Ed Tech

**Curriculum 311  
Systems Engineering (DL)**

Eugene Paulo  
Academic Associate

Joseph Sweeney  
Program Officer

Heather Hahn  
Ed Tech

**Curriculum 580  
Systems Engineering**

Mark Stevens  
Academic Associate

CDR Joseph Keller  
Program Officer

Sandra Stephens  
Ed Tech

**Curriculum 721  
Systems Engineering Management**

Ron Carlson  
Academic Associate

Brigitte Kwinn—Army Students  
Ron Carlson—NAVAIR Students

Joseph Sweeney  
Program Officers

Heather Hahn  
Ed Tech

*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.*



# Student News

## March 2012 Graduates & Awards



### Meyer Award for Outstanding Student in Systems Engineering (Distance Learning)

- ♦ Andrew Fowler
- ♦ Matthew Guernsey
- ♦ Heather Williams

### Wayne E. Meyer Award Faculty Award for Excellence in Systems Engineering (Integrated Projects)

- ♦ Paul Montgomery
- ♦ Brigitte Kwinn

### Master of Science in Systems Engineering

- \* Students recommended for With Distinction
- ⊕ Students recognized for an Outstanding Thesis

- ♦ LT Edward F. Hill, USN
- ♦ LT James J. Reynolds, USN
- ♦ LT Matthew J. Romero, USN
- ♦ CAPT Jason Panczenko, USAF
- ♦ Mr. Ang Toon Yiam Ronny, Defence Science and Technology Agency, Singapore
- ♦ Ms. Tan Hui Fang Evelyn, Defence Science and Technology Agency, Singapore
- ♦ Mr. Robert Boyer Brewer, Naval Air Systems Command
- ♦ \*Mr. Thomas L. Brown, Naval Surface Warfare Center - Crane
- ♦ Mr. Paul James Casey, Naval Air Systems Command
- ♦ Mr. Jonathan Chase Damiano, Defense Contract Management Agency
- ♦ Ms. Megan A. Denton, Naval Air Systems Command
- ♦ Mr. Cameron James Deremer, Naval Air Systems Command
- ♦ Mr. David Francis Engel Jr., Naval Air Systems Command
- ♦ \*Mr. Andrew John Fowler, Naval Air Systems Command
- ♦ Mr. Matthew Ryan Guernsey, Naval Air Systems Command
- ♦ Mr. Mark Phillip Haase, Naval Air Systems Command
- ♦ Mr. Terry G Janney II, Naval Air Systems Command
- ♦ Mr. Shivraj H. Jhala, Naval Air Systems Command
- ♦ Ms. Ashley Lynn Jurekovic, Naval Air Systems Command
- ♦ Mr. Ryan Moore, Naval Undersea Warfare Center – Newport Division

- ♦ Mr. Brett D. Morgan, Science Applications International Corporation
- ♦ Mr. Thomas Mark Opheim, Science Applications International Corporation
- ♦ Mr. Reynaldo Marcelo Peña, Naval Air Systems Command
- ♦ Mr. David B. Nolan, US Army Communications and Electronics Research, Development and Engineering Research Center



- ♦ Mr. Michael D. Plyler, Naval Air Systems Command
- ♦ Ms. Noemi Ramirez, Space and Naval Warfare Systems Center - Pacific
- ♦ Mr. William John Roman, Naval Undersea Warfare Center – Newport Division
- ♦ Mr. Thomas H. Rozenbroek, Naval Air Systems Command
- ♦ Mr. Yarin Johannes Sanchez, Naval Air Systems Command
- ♦ Mr. John J. Sciortino, Naval Air Systems Command



- ♦ \*Mr. Craig L. Simmons, Naval Air Systems Command
- ♦ Mr. Cory Spradlin, Naval Air Systems Command
- ♦ Ms. Rebecca Jane Thacker, Naval Air Systems Command
- ♦ Mr. John Allen Turk II, Naval Surface Warfare Center – Crane
- ♦ Mr. Gregory E Urtz, Naval Air Systems Command
- ♦ Ms. Christina Marie Ushkevich, Naval Undersea Warfare Center
- ♦ Mr. Kenneth Robert Wampler, Science Applications International Corporation
- ♦ Mr. Michael Joseph Zalewski, US Army Research Develop and Engineering Center
- ♦ Mr. Zantiago Zurita, Naval Air Systems Command



# Student News



## Master of Science in Engineering Systems

- ♦ Mr. Clifford V. Kangas III, Naval Air Systems Command
- ♦ Mr. Timothy Paul Ringwald, Naval Surface Warfare Center - Crane
- ♦ Mr. Paul Joseph Welsh, Naval Undersea Warfare Center – Newport
- ♦ Ms. Heather Ann Williams, International Telephone and Telegraph - Exelis

## Master of Science in Systems Engineering Management

- ♦ CAPT Luis E. J. Martinez, USAF
- ♦ CAPT Wellington Phillips, USAF



## June 2012 Graduates & Awards

### Naval Sea Systems Command Award for Excellence in Systems Engineering

- ♦ LT Joseph L. Caprio, USN

### The Northrop Grumman Student Award for Excellence in Systems Engineering

- ♦ LT Adam Bush, USN

### The Northrop Grumman Faculty Award for Excellence in Systems Engineering and Analysis

- ♦ Professor Gary Langford

### Meyer Award for Outstanding Student in Systems Engineering (Integrated Projects)

- ♦ LT Jonathan Allmond
- ♦ LT Adam Bush
- ♦ LT Joe Campbell
- ♦ Mr. Chua, Chee Nam, Ministry of Defense, Singapore
- ♦ LCDR Loren Jacobi
- ♦ LT Matt Martin



### Wayne E. Meyer Award Faculty Award for Excellence in Systems Engineering (Integrated Projects)

- ♦ Professor Gene Paulo
- ♦ Professor Gary Langford

### Meyer Award for Outstanding Student in Systems Engineering (Distance Learning)

- ♦ Marc Titler
- ♦ Matthew James Hurley

### Wayne E. Meyer Award for Teaching Excellence in Systems Engineering (Distance Learning)

- ♦ Donald S. Muehlbach., PhD



*Photo of BG John J. McGuiness and Kristin Giammarco at the SE graduation reception.*

*BG John J. McGuiness is the Senior Commander, US Army Natick Soldier Systems Center, Deputy to Commanding General of RDECOM.*

*Kristin Giammarco, an SE department instructor, received her PhD in Software Engineering from the NPS Computer Sciences*

## Master of Science in Systems Engineering

\* Students recommended for With Distinction

- ♦ CAPT Brock Allen Mantz, USMC
- ♦ MAJ Gary Alan Shill, USMC
- ♦ MAJ Robb William Witte, USA
- ♦ LT Benjamin Abeto, USN
- ♦ LT Jonathan R. Allmond, USN
- ♦ LTJG Jillian Elizabeth Bahlman, USN
- ♦ LT Warren Heap Chong Bong, USN
- ♦ LCDR Douglas George Buerger, USN
- ♦ LT Adam Richard Bush, USN
- ♦ LT Richard Campbell, USN
- ♦ LT Joseph L. Caprio, USN
- ♦ \*CDR Clark Christopher Childers, USN
- ♦ CDR James Christopher Chitko, USN
- ♦ LT Matthew Edward Davin, USN
- ♦ LT William A. Gibson, USN
- ♦ LT Mitchell Peter Grant, USN
- ♦ LT Terrell Richard Gropp, USN
- ♦ LT Karl J. Hassenfratz, USN
- ♦ LCDR Loren Jacobi, USN
- ♦ Ⓞ LT Andrew L. Laidler, USN
- ♦ CAPT Derek Law, USAF
- ♦ LTJG Dan Leszczynski, USN
- ♦ LCDR Brian Loustaunau, USN
- ♦ LT Matthew L. Martin, USN
- ♦ CDR Jonathan Ryan Murphy, USN
- ♦ LT Jeremy Tyler Nauta, USN
- ♦ LT Daniel Neverosky, USN
- ♦ LT Robert James Toohig Jr., USN
- ♦ LT Jacob Matthew Vickery, USN
- ♦ LT Sean Christian Washington, USN
- ♦ LT Rebecca Kendall Wright, USN
- ♦ Mr. Jonathan David Bartel, Department of Defense
- ♦ Mr. Nick Anthony Battaglia, US Army Research, Development and Engineering Command
- ♦ Mr. Victor D. Doumar Jr., Aviation and Missile Research and Engineering Development Command
- ♦ Mr. Billy Ray Driver, Department of Defense, US ARMY Research, Development and Engineering Command
- ♦ Mr. Matthew James Hurley, US Army Natick Soldier Research Development and Engineering Center
- ♦ Mr. William Joseph Jacobs, US Army Avia-





- ◆ Mrs. Shezarae Denitra Washington-Orr, US Army Research, Development and Engineering Command
- ◆ Ms. Leslie Willis, ARMY

### Master of Science in Systems Engineering Management

- ◆ CDR Joseph Hornbuckle, USN
- ◆ Ⓞ CAPT Scott Tyley, USAF

## SE Professors to Participate in the Joint TDSI-NPS Research projects

In May, Naval Postgraduate School (NPS) hosted a security workshop, which was the 10<sup>th</sup> in a series of meetings organized by Temasek Defence Systems Institute (TDSI), NPS, and Lawrence Livermore National Laboratories (LLNL). All participants were grouped into 5 research tracks:

- Unmanned Technology (chaired by Mr. Jong Chin WANG (DRTech) and Prof. Oleg Yakimenko (NPS))
- Maritime Security (chaired by Mr. Choong Chuin HO (DRTech) and Prof. Thomas Huynh (NPS))
- Cyber Security (chaired by Dr. Chye Hwang YAN (DRTech) and Prof. Cynthia Irvine (NPS))
- Sense-Making and Situation Awareness (chaired by Mr. Francis LIM (DRTech) and Prof. Alex Bordetsky (NPS))
- Emerging Technology (chaired by Mr. Chee Seng TAN (DRTech) and Prof. Douglas Fouts (NPS))

The objectives for this year workshop involved

- Engaging in pre-workshop activities with track members to identify ideas for research collaboration
- Growing these ideas into research proposals
- Presenting these proposals at the workshop for endorsement and support
- Following up with post-workshop implementation of these proposals

Among others, the following three proposals generated within the Unmanned Technology Track were submitted and approved by the executive committee consisting of TDSI and NPS co-chairs, COL Soon Chia LIM, Deputy Chief Research & Technology Officer, MINDEF, Singapore, and Prof. Douglas Fouts:

- Low cost and light weight autonomous navigation system for mini-VTOL UAV in urban environments (PIs: Dr. Ben M. Chen (NUS), Dr. Oleg Yakimenko, Dr. Roberto Cristi, Dr. Fernand D.S. Marquis (NPS))
- Optimal cooperative control using mini-VTOL UAVs (PIs: Dr. Ben M. Chen (NUS), Dr. Oleg Yakimenko, Dr. Wei Kang, Dr. Fotis Papoulias (NPS))
- Counter unmanned systems tactics (PIs: Dr. Ben M. Chen (NUS), Dr. Timothy Chung (NPS))

The NUS counterparts for these three three-year-long proposals will receive funding from TDSI, while NPS counterparts will seek funding from ONR.

tion and Missile Research, Development, and Engineering Center

- ◆ Ms. Janet Christine Langley, US Army Natick Soldier Research, Development and Engineering Center
- ◆ Mr. Andrey Mayer, US Army Research Development and Engineering Command
- ◆ Ms. Sarah Elizabeth Morrison, US Army Research Development and Engineering Command
- ◆ Ms. Juliane Marie Olsen, Edgewood Chemical Biological Center
- ◆ \*Mr. Devin K Reimers, Armament Research, Development and Engineering Center
- ◆ Mr. Marc Titler, US Army Research, Development and Engineering Command
- ◆ Mr. Wesley Trousdale, US Army Research, Development and Engineering Command
- ◆ Ms. Alexandra Hayes Wheeler, Naval Surface Warfare Center, Crane – Fallbrook Detachment
- ◆ Mr. Nicholas Allen Zeitler, Naval Surface Warfare Center, Panama City Division

## The SCOOP

(SE Conferences, Organizations, and Other Projects)

### New Deputy Director for NPS SEED Center

(<http://harvest.nps.edu>)  
5 July 2012

Professor Andy Hernandez was recently named the new Deputy Director for the NPS Simulation Experiments and Efficient Designs (SEED) Center. He will work with the Centers co-Directors, Professors Susan Sanchez and Tom Lucas from the Operations Research Department. The SEED Center for Data Farming at NPS was created to address the high-dimensional aspects that are inherent in models of real-world phenomena. The *Center* is internationally recognized as a leader in simulation experiments and advancing theory and applying it to militarily-relevant problems. Its revolutionary approaches take experimentation from the realm of the impossible to the possible. Designs from the *Center* have been used to effectively explore simulation models in days on a desktop computer, while traditional approaches would require billions of years on the world's fastest supercomputers.

As Deputy Director, Andy will help foster relationships with agencies (DOD and industry) that seek new approaches for improving the use of simulations and implementing design of experiments. He will lead the effort to link student work with operational problems. His main mission is to hone the functional capabilities that will showcase the SEED Center's strengths. The environment for developing innovations for the application of computer experiments and design of experiments is rich. Scenario development for test and evaluation, validation of simulation models, and sensitivity analysis are just some of the areas that the Center can focus its energy. Andy looks forward to his new role and the opportunity to support a research center that is on the leading edge of addressing warfighter needs.



### Master of Science in Engineering Systems

- ◆ MAJ Kevin Michael Ryan, USMC
- ◆ LT James Lawrence Evans, USN
- ◆ LT Scott Hussar, USN
- ◆ LT Chris W. Taylor, USN
- ◆ Mr. Christopher Saldana Karandang, Marine Corps Tactical System Support Activity
- ◆ Mrs. Melesia C Love, Department of Defense, Research and Development Center Command

## Systems Engineering Project Reports: Innovative, Relevant, Visible

*Calhoun, the NPS Institutional Archive is the new, single point for NPS-authored work...including Systems Engineering Project Reports*

Showcasing the applied collaborative scholarship of NPS's Systems Engineering graduates, SE Project Reports just became the newest collection to join **Calhoun, the new NPS Institutional Archive**. These valuable documents are now archived, full-text searchable and indexed by Google.

"Students of Systems Engineering at NPS have worked for years to produce innovative, relevant project reports that address real-world solutions to defense-related questions. The Project Reports offer real value to the U.S. Military, of course, but they are also significant to Systems Engineering scholarship and they deserve a wider audience," says Irene Berry, Calhoun's project lead at NPS's Dudley Knox Library. "Calhoun ensures they'll get it."

NPS's Systems Engineering Reports have joined thousands of other NPS scholarly documents in

### Why Calhoun?

The name of the NPS Digital Archive honors Professor Guy K. Calhoun (1889-1920), professor of Mathematics and the first appointed - and published - NPS scholarly author.

Calhoun, taking their place alongside other works such as Patents, Theses and Dissertations, and Technical Reports.

Calhoun is an ever-growing archive that makes NPS-created scholarly content visible, searchable and freely available to the public. It's full-text searchable with close to 7000 documents currently in place, including theses by NPS students going back to 1923. This is only a small fraction of an ongoing digitization to make all public-release NPS theses available digitally.

Calhoun went live in April, 2012.

### Recent SE entries to Calhoun:

- Influence of foreign humanitarian assistance/disaster relief in a coastal nation
- Systems approach to defeating Maritime Improvised Explosive Devices in U.S. ports
- Next generation mine countermeasures for the very shallow water zone in support of amphibious operations
- Ship-to-shore data communication and prioritization
- United States Navy oceanic armed reconnaissance system

### Visible to the World

Because the archive adheres to the Open Archive Initiative (<http://www.openarchives.org/>), NPS content in Calhoun is available to a global network of interoperable institutional repositories and metadata harvesters such as (OpenDOAR: <http://www.opendoar.org/>). This provides greater visibility to Systems Engineering scholarship happening here at NPS, and means Calhoun can be a great career tool for NPS graduates. "Calhoun gives everyone one place to go to find out about the Naval Postgraduate School's scholarly contributions," says University Librarian Eleanor Uhlinger. "Right now you have to browse through many, many web pages, look through faculty websites or look through our library catalog to find theses. This is one central location that says these are the products of NPS." New content is added continuously

The Dudley Knox Library is proud to provide a highly visible, permanent and secure online home for the work of Systems Engineering graduates, with Calhoun, the NPS Institutional Archive.

Visit the SE page in progress here:

<http://calhoun.nps.edu/public/handle/10945/7077>

Calhoun is growing all the time. We welcome new content!

Calhoun: <http://calhoun.nps.edu>

Contact: Irene Berry, Digital Services Librarian



Calhoun, the NPS Institutional Archive, <http://calhoun.nps.edu>

## "One Stop Shopping" for NPS Systems Engineers

The Dudley Knox Library and the SE Department have collaborated to produce the Systems Engineering online guide: [http://libguides.nps.edu/systems\\_engineering](http://libguides.nps.edu/systems_engineering), a website to support faculty and student research and academics.

You will find:

- Key books and e-books, journals, and articles for your research at the Library, and how to find them
- What textbooks are being used this quarter
- Industry and Military Standards and Handbooks
- The official SE Writing Guide tailored specifically to SE students
- Faculty: Discover educator and other professional development resources such as associations and Communities of Practice. Identify journals where you might choose to publish your work.
- and more . . .

*We created this site for the benefit of our Systems Engineering community, and we welcome all comments and suggestions for improvement. Use the handy Comment links at the bottom of each box, or the Feedback tab as a direct way to communicate with us. Help us make this site work for you!*



Kathy Norton,  
Systems Engineering Library  
Liaison



## CRUSER: Robotics Outreach Event for La Mesa Elementary

Timothy H. Chung, Ph.D.  
Assistant Professor

I just wanted to express my appreciation and recognize the efforts of Research Associates Michael Day (SE) and Lyla Englehorn (CRUSER) for the phenomenal job they did for supporting a robotics outreach event for the La Mesa Elementary School Fifth Grade field trip on Friday, 27 May.

The event comprised over 60(!) 5th graders and their chaperones, and both Michael and Lyla coordinated and facilitated the portion of the tours in my robotics lab, where they conducted a wildly successful "robotics challenge" for the kids. The event is a direct result of the initiative of an NPS community member (MAJ Kevin Bolke) to engage our school for outreach. My referral to Dave Nickles' office and Alana Tweed's coordination efforts helped realize this event.

Despite the short notice and immense prep time required to build robots from scratch, prepare the lab space, come up with the program, and coordinate the event, Michael and Lyla's efforts are a testament to their commitment to supporting the education of these young people. I applaud their efforts, and wanted to share and document their good deeds for broader recognition.

I believe such robotics-related outreach events is well-aligned with the CRUSER\* vision, and look forward to engaging our local community and beyond with such events, including our Robots in the Roses event.

Blue skies,

Tim

## Meet the Faculty

This section features newer faculty members, highlighting their unique expertise and commitment to excellence.



### *Warren Vaneman, Professor of Practice*

Dr. Warren Vaneman joined the Systems Engineering Department in April 2012, as a faculty member in the national Capitol Region. He joined NPS after more than 25 years working in the National Intelligence Community.

Most recently Warren served in the Central Intelligence Agency, where he was assigned to the National Reconnaissance Office (NRO). While at the NRO, he was the Chief Architect of the NRO's Ground Enterprise, the Director of International Research and Development, and the Chief of the Architecture Analysis Division. Prior to joining the CIA, Warren worked in various engineering positions at the National Geospatial-Intelligence Agency (NGA). His last position was as the NGA lead for Modeling and Simulation.

In addition to his civilian career, Warren is a Captain in the U.S. Navy Reserve. He is qualified as a Surface Warfare Officer, an Information Dominance Warfare Officer, and a designated Space Cadre Officer. He had numerous shipboard and shore-based assignments including five command tours. His most recent command tour was as Commander, U.S. Navy Combined Security Transition Command-Afghanistan, in Kabul, Afghanistan. He is currently assigned to TENTH Fleet as the Director of Space Operations.

Warren has a B.S. in Meteorology and Oceanography from the State University of New York Maritime College, a M.S. and Ph.D. in Industrial and Systems Engineering from Virginia Tech, and Joint Professional Military Certificate from the U.S. Naval War College.

Warren's research interests include Systems of Systems Engineering and Integration (SoSE&I), and Model-based Systems Engineering. He is currently helping the SPAWAR Chief Engineer implement SoSE&I processes to support their new Information Technology Technical Authority role.

Warren and his wife Robin have two sons (ages 13 and 11), and live in Haymarket, VA.



## Meet the Faculty *continued...*



***Rabia Khan, Research Assistant***

Rabia recently joined the faculty as a Research Assistant in the Systems Engineering department. She worked for some time at NPS' Office of Institutional Research, and also has experience working at the Spacecraft Research and Design Center and as a K-12 teacher in the Monterey County district. She graduated from the University of California, Davis with a B.S. in Psychobiology and hopes to pursue an education in Artificial Intelligence.

Often dubbed "Excel Queen," Rabia's area of research includes survey design and analysis, with a focus on trends highlighting educational effectiveness.

She enjoys coming to work at NPS with her twin sister, Tayiaba – for whom she is often mistaken as!



***Corina White, Research Assistant***

Corina White is a new research assistant in the Systems Engineering Department. She graduated with a B.S. in Chemical Engineering from Prairie View A&M University in 2007. She also met her husband LT Roosevelt White Jr., USN at Prairie View. They have a 4 year old son Caleb and a German shepherd puppy, Bella.

Corina has had an opportunity to work with NASA in Hampton VA, NAVAIR in Patuxent River, MD, and NAS JAX Materials Engineering Division, Jacksonville, FL. She enjoys spending time with her family and friends, playing board games, exercising & creating diaper cakes. She is also pursuing her masters in Systems Engineering at NPS.

## *NPS - A Tidbit of History*



The university mourns the passing of Rear Adm. Robert "Bob" McNitt, who passed away peacefully on Sunday, Aug. 12, 2012, at his home in Annapolis, Md. – he was 97. McNitt served as Superintendent of the Naval Postgraduate School from 1967 - 1971, and was a student as well, pictured at left receiving a Gold Star in lieu of second Silver Star from then NPS Superintendent Capt. Herman Spanagel.

McNitt would complete a detailed program of study in physics and ordnance engineering at NPS, before finalizing requirements for an MS in Mechanical Engineering from the Massachusetts Institute of Technology. McNitt is credited for inspiring many young men and women throughout his Navy career, including a southern California high school student named Mike Mullen, who would become the first NPS alumnus to serve as Chairman of the Joint Chiefs of Staff, and acknowledged McNitt's role in his success during his induction speech into the NPS Hall of Fame.

# Faculty and Staff News

The new Academic Associate for PD-21, the Systems Engineering Management Program, is **Ron Carlson, Professor of Practice**.

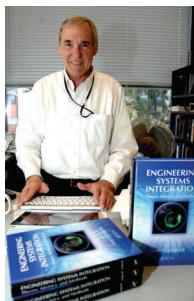
Ron is in the systems engineering department here at NPS but is permanently located at NAS Patuxent River, Maryland as embedded faculty to support the Distance Learning (DL) MSSE program initiated by the SYSCOMS as well as to act as the NPS liaison for student and faculty issues at Pax River. Additionally, he is the Program Officer for the NAVAIR 311 program and recently volunteered to take over as the Academic Associate for the PD-21 Program.



Ron has an extensive aviation background, and retired as a Captain (O-6) in the USN. He served the fleet as an Operations (S-3) Pilot through his Commanding Officer tour of the World Famous Maulers of VS-32 and then reported to NAS Patuxent River as the S-3 Class Desk and Deputy Program Manager. He then served four years as the Military Director of Systems Engineering for NAVAIR.

Ron received a Bachelor of Science degree in Nuclear Engineering from the University of Michigan, an MBA from Embry Riddle University, and a Master of Arts in National Strategic Studies from the Naval War College and is currently enrolled in Stevens Institute of Technology perusing my PhD in Systems Engineering.

He is looking forward to working with all of the PD-21 students and wishes you all the best in this academic experience and where it takes you once you complete.



NPS Facebook post on 9 August, 2012 -

Naval Postgraduate School **Senior Lecturer of Systems Engineering Gary Langford** proudly displays the book he recently authored, "Engineering Systems Integration: Theory, Metrics, and Methods," a research textbook that focuses extensively on integration and addresses underlying premises of systems integration. "We have a long history of talking about it [integration], but no history of actually developing a theory for it and appreciating its deepest, most fundamental framework concepts," noted Langford. "It's a tediously written book. Every word and every sentence is packed with a lot of meaning, so it's very slow reading. It doesn't skip ahead to the principles, and then give you a bunch of examples ... This is a densely packed 400 pages."

**CONGRATULATIONS and KUDOS to You, Kristin for both receiving your PhD and for your appointment as Associate Professor!!**

**Kristin Giammarco, Associate Professor**, received her PhD in Software Engineering from the NPS Computer Sciences Department in the Spring AY12 quarter. The title of the dissertation is "Architecture Model-Based Interoperability Assessment" and the short abstract is as follows:

"This dissertation presents a novel method grounded in formal logic for uncovering interoperability deficiencies early in the de-



sign cycle of software-intensive systems. Based on an architectural framework widely familiar to system architects, the method provides a precise means for capturing collective experiences with interoperability problems, transferring that knowledge to the development of improved solutions, and ultimately maximizing reuse of successful interoperable designs."

**Tim Chung, Ph.D., Assistant Professor**, has been featured in a CNET news item about projects at NPS. Way to go Tim! [Prepping for 50-on-50 aerial BattleBot conflict \(pictures\)](http://www.cnet.com/news/50-on-50-aerial-battlebot-conflict-pictures/)

Also, check out the recent article at <http://www.airforce-technology.com/features/featureddogfight-drones-unmanned-battle-bot-swarms> highlighting Tim's project. **Michael Day, Research Associate**, who works alongside Tim in the department, is pictured below.



Recent Research Papers for **Ravi Vaidyanathan, Ph.D., Research Assistant Professor**:

R. Evins, S. Joyce, P. Pointer, S. Sharma, R. Vaidyanathan, and C. Williams, "Multi-objective optimisation: Getting more for less by design", Civil Engineering, Proceedings of Institute of Civil Engineers (ICE), 165, ICE5, pp 5-10, 2012

Vaidyanathan R., Chen C., Jeong C.D., Williams C., Ritzmann R.E., Quinn R.D., "A Reflexive Control Architecture based on a Neural Model of the Cockroach Escape Response", Journal of Systems and Control Engineering (Proceedings of the Inst. of Mechanical Engineers (IMECHE) Part I), 226, 5, pp 699-718, 2012 (IF: 0.374, 2010)



R. Evins, P. Pointer, R. Vaidyanathan, and S. Burgess, "A case study exploring regulated energy use in domestic buildings using design-of-experiments and multi-objective optimisation" Building and Environment, 54, pp 126-136, 2012 (IF: 2.129, 2012)

K. A. Mamun, M. Mace, L. Gupta, C. A. Verschuur, M. E. Lutman, M. Stokes, R. Vaidyanathan, S. Wang, "Robust Real-time Identification of Tongue Movement Commands from Interferences," Neurocomputing, 80, pp 83-92, 2012

A Recent Publication for **Dr. Richard Millar, Associate Professor, and Kristin Giammarco, Lecturer** . . .

Millar, R. and Giammarco, K. Integrated Instrumentation & Sensor Systems Functional Model and Taxonomy. J. Aerosp. Eng. . .

Integrated Instrumentation & Sensor Systems Functional Model and Taxonomy



# Faculty and Staff News

## ARTICLE HISTORY

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Richard C. Millar<sup>1</sup> and Kristin Giammarco<sup>2</sup>

<sup>1</sup>Associate Professor, Department of Systems Engineering, Graduate School of Engineering and Applied Sciences, Naval Postgraduate School, Monterey, CA, 93943 USA, Email: [rcmillar@nps.edu](mailto:rcmillar@nps.edu)

<sup>2</sup>Lecturer, Department of Systems Engineering, Graduate School of Engineering and Applied Sciences, Naval Postgraduate School, Monterey, CA 93943, Email: [kmgiamma@nps.edu](mailto:kmgiamma@nps.edu)

This article presents a tailored systems engineering functional architecture intended to guide the development of integrated instrumentation / sensor systems [IISS] (incorporating communications media & interconnections and signal acquisition) for application to aerospace equipment in the following activities: • test & evaluation, • system diagnostics and health management [DHM] and • advanced system control. The functional architecture suggested a taxonomy for integrated instrumentation / sensor systems [IISS] based on defined variants of the functional architecture and morphological variations on the functional elements. The functional architecture and derived taxonomy focus attention on the sensor system interfaces and the transformations of the sensed parameters as the key to the definition and categorization of new configurations and implementations of integrated instrumentation / sensor systems (IISS) that promise to support: • improved aerospace system verification and validation, • more effective and responsive equipment health management, and • greater scope for precise control of system behaviour and performance.

# WELCOME

## *to our newest staff members!*

**Tom Pierce, Lab Technician** - Raised in a Coast Guard family, I lived in Florida, Alaska, and finally settled in northern Michigan. After high school, I worked as a Truck driver while I attended local college for flight school in September of 2001. Due to the

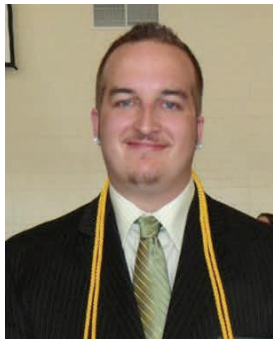


events of September 11th, the opportunities in the aviation field dwindled swiftly and I had to rethink my career choice.

I eventually grew tired of truck driving and decided to

enlist in the US Navy in January 2008. Having chosen to become an avionics technician, I spent my first tour in-between NAS Lemoore, California and the aircraft carrier USS Ronald Reagan; most recently deploying from February 1st to September 9th 2011, in support of Operations Tomodachi, Enduring Freedom, and New Dawn.

I then received orders to the Academics department at NPS, and arrived onboard in February of this year. I am currently a lab technician in the Systems Engineering department, where along with maintaining multiple varied labs I am often tasked with faculty support. As I am new to this field, the learning curve is immense. Though with my tour at NPS until February, 2015, I look forward to learning the labs I support and the theories behind them. I plan to utilize my time here to further my education, with an interest in linguistics and by proxy, engineering. I look forward to the opportunity of working with the students and faculty of Systems Engineering over the next few years (not so much Lori Wilson and Gene Paulo who are a bit intimidating)!



**Mike Ruff, Office Assistant** - Born and raised on the Monterey Peninsula, I have called the area home my entire life. I attended Seaside High School where I played football for the Spartans. Sports, especially football, have been a significant part of my life and as you may learn from a conversation with me, remain one of my primary interests. (GO EAGLES!)

I recently graduated Magna Cum Laude from California State University Monterey Bay with a Bachelor's degree in Business. Business is something I find both intriguing and advantageous to nearly all career paths. Throughout my young career I have maintained several jobs including various student positions at the Naval Postgraduate School as well as a stint as co-manager of an eBay resale store.

I am currently the OA of the Systems Engineering Department where I have been since mid-June. The administrative side of the equation is a new one for me, having worked the past two years as a member of NPS's Dudley Knox Library Computer Systems Department. There I provided basic IT support, while utilizing my marketing education and design skill to develop various marketing campaigns for the library's new initiatives. I look forward to broadening my horizons with the SE department, developing an all new set of skills and getting to know the faculty, staff and students as well as duties and accomplishments of the department. In addition to acclimating to the new position with SE, my fiancée Christina and I are busy planning our wedding for April of 2013.

### CALLING ALL ALUMNI

*To continue receiving the SE Newsletter,*

*please send your email address to*

**SEDepartment@nps.edu or lawilson@nps.edu**

# Upcoming Conferences & Workshops



1. [AIAA Complex Aerospace Systems Exchange](#), Pasadena, CA, September 11-13, 2012
2. [NDIA 50th Annual Targets, UAVs & Range Operations Symposium & Exhibition](#), Orlando, FL, October 2-4, 2012
3. [2012 IEEE International Ultrasonics Symposium](#), Dresden, Germany, October 7-10, 2012
4. [2012 IEEE Vehicle Power and Propulsion Conference \(VPPC\)](#), Seoul, Korea, October 9-12, 2012
5. [6th Annual INCOSE Great Lakes Regional Conference](#), Schaumburg, IL, October 12-13, 2012
6. [IEEE International Conference on Systems, Man, and Cybernetics \(SMC 2012\)](#), COEX, Seoul, Korea, October 14-17, 2012
7. [2012 IEEE Compound Semiconductor Integrated Circuit Symposium \(CSICS\)](#), San Diego, CA, October 14-17, 2012
8. [15th Annual Systems Engineering Conference](#), Sponsored by the National Defense Industrial Association (NDIA), Systems Engineering Division, San Diego, CA, October 22–25, 2012
9. [NDIA Aircraft Survivability Symposium 2012](#), NPS Monterey, CA, October 23-25 (Classified, Secret/US Only)
10. [24th International Conference on SOFTWARE & SYSTEMS ENGINEERING and their APPLICATIONS](#), Telecom ParisTech, Paris, France, October 23-25, 2012
11. [ASEC2012 - “Building a Better Future”](#), (INCOSE), Univ. of Warwick, Coventry UK, November 7-8, 2012
12. [ASNE Launch & Recovery of Manned & Unmanned Vehicles from Surface Platforms](#), MITAGS, Linthicum, MD, November 14-15, 2012
13. [2012 IEEE 51st Annual Conference on Decision and Control \(CDC\)](#), Maui, HI, December 10-13, 2012
14. [3rd International CSDM](#) (INCOSE), Paris, France, December 12-14
15. [INCOSE Workshop \(IW\) 2013](#), Jacksonville, FL, January 26-29, 2013
16. [ASNE Day 2013](#), Arlington, VA, February 21-22, 2013
17. [29th Annual Test & Evaluation Conference](#), Charlotte, NC, February 25-28, 2013
18. [Global Deterrence & Defense Symposium \(GDDS\) 2013](#), Crane, IN, March 5-6, 2013
19. [11th Annual Conference on Systems Engineering Research \(CSER\)](#), Atlanta, GA (Host: GA Tech), March 19-22, 2013
20. 2013 ABET Symposium, Portland, OR, April 19-20, 2013
21. 29<sup>th</sup> [Technology Review & Update Short Course](#), NPS Monterey, CA, April 22-26, 2013
22. [NDIA 2013 Ground Robotics Capabilities Conference & Exhibition](#), Atlanta, GA, April 29-May 1, 2013
23. [Intelligent Ships Symposium \(ISS\) X](#), Philadelphia, PA, May 22-23, 2013
24. [23rd Annual INCOSE International Symposium \(IS 2013\)](#), Philadelphia, PA, June 24-27, 2013
25. [ASNE Mega Rust 2013: Naval Corrosion Conference](#), Newport News, VA, 23606, June 25-27, 2013
26. [ASNE Fleet Maintenance & Modernization Symposium 2013](#), San Diego, CA, August 27-28, 2013

SE Newsletter Editor

Lori A. Wilson

*Please direct any comments or questions  
to [lawilson@nps.edu](mailto:lawilson@nps.edu)*

