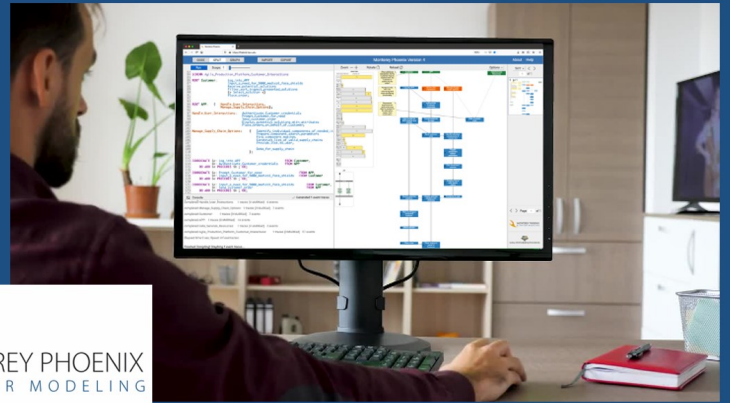




In This Issue:

- [SE Spotlight](#)
- [Faculty News](#)
- [Student Stories](#)
- [Summer Qtr Awards and Graduations](#)

Your system or process may be primed to behave in ways you never imagined or intended. Find and fix unexpected behaviors lurking in your design with Monterey Phoenix (MP), a user-friendly, NPS-developed language, approach and tool for modeling and reasoning about behavior.



<https://nps.edu/mp>

Letter from the Chairman

Welcome to the Systems Engineering Newsletter for the 2021 Summer quarter! The Naval Postgraduate School Summer quarter of the 2021 academic year was executed in a hybrid mode, allowing small groups of students to return to the NPS campus and not only take some classes in-person, but also work in the laboratories on projects involving hardware fabrication, hardware- and software-in-the-loop testing, and integration. In addition to working in the labs, students also had the opportunity to participate in some field testing.

For the summer graduation in September, the NPS Systems Engineering Department graduated 55 students. Of these students, 18 earned Masters of Science in Systems Engineering degrees, three earned Masters of Science in Engineering Systems degrees, and 34 earned Masters of Science in Systems Engineering Management degrees.

Additionally, eight students graduated with distinction and six theses were recognized as outstanding. Of the six outstanding theses, two focused on the emergent behaviors in the different supply chains; two focused on the Manned-Unmanned Teaming (MUM-T) technology (which is now the center of focus in the defense equipment development arena), and another two focused on combat drone swarms and artificial intelligence.



Systems Engineering Chairman
Dr. Oleg Yakimenko

When they weren't teaching or advising students, the faculty members of the Systems Engineering department continued to work on their FY21 research projects while also securing funding for their FY22 research projects. Eight of our faculty were selected to work on challenging projects within the Naval Research Program that deal with the current and future operational warfighter challenges. These projects are being sponsored by such organization as ASN(RDA) (Assistant Secretary of the Navy for Research, Development and Acquisition), N2/N6 (Office of the Deputy Chief of Naval Operations for Information Warfare), N9 (DCNO Deputy Chief of Naval Operations Warfare Systems), HQMC P&R(Headquarters Marine Corps Programs and Resources), U.S. Fleet Forces Command, and Marine Corps Systems Command.

Congratulations to our graduates and our faculty on their accomplishments!

Sincerely,

Oleg Yakimenko,
Distinguished Professor and Chair of the Systems Engineering Department

TDSI Program Celebrates 20th Anniversary By Associate Professor Fotis Papoulias

[The Temasek Defense Systems Institute](#) (TDSI), a strategic alliance between the National University of Singapore (NUS) and the Naval Postgraduate School (NPS), recently celebrated its 20th anniversary.

Originally established in 2001, It brings together military students, staff, and defense technologists in a challenging education and research environment. Graduates understand the dynamic complexities of a military force and are able to create maximum leverage through the integration of operations and technologies.

Typically, three US students, about a dozen students from Singapore, and one from Israel participate yearly in the program. Together, they form an educational cohort, learning from each other, forging long-lasting relationships, and helping our allied nations continue their long tradition of defense security and cooperation.

The program is divided into two curriculums. During the first six months, students study the common curriculum at the NUS. For the next 12 months, students pursue their specialization in one of existing curricula at NPS, thereby gaining knowledge of a specific field in defense technology. At the same time, students also embark on an integration project while they are at NPS. The integration project is led by the students in the Systems Engineering Analysis (SEA) curriculum and is the culmination of the 18-month long course of studies in the program.

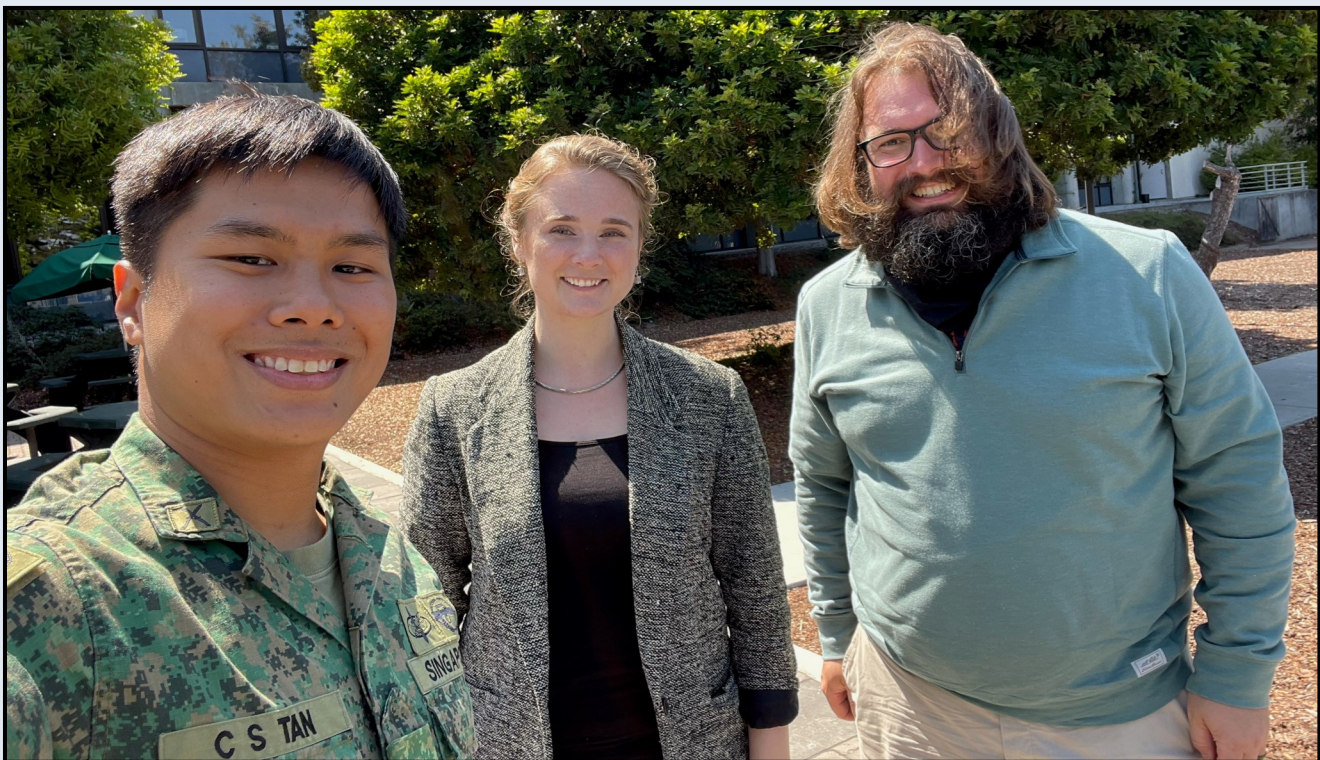
Upon successful completion, they are awarded a Master of

Science (Defense Technology & Systems MDTS) degree by NUS and their Master of Science degree in their home curriculum at NPS.

The SE Department is proud to serve in a leading role in the program, and we echo President Rondeau's remarks, "The Naval Postgraduate School (NPS) is proud of our partnership with the National University of Singapore, and it is with honor and respect that we together celebrate the 20th anniversary of TDSI. The MDTS program continues to be a highly sought-after course for defense professionals from both nations. Our NPS graduates participating in this program will attest to the rigor of the curriculum. They also tell me that the cultural exchange and friendships built during this experience are equally as important as that of academic rigor.

"This program gives graduate students an overview of current defense technology issues in both nations accompanied by a specialization in a chosen technological field to coursework in Singapore and US. With a persistent view towards improvement, leading faculty at both institutions have fostered a partnership that is nimble and adaptable, well-suited for success in this current cognitive age. As we look ahead to the next 20 years, we look forward to working with our Singaporean partners at TDSI as we face the technological challenges and opportunities of tomorrow together."

As another cohort graduation is upon us, we would like to congratulate the graduates, and let us continue to strengthen our nations' ties for the next 20 years and beyond.



(Axel) Choon Seng Tan (Left) graduated from the TDSI program in the 2021 Summary quarter. His advisor was Dr. Douglas Van Bossuyt (right) and his co-advisor was Dr. Britta Hale (Center).

Distance Learning Systems Engineering Faculty Win Meyer Award

Each student cohort that graduates from the Department of Systems Engineering selects one faculty member for the Wayne E. Meyer Award for Systems Engineering Teaching Excellence. The winners for the 2021 Summer Quarter are Professor of Practice Rama Gehris, Associate Professor Kristin Giammarco, and Lecturer Brigit Kwinn.



Professor of Practice Rama Gehris

Dr. Rama Gehris started teaching at NPS in 2011 after many years with the the Navy civil service at China Lake and Paxtuxent River. Her prior experience working for the Navy in both technical and acquisition roles helps her relate current course materials and assignments to her students' experiences at work.

While earning her doctorate, Dr. Gehris worked and raised three children, so can appreciate the importance of accommodating the work/life/school balance of Distance Learning students. She provides flexible office hours via Zoom and opens assignments at the beginning of the quarter so students can plan around work and life responsibilities. She also ensures her students are fully aware of her expectations by providing them with a grading rubric before every assignment, and detailed formative feedback after every assignment.

As part of a philosophy of continuous improvement, Dr Gehris reads all course evaluation forms and makes changes to course content and Sakai sites based on student feedback.

In addition to teaching, Dr. Gehris is also working on developing and improving Excel and Word based products to create consistency in grading and to reduce the workload of electronic handling of assignments through the use of custom macros she has written to automate some common tasks. Dr. Gehris was awarded a small grant from Teaching and Learning Commons (TLC) with the goal of converting these tools into something usable by someone else.

Those interested in using the beta versions of the tools or being part of the user group for these tools, please contact Dr. Gehris at rdgehris@nps.edu.



Associate Professor Kristin Giammarco

Kristin Giammarco has been with the NPS Department of Systems Engineering since 2009. She attributes her connection to her students from having been a distance learning student herself, earning a Ph.D. and a Master's degree from NPS in a distance learning modality. Her NPS instructors inspired her to become part of the NPS community herself.

Because she comes from a position of real-world practice of systems engineering, she can relate to the students who are in it right now, "I know how stressful and how rewarding it is at the same time to work on a program of record! I love that I have the opportunity to help others achieve their professional goals in balance with other work, family and life activities."

Dr. Giammarco received a special act

award for supporting colleagues from around the campus in their transition to emergency online instruction during the COVID-19 pandemic. She developed a general course template for use by faculty new to Distance Learning delivery and has been an invited speaker for web-based seminars offered by the Graduate Education Advancement Center's Office of Teaching and Learning. She is currently participating in the NPS Distance Learning Quality Initiative with other academic associates from a cross section of departments to enhance all distance education programs at NPS.

Dr. Giammarco is also the winner of the 2021 the Rear Admiral John Jay Schiefelin Award for Excellence in Teaching, an annual award sponsored by the NPS Foundation & Alumni Association.



Lecturer Brigitte Kwinn

Brigitte Kwinn started teaching at NPS in 2008 after retiring from the US Army with 22.5 years of service.

While in the military, she spent 8 years as an assistant professor in the Department of Systems Engineering at the United States Military Academy West Point.

After Dr. Kwinn was hired to teach at NPS, she took several distance learning courses at Stevens Institute of Technology. During this period, she learned to appreciate the student work-life balance—her husband and she had just been given guardianship of their three great nieces who were ages four, three and one; their oldest daughter was at MIT as an

undergrad, and they were dealing with the deaths of their teenage son and their parents.

Dr. Kwinn attributes the successes of her own family to the atmosphere of the Systems Engineering department at NPS, which is very proactive about including the distance learning students and faculty in department events. She believes it is

this atmosphere of inclusion that has and will continue to enable the DL students to achieve great things.

Dr. Kwinn coached junior Olympic girls volleyball for 15 years and learned many things about communication and leadership from those athletes. She now applies this knowledge by trying to give student feedback early and be responsive to their

questions on email, text message, phone calls and the Sakai Discussion Forums; and by working as the program officer for the 311 and 711 cohorts to help struggling students be successful.

Dr Brigitte Kwinn will retire September 2021 and will then have time to do some more fun things with her grandson!

Former Systems Engineering Chair Receives Meritorious Civilian Service Award

Dr. Ronald Giachetti, Professor of Systems Engineering and new Dean of the Graduate School of Engineering and Applied Sciences, was presented the Department of the Navy Meritorious Civilian Service Award by Scott Gartner, Provost of the Naval Postgraduate School, on August 18, 2021.

Transcript of the award ceremony follows:

“As Provost at the United States Naval Postgraduate School, it gives me great honor to present you with an award from the Department of the Navy for meritorious civilian service. Congratulations.

Department of the Navy meritorious civilian service: This certificate of award is presented to Dr. Ronald Giachetti in recognition and appreciation of meritorious service which has been of high value and benefit to the Navy. And it reads: President Naval Postgraduate School takes pleasure in present-

ing the Department of the Navy meritorious civilian service award to Dr. Ronald Giachetti for service as set forth in the following:

For sustained meritorious civilian service while serving as the chair of the Systems Engineering Department at the Naval Postgraduate School through July 15, 2021. Demonstrating professionalism, Dr. Giachetti provided Resident and Distance Learning students an advanced level of knowledge and technical competence in Systems Engineering and application domain.

He led the department through an accreditation board for engineering and technology program re-accreditation creating the resident and distance learning Master of Science in systems engineering accredited program.”

Congratulations, Dr. Giachetti!



Provost Scott Gartner (right) presents Dr. Ronald Giachetti (left) with Department of the Navy Meritorious Civilian Service Award

New Faculty Join the Systems Engineering Department



Distance Learning Lecturer Corina

Corina White joined the SE department in June 2021 as a lecturer. She graduated with a B.S. in Chemical Engineering from Prairie View A&M University in 2007 and earned a M.S. in Systems Engineering in 2014 from the Naval Postgraduate School.

Corina has over 10 years of military civilian service in research and development,

depot maintenance, DoD acquisition and test and evaluation. She is ENG Level III certified and has a Digital Engineering certificate from DAU.

She started her career with the Naval Air Systems Command (NAVAIR) as a chemical engineer participating in the Engineering & Scientist Development Program in 2007. As a part of AIR-4.4 Propulsion Lubricants Team in Patuxent River, MD she planned and conducted tests to qualify and ensure the performance of Navy aviation oils for the fleet. She graduated from the program in 2010 and transferred to the Materials Engineering Laboratory at NAS Jacksonville. She served in a couple of assignments and became the Lead Materials Engineer for the Manufacturing and Processing Team at NAS Jacksonville.

Corina was a research associate in the Systems Engineering Department at NPS between 2012-2016. Her research efforts contributed to creating a Systems Engineering Career Competency Model for the DoD for DASN RDT&E.

In 2019 she joined the Marine Corps Test and Evaluation Activity (MCOTEA) at Quantico as an operational research analyst directly supporting Ground Based Air Defense (GBAD). In this role she analyzed data while verbally and orally communicating evaluation and assessment reports on GBAD systems to leadership, indicating whether the systems were operationally effective, suitable and survivable.

Corina served as one of the US Air Force Life Cycle Management Center (AFLCMC) Lead Systems Engineers for the Foreign Military Sales Program. Her efforts supported the Force Protection of CONUS bases by leading a team of engineers through the design, installation and sustainment of the systems designated to monitor, surveil and protect assets.

Corina and her family live in Jacksonville, Florida. Corina and her husband Roosevelt have been married 14 years and they have three children ages 13, 8 and 4. Roosevelt is a Surface Warfare Officer in the U.S. Navy.



Jonathan Lussier—Faculty Associate—Research

Jonathan Lussier joined the SE department in June 2021 as a Faculty Associate-Research. He graduated with a B.S. in Mechanical Engineering, with minors in mathematics and physics, from the University of Denver in 2020. He has experience in design for manufacturability, programming, and CAD simulation.

While at the University of Denver, Jonathan volunteered to work with the biomechanical engineering department to create

a new fixturing machine using CNC milling and lathing skills that he had gained through nearly 500 hours of practice in his school's machine shop. The fixturing device he created is now in use every day and has reduced test times for hip and knee cadavers down to around half of what they were, saving the test teams dozens of hours a week.

Jonathan also completed a mechanical engineering internship with the SE department at NPS in 2018. During this time he had the opportunity to help design an autonomous underwater vehicle (WIEVLE) as part of the team that brought the project from a concept on paper to physical prototypes ready for testing. In order to make progress on the project, Jonathan taught himself how to design in CAD, choose parts based on requirements, use 3D printers, and apply technical knowledge learned in classes to real-world problems such as dynamics analysis and circuit design.

Later, in 2019, the Air Force Research Laboratory awarded Jonathan a graduate-level research internship. During this internship, he used technical data to gener-

ate creative solutions developing more precise and reliable beam control mechanisms for laser control systems using gimbals and fast steering mirrors controlled with novel Kalman filtering techniques.

Before joining NPS, Jonathan worked as a manufacturing engineer within the space industry overseeing the manufacturing process of solar array deployment electronics (SADEs) for spacecraft at Honeybee Robotics. Many of the products that Jonathan oversaw production of were not tested or built before going into full production because of compressed time schedules; therefore, much of his job at honeybee was involved with addressing emergent design issues by implementing hardware design changes to hardware already mid-production and on a hurried schedule.

Jonathan is interested in leveraging emergent technologies and systems engineering to advance space exploration, energy storage systems, and versatile manufacturing techniques.

Systems Engineering Faculty Members Retire



Gary Parker - FA., Research

I started working at NPS in November 2010, and the last almost 11 years have been among the best years of my working career.

It has been my privilege to work for and with many colleagues in the SE department over the years on research projects with relevance to DOD and the DON. Through these projects I have come to know and appreciate the talents and intellects of many of the SE Department's faculty and staff. I am fortunate to be able to say many of my colleagues have also become my friends.

The number one product of NPS is educated officers and civilians. Having attended NPS as an Army student 35 years ago, I know firsthand the impact an NPS education can have on a military (and post-military) career; I feel very fortunate that I have been able to assist faculty in the education of the many bright, energetic officers that attend NPS in the systems engineering curricula.

Do not underestimate the lasting impact that a single, offhand comment or action of yours can have on a student. Many years from now, they might recall how a simple encouraging talk with you during an extremely stressful period in their lives helped them persevere on to

achieve their goal. Or how your dogged insistent on rigorous reasoning and well written argumentation in that thesis or capstone report set the standard in their mind for how to judge written communications from their subordinates and colleagues in the future.

None of us stay at NPS forever, and memories of faculty fade over time. I might be remembered as that slightly weird guy who used to post the weekly puzzler outside his office, or dressed the stuffed penguin in cap and gown outside his office each graduation, but there are far worse things for which to be remembered. I would like to think I'll be remembered as part of a great department that infused a generation of officers and civilians with systems thinking and an interdisciplinary approach to conceiving, designing, building, and fielding of systems that worked.

Although it has come time for Kim and me to begin the next phase of our lives, I will remember the wonderful years and friends that we have made here at NPS.

I am looking forward to watching the magnificent sunsets here on the Central Coast with a cool breeze in my face without thinking about Rayleigh scattering, planetary rotation, and atmosphere-ocean interactions in a complex system with feedback – it's time to just enjoy the sunsets.

There will be challenging times ahead for the department and NPS. Do the right thing. Practice consideration of others and mutual respect. It's not as hard as you might think. Take care of yourselves and each other, and I'll see you around campus.

- Gary Parker



Brigitte Kwinn - SE Lecturer

When Dave Olwell hired me 13 years ago, it was only for a couple of years until our family could be financially stabilized after we were given guardianship of 3 little girls who were 6, 5 and 3. I will be forever grateful to Dave and BG (Retired) Jim Kays (bless his soul) who took a risk and hired me to teach at West Point and NPS. 13 years went fast!!!

I have truly enjoyed teaching these many years. The students are tremendous and have incredibly varied backgrounds. I learned something from them every day. I hope they learned something from me too.

I appreciate all the support from the folks at NPS especially Kathy Cain, Heather Hahn, Matt Boensel, Laura Barnes, Lori Wilson and Mark Rhoades who helped me along the way. I am thankful that I was not the only Army person in the department! I will forever say Beat Navy! But still tell everyone that I used to teach at the Naval Postgraduate School.

- Brigitte Kwinn

Distance Learning Students Receive Meyer Award

The Wayne E. Meyer Award for excellence in systems engineering is presented for superior academic achievement and leadership to an outstanding NPS graduate from the distance learning systems engineering degree program. Recipients are nominated by fellow classmates and the NPS Systems Engineering faculty. It is a very competitive process and a significant honor.

Ms. Jamarie Kilgore, Mr. Jeffrey Patel, and Mr. Benjamin Wimberly were each selected for the Meyer Award for the 2021 Summer quarter.



Mrs. Jamarie Kilgore

Jamarie Kilgore is the current NAWCAD Product Integrity AA17200 Manufacturing and Quality PEO (A) Branch Supervisor. She is responsible for managing branch employees and support PEO (A) programs to maintain product integrity in the procured systems.

Mrs. Kilgore started her professional career with NAVAIR enrolled in the Engineering and Scientist Developmental Program (ESDP) with the Product Integrity Division. She graduated from the program in 2013, then entered the Rising Journey Program while pursuing a Masters in Systems Engineering with the Naval Postgraduate School. In 2015, she graduated from the Rising Journey Program and completed her Master's degree, receiving an "outstanding thesis" award for the capstone project "UAV Swarm Operational Risk Assessment System."

From 2010 to 2015 Mrs. Kilgore worked in various acquisition programs providing manufacturing and quality support. In 2016, she accepted a reassignment with Air Platform Systems Engineering Division as a Deputy Assistant Program Manager for Systems Engineering (DAPMSE) for PMA-201 Program Office Precision Strike Weapons. Subsequently in 2017, she competed and was selected for position with the Product Integ-

riety Division to support PMA-251 Program Office Aircraft Launch and Recovery Equipment. In 2018, on account of her accomplishments, performance, and technical expertise, Mrs. Kilgore was re-assigned to a special project to support a Command initiative to expand quality surveillance of commercial and interservice MRO activities. In 2019, she was selected to pursue a second Masters in Systems Engineering Management with a thesis requirement. The special project was her inspiration to document depot-level maintenance and repair activities for program managers and systems engineers through the Master thesis requirement titled Evaluation of Navy Depot Maintenance Inter-Service Support Agreement (DMISA) Technical Data Compliance and Quality Control.

Mrs. Kilgore has been recognized with various "Letter of Appreciation" from different program offices for her expertise, attention to detail, work ethic, and technical support. She has exceeded mission expectations in various yearly performance evaluations. Furthermore, she dedicates personal time to various volunteering efforts sponsored by the community or command. She is an active mentor and promotes STEM field opportunities in and out of work.



Mr. Jeffrey Patel

Jeffrey Patel is a physicist at the US Army Combat Capabilities Development Command (DEVCOM) Armament Center at Picatinny Arsenal, New Jersey. Since 2009, Patel has worked in the Small Arms Fire Control and Optics Technology Division. He has participated in S&T projects and programs spanning the acquisition life cycle. Patel holds a bachelor's degree in Imaging Science from Rochester Institute of Technology.

During his time at NPS, Patel has enjoyed learning with the diverse DL faculty and students and applying the systems engineering curriculum to his work at DEVCOM. The experience has had an immediate impact on his ability to meaningfully contribute to programs and deliver advanced technology to the warfighter.



Mr. Benjamin Wimberly

Ben Wimberly lives in Huntsville, AL with his wife, Jennifer, and two children, Rosalie and Ezra. He is currently employed by the Combat Capabilities Development Command

(DEVCOM) Aviation & Missile Center (AvMC) while matrixed to the Program Executive Office, Aviation (PEO-AVN) Cargo Helicopters Project Office (CHPO) at Redstone Arsenal as the CH-47F Block I Program Integration Lead.

In 2009, he graduated from Harding University earning a Bachelor of Science in electrical engineering and played two years of collegiate baseball. Through his college career, Mr. Wimberly supported the Utility Helicopters Project Office (UHPO) through a summer internship program, and upon graduation, he began his Army Civilian career as the Data Management Team Lead for UHPO.

Mr. Wimberly supported UHPO for ten years in various roles including the Data Management Team Lead, Configuration Management Team Lead, H-60 Improved Turbine Engine (ITE) Integration Lead, and the H-60 Futures Team Lead. In 2020, he transitioned to the Cargo Helicopters Project Office to act as the CH-47F Block I Tech Chief for a nine-month period.

Outside of his career, Mr. Wimberly enjoys spending time with his family, being active in his church, and participating in or spectating various sporting events.

Systems Engineering Students Win 1st and 2nd Place for Best Paper at Professional Conference By Assistant Professor Anthony Pollman



LCDR (sel) Alexander Frederickson

[Heat Exchanger for a Small-scale liquid Air Energy Storage System](#) applied a system engineering approach to select a heat exchanger for a Carnot battery using a Linde-Hampson cycle to implement the liquefaction function.

Alex was recently selected for LCDR and is serving as an Engineering Duty Officer in Norfolk.

Mark's winning entry, ["Experimental Evaluation of Dewar Volume and Cryocooler Cold Finger Size in a Small-scale Stirling Liquid Air Energy Storage System"](#) outlined the results of experiments to map the tradespace and inform design of a Carnot battery using a Stirling cycle to implement the liquefaction function.

System Engineering students LT Alex Frederickson and MAJ Mark Swanson took 1st and 2nd Place, respectively, in the American Society of Mechanical Engineers' (ASME) Power Division outstanding presentation/paper competition at POWER 2021 in July.

Their submissions, which were based on their thesis work, will be published in the proceedings and are available publicly on www.researchgate.com.

Alex's winning entry, ["Selection of a](#)



LTC Mark Swanson

likely!"

Their work was undertaken under the auspices of the Office of Naval Research's Next Step Program. Next Step evaluates the efficacy of new and nascent technologies for use by the Naval service.

Next Step's local director, Dr. Anthony Gannon from the Mechanical Engineering Department, said, "Winning 1st and 2nd Place in an ASME competition is quite the accomplishment. I've never seen it. It must be a bit like winning an exacta bet at the horse track, only less

Mark was recently promoted to LTC and currently serves as the Commander of the Army's Blackhawk acquisition program at Redstone Arsenal in Alabama.

Their advisor was Dr. Pollman from the SE Department. Co-advisors were Dr. Hernandez from SE, and Dr. Gannon and Dr. Smith both from the Mechanical Engineering Department.

Congratulations to both! You make the department proud.

Defense ARJ Publishes Former NPS 522 Students' Capstone Work

By Assistant Professor Joseph Klamo

The Defense Acquisition Research Journal (ARJ), a peer-reviewed journal focusing on acquisition within the Department of Defense (DoD) and produced by the Defense Acquisition University (DAU), recently published the work of MAJ Minou Pak and MAJ Joshua L. Peeples, two former graduates of the Naval Postgraduate School's Master of Science in Systems Engineering Management (SEM) degree program.



MAJ Minou Pak



MAJ Joshua L. Peeples

The team applied their modified model to a specific item, the ubiquitous BA-5590/U battery. For the derived journal article, MAJ Pak and MAJ Peeples focused on demonstrating the sensitivity of the estimated optimized inventory level to each of the parameters in the model. By doing so they were able to identify that the variable they named the "Value-to-Cost Ratio" is a critical parameter that drives optimal inventory storage levels. This parameter captures the value of

The article, "[Extra! Using the Newsvendor Model to Optimize War Reserve Storage.](#)" which was published in the just released October issue, had its genesis in the work they did for their capstone project as part of their degree program.

The complete capstone project team also included MAJ Alexandre W. Anderson, MAJ Casey B. Close, and MAJ Chad S. Frizzell. The team was co-advised by Dr. Joseph T. Klamo and COL John T. Dillard, USA (Ret.).

The project was sponsored by the United States Marine Corp Installation and Logistics Command, Logistics Plans and Operations (LPO-2). It challenged the students to look at an alternative method for the Marine Corp to optimize the amount of inventory stored in war reserve. After discussions with the sponsors, it was decided that the commonly used "newsvendor" model would be adapted for a DoD focused inventory problem.

The deliverable was a comprehensive report that showed the modifications required to the newsvendor model in order to apply it to a DoD inventory problem—mainly the lack of any revenue from the sale of items in inventory and the criticality of the creating a term to capture the intangible cost of shortages.

the increased warfighting capability due to the item, relative to its purchase cost, and is a component of the intangible cost of shortages. They also highlighted that the revenue-less structure of DoD inventory storage problem requires that the intangible cost of shortage must be captured, regardless of the specific mathematical model used.

As the DoD continues to face increasing fiscal constraints while at the same time needing to have the required inventory levels to support future troop surges, the ability for all the U.S. military branches to optimize their war reserve levels will be important.

MAJ Minou Pak is an Army Acquisition Corps Officer who holds a Master's in Systems Engineering Management from Naval Postgraduate School (NPS) and a BS in Mechanical Engineering from United States Military Academy.

MAJ Joshua L. Peeples is an Army Acquisition Corps Officer currently who holds a Master's in Systems Engineering Management from NPS, a Masters in Logistics Management from Florida Institute of Technology, and a BA in Sociology/Criminal Justice from University of Tennessee, Knoxville.

Awards and Graduations

Awards

Air Force Association Award for Advancement of Aerospace Studies

Military Expert 5 Haocheng Joel Li, Singapore Army

Naval Postgraduate School Outstanding Academic Achievement Award International Students

Military Expert 5 Haocheng Joel Li, Singapore Army

Monterey Kiwanis Club Outstanding International Student Award

Military Expert 5 Haocheng Joel Li, Singapore Army

Meyer Award for Outstanding DL Student in Systems

Mr. Jeffrey Patel, U.S. Army, DEVCOM, Armaments Center
Mrs. Jamaris Kilgore, Naval Air Warfare Center Aircraft Division

Meyer Award in Systems Engineering for DL Teaching

Dr. Rama Gehris
Dr. Kristin Giammarco
Brigitte Kwinn

Systems Engineering Management Capstone Competition

722-201G Team Motivated! To Graduate (M2G)

Capstone Title: TAXONOMY OF SITUATIONAL AWARENESS INFORMATION FOR THE FUTURE LONG-RANGE ASSAULT AIRCRAFT (FLRAA) MEDICAL EVACUATION (MEDEVAC) CO-PILOT

Members: Aaron Balk, Tiffanie Bachar, Kevin Lennan, Carelyn Martinez, Nicole Olbricht, and Benjamin Wimberly

Advisors: Alejandro Hernandez, Joel Hagan, Matthew Nicholson, and COL Joyce Stewart

Outstanding Thesis

CPT Robert Justin Morales Naquila, Singapore Army

Thesis Title: MODEL-BASED UAS-UGS IED CLEARANCE MISSION ENGINEERING

Advisor: Oleg Yakimenko and **Second Reader:** Fotis Papoulias

Mr. Joshua Paul Beaver

Thesis Title: ANALYZING EMERGENT BEHAVIOR OF SUPPLY CHAINS FOR PERSONAL PROTECTIVE EQUIPMENT IN RESPONSE TO COVID-19

Advisor: Kristin Giammarco and **Second Reader:** Wally Owen

Mr. Daniel M. Edwards

Thesis Title: SIMULATED LASER WEAPON SYSTEM DECISION SUPPORT TO COMBAT DRONE SWARMS WITH MACHINE LEARNING

Advisor: Bonnie Johnson and **Second Reader:** Rolf Johnson

Mr. Rohan Orville Kennedy

Thesis Title: APPLYING ARTIFICIAL INTELLIGENCE TO IDENTIFY CYBER SPOOFING ATTACKS AGAINST THE GLOBAL POSITIONING SYSTEM

Advisor: Bonnie Johnson, **Co-Advisor:** James Baker, and **Second Reader:** Ying Zhao

Ms. Margaret G Palmieri, USN

Thesis Title: ASSESSING AND VISUALIZING RISK IN MONTEREY PHOENIX THROUGH A SUPPLY CHAIN CYBER-ATTACK USE CASE

Advisor: Kristin Giammarco and **Second Reader:** Bonnie Johnson

Recommendation for Graduation with Distinction

Military Expert 5 Haocheng Joel Li, Singapore Army
MAJ Ming Hui Peh, Singapore Army

MAJ Axel Tan, Singapore Army
Mr. Michael A. Bennett, USA
Mrs. Jamaris Kilgore, Naval Air Warfare Center Aircraft Division
Mrs. Nicole M Olbricht, USA
Mr. Jeffrey Patel, U.S. Army, DEVCOM, Armaments Center
Mr. Cole A Rice, USA

Capstone Teams

311 Team Artificial Intelligence

Capstone Title: IMPLEMENTING AUTOMATED BATTLE MANAGEMENT AIDS FOR AIR AND MISSILE DEFENSE
Members: Luis Cruz, Angela Hoopes, Ryane Pappa, Savanna Shilt, and Samuel Wuornos
Advisor: Bonnie Johnson and Second Reader: Scot Miller

311 Team Unmanned Systems for Distributed Maritime Operations

Title: UNMANNED VEHICLE CARRIER SUPPORTING DISTRIBUTED MARITIME OPERATIONS
Members: Winston Arnold, Craig Fletcher, Richard McCann, Jeffrey Patel, and Jairus Potts
Advisors: Paul Beery, Gene Paul, and Wayne Porter

311 Team Hypersonic Missile

Title: BRINGING HYPERSONIC MISSILE CAPABILITY TO THE FLEET
Members: Sebastian Banuchi, Thomas Hughes, Cole Rice, and Thia Tank
Advisors: Gene Paulo, Paul Beery, and Wayne Porter

722-201G Team Motivated! To Graduate (M2G)

Capstone Title: TAXONOMY OF SITUATIONAL AWARENESS INFORMATION FOR THE FUTURE LONG-RANGE ASSAULT AIRCRAFT (FLRAA) MEDICAL EVACUATION (MEDEVAC) CO-PILOT
Members: Aaron Balk, Tiffanie Bachar, Kevin Lennan, Carelyn Martinez, Nicole Olbricht, and Benjamin Wimberly
Advisors: Alejandro Hernandez, Joel Hagan, Matthew Nicholson, and COL Joyce Stewart

722-201G Quaranteam

Title: SYSTEM ANALYSIS OF THE ARMY COMMUNICATION NETWORK IN SUPPORT OF ENHANCED RECRUITING
Members: Michael Bennett, Thomas Delaney, Justin Kalousdian, Michell Shoultz, Priya Stiller, and Kyle Szwarc
Advisors: Joel Hagan, Alejandro Hernandez, and Robert Semmens

722-201G Team RM4 Convergence

Title: ASSESSMENT FRAMEWORK FOR OPERATIONAL EFFECTIVENESS IN MULTI-DOMAIN OPERATIONS (MDO)
Members: Matthew Ebner, Marilyn Mitchell, Raven Nall, Michele Richardson, and Sandra Teal
Advisors: Alejandro Hernandez, Joel Hagan, William Hatch

Individual Theses

Military Expert 5 Boon Kien Eugene Lee, Republic of Singapore Air Force

Thesis Title: ENHANCING MISSION ENGINEERING ROUTE SELECTION THROUGH DIGITAL TWIN DECISION SUPPORT
Advisor: Douglas Van Bossuyt and Co-Advisor: Jason Bickford

Military Expert 5 Hao Cheng Joel Li, Singapore Army

Thesis Title: EFFECTS OF TARGET CLASSIFICATION ON AI-BASED UNEXPLODED ORDNANCE DETECTION PERFORMANCE

Advisor: Oleg Yakimenko and Second Reader: Fotis Papoulas

Military Expert 5 Wei Qin Lim, Republic of Singapore Air Force

Thesis Title: AN ARCTIC ENVIRONMENT READINESS (AER) MODEL FOR QUANTIFYING THE IMPACT OF EXTREME ARCTIC WEATHER ON SYSTEM READINESS

Advisor: Bryan O'Halloran and Co-Advisor: Douglas Van Bossuyt

CPT Robert Justin Morales Naquila, Singapore Army

Thesis Title: MODEL-BASED UAS-UGS IED CLEARANCE MISSION ENGINEERING

Advisor: Oleg Yakimenko and Second Reader: Fotis Papoulas

MAJ Ming Hui Peh, Singapore Army

Thesis Title: STRATEGY TO IMPROVE THE TRUST BETWEEN HUMANS AND ARTIFICIAL INTELLIGENCE ENABLED AIR AND MISSILE DEFENSE (AMD) SYSTEMS

Advisor: Bonnie Johnson and Second Readers: Mike Green and Walter Kendall

Mr. Marcus Tai, Singapore Technologies Engineering Land Systems

Thesis Title: COACTIVE DESIGN IN SYSTEMS ENGINEERING: HUMAN-MACHINE TEAMING IN SEARCH AND RESCUE (SAR) OPERATIONS

Advisor: Mike Green and Co-Advisor: Scot Miller

MAJ Axel Tan, Singapore Army

Thesis Title: SYSTEM ANALYSIS OF COUNTER UNMANNED AERIAL SYSTEMS' KILL CHAIN IN AN OPERATIONAL ENVIRONMENT

Advisor: Douglas Van Bossuyt and Co-Advisor: Britta Hale

LT Scott Alexander Brady, USN

Thesis Title: IMPROVING NAVAL AVIATION MISSION PLANNING SYSTEMS: AN ANALYSIS OF ALTERNATIVES

Advisor: Bonnie Johnson and Co-Advisor: Scott Miller

CDR Jeff A. Gardner, USN and Mr. Steve L. Oakley

Thesis Title: APPLICATIONS AND SUITABILITY OF RENEWABLE POWER SYSTEMS IN REMOTE SPECIAL OPERATIONS FORCES (SOF) EXPEDITIONARY ENVIRONMENTS

Advisor: Anthony Pollman and Co-Advisor: Alejandro Hernandez

Mr. Joshua Paul Beaver

Thesis Title: ANALYZING EMERGENT BEHAVIOR OF SUPPLY CHAINS FOR PERSONAL PROTECTIVE EQUIPMENT IN RESPONSE TO COVID-19

Advisor: Kristin Giammarco and Second Reader: Wally Owen

Mr. Jonathan Burnette

Thesis Title: FEASIBILITY OF APPLYING ULTRAVIOLET (UVC) DISINFECTION TO SHIPBOARD VENTILATION SYSTEMS

Advisor: Donald Brutzman and Co-Advisor: Gregory Miller

Ms. Amy Marie Carr

Thesis Title: STUDY OF AN INTEGRATED APPROACH TO NAVAL SHIPBOARD LASER AND KINETIC WEAPON SELECTION AND SCHEDULING

Advisor: Bonnie Johnson and Co-Advisor: Mike Green

Ms. Rusita H Desai

Thesis Title: REUSABLE MONTEREY PHOENIX CODE LIBRARIES FOR BEHAVIOR MODELS AND MODEL SEGMENTS

Advisor: Kristin Giammarco and Second Reader: Wally Owen

Mr. Daniel M. Edwards

Thesis Title: SIMULATED LASER WEAPON SYSTEM DECISION SUPPORT TO COMBAT DRONE SWARMS WITH MACHINE LEARNING

Advisor: Bonnie Johnson and Second Reader: Rolf Johnson

Mr. Errol T Holcomb

Thesis Title: TACION SYSTEM ARCHITECTURE FOR IONOSPHERIC SPECIFICATION IN SUPPORT OF OFFENSIVE AND DEFENSIVE ELECTROMAGNETIC SPECTRUM OPERATIONS

Advisor: Bonnie Johnson and Second Reader: Wally Owen

Mr. Daniel E. Jent

Thesis Title: EARLY OUTFITTING IN AIRCRAFT CARRIER CONSTRUCTION

Advisor: Fotis Paploulas and Second Reader: Wally Owen

Mr. Rohan Orville Kennedy

Thesis Title: APPLYING ARTIFICIAL INTELLIGENCE TO IDENTIFY CYBER SPOOFING ATTACKS AGAINST THE GLOBAL POSITIONING SYSTEM

Advisor: Bonnie Johnson, Co-Advisor: James Baker, and Second Reader: Ying Zhao

Mrs. Jamarie Kilgore

Thesis Title: EVALUATION OF NAVY DEPOT MAINTENANCE INTER-SERVICE SUPPORT AGREEMENT (DMISA) TECHNICAL DATA COMPLIANCE AND QUALITY CONTROL

Advisor: Ronald Giachetti and Co-Advisor: COL Joyce Stewart

Mr. Christopher David Laliberte

Thesis Title: AUTOMATING REQUIREMENTS TRACEABILITY USING NATURAL LANGUAGE PROCESSING: A COMPARISON OF INFORMATION RETRIEVAL TECHNIQUES

Advisor: Ronald Giachetti and Co-Advisor: Mathias Kolsch

Mrs. Aimee Kathryn McCarthy

Thesis Title: ACTIVITY MAPPING OF DEVELOPMENT METHODS AS A DECISION AID FOR HARDWARE DEVELOPMENT PROGRAMS

Advisor: Clifford Whitcomb and Second Reader: Wally Owen

Ms. Margaret G Palmieri, USN

Thesis Title: ASSESSING AND VISUALIZING RISK IN MONTEREY PHOENIX THROUGH A SUPPLY CHAIN CYBER-ATTACK USE CASE

Advisor: Kristin Giammarco and Second Reader: Bonnie Johnson

Mr. Eduardo E. Quintero Vera

Thesis Title: OPERATIONALIZING DIGITAL THREAD THROUGH MODEL-BASED SYSTEMS ENGINEERING METHODS FOR HEAVY LIFT AND SALVAGE OPERATIONS

Advisor: Clifford Whitcomb and Second Reader: Wally Owen

Ms. Leslie D Russell

Thesis Title: ANALYSIS OF THE SURGE CAPACITY OF A LOCAL HOSPITAL IN THE FACE OF PANDEMIC THREATS

Mr. Kenneth Sanchez

Thesis Title: A HUMAN-MACHINE INTERDEPENDENCE ANALYSIS FOR OVER-THE-HORIZON STRIKE MISSION PLANNING

Advisor: Bonnie Johnson and Co-Advisor: Scot Miller

Mr. George L. Scott

Thesis Title: USING MICROSOFT TEAMS FOR BUILDING A COMMUNITY OF INTEREST FOR COMMUNICATIONS MARINES FOR CONTINUOUS LEARNING OPPORTUNITIES

Advisor: Charles Pickar and Second Reader: Deborah Gibbons

Mr. Frank Watson

Thesis Title: DESIGN METHODOLOGIES FOR 21ST CENTURY ENTITY CORRELATION

Advisor: John Audia and Co-Advisors: Kristin Giammarco and Eric Hodson

Graduations

Master of Science in Systems Engineering

Military Expert 5 Boon Kien Eugene Lee, Republic of Singapore Air Force

Military Expert 5 Hao Cheng Joel Li, Singapore Army

Military Expert 5 Wei Qin Lim, Republic of Singapore Air Force

CPT Robert Justin Morales Naquila, Singapore Army

MAJ Ming Hui Peh, Singapore Army

Mr. Marcus Tai, Singapore Technologies Engineering Land Systems

MAJ Axel Tan, Singapore Army

Maj Samuel Isaiah Wuornos, USMC

Mr. Winston R. Arnold, U.S. Army Aberdeen Test Center

Mr. Sebastian Banuchi, Naval Ordnance Test Unit (NOTU)

Mr. Luis Arnaldo Cruz, Missile Defense Agency

Mr. Craig Steven Fletcher, United States Army Information Systems Engineering Command

Mr. Richard C. McCann, US Army Aviation & Missile Center

Ms. Ryane Maria Pappa, Combat Capabilities and Development Command - Armaments Center

Mr. Jeffrey Patel, U.S. Army, DEVCOM, Armaments Center

Mr. Jairus Potts, Marine Corps Systems Command

Mr. Cole A Rice, USA

Mrs. Savanna L Shilt, United States Army Information Systems Engineering Command

Master of Science in Engineering Systems

Mrs. Angela L Hoopes, Missile Defense Agency

Mr. Thomas Hughes, U.S Army Combat Capabilities Development Command Chemical Biological Center

Ms. Thia N Tank, SAIC

Master of Science in Systems Engineering Management

LT Scott Alexander Brady, USN

CDR Jeff A. Gardner, USN

Ms. Tiffanie R Bachar, USA

Mr. Aaron Douglass Balk, USA

Mr. Joshua Paul Beaver, Naval Air Systems Command

Mr. Michael A. Bennett, USA

Mr. Jonathan Burnette, Naval Information Warfare Center

Ms. Amy Marie Carr, Naval Facilities Engineering and Expeditionary Warfare Center

Mr. Thomas B. Delaney, III, U.S. Army Redstone Test Center

Ms. Rusita H Desai, Naval Facilities Engineering and Expeditionary Warfare Center

Mr. Matthew Charles Ebner, U.S. Army Contracting Command - Aberdeen Proving Ground

Mr. Daniel M. Edwards, Naval Facilities Engineering and Expeditionary Warfare Center

Mr. Errol T Holcomb, Naval Undersea Warfare Center, Division Keyport

Mr. Daniel E. Jent, Naval Facilities Engineering Systems Command, Expeditionary Warfare Center

Mr. Justin A. Kalousdian, USA

Mr. Rohan Orville Kennedy, Marine Corps Tactical Systems Support Activity

Mrs. Jamarie Kilgore, Naval Air Warfare Center Aircraft Division

Mr. Christopher David Laliberte, Lockheed Martin

Mr. Kevin Joseph Lennan, Headquarter, United States Department of the Army

Ms. Carelyn E Martinez, U.S. Army Combat Capabilities Development Command Aviation & Missile Center

Mrs. Aimee Kathryn McCarthy, Strategic Systems Programs, Program Management Office Shipboard Systems

Ms. Marilyn A. Mitchell, Program Executive Office, Power Projection Enablers

Mrs. Raven Annyce Nall, United States Army Contracting Command - Redstone Arsenal

Mr. Steve L. Oakley, Marine Corps Tactical System Support Activity

Mrs. Nicole M Olbricht, USA

Ms. Margaret G Palmieri, USN

Mr. Eduardo E. Quintero Vera, Naval Surface Warfare Center, Port Hueneme Division

Ms. Michele L Richardson, U.S. Army Combat Capabilities and Development Command, Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance and Reconnaissance (C5ISR) Center, Aberdeen Proving Ground, MD

Ms. Leslie D Russell, Marine Corps Systems Command

Mr. Kenneth Sanchez, Naval Air Warfare Center, Point Mugu

Mr. George L. Scott, Marine Corps Tactical System Support Activity

Ms. Michcell L. Shoultz, U.S. Army Communications - Electronics Command, Aberdeen Proving Ground, MD

Mrs. Priya Desai Stiller, US Army Corps of Engineers

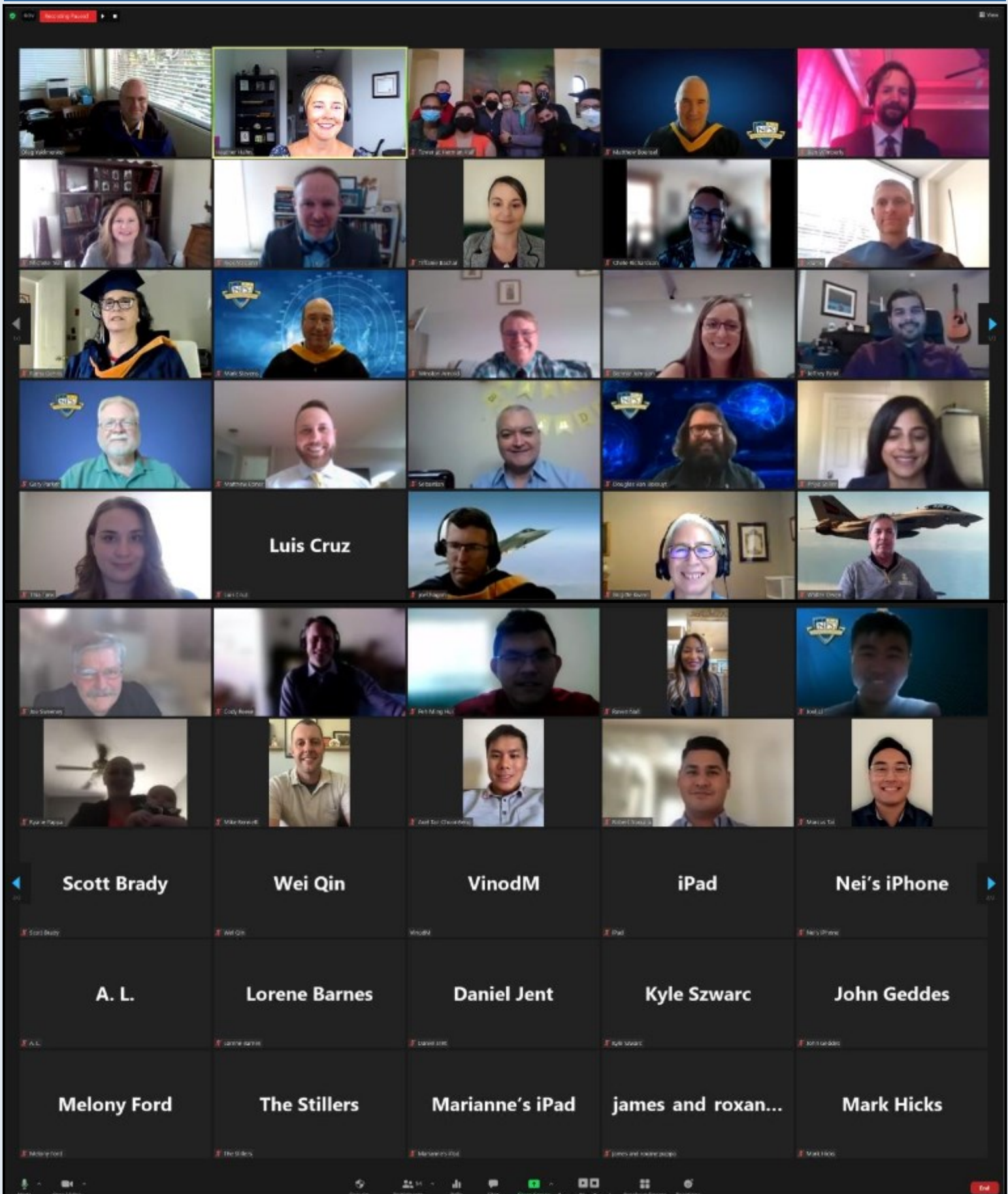
Mr. Kyle Szwarc, Program Executive Office, Combat Support & Combat Service Support

Mrs. S. Michele Teal, Army Contracting Command - Anniston Army Depot

Mr. Frank Watson, Naval Information warfare Center, Pacific

Mr. Benjamin Wimberly, US Army Futures Command

Systems Engineering Distance Learning Summer Quarter Graduation Ceremony



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.

If you would like to subscribe to the Systems Engineering Newsletter, please click [here](#).

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