Department of Systems Engineering

Fall 2020

Student Celebration Ceremony

Thursday, December 17th, 2020

09:00 AM Pacific Time

We invite graduates, family, and guests to join us in celebrating the graduation of Systems Engineering September graduates. We will hold the ceremony via ZoomGov.

**The ZoomGov app is NOT required to attend, those without the app can enter the link in an internet browser to attend.*

https://nps-edu.zoomgov.com/j/1616098106

Meeting ID: 161 609 8106

Passcode: @Congrats1

Welcome

Dr. Ronald Giachetti

Chair, Department of Systems Engineering

Comments on Wayne Meyer and the Systems Engineering Department

COL John T. Dillard, USA (Ret)

Senior Lecturer

Systems Engineering Faculty

Ronald Giachetti	Fotis Papoulias	Matthew Boensel	Charles Pickar
Raymond Madachy	Eugene Paulo	John Dillard	Lawrence Shattuck
Clifford Whitcomb	Paul Beery	Mike Green	Wayne Porter
Oleg Yakimenko	Joseph Klamo	Gregory Miller	Katherine Cain
Ronald Carlson	Bryan O'Halloran	Walter Owen	Ross Eldred
Rama Gehris	Anthony Pollman	Mark Rhoades	Lois Hazard
Joel Hagan	Robert Semmens	Mark Stevens	Marianna Jones
Donald Muehlbach Jr.	Douglas Van Bossuyt	Tim Anderson	Rabia Khan
Warren Vaneman	Kathleen Giles	Bonnie Johnson	Gary Parker
Kristin Giammarco	Joyce Stewart	Brigitte Kwinn	Chris Wolfgeher
Andy Hernandez	Barbara Berlitz	Joseph Sweeney	

Systems Engineering Staff

Heather Hahn	Albert Jordan	Lorene Barnes	Susan Lichtenwalter

Honoring the Graduates

Matthew Boensel

Senior Lecturer and Associate Chair

Doctor of Philosophy in Systems Engineering

Mr. William W. Anderson, Jr., Naval Facilities Engineering Systems Command, Engineering and Expeditionary Warfare Center

Dissertation: RESILIENCE ASSESSMENT OF ISLANDED RENEWABLE ENERGY MICROGRIDS

Committee: Dr. Ronald Giachetti, Supervisor/Chair

Richard Carlin, Office of Naval Research

Dr. Giovanna Oriti, NPS

Fotis Papoulias, NPS

Dr. Douglas Van Bossuyt, NPS

Abstract: The military's remote installations on islands have the highest power costs and demand resilient and reliable power for mission assurance. The research objective is to analyze cost and resilience of microgrids on military islands. The research problem is: develop a method to choose renewable energy (RE) microgrid designs that increase resilience cost effectively on remote islands, with further applications for islanded naval installations (INI). The deliverable is a tool that incorporates the methodology to identify the cost of resilience using a measure that captures the area under the resilience curve. Three primary contributions are made with the first contribution developing the resilience and cost measures for RE microgrids at INIs, the second contribution creates a decision-making tool for the islanded locations to assess resilience, and the third contribution to systems engineering is the application of this tool to create and visualize the resilience and costs trade space to choose RE microgrid designs primarily for remote islanded military installations like San Nicolas Island. The research concludes that resilience can be improved by not exceeding some power ratios for a renewable energy microgrid, redundancy improves resilience when the generation power rating is closer to the demand and for microgrids with less redundancy.

Master of Science in Systems Engineering

LT Christian Diaz, USN

LT Christopher Lawrence Hevey, USN

LT Joshua P. Hildebrand, USN

LT Katherine E. Irgens, USN

LT Andrew Wiley Miller, USN

Mr. Antoin J. Abboud, Naval Surface Warfare Center, Port Hueneme Division

Mr. Daniel Wade Carter, U.S. Army Combat Capabilities Development Command Aviation and Missile Center

Mr. Cedric T Chiu, Naval Sea Systems Command, Port Hueneme

Mr. William Patrick Emeny, Naval Surface Warfare Center, Port Hueneme Division

Ms. Katrina M. Granada, Naval Surface Warfare Center, Port Hueneme Division

Mr. Timothy Owen Hillman, 96th Test Wing Eglin Air Force Base

Mr. Alex Robert Kemeny, Naval Sea Systems Command

Mr. Edwin Rafael Laboy Perez, Naval Surface Warfare Center

Mr. Lance Lowenberg, Naval Information Warfare Center Pacific

Mr. Roianthony Corpuz Navarro, Naval Surface Warfare Center Port Hueneme Division

Mr. Michael Horst Rubow, Naval Surface Warfare Center, Port Hueneme Division

Mr. Wesley C Sanders, Naval Surface Warfare Center, Port Hueneme Division

Mr. Jacob Scott Shadle, Naval Sea Systems Command

Mr. Harsh Kalpesh Shah, Naval Surface Warfare Center, Port Hueneme Division

Mr. Dustin Gregg Talley, Naval Surface Warfare Center, Port Hueneme Division

Ms. Victoria C Tsugawa, Naval Surface Warfare Center, Port Hueneme Division

Master of Science in Engineering Systems

Ms. Lynn Phuong Nguyen, Naval Surface Warfare Center, Port Hueneme Division

Mr. Ryan Christopher Robar, Naval Surface Warfare Center, Port Hueneme Division

Master of Science in Systems Engineering Management

MAJ Robert D. Allen, USA

MAJ Mitchell J. Boatwright, USA

MAJ Joe Callaghan, USA

MAJ Ted Lee Cha, USA

MAJ Catherine L. Collinsworth, USA

CPT Blake A. Davis, USA

MAJ Oscar Delgado, USA

CPT Nicholas J. Grazer, USA

MAJ Michael Ryan Griffin, USA

MAJ Monica Michelle Holmes, USA

CPT Shad Hughes, USA

MAJ James A. Jones, USA

MAJ Sean S. McCune, USA

CPT Joshua Kain McMillion, USA

CPT John Pfiester, USA

CPT Chummie S. Recel, USA

MAJ Joshua A. Redmond, USA

CPT Zachariah R. Shutte, USA

CPT Douglas J. Snodgrass, USA

MAJ Alan Joaquin Villanueva, USA

MAJ Christopher J. Wimsatt, USA

MAJ Ray Ybarra, USA

Mr. Andrew George Liehr, Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division

Individual Theses

LT Christian Diaz, USN

Thesis Title: COST ANALYSIS FOR OPERATIONAL AND SYSTEM LEVEL CONSIDERATIONS FOR THE ELECTROMAGNETIC RAILGUN INTEGRATED ON AN AMPHIBIOUS PLATFORM

Advisor: Paul Beery, **Second Reader:** Anthony Pollman

LT Christopher Lawrence Hevey, USN

Thesis Title: APPLICATION OF MACHINE LEARNING IN THE PREDICTION OF THEORETICAL, DISPLACEMENT HULL FORM RESISTANCE: A NEW APPROACH TO INFORM PRELIMINARY DESIGN POWER STUDIES

Advisor: Fotis Papoulias, **Co-Advisor:** Todd Greene, **Second Reader:** Marko Orescanin

LT Joshua P. Hildebrand, USN

Thesis Title: ESTIMATING THE LIFE CYCLE COST OF MICROGRID RESILIENCE

Advisor: Douglas Van Bossuyt, **Co-Advisor:** Daniel Nussbaum

LT Katherine E. Irgens, USN

Thesis Title: EXPERIMENTAL ASSESSMENT OF ENTANGLEMENT FOR AN UNMANNED UNDERWATER VEHICLE WITH AN OPEN THREE-BLADED PROPELLER

Advisor: Joseph Klamo, **Co-Advisor:** Anthony Pollman

LT Andrew Wiley Miller, USN

Thesis Title: INTEGRATING DEVOPS INTO NAVY COMBAT SYSTEMS DEVELOPMENT

Advisor: Ronald Giachetti, **Second Reader:** Douglas Van Bossuyt

Mr. Andrew George Liehr

Thesis Title: DETERMINING A METHODOLOGY TO ALTER BINARY SYSTEMS ENGINEERING TECHNICAL REVIEW CRITERIA FOR EMPLOYMENT WITH MODEL-BASED SYSTEMS ENGINEERING

Advisor: Warren Vaneman, **Co-Advisor:** Ronald Carlson

Capstone Teams

Team Name: 311-192S Team A

Capstone Title: A STUDY OF MBSE THROUGH THE DEVELOPMENT OF MODELING AND DATA EXCHANGE PROCESSES

Members: William Emeny, Lance Lowenberg, Lynn Nguyen, Ryan Robar, Michael Rubow, and Dustin Talley

Advisor: Brigitte Kwinn

Capstone Teams Continued

Team Name: 311-192S Team Matrix

Title: COMMON COMBAT SYSTEMS—REMOTE SOFTWARE DEPLOYMENT OF INCREMENTAL CAPABILITY AND UPDATES

Members: Daniel Carter, Cedric Chiu, Timothy Hillman, Roianthony Navarro, Harsh Shah, Victoria Tsugawa

Advisors: Brigitte Kwinn

Team Name: 311-192S Team Rico

Title: INCREASING FLEET DATA TRANSFER CAPABILITIES USING AN UNMANNED AERIAL VEHICLE (UAV)

Members: Antoin Abboud, Katrina Granada, Alex Kemeny, Edwin Laboy, Wesley Sanders, Jacob Shadle

Advisors: Brigitte Kwinn

Team Name: 522-194 Mixed Reality Comparison

Capstone Title: A SYSTEMS ENGINEERING APPROACH TO COMPARING MIXED REALITY GAMING ENGINES WITHIN THE DOD

Members: MAJ Ted Cha, CPT Blake Davis, CPT Zack Shutte, CPT Doug Snodgrass, MAJ Chris Wimsatt, and MAJ Ray Ybarra

Advisors: Alejandro Hernandez, Joseph Sweeney, and Douglas Van Bossuyt

Team Name: 522-194 Sail Training Class

Capstone Title: USNA SAIL TRAINING CRAFT ACQUISITION: EFFECTIVE STAKEHOLDER MANAGEMENT THROUGH APPLICATION OF THE SYSTEMS ENGINEERING PROCESS

Members: MAJ Robert Allen, MAJ Mitchell Boatwright, CPT Shad Hughes, MAJ Sean McCune, and CPT John Pfiester

Advisors: Anthony Pollman, William Hatch, and Alejandro Hernandez

Team Name: 522-194 XR Requirements Analysis

Capstone Title: REQUIREMENTS DEVELOPMENT METHODOLOGY FOR A CROSS-REALITY MISSION PLANNING/REHEARSAL SYSTEM

Members: MAJ Joseph Callaghan, CPT Nicholas Grazer, MAJ James Jones, CPT Chummie Recel, MAJ Joshua Redmond, and MAJ Alan Villanueva

Advisors: Alejandro Hernandez, John Dillard, Joseph Sweeney, and Douglas Van Bossuyt

Team Name: 522-194 SBS Capstone Group

Capstone Title: ANALYSIS OF SOLDIER BORNE SENSOR (SBS) EMPLOYMENT AND TRAINING PROGRAM

Members: MAJ Catherine Collingsworth, MAJ Oscar Delgadoveana, MAJ Michael Griffin, MAJ Monica Holmes, and CPT Joshua McMillion

Advisors: Lawrence Shattuck, John Dillard, Alejandro Hernandez, and Robert Semmens

Presentation of Awards

Dr. Ronald Giachetti

Naval Sea Systems Command Award for Excellence in Systems

LT Christopher Hevey, USN

The Surface Navy Association's Award for Excellence in Surface Warfare Research Engineering

LT Christopher Hevey, USN

Meyer Award for Outstanding DL Student in Systems

Mr. William Patrick Emeny, Naval Surface Warfare Center, Port Hueneme Division

Meyer Award in Systems Engineering for DL Teaching

CAPT Donald Muehlbach PhD, USN (ret)

Systems Engineering Management Capstone Competition

522-194 Team Mixed Reality Comparison

Capstone Title: A SYSTEMS ENGINEERING APPROACH TO COMPARING MIXED REALITY GAMING ENGINES WITHIN THE DOD

Members: MAJ Ted Cha, CPT Blake Davis, CPT Zack Shutte, CPT Doug Snodgrass, MAJ Chris Wimsatt, and MAJ Ray Ybarra

Advisors: Alejandro Hernandez, Joseph Sweeney, and Douglas Van Bossuyt

Outstanding Thesis

LT Christopher Hevey, USN

LT Joshua Hildebrand, USN

LT Katherine Irgens, USN

Outstanding Capstone Report

311-192S Team A

Capstone Title: A STUDY OF MBSE THROUGH THE DEVELOPMENT OF MODELING AND DATA EXCHANGE PROCESSES

Members: William Emeny, Lance Lowenberg, Lynn Nguyen, Ryan Robar, Michael Rubow, and Dustin Talley

Advisor: Brigitte Kwinn

Recommendation for Graduation with Distinction

LT Christopher Hevey, USN

LT Joshua Hildebrand, USN

Mr. Antoin J. Abboud, Naval Surface Warfare Center, Port Hueneme Division

Mr. Dustin Gregg Talley, Naval Surface Warfare Center, Port Hueneme Division