

DOUGLAS L. VAN BOSSUYT

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Education

Doctor of Philosophy

Institution: Oregon State University
Field(s) of Concentration: Mechanical Engineering (major concentration)
Industrial Engineering (minor)
Dates: January 2009 - June 2012
Title of Dissertation: A Risk-Informed Decision Making Framework Accounting for Early-Phase Conceptual Design of Complex Systems

Master's of Science

Institution: Oregon State University
Field(s) of Concentration: Mechanical Engineering
Dates: September 2007 - January 2009
Title of Thesis: Mechanical Engineering Across Cultures: A Method of Designing for Cultures

Honors Bachelors of Science and Honors Bachelors of Arts

Institution: Oregon State University
Field(s) of Concentration: Mechanical Engineering (major)
International Studies (major)
Business Administration (minor)
Dates: September 2001 - June 2007
Title of Thesis: The Eyes of Tunis: A Fictionalized Travelogue of my Time in Tunis
Title of Senior Project: Micro Porous Media Test Bed for 3D Flow Visualization at High Reynolds Numbers
Title of Thesis: International Engineering Interns in Their Own Words: Past Interns Share Their Stories and Their Wisdom with the Future

Undergraduate Coursework

Institutions: Institut Bourguiba des Langues Vivantes
Université du 7 Novembre à Carthage
Field(s) of Concentration: Coursework in Arabic, Tunisian culture, women's studies, environmental science
Dates: September 2004 - June 2005

Professional History

1. Naval Postgraduate School

Position: Associate Professor (2023-Present)
Assistant Professor (2018-2023)
Department of Systems Engineering

Dates of Employment: January 2018 - Present

Responsibilities:

- Systems Engineering Ph.D. Program Academic Associate and Departmental Program Chair
- Naval Postgraduate School Teaching Faculty Fellow - 2018-2019

This year-long program requires faculty to apply for and be competitively accepted to participate in a series of workshops and training seminars to improve teaching.

- Faculty Meyer Award, Naval Postgraduate School Systems Engineering Department - 311-193A March 2021 Cohort; 311-192N December 2022 Cohort; 311-213 March 2023 Cohort

This award is given quarterly on a per-cohort basis (some quarters have multiple cohorts) by distance learning students in systems engineering programs to recognize one faculty member who particularly contributed to their cohort's success. I have received the award three times.

- Richard W. Hamming Teaching Award - 2022

This is the highest faculty teaching award given at NPS. It is awarded once per year to one NPS faculty member through a competitive nomination process. The award citation is available at: <https://hdl.handle.net/10945/70550>

- Richard W. Hamming Interdisciplinary Award - 2023

This is the highest faculty interdisciplinary award covering research and teaching given at NPS. It is awarded once per year to one NPS faculty member through a competitive nomination process. The award citation is available at: <https://hdl.handle.net/10945/71603>

2. KTM Research, LLC / ManVanCo, LLC

Position: Automation Engineer and Partner

Dates of Employment: January 2017 - December 2017

Responsibilities:

- Developed manufacturing machine vision tools to perform quality control, visual inspection, etc.
- Built a pipeline for talent acquisition and grew company to five people. Supervised two engineers.

3. Colorado School of Mines

Position: Assistant Professor, Department of Mechanical Engineering, and Faculty of Nuclear Science and Engineering

Dates of Employment: August 2013 - December 2016

Responsibilities:

- Founding Co-Director of the Alliance for the Development of Additive Processing Technologies (ADAPT) Center with more than \$8M in grants
- Shultz Family Humanitarian Engineering Faculty Fellow; Humanitarian Engineering Curriculum Development Committee
- Graduate Admissions and Recruiting Committee, Department of Mechanical Engineering

4. NuScale Power, LLC

Position: Probabilistic Risk Assessment Engineer, Systems Safety Group

Dates of Employment: August 2012 - August 2013

Responsibilities:

- Developed Levels 1, 2, and 3 Probabilistic Risk Assessments (PRAs) using Systems Analysis Programs for Hands-on Integrated Reliability Evaluations (SAPHIRE) for the NuScale small modular nuclear reactor in support of Nuclear Regulatory Commission (NRC) design certification application. Included Chapter 19 seismic margins analysis, high wind initiating event analysis, Human Reliability Analysis (HRA) of Human Failure Events (HFEs) using the Standardized Plant Analysis Risk (SPAR) HRA (SPAR-H). and other analyses.

5. Oregon State University

Position: Courtesy Faculty, Lecturer, Graduate Research Assistant; Complex Engineered Systems Design Laboratory

Dates of Employment: January 2009 - July 2016

Responsibilities:

- Participated in Defense Advanced Research Projects Agency (DARPA) Fast Adaptable Next-Generation Ground Vehicle (FANG-GV) Challenge as a team member and mentor
- Researched risk and reliability engineering, and complex system design to address emergent behaviors

6. University of Sydney
 - Position: Visiting Scholar, Faculty of Architecture, Design, and Planning
 - Dates of Employment: June - August 2010
 - Responsibilities:
 - Developed and tested survey instruments and experiments in support of research on how engineers understand and make decisions with engineering uncertainty and risk
7. Jet Propulsion Laboratory
 - Position: Space Grant Intern
 - Dates of Employment: June - August 2009
 - Responsibilities:
 - Developed methods to use risk metrics as system-level design parameters in trade studies for Team-X
8. Oregon State University
 - Position: Graduate Research Assistant, National Center for Accessible Transportation
 - Dates of Employment: September 2007 - January 2009
 - Responsibilities:
 - Designed, built, and trialled airline aisle chairs for mobility-impaired passengers
9. Oregon State University
 - Position: Research Diver, Research Dive Program
 - Dates of Employment: May 2008 - June 2011
 - Responsibilities:
 - Dived on underwater structures to count and/or capture marine life, take genetic samples, and perform construction and maintenance on man-made structures in support of underwater research
10. Oregon State University
 - Position: Technical Writing Assistant, Center for Writing and Learning
 - Dates of Employment: September 2005 - June 2008
 - Responsibilities:
 - Developed technical writing training curriculum to assist other writing coaches in helping engineering students with their writing.
11. Rosendin Electric Inc
 - Position: Construction Engineering Management Intern
 - Dates of Employment: June - September 2007
 - Responsibilities:
 - Supported master scheduler using Prima Vera on the multi-billion dollar Genentec Hillsboro construction project. Worked on Washington State University CUB renovation, various commercial projects in the Portland Metro Area, and several data center projects.
12. Flextronics International
 - Position: Build Supervisor, Hewlett Packard Test Tool Construction Group
 - Dates of Employment: December 2006 - March 2007
 - Responsibilities:
 - Recruited, hired, and led a team of three assemblers constructing ten automated ink-jet cartridge test tools for multiple international Hewlett Packard sites

13. Electro Scientific Industries, Electronic Component Solutions Group, 35xx Project
 - Position: Multiple Engineering Cooperative Program (MECOP) Intern
 - Dates of Employment: April - September 2006
 - Responsibilities:
 - Researched, designed, and implemented pneumatic (compressed dry air and vacuum) subsystems for new product development initiative. Issued a patent for my design work.

14. Universität Karlsruhe Institut für Produktentwicklung
 - Position: Deutscher Akademischer Austausch Dienst - Research Internships in Science and Engineering (DAAD-RISE) Research Fellow
 - Dates of Employment: July - September 2005
 - Responsibilities:
 - Designed 6 DOF humanoid robotic shoulders for humanoid robots for factories and elder care facilities
 - Worked in German and English

15. Le Centre d'Études Maghrébines à Tunis (CEMAT)
 - Position: International Education, Experience, Employment (IE3) Intern
 - Dates of Employment: February - June 2005
 - Responsibilities:
 - Assisted developing the Tunis Past and Present program for the US State Department which later turned into the Critical Language Scholarship Program
 - Organized and provided logistics support for several academic conferences, and served as interpreter and escort for visiting academics to help them navigate Tunisia more efficiently and safely
 - Worked in Tunisian Arabic, Modern Standard Arabic, French, and English on a daily basis

16. Marbrerie Tunis Carthage
 - Position: Maintenance Engineering Intern
 - Dates of Employment: January - June 2005
 - Responsibilities:
 - Investigated automation of marble block cutting equipment to improve efficiency and safety. Identified that the cost of automating the equipment would not be recouped in labor savings.
 - Interacted with Tunisian workforce in Tunisian Arabic

17. Daimler Trucks North America
 - Position: Manufacturing Engineering, Test and Technology Group, Multiple Engineering Cooperative Program (MECOP) Intern; Corporate Manufacturing Engineering, Test and Technology Group
 - Dates of Employment: April - September 2004
 - Responsibilities:
 - Designed, built, tested, and deployed several production electronic equipment test machines and assembly aids to production lines across the company's North American factories

18. Planar Systems Inc.
 - Position: American Electronics Association (AeA) Manufacturing Engineering Intern
 - Dates of Employment: June to September 2003, June to September 2002
 - Responsibilities:
 - Designed and implemented tooling and fixtures in support of the Liquid Crystal Display (LCD) (both analog and digital), and Electro-Luminescent (EL) manufacturing process

19. Portland General Electric

Position: Groundsman and Traffic Safety Technician Summer Intern

Dates of Employment: June to September 2001

Responsibilities:

- Supported aerial operations from the ground by building up cross-arms, transformers, and other activities. Controlled traffic flow at worksites to ensure the safety of power crews and general public.

20. Spring Creek Llama Ranch

Position: Farm Hand

Dates of Employment: 1990-2013

Responsibilities:

- Supported my family’s farm as a farm hand dealing with large and small livestock, logging, Christmas tree harvesting, farm equipment repair, business management, and other tasks.

Professional Certifications and Registrations

1. Certified Electric Power Research Institute (EPRI) Nuclear Risk Professional - EPRI-Provided Training Course Series - Certified November 2013
2. Divemaster - Professional Association of Diving Instructors (PADI) - Member Number 238303 - November 2008 to Present

INSTRUCTIONAL ACTIVITIES

NPS Teaching Activities

Note that due to the COVID-19 pandemic, † indicates resident courses taught in a hybrid resident/distance learning mode with a Provost’s waiver, and ‡ indicates resident courses taught entirely in distance learning mode. I taught multiple sections of the same course in several quarters.

Courses Taught

	Course Number	Course Name	# of Students	Teaching Mode
Spring 2023				
1.	SE 4150	Systems Architecture and Design	21	R
Winter 2023				
2.	SE 4353	Risk Analysis and Management for Engineering Systems	15	DL
Fall 2022				
3.	SE 3100	Fundamentals of Systems Engineering	18	R
4.	SE 4115	Combat Systems Integration	10	R
Summer 2022				
5.	SE 4150	Systems Architecture and Design	17	DL
Fall 2021				
6.	SE 4150	Systems Architecture and Design	14	R†
Winter 2021				
7.	SE 4115	Combat Systems Integration	10	R‡
Fall 2020				
8.	SE 4115	Combat Systems Integration	12	DL
Winter 2020				
9.	SE 4115	Combat Systems Integration	7	R
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	Course Number	Course Name	# of Students	Teaching Mode
Fall 2019				
10.	SE 3302	System Suitability	26	DL
Summer 2019				
11.	SE 4150	Systems Architecting and Design	21	DL
Spring 2019				
12.	SE 3302	System Suitability	32	R
Fall 2018				
13.	SE 4150	Systems Architecting and Design	15	R
Summer 2018				
14.	SE 4150	Systems Architecting and Design	15	DL
Spring 2018				
15.	SE 4150	Systems Architecting and Design	10	R

Reading Courses (Directed Studies) Taught

	Course Number	Course Name	# of Students	Teaching Mode
Spring 2023				
1.	SE 4900	Advanced Studies in Systems Engineering	2	R
Fall 2022				
2.	SE 4900	Advanced Studies in Systems Engineering	3	R
Spring 2022				
3.	SE 4900	Advanced Studies in Systems Engineering	1	R
Summer 2019				
4.	SE 4900	Advanced Studies in Systems Engineering	2	DL

Dissertation Courses

	Course Number	Course Name	# of Students	Teaching Mode
Spring 2023				
1.	SE 5805	Dissertation Proposal Prep	1	R
2.	SE 5805	Dissertation Proposal Prep	13	DL
3.	SE 5810	Dissertation Research	2	DL
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	Course Number	Course Name	# of Students	Teaching Mode
Winter 2023				
4.	SE 5805	Dissertation Proposal Prep	1	R
5.	SE 5805	Dissertation Proposal Prep	10	DL
6.	SE 5810	Dissertation Research	1	DL
Fall 2022				
7.	SE 5805	Dissertation Proposal Prep	1	R
8.	SE 5805	Dissertation Proposal Prep	10	DL
Summer 2022				
9.	SE 5805	Dissertation Proposal Prep	1	R
10.	SE 5808	Dissertation Proposal Prep	7	DL
Spring 2022				
11.	SE 5805	Dissertation Proposal Prep	1	R
12.	SE 5805	Dissertation Proposal Prep	6	DL
Winter 2022				
13.	SE 5808	Dissertation Proposal Prep	8	DL
Fall 2021				
14.	SE 5805	Dissertation Proposal Prep	7	DL
Spring 2021				
15.	SE 5805	Dissertation Proposal Prep	8	DL
Winter 2021				
16.	SE 5805	Dissertation Proposal Prep	5	DL
Fall 2020				
17.	SE 5805	Dissertation Proposal Prep	6	DL
Summer 2020				
18.	SE 5805	Dissertation Proposal Prep	4	DL
Spring 2020				
19.	SE 5805	Dissertation Proposal Prep	5	DL

Capstone and Project Courses

	Course Number	Course Name	# of Students	Teaching Mode
Spring 2023				
1.	SE 3211	Systems Engineering Management Capstone I	5	DL
2.	SE 3201	Engineering Systems Conceptualization	5	DL
3.	SE 3202	Engineering Systems Design	4	DL
4.	SE 3202	Engineering Systems Design	4	DL
5.	SE 3203	Engineering Systems Implementation & Operation	4	DL
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	Course Number	Course Name	# of Students	Teaching Mode
Winter 2023				
6.	SE 3201	Engineering Systems Conceptualization	4	DL
7.	SE 3201	Engineering Systems Conceptualization	4	DL
8.	SE 3202	Engineering Systems Design	4	DL
9.	SE 3203	Engineering Systems Implementation & Operation	3	R
Fall 2022				
10.	SE 3201	Engineering Systems Conceptualization	4	DL
11.	SE 3202	Engineering Systems Design	3	R
12.	SE 3203	Engineering Systems Implementation & Operation	9	DL
13.	SE 3203	Engineering Systems Implementation & Operation	11	DL
14.	SE 3212	Systems Engineering Management Capstone II	4	DL
Summer 2022				
15.	SE 3201	Engineering Systems Conceptualization	3	R
16.	SE 3202	Engineering Systems Design	5	DL
17.	SE 3202	Engineering Systems Design	9	DL
18.	SE 3202	Engineering Systems Design	6	DL
19.	SE 3211	Systems Engineering Management Capstone I	4	DL
20.	SE 3212	Systems Engineering Management Capstone II	5	DL
Spring 2022				
21.	SE 3201	Engineering Systems Conceptualization	5	DL
22.	SE 3201	Engineering Systems Conceptualization	16	DL
23.	SE 3211	Systems Engineering Management Capstone I	5	DL
Winter 2022				
24.	SE 3203	Engineering Systems Implementation & Operation	2	R
Fall 2021				
25.	SE 3202	Engineering Systems Design	2	R†
26.	SE 3203	Engineering Systems Implementation & Operation	7	DL
27.	SE 3212	Systems Engineering Management Capstone II	5	R†
Summer 2021				
28.	SE 3201	Engineering Systems Conceptualization	2	R†
29.	SE 3202	Engineering Systems Design	7	DL
30.	SE 3203	Engineering Systems Implementation & Operation	3	R†
Spring 2021				
31.	SE 3201	Engineering Systems Conceptualization	7	DL
32.	SE 3202	Engineering Systems Design	3	R†
33.	SE 3203	Engineering Systems Implementation & Operation	5	DL
Winter 2021				
34.	SE 3201	Engineering Systems Conceptualization	3	R†
35.	SE 3202	Engineering Systems Design	5	DL
36.	SE 3203	Engineering Systems Implementation & Operation	6	DL
Fall 2020				
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	Course Number	Course Name	# of Students	Teaching Mode
37.	SE 3201	Engineering Systems Conceptualization	5	DL
38.	SE 3202	Engineering Systems Design	6	DL
39.	SE 3212	Systems Engineering Management Capstone II	12	R†
Summer 2020				
40.	SE 3201	Engineering Systems Conceptualization	6	DL
41.	SE 3201	Engineering Systems Conceptualization	12	R†
Spring 2020				
42.	SE 3203	Engineering Systems Implementation & Operation	8	DL
Winter 2020				
43.	SE 3202	Engineering Systems Design	8	DL
Fall 2019				
44.	SE 3201	Engineering Systems Conceptualization	8	DL

Short Course Initiation, Coordination, and Participation

1. Microgrid Virtual Class: Microgrid Digital Twin Sessions. Sponsored by NAVFAC EXWC. 2 Hours of Lecture. Jointly presented with M. Rhoades. Fall 2022.
2. Microgrid Introduction Seminar. One hour seminar to introduce utility workers to major microgrid concepts. Taught at Naval Air Station Sigonella to civilian workforce and Navy Seabees. Spring 2023.
3. Microgrid Design Seminar. One hour seminar to introduce utility managers to major microgrid design concepts. Taught at Naval Air Station Sigonella to civilian workforce. Spring 2023.
4. Microgrid Integration Seminar. One hour seminar to introduce utility managers to major microgrid integration concepts. Taught at Naval Air Station Sigonella to civilian workforce. Spring 2023.

Colorado School of Mines Teaching Activities

All courses taught at the Colorado School of Mines were resident courses. Most courses had all lectures recorded and made available to students who either could not attend lectures or wanted to re-watch portions of lectures.

Courses Taught

	Course Number	Course Name	# of Students	Grad/Undergrad
Fall 2016				
1.	MEGN 592	Risk and Reliability Engineering	25	G
Spring 2016				
2.	MEGN 498	Design for Development	12	UG
Fall 2015				
3.	MEGN 592	Risk and Reliability Engineering	30	G
Spring 2015				
4.	MEGN 498A / 598C	Additive Manufacturing Processes	G:15, UG:40	G&UG
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	Course Number	Course Name	# of Students	Grad/Undergrad
Fall 2014				
5.	MEGN 592	Risk and Reliability Engineering	17	G
Spring 2014				
6.	MEGN 481	Machine Design	80	UG
Fall 2013				
7.	MEGN 591	Advanced Engineering Design Methods	15	G

Reading Courses (Directed Studies) Taught

	Course Number	Course Name	# of Students	Grad/Undergrad
Spring 2016				
1.	MEGN 499	Machine Learning and Signal Processing Applied to Condition Monitoring of Hydraulic Turbines	1	UG
Spring 2014				
2.	MEGN 599C	Lean Methods Applied to Economic Development	1	G
3.	MEGN 599E	Toward a Uniform Lean Design Methodology	1	G

Oregon State University Teaching Activities

All courses at Oregon State University were taught as resident courses.

Courses Taught

	Course Number	Course Name	# of Students	Grad/Undergrad
Spring 2013				
1.	ME 511	Geometric Dimensioning and Tolerancing	30/10	UG/G
Summer 2011				
2.	ENGR 212	Introductory Dynamics	36	UG

Teaching Assistant Roles

	Course Number	Course Name	# of Students	Grad/Undergrad
Fall 2011				
1.	ME 516	Complex System Design	15	G
Winter 2010				
2.	ME 383	Mechanical Component Design	110	UG
Fall 2010				
3.	ME 382	Introduction to Design	110	UG
Winter 2009				
4.	ME 383	Mechanical Component Design	115	UG
Fall 2009				
5.	ME 382	Introduction to Design	115	UG
6.	ME 101	Introduction to Mechanical Engineering	150	UG
Fall 2008				
7.	ME 101	Introduction to Mechanical Engineering	150	UG

Other Teaching Roles

From 2007 to 2013 I assisted in instructing PADI SCUBA programs at Oregon State University including open water, advanced open water, rescue diver, deep diver, night diver, dive propulsion vehicle, spear fishing, and other courses.

Courses Developed at the Naval Postgraduate School

For each of the courses listed below I did the following:

- Developed new and updated existing lecture materials, and removed outdated and superfluous materials
- Implemented weekly course learning journals, an oral midterm exam, and project in progress review documents to improve and streamline learning outcomes
- Mapped ABET criteria, learning outcomes, and objectives to curriculum to ensure that students learn essential concepts

Additionally, I did the following in individual courses:

1. Developed updated version of SE 4115 - Combat Systems Integration
 - Adopted new textbook - Rigby, Keith A. *Aircraft systems integration of air-launched weapons*. John Wiley & Sons, 2013.
 - Added hands-on lab/project component of Lego Mindstorms to facilitate student experiences with integrating sensors and weapons into a combat system
 - Redeveloped course to bring in more elements of system integration
2. Developed updated version of SE 4150 - Systems Architecting and Design
 - Adopted the textbook - Cameron, Bruce, Edward Crawley, and Daniel Selva. *Systems Architecture. Strategy and product development for complex systems*. Pearson Education, 2016.
 - Introduced a hands-on project using Lego Mindstorm kits to demonstrate systems architecture and model based systems engineering (MBSE) on a physical system that the students design, build, and operate

3. Developed my version of SE 3302 - Suitability
 - Redeveloped the course to put a greater emphasis on the term project, expanded the term project to encompass all topic areas covered in the course, shifted the term project from point-based solutions to open-ended questions and outcomes, and remapped the term project away from worksheets and to a process more closely resembling the system engineering process
 - Brought in updated and expanded coverage of trade-off studies and other important applications of suitability topics into the systems engineering process
4. Developed my andragogical approach through the NPS Teaching Faculty Fellows program
 - Hallmarks include weekly learning journals (1), oral midterm exams (2), hands-on projects for both resident and distance learning students, specifications grading (3), and the ability for students to revise all assignments as many times as necessary and with input from me until they earn the grade they desire to earn in the course
 - A video presentation of my andragogical approach is available at: <https://nps.edu/web/tlc/faculty-voices-high-impact-teaching-and-learning>
5. Developed L^AT_EX Crash Course Seminar for the NPS Thesis Processing Office (TPO) and Graduate Writing Center (GWC)
 - Introduces attendees to L^AT_EX, Overleaf.com (an online L^AT_EX editor and compiler), and the NPS L^AT_EX template
 - Provided once per quarter via the TPO and GWC seminar to NPS students and faculty
 - A TPO-sponsored MS Teams channel provides rapid L^AT_EX support to the growing ranks of students and faculty using L^AT_EX at NPS
 - Course developed in partnership with Dr. Britta Hale (NPS CS), Dr. Dan Eisenberg (NPS OR), and Janice Long (NPS TPO)

Courses Developed at the Colorado School of Mines

1. Developed new course: MEGN 592 - Risk and Reliability Engineering
 - Developed course from scratch using resources from NASA, the Nuclear Regulatory Commission, the Electric Power Research Institute, and others.
 - Included advanced research modules in the course to introduce students to cutting edge research.
 - Students worked on a term-long project to analyze a complex system for risk and reliability, and produced extensive analysis reports.
2. Developed new course: MEGN 498 - Design for Development
 - Developed course from scratch focusing on design methods for producing products for customers in the developing world.
 - Course was project-based and resulted in two draft journal articles and multiple draft conference papers from undergraduate students.
3. Developed new course: MEGN 498A/598C - Additive Manufacturing Processes
 - Piloted completely new course with graduate and undergraduate students focusing on additive manufacturing technologies, design for additive manufacturing, and using additive manufacturing techniques in industry.
 - Course was project-based using real-world problems.
 - Extensive industry speakers brought important real-world applications of additive manufacturing to the classroom.
 - Course was taught in Spring 2016 by an industry expert from Lockheed Martin using my course materials and with my support.
4. Redeveloped existing course: MEGN 481 - Machine Design
 - Extensively redeveloped the course material to transform from an old lab-based course to a new design studio-based hands-on learning environment.
 - Course was project-based using real-world problems.
 - Students were very receptive to the new style of teaching and design studios will be rolled out throughout the rest of the curriculum based in part on this success.

5. Developed a new method of teaching: The Phase Gate Sprint Approach
 - A colleague and I developed a phase gate sprint approach to teach humanitarian engineering courses as part of the Humanitarian Engineering undergraduate program
 - The approach allowed students to succeed academically while ensuring high quality engineering came out of the courses because the students worked on real projects for developing world communities where a poor outcome was unacceptable
 - Using the concepts of phase gates and sprints allowed us to have the students iterate on a project until it was satisfactory to be released to a community while also meeting all learning objectives and outcomes of the associated course
 - We published a journal article on the approach
(see: 36)

Teaching Techniques Developed and Self-Improvement Efforts

1. Learning Journal: I developed a learning journal technique and template that provides structure to student learning activities each week and includes the following sections: Summary of Topic; Strengths and Weaknesses Analysis, and Plan for Improvement; Demonstration of Learning; Learning Timecard; Course and Instructor Feedback; References; and Appendices.

The learning journal technique has been extremely effective to get students engaged with and excited about their learning and education. I have received numerous positive comments from students at the conclusion of courses using the learning journal.
2. Oral Midterm: I developed an oral midterm format in place of a traditional written midterm in my courses which is built around question trees where I can divert down into appropriate questions for the student to probe the limits of their knowledge and understanding of course content. The midterm requires students to synthesize knowledge and bring their learning higher up Bloom's Taxonomy into the "Evaluate" domain. Many students love the one-on-one time and find the oral midterm to be challenging, fair, and extremely useful in their learning.
3. Specifications Grading and Spiral Learning: I use a specifications grading approach to most assignments. If the assignment is not up to the necessary standard to receive full credit, I provide feedback to the student on what needs to be amended to earn full credit. A student wishing to earn less than full credit has a one-on-one conversation with me to identify what letter grade they wish to earn in the course. I then grade their assignments with this in mind.
4. Scaffolding Learning and Knowledge Development: I have developed weekly hand-outs for each of my courses that contain the following information: 1) Introduction and summary of learning for the week, 2) Weekly learning objectives, 3) Reading and pre-class prep, 4) Summary of in-class lecture and work, 5) Self-directed study directions, 6) Weekly Homework Assignment, 7) Weekly Project Assignment. Scaffolding the learning in this way helps students to rapidly navigate learning for the week and helps with their knowledge development.
5. Making Learning Accessible Anywhere, Anytime: I record all course lectures and post the videos online for students to access as needed. Students who cannot attend class due to operational reasons, deployment, family reasons, etc., can watch the videos to catch up on lectures. Students who wish to re-watch lectures may do so. Some students have turned the lectures into podcasts that they listen to while exercising. All course material is released before the first day of class which enables students to begin working immediately. This is advantageous for students who are deployed (our warrior scholars) because they can download all course material, old lectures, and other necessary information to complete the course completely asynchronously if necessary. In these cases, I work with the student ahead of time to ensure that all learning objectives will be met and make myself available for questions as needed.
6. MS Teams Course Management System (CMS): Recently I converted my instruction from the Sakai CMS (similar to Blackboard CMS) to the MS Teams CMS. This is in support of the NPS's "Classroom of the Future" initiative. Feedback has been extremely positive to have all course content unified within the same platform we use for distance learning synchronous instruction.

Workshop/Conference Attendance to Improve Instruction

1. Teaching and Learning Commons (TLC) Faculty Forum: Tools to Optimize Your Advising. July 2022.

2. The Art and Science of Learning Series - NPS Graduate Education Advancement Center, Office of Teaching and Learning: Promoting Excellence in Teaching to Advance Learning. Series of four seminars in April and May 2022.
3. ModelCenter Explore Training - Phoenix Integration-provided software training for use in instruction. July 2021.
4. ModelCenter Integrate Comprehensive Training - Phoenix Integration-provided software training for use in instruction. February 2021.
5. ModelCenter MBSE (Model Based Systems Engineering) Training - Phoenix Integration-provided software training for use in instruction. February 2021.
6. Yes They Can! Authoring Papers With Students - NPS Teaching and Learning Commons Faculty Webinar Series. September 2020.
7. High Impact Teaching and Learning - NPS Teaching and Learning Commons Faculty Webinar Series. August 2020.
8. SysML Intensive with Model Based Systems Engineering (MBSE) Using CAMEO Systems Modeler - NoMagic-provided software training for use in instruction. March 2019.
9. Teaching Fellows Program - NPS Promoting Excellence in Teaching to Advance Learning (PETAL). Year-long series of seminars and workshops with Office of Teaching and Learning staff and other program fellows. 2018-2019.

ADVISING AND STUDENT SUPPORT

Naval Postgraduate School Advising and Support for Students

The below lists are current as of April 2023. It excludes masters students currently in progress.

Dissertation Supervision

Dissertation Supervisor and Chair

1. Mr. Jason Bickford, PhD Systems Engineering, Title TBD, Expected March 2024
2. Mr. Noah Weitz, PhD Systems Engineering, Title TBD, Expected December 2023

Dissertation Committee Member

1. Mr. Roger Cutitta, Dissertation Title TBD, PhD Systems Engineering, Expected September 2023
2. MAJ. Domonique Hittner, Dissertation Title TBD, PhD Computer Science, Expected June 2023
3. Dr. Cuong Ton, Useful Measures of Complexity: A Model of Assessing Degree of Complexity in Engineered Systems and Engineering Projects, PhD Systems Engineering, December 2021
4. Dr. William Anderson Jr, Resilience Assessment of Islanded Renewable Energy Microgrids, PhD Systems Engineering December 2020

Master's Thesis Supervision

Advisor

1. LT. Steven Arnold, Mapping Virtual and Augmented Reality Training Systems to Support the United States Coast Guard Training Needs, MS Systems Engineering, December 2022
2. MAJ. Chee Hoe Jason Lee^{1,2}, A Systems Analysis of Energy Usage and Effectiveness of a Counter-Unmanned Aerial System Using a Cyber-Attack Approach, MS Systems Engineering, September 2022
3. MAJ. Jiawei Justin He², Experimental Validation of Resilience Models for Islanded Microgrids for Military Operations, MS Systems Engineering, September 2022
4. Mr. Xue Yong Yap², Digital Twin Model-Based Systems Engineering Approach for Failure Analysis of an Engine System, MS Systems Engineering, September 2022
5. Mr. Andrew Machamer³, Optimizing the Periodicity of Preventative Maintenance Inspections Based on Historical Reliability Data, MS Systems Engineering, September 2022

¹This thesis was recognized as an "Outstanding Thesis" by the Systems Engineering Department.

²Student is from the Defence Science Technology Programme from the National University of Singapore on a combined program with the Naval Postgraduate School.

³Nominated for the Surface Navy Association Award for Academic Excellence in Surface Warfare Research.

6. MAJ. Daniel Varley^{4,5}, Feasibility Analysis of a Mobile Microgrid Design to Support DoD Energy Resilience Goals, MS Systems Engineering, June 2022
7. LT. Janice Mallery, Defense Installation Energy Resilience for Changing Operational Requirements, MS Systems Engineering, December 2021
8. LT. Edward Anuat⁶, Energy Resilience Impact of Supply Chain Network Disruption to Military Microgrids, MS Systems Engineering, December 2021
9. MAJ. Boon Kien Eugene Lee², Enhancing Mission Engineering Route Selection Through Digital Twin Decision Support, MS Systems Engineering, September 2021
10. MAJ. Choon Seng Axel Tan^{2,5}, System Analysis of Counter Unmanned Aerial Systems Kill Chain in an Operational Environment, MS Systems Engineering, September 2021
11. LT. Alissa Kain, Investigation of Nanogrids for Improved Navy Installation Energy Resilience, MS Systems Engineering, June 2021
12. LT. Marcella Herster-Dudley, Building Resilience Within DoD Microgrids by Considering Human Factors in Recovery Procedures, MS Systems Engineering, March 2021
13. LT. Daniel Beaton, Testing Whether Distributed Energy Storage Results in Greater Resilience of Microgrids, MS Systems Engineering, March 2021
14. LT. Joshua Hildebrand, Estimating the Life Cycle Cost of Microgrid Resilience, MS Systems Engineering, December 2020
15. LT. Owen Lynch³, Reducing Logistics Delays Using the Supply Chain Criticality Index: A Diagnostic Approach, MS Systems Engineering, June 2020
16. LT. Benjamin Rathwell, Informing the Systems Engineering Approach to Maintenance Activity Development Using Maintenance Personnel Risk Attitudes, MS Systems Engineering, December 2019
17. Mr. Christopher Peterson¹, Systems Architecture Design and Validation Methods for Microgrid Systems, MS Systems Engineering, September 2019

Co-advisor

1. LtCol Stephen F. Strieby, Operationalizing Metal Additive Manufacturing for Expeditionary Employment by the United States Marine Corps, MS Management, MS Systems Engineering Management, March 2023
2. LT. Denntrick Horton, Verification and Validation of Naval Warfare Center Air Division (NAWCAD) F/A-18 Sustainment Model, MS Systems Engineering, December 2022
3. LT. Frank Chase Smeeks^{7,8}, IV, Development of Operational Scenarios for Hydrogen-Powered Unmanned Aerial Vehicles in Naval Applications, MS Systems Engineering, December 2022
4. LCDR Christofer Fackrell^{6,5}, Experimental Assessment of a Novel Dual Opening Dewar for Use on a Liquid Air Energy Storage System Installed on Remote, Islanded, Renewable Military Microgrids, MS Systems Engineering, December 2022
5. Maj. David Jones, Reliability Analysis of a Stand-Alone Microgrid with the Possibility of Redundancy, MS Electrical Engineering, September 2022
6. Capt. Robert Lindstrom, Performance Characterization of a Mobile Microgrid, MS Electrical Engineering, September 2022
7. LT. Kyle Diatte, The Integration of Reliability, Availability, and Maintainability (RAM) into Model-Based Systems Engineering, MS Systems Engineering, December 2021
8. MAJ. Wei Qin Lim², An Arctic Environment Readiness (AER) Model for Quantifying the Impact of Extreme Arctic Weather on System Readiness, MS Systems Engineering, December 2021
9. LCDR. Boswyck Offord⁹, Counter-Unmanned Aerial Systems (C-UAS) Interoperability in the Global Environment, MS Computer Science, September 2021
10. LT. Allen Golphin⁹, Counter-Unmanned Aerial Systems (C-UAS) Interoperability in the Global Environment, MS Computer Science, September 2021
11. Capt. Ruth Fish, Design and Modeling of Hybrid Microgrids in Arctic Environments, MS Electrical Engineering, September 2021

⁴Recipient of the Association of the United States Army, General Joseph W. Stilwell Chapter, Award for Outstanding Army Student

⁵Graduated with distinction.

⁶Recipient of the Naval Sea Systems Command Award for Excellence in Systems Engineering.

⁷Recipient of the Chief of Naval Research Award for Excellence in Robotics and Autonomous Systems Research

⁸Added as co-advisor due to Dr. Pollman's medical leave.

⁹LCDR. Offord and LT. Golphin wrote a two person master's thesis.

- neering, September 2020
12. Ms. Cindy Whitehead¹⁰, Exploring the Use of Human Reliability and Accident Investigation Methods to Influence Design Requirements for Naval Systems, MS Systems Engineering, September 2020
 13. Mr. Jacob Weintraub, Risk Mitigation for Decreased F/A-18 Readiness Caused by Improperly Executed Airframe Inspections on Missile Support RIB Door 144, MS Systems Engineering, September 2020
 14. LT. Crystal Hong, Automation and Artificial Intelligence for Naval ISR: U.S. Navy vs. China's Navy, MS Defense Analysis, June 2020
 15. Mr. Joseph Dean, A Probability Risk Assessment to Support a Defendable and Quantitative Safety Assessment of the Assault Amphibious Vehicle, MS Systems Engineering, September 2018

Second Reader

Second readers are equivalent to masters thesis committee members at most universities.

1. Capt. Christian Thiessen, Redesigning the Counter Unmanned Systems Architecture, MS Information Warfare Systems Engineering and MS Applied Design for Innovation, June 2022
2. Ms. Landa McClure, Analysis of Domain-Specific Nuclear Ontology Using Monterey Phoenix Behavior Modeling, MS Systems Engineering Management, June 2022
3. LT. Andrew Miller, Integrating DEVOPS into Navy Combat Systems Development, MS Systems Engineering, December 2021
4. CPT. Young Jie Chia², Comparison of Requirements Understanding in Model-Based Systems Engineering Versus Traditional Methods, MS Systems Engineering, September 2018
5. ENS. Edward Hanlon¹, Design Strategies and Tactics to Defeat Co-Orbital Anti-Satellite Capabilities, MS Systems Engineering, March 2018
6. LT. Robert Hall, Utilizing a Model-Based Systems Engineering Approach to Develop a Combat System Product Line, MS Systems Engineering, June 2018

Capstone Supervision

Advisor

1. Ms. Laura Best, Ms. Chelsea N. Harrison, Mr. Steven T. Holland, Mr. Eric S. Slack, Mr. David T. Walsh III, Hardware in the Loop (HWIL) Architecture in a Model Based Systems Engineering (MBSE) Environment¹², MS Systems Engineering, 311-192N Cohort, April - December 2022
2. Mr. Jason A. Behling, Mr. Fernando Fuentes, Mr. Larry D. Mannings^{10,5}, Ms. Golda R. Morgan, Mr. Jonathan T. Schinowsky, Counter-UxS Energy and Operational Analyst¹², 311-212O Cohort, April - December 2022
3. Mr. Thomas M. Buetow^{10,5}, Mr. James D. Ingalls⁵, Mr. Michael J. Ledden Jr., Mr. Andrew R. Palmer, Mr. Ricardo Perez, Microgrid Resilience Analysis Software Development and MBSE Tool Integration¹², 311-212O Cohort, April - December 2022
4. Mr. Jordan Drake, Mr. Graham D. Hardman, Mr. William C. Kimble, Mr. Andrea Rodriguez, Mr. Bradley I. Smith, Moveable, Deployable Microgrid Analysis¹², MS Systems Engineering, 311-192N Cohort, April - December 2022
5. Mr. Jacob M. Bell, Mr. John L. Berry, Mr. Christian F. Bowers, Mr. Charles D. Slagle, Assessing and Incorporating Anticipated Climate Risks into the Energy Security Models for Military Installations, MS Systems Engineering Management, 711-214P Cohort, July - December 2022
6. Mr. Sean G. Auld, Mr. Daniel V. Camp^{10,5}, Mr. Paul Kylander, Mr. Nathan Vey, Mr. Jerald J. Willis, Battery Usage in the Future Fleet, MS Systems Engineering Management - Systems and Program Management, 722-211G Cohort, April - September 2022
7. Mr. Ray A. Ashworth, CDR. Zachary Capacete¹⁰, Mr. Matthew Casim, Mr. Garrett D. Dong, Mr. Joshua W. Gutterman, Mr. Carlos R. Riosmora, Mr. Jeffrey L. Smith, Ms. July A. Thomson, Architecture for a CBM+ and PHM Centric Digital Twin for Warfare Systems, MS Systems Engineering, 311-202S Cohort, April - December 2021
8. Ms. Meagan B. Parker¹⁰, Ms. Leslie J. Amodeo, Mr. Brian B. Dick¹¹, Mr. Charles P. Flynn, Ms.

¹⁰Recipient of Wayne E. Meyer Award for Excellence in Systems Engineering for Outstanding Academic Achievement.

¹¹Recipient of the Naval Postgraduate School Outstanding Academic Achievement Award for Department of Defense Students.

- Rebecca A. Nagurney⁵, Navy Expeditionary Additive Manufacturing (NEAM) Capability Integration¹², MS Engineering Systems, 311-194O Cohort, Naval Postgraduate School September 2020 - June 2021
9. LT. Curtis D. Bolen, Ms. Victoria Chu, Mr. Andy Q. Dang, Mr. Paul T. Kim, Mr. Christian Proctor, Ms. Bridget R. Shideler, Integrating Power-Flow, Resilience, and Cost Models for Naval Installation Microgrids¹², MS Systems Engineering, 311-193A Cohort, July 2020 - March 2021
 10. Mr. Nathan Banks¹⁰, Mr. Daniel Ferreira, Mr. Jerome McCauley, Mr. Joseph Trinh, Mr. Kenneth Züst, Navy Additive Manufacturing Afloat Capability Analysis¹², MS Systems Engineering, 311-184O Cohort, September 2019 - June 2020
 11. Mr. Aaron Daponte, Mr. Gregory Maguire, Mr. Calvin Rolan. Unmanned Aerial System Cybersecurity Risk Management Decision Matrix. MS Systems Engineering, 311-184O Cohort, September 2019 - June 2020

Co-Advisor

1. CPT. Kirk J. Porter, MAJ. Christian T. Ray, MAJ. Eric C. Scholl, CPT. David E. Terhune, CPT. Andrew K. Umstead, Tradeoff Analysis of Backup Power Generation Solutions for Military Bases, MS Systems Engineering Management, 522-204 Cohort, June - December 2021
2. Mr. Gregory L. Barr, Mr. Nolan J. Bunker, Mr. Oscar I. Cedillos, Mr. Tylong Chheung, Mr. William Flores, Mr. Adam C. Ortega, A Digital Engineering Case Study of an Unmanned Underwater Vehicle, MS Systems Engineering, 311-202S Cohort, April - December 2021
3. MAJ. Ted L. Cha, CPT. Blake A. Davis, CPT. Zachariah R. Shutte, CPT. Douglas J. Snodgrass, MAJ. Christopher J. Wimsatt, MAJ. Rene V. Ybarra. A Systems Engineering Approach to Comparing Mixed Reality Gaming Engines Within the DoD, MS Systems Engineering Management, 522-194 Cohort, July - December 2020
4. MAJ. Joseph Callaghan, CPT. Nicholas J. Grazer, MAJ. James A. Jones, CPT. Chummie S. Recel, MAJ. Joshua A. Redmond, MAJ. Alan J. Villanueva. Requirements Development Methodology for a Cross-Reality Mission Planning/Rehearsal System, MS Systems Engineering Management - Systems Acquisitions, 522-194 Cohort, June - December 2020
5. Ms. Alma Rubalcava, Mr. Man Nguyen, Mr. Christopher Fava, Mr. Michael Penson, Mr. Matthew Rothblatt, Mr. Allen Kasapian, Mr. Marion Jan Hamor, Mr. Wilvin Crawford. System Architecture for Next-Generation AEGIS Laboratory at SWEF. MS Systems Engineering, 311-182S Cohort, April - December 2019

Second Reader

1. Ms. Meredith Broadfoot, Ms. Catherine Bush, Ms. Beth Harpel, Mr. Thomas Lajoie, Mr. Paul Laube, LT. Michael OGrady, Ms. Emily Overman, Ms. Allison Parcus. Examining Operational and Design Effects of MH-60S with Enhanced Weapon Systems in Anti Surface Warfare Missions, MS Systems Engineering, 311-171G Cohort, January - September 2018
2. Mr. Dennis S. Geary, Mr. Robert D. Jones, Mr. Dominick M. Viruleg, Mr. Justin L. Williams. Ballistic Missile Defense Review Management Using an Automated Collaborative Platform, MS Engineering Systems, 311-161I Cohort, January - September 2018

Project Supervision

This category includes 580 cohort projects which run for three quarters. These are similar to capstone projects but are not listed in Python (the NPS academic management tool) because the students also write masters theses.

Advisor

1. CPT. Stergios Barmapas, LT. Peter Sebastian Dowling, LT. Devon L. Florendo, Mounted Tracking Launcher, 580 Cohort, Naval Postgraduate School June 2022 - March 2023
2. CPT. Mehmet Bahadir, LT. Jamie Dubyoski, Mounted Tracking Launcher (MTL), 580 Cohort, Naval Postgraduate School June 2021 - March 2022
3. Lt. Janice Mallery, LT. William Melton, LT. Austin Taylor. Mounted Tracking Launcher (MTL), MS Systems Engineering, 580 Cohort, January - September 2021

¹²Recipients of the Outstanding Capstone Report in the Department of Systems Engineering.

Colorado School of Mines Advising and Support for Students

Dissertation Committee Member

1. Andrew Neill, PhD Mechanical Engineering - Fall 2016
2. Ahmed Alkaabi, PhD Nuclear Engineering - Spring 2015

Master's Thesis Supervision

Advisor

1. Seth Gregg, MS Mechanical Engineering - Summer 2016¹³
2. Adam Short, MS Mechanical Engineering - Spring 2016
3. Ryan Hemphill, MS Mechanical Engineering - Spring 2016
4. Caitlin Stack, MENG Nuclear Engineering - Spring 2016¹⁴
5. Michael Slater, MENG Nuclear Engineering - Fall 2015¹⁴
6. Isaac Ramp, MS Mechanical Engineering - Fall 2014¹⁴
7. Jordan Pease, MS Mechanical Engineering - Spring 2014

Master's Thesis Committee Member

1. Kevyn Young, MS Mechanical Engineering - Spring 2016
2. Jeremy D. Webb, MS Mechanical Engineering - Spring 2016
3. Peter Morgenthaler, MS Mechanical Engineering - Spring 2016
4. Ryan Collette, MS Nuclear Engineering - Spring 2015

Graduate Research Assistant Students Supervised

1. Jose Dempere, MS Mechanical Engineering - Fall 2015-Fall 2016
2. Kirtland McKenna, MS Mechanical Engineering - Fall 2015 - Fall 2016
3. Guillaume L'Her, PhD Nuclear Engineering - Fall 2016
4. Cliff Ghiglieri, PhD Nuclear Engineering - Fall 2016
5. Tom Gallmeyer¹⁵, PhD Material Science - Fall 2016
6. Dana Drake¹⁵, PhD Material Science - Fall 2016
7. Nathan Johnson¹⁵, PhD Material Science - Fall 2016
8. Henry Geerlings¹⁵, PhD Mechanical Engineering - Winter-Fall 2016
9. Senthamaruvi Moorthy¹⁵, PhD Mechanical Engineering - Winter-Fall 2016
10. Shawn Robinson, MS Nuclear Engineering - Fall 2015
11. Kevyn Young, MS Mechanical Engineering - Spring 2015
12. Max Harris, MS Mechanical Engineering - Spring 2015
13. Matthew Runas, MS Electrical Engineering - Summer 2014
14. Matthew Chee, MS Mechanical Engineering - Summer 2014
15. John Steuben, PhD Mechanical Engineering - Spring - Fall 2014

Graduate Students Teaching Assistants Supervised

1. Jessica Buckley, Machine Design (MEGN 481) Graduate Teaching Assistant, MS Civil Engineering - Spring 2014

Undergraduate Research Assistant Students Supervised

1. David Grimmer¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Summer 2016
2. Grant DeShazer¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Summer 2016
3. Joseph Pauza¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Summer 2016 - Fall 2016
4. Bryan Marsh¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Summer 2016 - Fall 2016
5. Cory Voorhis¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2016
6. Christopher James¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2016
7. Logan Hoover¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2016

¹³Co-advised with John Steele

¹⁴Non-thesis, published research during the course of the degree with Dr. Van Bossuyt

¹⁵Student co-advised with Aaron Stebner as part of the Alliance for the Development of Additive Processing Technologies (ADAPT)

8. Bryan Morgan¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2016
9. Samuel Kincaid¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2016
10. Trevor Thompson¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2016 - Fall 2016
11. Logan Schuelke, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2016
12. Sean Bell¹⁶, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2016 - Fall 2016
13. Nicholas Taylor, CSM Undergraduate Research Fellow, BS Mechanical Engineering - Spring 2016 - Fall 2016
14. Kevin Nelsen, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2016 - Fall 2016
15. Sami Al-Saadawi, CSM Undergraduate Research Fellow, BS Mechanical Engineering - Spring 2016 - Fall 2016
16. Hugh McCreery, Undergraduate Research Assistant, BS Mechanical Engineering - Fall 2015 - Fall 2016
17. Holden Steppan, Undergraduate Research Assistant, BS Mechanical Engineering - Fall 2015
18. Robin Coleman, Undergraduate Research Assistant, BS Engineering Physics - Fall 2015 - Fall 2016
19. Kyle Knaeble, Undergraduate Research Assistant, BS Mechanical Engineering - Fall 2015 - Fall 2016
20. Raul Noquaye Tackie, Undergraduate Research Assistant, BS Mechanical Engineering - Summer 2015, Summer 2016
21. (Taylor) Chase Tyree, Undergraduate Research Assistant, BS Computer Science - Spring 2015
22. Arjumand Alvi, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2015 - Spring 2016
23. (Dung) Ann Lai, Undergraduate Research Assistant, BS Mechanical Engineering - Spring 2015 - Fall 2015
24. (Robert) David Hodge, CSM Undergraduate Research Fellow, BS Mechanical Engineering - Spring 2015 - Spring 2016
25. Keenan Murphy, Undergraduate Research Assistant, BS Mechanical Engineering - Fall 2014 - Spring 2015
26. Katarina Bujnoch¹⁷, CSM Undergraduate Research Fellow, BS Mechanical Engineering - Fall 2013 - Fall 2015
27. Sean Zeiler, Undergraduate Research Assistant, BS Computer Science - Summer 2014 - Spring 2015
28. Matthew Craig, Undergraduate Research Assistant, BS Mechanical Engineering - Summer 2014 - Spring 2015
29. Alexis Humann^{18,19}, CSM Undergraduate Research Fellow, BS Mechanical Engineering - Fall 2013 - Spring 2016
30. Zachary Mimplitz^{20,19}, CSM Undergraduate Research Fellow, BS Engineering Physics - Fall 2013 - Fall 2016
31. William Haynes¹⁹, Undergraduate Research Assistant, BS Mechanical Engineering - Fall 2013 - Spring 2015
32. Paulo Iza, Undergraduate Research Assistant, BS Computer Science - Summer 2014 - Fall 2014
33. Justin Dearden, Undergraduate Research Assistant, BS Mechanical Engineering - Summer 2014)

High School Research Assistants Supervised

1. Weston Donati-Leach¹⁶, Evergreen High School - Summer 2016

Undergraduate Teaching Assistant Students Supervised

1. Zachary Fitzgerald, CSM Design Lab, Lab Assistant, BS Mechanical Engineering - Summer 2014
2. Adam Casanova, CSM Design Lab, Lab Assistant, BS Mechanical Engineering - Summer 2014

Oregon State University Advising and Support for Students

Master's Thesis Committee Member

1. Brady Gilchrist, MS Mechanical Engineering - Spring 2013

Graduate Students Teaching Assistants Supervised

1. John Fields, Geometric Dimensioning and Tolerancing (ME 511) Graduate Teaching Assistant, MS Mechan-

¹⁶Student is/was part of Alliance for the Development of Additive Processing Technologies (ADAPT) <http://adapt.mines.edu/>

¹⁷Katarina Bujnoch was recognize as the Fall 2015 Outstanding Graduating Senior in the Department of Mechanical Engineering and also as the 1st Place Fall 2015 Senior Design Trade Fair Essay Winner.

¹⁸Alexis Humann was recognized as the 2013-2014 Colorado School of Mines Student Employee of the Year and the 2013-2014 State of Colorado Student Employee of the Year. She was also recognized with the Colorado Engineering Council Award for 2016.

¹⁹Student has published undergraduate student research based on work with the Van Bossuyt Research Group.

²⁰Zachary Mimplitz was nominated for 2014-2015 Colorado School of Mines Student Employee of the Year.

ical Engineering - Spring 2013

2. Josef Hortnagl, Geometric Dimensioning and Tolerancing (ME 511) Graduate Teaching Assistant, Ph.D Mechanical Engineering, - Spring 2013

Undergraduate Research Assistant Students Supervised

1. Courtney Solem, REU Student, BS Mechanical Engineering - Spring 2011 - Spring 2012
2. Josh Wilcox, REU Student, BS Mechanical Engineering - Spring 2009 - Winter 2011
3. Yousef Alhashemi, Undergraduate Research Assistant, BS Computer Science - Winter 2009-Spring 2010

Undergraduate Teaching Assistant Students Supervised

1. Felicia Glenn, Introductory Dynamics (ENGR 212) Teaching Assistant, BS Mechanical Engineering - Summer 2011
2. Robin Kiff, Introductory Dynamics (ENGR 212) Teaching Assistant, BS Mechanical Engineering - Summer 2011
3. Austin Kintner, Introductory Dynamics (ENGR 212) Teaching Assistant, BS Mechanical Engineering - Summer 2011
4. Allan Niman, Introductory Dynamics (ENGR 212) Teaching Assistant, BS Mechanical Engineering - Summer 2011
5. Jonathan Zaworski, Introductory Dynamics (ENGR 212) Teaching Assistant, BS Mechanical Engineering - Summer 2011

SCHOLARSHIP AND RESEARCH

Book Chapters

1. W.W. Anderson, D.L. Van Bossuyt²¹. “Foundations of Microgrid Resilience,” in *Microgrids: Theory and Practice*, Power and Energy Engineering Series, 1st Ed. P. Zhang, Y. Zhou Ed. Wiley. Bridgewater, NJ. Submitted October 2022. Accepted November 2022. In press.
2. B. Hale²¹, N. Bindel, D.L. Van Bossuyt “Quantum Computers The Need for a New Cryptographic Strategy,” in *Handbook for Management of Threats - Security and defense, resilience and optimal strategies*, 1st Ed. K. Balomenos, P. Pardalos Ed. Springer. New York City. Submitted March 2022, Accepted April 2022. In press.
3. D.L. Van Bossuyt²¹, N. Papakonstantinou, B. Hale, J. Salonen, B. O’Halloran. “Model Based Resilience Engineering for Design and Assessment of Mission Critical Systems Containing Artificial Intelligence Components,” in *Artificial Intelligence and Cybersecurity: Theory and Applications*, 1st Ed. T. Sipola, T. Kokkonen, M. Karjalainen, Ed. Springer. New York City. https://doi.org/10.1007/978-3-031-15030-2_3. First Online: August 2022. Book in Print: January 2023.

Peer-Reviewed Journal Papers

1. C. Thiessen²², D.L. Van Bossuyt, B. Hale²¹. Reducing Asymmetry in Countering Unmanned Aerial Systems. *Naval Engineers Journal*, 135(1). p 83-93. March 2023.
2. D.V. Camp²², N.L. Vey²², P.W. Kylander²², S.G. Auld²², J.J. Willis²², J. Lussier, R. Eldred, D.L. Van Bossuyt²¹. Li-ion Batteries and the Electrification of the Fleet. *Naval Engineers Journal*. 135(1). p. 169-184. March 2023.
3. J.J. He²², D.L. Van Bossuyt²¹, A. Pollman. Experimental Validation of Systems Engineering Resilience Models for Islanded Microgrids for Defense Operations. *Systems*. 10(6):245. <https://doi.org/10.3390/systems10060245> December 2022.
4. C. Fackrell²², A. Pollman²¹, D.L. Van Bossuyt^{21,23}, A. Gannon. Experimental Assessment of a Novel Dual Opening Dewar for Use on a Liquid Air Energy Storage System Installed on Remote, Islanded, Renewable Microgrids. *Inventions*. 7(4):101. <https://doi.org/10.3390/inventions7040101> November 2022.
5. N. Anglani, G. Oriti²¹, R. Fish²², D.L. Van Bossuyt. Design and Optimization Strategy to Size Resilient

²¹Corresponding Author

²²Student Author

²³Shared corresponding authorship with Dr. Anthony Pollman due to his medical leave

- Stand-Alone Hybrid Microgrids in Various Climatic Conditions. IEEE Open Journal of the Industry Applications Society. pp. 1-9. <https://doi.org/10.1109/ojia.2022.3201161>. August 2022.
6. C.H. Lee²², C. Thiessen²², D.L. Van Bossuyt²¹, B. Hale. A Systems Analysis of Energy Usage and Effectiveness of a Counter-Unmanned Aerial System Using a Cyber-Attack Approach. *Drones*. 6(8), 198; <https://doi.org/10.3390/drones6080198>. August 2022.
 7. K. Diatte²², B. O'Halloran, D.L. Van Bossuyt²¹. The Integration of Reliability, Availability, and Maintainability into Model-Based Systems Engineering. *Systems*. 10(4), 101; <https://doi.org/10.3390/systems10040101>. July 2022.
 8. K Weger²¹, L. Matsuyama²², R. Zimmermann²², B. Mesmer, D.L. Van Bossuyt, R. Semmens, C. Eaton²². Insight into the Acceptance and Adoption of Autonomous Systems by Military Personnel. *International Journal of Human-Computer Interaction* Special Issue on AI, Decision-Making, and the Impact on Humans. 39(7), 1423-1437; <https://www.tandfonline.com/doi/full/10.1080/10447318.2022.2086033> June 2022.
 9. D. Varley²², D.L. Van Bossuyt²¹, A. Pollman. Feasibility Analysis of a Mobile Microgrid Design to Support DoD Energy Resilience Goals. *Systems*. 10(3), 74; <https://doi.org/10.3390/systems10030074>. June 2022.
 10. R. Eldred²¹, D.L. Van Bossuyt. Preliminary Design and Testing of a Resetting, Combination Anchor, Antenna and Tether Mechanism for a Spherical Autonomous Underwater Vehicle. *Applied Sciences*. 12(10), 5072; <https://doi.org/10.3390/app12105072> May 2022.
 11. J. Mallery²², D.L. Van Bossuyt²¹, A. Pollman. Defense Installation Energy Resilience for Changing Operational Requirements. *Designs*. 6(2), 28; <https://doi.org/10.3390/designs6020028>. February 2022.
 12. E. Anuat²², D.L. Van Bossuyt²¹, A. Pollman. Energy Resilience Impact of Supply Chain Network Disruption to Military Microgrids²⁴. *Infrastructures*. Special Issue on Infrastructure Resilience in Emergency Situations. 7(1), 4. <https://doi.org/10.3390/infrastructures7010004>. January 2022.
 13. A. Miller²², R. Giachetti²¹, D.L. Van Bossuyt. Challenges of Adopting DevOps for Combat Systems Development Environment. *Defense Acquisition Research Journal*. 29(1), 2248. <https://doi.org/10.22594/dau.21-870.29.01>. January 2022.
 14. E.B.K. Lee²², D.L. Van Bossuyt²¹, J. Bickford²². Digital Twin-Enabled Decision Support in Mission Engineering and Route Planning. *Systems*. 9(4), 82. <https://doi.org/10.3390/systems9040082>. November 2021.
 15. C.S. Tan²², D.L. Van Bossuyt^{21,25}, B. Hale²¹. System Analysis of Counter Unmanned Aerial System Kill Chain in an Operational Environment. *Systems*. 9(4), pp. 79. <https://doi.org/10.3390/systems9040079>. November 2021.
 16. C. Peterson²², D.L. Van Bossuyt²¹, G. Oriti, R. Giachetti. Analyzing Mission Impact of Military Installations Microgrid for Resilience. *Systems*, 9(3), 69. <https://doi.org/10.3390/systems9030069>. September 2021.
 17. R. Giachetti²¹, D.L. Van Bossuyt²¹, G. Oriti, W. Anderson²². Resilience and Cost Tradespace for Microgrids on Islands. *IEEE Systems Journal*. 16(3), 3939-3949. <https://doi.org/10.1109/JSYST.2021.3103831>. Published online: September 2021. In print: September 2022.
 18. P. Siritoglou²², G. Oriti^{21,26}, D.L. Van Bossuyt^{21,26}. Distributed Energy Resources Design Method to Improve Energy Security in Critical Facilities. *Energies*. 14(10), pp. 2773. <https://doi.org/10.3390/en14102773>. May 2021.
 19. A. Kain²², D.L. Van Bossuyt²¹, A. Pollman. Investigation of Nanogrids for Improved Navy Installation Energy Resilience. *Applied Sciences*. 11(9), pp. 4298. <https://doi.org/10.3390/app11094298>. May 2021.
 20. N. Papakonstantinou, D.L. Van Bossuyt²¹, J. Linnosmaa, B. Hale, B. O'Halloran. A Zero Trust Hybrid Security and Safety Risk Analysis Method. *ASME Journal of Computing and Information Science in Engineering*. 21(5): 050907 (10 pages). <https://doi.org/10.1115/1.4050685>. Oct 2021.
 21. B. O'Halloran²¹, N. Papakonstantinou, K. Giammarco, D.L. Van Bossuyt. A Graph Theory Approach to Functional Failure Propagation in Early Complex Cyber-Physical Systems (CCPSs). *Systems Engineering*. <https://doi.org/10.1002/sys.21569>. Vol 24. No 2. Pages 100-121. February 2021.
 22. J. Bickford²², D.L. Van Bossuyt²¹, P. Beery, A. Pollman. Operationalizing Digital Twins Through Model

²⁴Featured Paper

²⁵50% Shared Corresponding Authorship with B. Hale

²⁶50% Shared Corresponding Authorship with G. Oriti

- Based Systems Engineering Methods. *Systems Engineering*. <https://doi.org/10.1002/sys.21559> Vol. 23, No 6. Pages 724-750. October 2020.
23. D.L. Van Bossuyt²¹, R.M. Arlitt. A Functional Failure Analysis Method of Identifying and Mitigating Spurious Emissions from a System of Interest in a System of Systems. *ASME Journal of Computing and Information Science in Engineering*. 20(5): 054501 (8 pages). <https://doi.org/10.1115/1.4046991> October 2020.
 24. B. Rathwell²², D.L. Van Bossuyt²¹, A. Pollman, J. Sweeney III. A Method to Inform the Systems Engineering Approach to System Design and Maintenance Activity Development Using Systems Operators and Maintenance Personnel Risk Attitudes to Improve Operational Availability. *Systems*. 8(3), 26. <https://doi.org/10.3390/systems8030026>. August 2020.
 25. D.L. Van Bossuyt²¹, B.M. O'Halloran, R.M. Arlitt. A Method of Identifying and Analyzing Irrational System Behavior in a System of Systems. *Systems Engineering*. Vol 22. pp. 519-537. <https://doi.org/10.1002/sys.21520> November 2019.
 26. R. Arlitt, D.L. Van Bossuyt²¹. A Generative Human-in-the-Loop Approach for Conceptual Design Exploration Using Flow Failure Frequency in Functional Models. *ASME Journal of Computing and Information Science in Engineering*. 19(3): 031001 (10 pages). <https://doi.org/10.1115/1.4042913>. September 2019.
 27. D.L. Van Bossuyt²¹, P.Beery, B.M. O'Halloran, A. Hernandez, E. Paulo. The Naval Postgraduate Schools Department of Systems Engineering Approach to Mission Engineering Education. *Systems*. Vol. 7 No. 3, Article-No. 38. <https://doi.org/10.3390/systems7030038>. August 2019.
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2. B. Hale, D.L. Van Bossuyt U.S. Provisional Patent Application #TBD. *A method for Limited Access Non Fungible Tokens*. Submitted to Naval Postgraduate School internal patent review process February 2022.
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2. D.L. Van Bossuyt²¹, B. Hale, R. Arlitt, N. Papakonstantinou. Multi-Mission Engineering with Zero Trust: a Modeling Methodology and Application to Contested Offshore Wind Farms. *2022 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference, IDETC/CIE 2022*.²⁷
3. C. Thiessen²², D.L. Van Bossuyt, B. Hale²¹. Reducing Asymmetry in Countering Unmanned Aerial Systems. *19th Annual Acquisition Research Symposium*, <https://dair.nps.edu/handle/123456789/4561>. 2022.
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 13. B.M. O'Halloran²¹, J. Dean²², D.L. Van Bossuyt, R. Mourning. Toward a Probabilistic Risk Assessment (PRA) Method for Assessing Mishaps in Legacy Systems Using Mishap Reports. *2020 International Council on Systems Engineering Research International Symposium*, <https://doi.org/10.1002/j.2334-5837.2020.00772.x>. INCOSE IS 2020.
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²⁸50% Shared Corresponding Authorship with C.J. Turner

- Information in Engineering Conference*, <https://doi.org/10.1115/DETC2015-46355>. IDETC/CIE2015.
42. A.R. Short²² and D.L. Van Bossuyt²¹. Rerouting Failure Flows Using Logic Blocks in Functional Models for Improved System Robustness: Failure Flow Decision Functions, *2015 ICED Conference*²⁹, <https://www.designsociety.org/publication/37849/>. ICED2015.
 43. B. O'Halloran, N. Papakonstantinou, D.L. Van Bossuyt²¹. Modeling of Function Failure Propagation Across Uncoupled Systems, *2015 IEEE Reliability and Maintainability Symposium*, <https://doi.org/10.1109/RAMS.2015.7105107>. RAMS2015.
 44. J.F. Pease²², J.H. Dean, and D.L. Van Bossuyt²¹. Lean Design for the Developing World: Making Design Decisions Through the Use of Validated Learning Techniques in the Developing World, *2014 ASME International Mechanical Engineering Congress and Exposition*, <https://doi.org/10.1115/IMECE2014-36612>. IMECE2014.
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Non-Refereed Conference Papers

1. Z. Mimplitz²², D.L. Van Bossuyt^{21,30}. Using Weighted-Parameter Models in Autonomous Decision Making. *AIAA Rocky Mountain Section Technical Symposium*, 2015.
2. A.R. Short²², D.L. Van Bossuyt²¹. Prognostics Informed Rover Mission Control. *AIAA Rocky Mountain Section Technical Symposium*, 2015.
3. D.L. Van Bossuyt²¹, J. Piacenza, D. Jensen, I.Y. Tumer. Model Center in the Classroom: Lessons Learned and Best Practices. *Phoenix Integration Users Conference*, 2015.

²⁹Recognized as Reviewers Favourite at ICED2015

³⁰Proper credit was not given in symposium proceedings but is reflected on the paper.

4. W. Hayne²², D.L. Van Bossuyt²¹. Orbital Satellite Relay Test Bed for Prognostics and Health Management. *AIAA Rocky Mountain Section Technical Symposium*, 2014.
5. D.L. Van Bossuyt²¹. Toward Risk-informed Decision-Making in the Early Stages of Conceptual System Design *IEEE International Reliability Innovations Conference*, 2014.

Presentations

In addition to the below, I have presented 24 full papers at conferences, and presented 18 seminars to NPS Groups. I have also been on 5 invited conference panels.

1. D.L. Van Bossuyt, G. Oriti, R. Giachetti, A. Anderson. Replicable Resilient Microgrid Design and Implementation for Naval Facilities. *Briefing for Maj. Gen. Maxwell*. June 2022.
2. D.L. Van Bossuyt. Microgrids for Energy Resilience. *National Defense University Eisenhower School Field Studies Visit*. April 2022.
3. D.L. Van Bossuyt, J. Bickford²². Lunch & Learn: Digital Twins. *Deloitte Digital Engineering*. February 2022.
4. D.L. Van Bossuyt. Zero Trust Systems Engineering for Cyber-Physical Systems Conducting Mission-Critical Activities. *Texas A&M University Engineering Systems Design Group Seminar Series*. November 2021.
5. D.L. Van Bossuyt. Driving System Architecture Decisions Using Failure and Reliability Analysis Information in Conceptual System Design. *University of Alabama Huntsville*. December 2019.
6. D.L. Van Bossuyt, B.M O'Halloran, R.M. Arlitt³¹. Recent Efforts to Help Systems be Good Neighbors in the Modern SoS Landscape: A System Architecture Approach. *System of Systems Engineering Collaborators Information Exchange (SoSECIE) Sponsored by NDIA and Hosted by MITRE*. November 2019.
7. D.L. Van Bossuyt and B.M. O'Halloran. Driving System Architecture Decisions Using Reliability and Failure Analysis Information in Conceptual System Design. *Naval Surface Warfare Center Crane Division*. October 2019.
8. D.L. Van Bossuyt. Driving System Architecture Decisions Using Failure Analysis in System Design. *Project Management Office for Advanced Amphibious Assault*. May 2018.
9. D.L. Van Bossuyt and B.M. O'Halloran. Driving System Architecture Decisions Using Reliability and Failure Analysis Information in Conceptual System Design. *Singapore University of Technology and Design SUTD-MIT International Design Centre*. April 2018.
10. D.L. Van Bossuyt. Making Risk-Informed System Architecture Decisions in My Career. *Oregon State University School of Mechanical, Manufacturing, and Industrial Engineering Design Area Seminar Series*. March 2017.
11. D.L. Van Bossuyt. Making Risk-Informed System Architecture Decisions in Early Design. *Naval Postgraduate School Systems Engineering Department Systems Engineering Colloquium*. February 2017.
12. H. Hostetter and D.L. Van Bossuyt³². Keynote: Colorado National Center of Excellence to Lead the Nation in Additive Technology. *Northern Colorado Manufacturing Partnership - NOCOM 2016 Manufacturing Trade Show*. April 2016.
13. D.L. Van Bossuyt. System Architecture Decisions in the Early Phases of Design Informed by Risk and Reliability Analysis. *University of Arizona, Department of Systems and Industrial Engineering*. January 2016.
14. D.L. Van Bossuyt. Hazardous Environment Robotic Systems and Human Sensorimotor Control of Robotics. *Los Alamos National Lab, Automation and Robotics Deep-Dive Workshop*. October 2015.
15. D.L. Van Bossuyt. Building an Online Brand that Works for Your Career. *ASME IDETC/CIE Conferences: ASME FutureME Mini-Talks*. August 2015. <https://www.asme.org/career-education/media/career-development/video-building-online-brand-works-career>
16. D.L. Van Bossuyt. System Architecture Decisions in the Early Phases of Design Supporting Product Manufacturing and Reliability. *Arizona State University, Ira A. Fulton Schools of Engineering, Polytechnic Campus*. February 2015.
17. D.L. Van Bossuyt. A Risk-Informed Decision Making Framework Accounting for Early-Phase Conceptual Design of Complex Systems. *Colorado School of Mines, Department of Mechanical Engineering*. April 2013.

³¹Co-presented with Dr. O'Halloran and Dr. Arlitt

³²Filled in for A. Stebner due to last minute family situation

Conference Panels

1. Countering Intelligent Autonomous Systems Panel, *Naval Research Working Group - NRWG 2022*.
2. Additive Manufacturing Panel, *Naval Research Working Group - NRWG 2022*.
3. Climate Security Panel, *Naval Research Working Group - NRWG 2022*.
4. SEIKM Panel: The Recent Advances and Future Direction of Model-Based Systems Engineering, *2019 ASME International Design Engineering Technical Conference & Computers and Information in Engineering Conference (ASME IDETC/CIE 2019)*.
5. Chapter Management Techniques Panel, *2007 Engineers Without Borders West Coast Conference*.

Technical Reports

1. A. Jennings, D.L. Van Bossuyt, G. Oriti. Review of Microgrid Research for Defense Applications - State of the Art and Future Directions. Naval Postgraduate School, Monterey, CA. 2022.
2. D.V. Camp, N.L. Vey, P.W. Kylander, S.G. Auld, J.J. Willis, J.F. Lussier, R.A. Eldred, D.L. Van Bossuyt, Electrical Energy Storage to Support Electrification of the Fleet. Navy Operational Energy Requirements (N-941), Naval Postgraduate School, Monterey, CA. 2022.
3. D.L. Van Bossuyt²¹, A. Sadagic, Navy Expeditionary Additive Manufacturing (AM) Capability Integration. Technical Report. Naval Expeditionary Combat Command (NECC), Naval Postgraduate School, Monterey, CA. <http://hdl.handle.net/10945/69861>. 2021.
4. B.M. O'Halloran²¹, D.L. Van Bossuyt, The Integration of Reliability, Availability, and Maintainability (RAM) into Model-Based Systems Engineering (MBSE). Technical Report. Naval Surface Warfare Center (NSWC), Division Crane, Naval Postgraduate School, Monterey, CA. <http://hdl.handle.net/10945/69894>. 2021.
5. B. Hale²¹, D.L. Van Bossuyt, Counter-Unmanned Aerial Systems for the Navy and Marine Corps: Future Hardware Development Needs. Technical Report. Marine Corps Forces Command (COMMARFORCOM), Naval Postgraduate School, Monterey, CA. <http://hdl.handle.net/10945/69790>. 2021.
6. C. Ritter, M. Auguston, J. Browning, K. Giammarco²¹, A. Pollman, M. Stevens, D.L. Van Bossuyt, C. Whitcomb. Ontology for the Design of Innovative Nuclear Technologies. Technical Report. Naval Postgraduate School, Monterey, CA. <http://hdl.handle.net/10945/69148>. 2020.
7. B.M. O'Halloran²¹, D.L. Van Bossuyt, M. Mornigstar, Modeling and Simulation for Lifetime Predictions. Technical Report. Naval Surface Warfare Center (NSWC), Division Crane, Naval Postgraduate School, Monterey, CA. <http://hdl.handle.net/10945/70012>. 2019.
8. D.L. Van Bossuyt²¹, A. Pollman, J. Sweeney, Identifying Traits that May Lead to Unethical Decision Making and Destructive Behavior in Navy Recruiters. Technical Report. Navy Recruiting Command (NRC), Naval Postgraduate School, Monterey, CA. <http://hdl.handle.net/10945/69968>. 2019.

Technical Standards

1. American National Standard ANSI/ANS-30.3-2022: Light Water Reactor Risk-Informed, Performance-Based Design. American Nuclear Society, La Grange Park, Illinois. https://www.techstreet.com/ans/standards/ans-30-3-2022?product_id=2259746. 2022.

Conference, Workshop, and Symposia Posters

1. B. O'Halloran²¹, D.L. Van Bossuyt. The Integration of Reliability, Availability, and Maintainability (RAM) into Model-Based Systems Engineering (MBSE), *Naval Research Program - Naval Research Working Group, NRWG 2022*.
2. D.L. Van Bossuyt²¹, A. Sadagic. Navy Expeditionary Additive Manufacturing (AM) Capability Integration, *Naval Research Program - Naval Research Working Group, NRWG 2022*.
3. B. Hale²¹, D.L. Van Bossuyt. Counter-Unmanned Aerial Systems for the Navy and Marine Corps: Future Hardware Development Needs, *Naval Research Program - Naval Research Working Group, NRWG 2021*.
4. D.L. Van Bossuyt²¹, A. Sadagic. Navy Additive Manufacturing (AM) Afloat Capability Laydown, *Naval Research Program - Naval Research Working Group, NRWG 2021*.
5. D.L. Van Bossuyt²¹, B. Hale. Unmanned Aerial System Cybersecurity Risk Management Decision Matrix for Tactical Operators, *Naval Research Program - Naval Research Working Group, NRWG 2021*.
6. N. Papakonstantinou²¹, A. Bashir, A. Jarmo, L. Joonas, M. Timo, D.L. Van Bossuyt. Early Combined Safety

- Security Defence in Depth Assessment of Complex Systems. *2020 IEEE Reliability and Maintainability Symposium, RAMS2020*.
7. D.L. Van Bossuyt²¹, J. Sweeney, A. Pollman. Identifying Traits that May Lead to Unethical Decision Making and Destructive Behavior in Navy Recruiters, *Naval Research Program - Naval Research Working Group, NRWG 2020*.
 8. B.M. O'Halloran²¹, D.L. Van Bossuyt. Physics of Failure: Modeling and Simulation for Lifetime Predictions, *Naval Research Program - Naval Research Working Group, NRWG 2019*.
 9. G. Oriti²¹, R. Giachetti, A. Hernandez, D.L. Van Bossuyt. Energy Security for Military Bases Using Microgrids, *Naval Research Program - Naval Research Working Group, NRWG 2019*.
 10. D.L. Van Bossuyt²¹, K. Giles, J. Piacenza. Counter Micro UAV Threats Through Analysis and Design/Re-Design of Facilities and Ships, *Naval Research Program - Naval Research Working Group, NRWG 2019*.
 11. D.L. Van Bossuyt²¹, J. Sweeney, A. Pollman. Toward Identifying Traits that May Lead to Unethical Decision Making and Destructive Behavior in Navy Recruiters, *Naval Research Program - Naval Research Working Group, NRWG 2019*.
 12. D.L. Van Bossuyt²¹. Emergent System Behaviors: New Ways for Systems to Fail, *Mine Warfare Symposium, 2018*.
 13. D.L. Van Bossuyt²¹. New Faculty Looking for Projects and Sponsors in Systems Modeling and Failure Analysis, *Naval Research Program - Naval Research Working Group (NRWG) 2018*.
 14. B. Kappes²¹, H. Geerlings²², S. Moorthy²², A. Petersen, D.L. Van Bossuyt, A. Stebner. Machine Learning Approaches to Optimize Additive Manufacturing Parameters for SLM of Inconel 718, *TMS Annual Meeting & Exhibition 2017*.
 15. K. McKenna²², D.L. Van Bossuyt²¹. Introducing Uncoupled Flow in Functional Model Risk Assessment Techniques to Analyze Emergent System Behavior and Improve Safety and Reliability in Complex System Design, *2016 AIAA Rocky Mountain Section Technical Symposium*.
 16. A. Short^{22,21}, D.L. Van Bossuyt³³. Design for Survivability of Autonomous Systems. *2016 CSM Graduate Research and Discovery Symposium, GRADS 2016*.
 17. K. McKenna^{22,21}, D.L. Van Bossuyt. Advancing Design Engineering Functional Flow Modeling to Account for Emergent System Behavior on the Geometric Constrained Component Level. *2016 CSM Graduate Research and Discovery Symposium, GRADS 2016*.
 18. R. Hemphill^{22,21}, D.L. Van Bossuyt³³. Development and Validation of an Economical Polymer Composite Additive Manufacturing Method. *2016 CSM Graduate Research and Discovery Symposium, GRADS 2016*.
 19. P. Morgenthaler^{22,21}, C.J. Turner, D.L. Van Bossuyt. Analogy Matching with Function Flow and Performance. *2016 CSM Graduate Research and Discovery Symposium, GRADS 2016*.
 20. A. Humann²², D.L. Van Bossuyt²¹. Prognostics and Health Management Testing on a Small Robotic Platform. *2015 AIAA Rocky Mountain Section Technical Symposium*.
 21. M.R.S. Slater^{22,21}, D.L. Van Bossuyt. Modeling of Arrestor Failures Propagating Across Uncoupled Systems, *2015 Conference on Earth and Energy Research, CEER 2015*.
 22. R. Hemphill^{22,21}, D.L. Van Bossuyt. Fused Filament Fabrication: Exploring Delamination Failures, *2015 Conference on Earth and Energy Research, CEER 2015*.
 23. A. Short^{22,21}, D.L. Van Bossuyt. Optimized Failure Flow in a Planetary Rover, *2015 Conference on Earth and Energy Research, CEER 2015*.
 24. C. Stack^{22,21}, D.L. Van Bossuyt. Uncoupled System Failure Propagation Analysis, *2015 Conference on Earth and Energy Research, CEER 2015*.
 25. C. Stack²², B. O'Halloran, N. Papakonstantinou, D.L. Van Bossuyt²¹. Modeling of Function Failure Propagation Across Uncoupled Systems, *2015 IEEE Reliability and Maintainability Symposium, RAMS2015*.
 26. Z. Mimitz²², D.L. Van Bossuyt²¹. Using Simulated Environments to Tune Prognostics and Health Management Algorithms, *2014 AIAA Rocky Mountain Section Technical Symposium*.
 27. A. Humann²², D.L. Van Bossuyt²¹. Development of a Small Robotic Platform for Prognostics and Health Management Research, *2014 AIAA Rocky Mountain Section Technical Symposium*.
 28. J. Pease^{22,21}, D.L. Van Bossuyt. A Novel Market-Based Lean Startup Product Design Approach to Design Consumer Products that Produce Customer Value, Have Strong Growth Potential, and Create Positive

³³Proper credit was not given in symposium proceedings but is reflected on the poster.

Community Impacts in the Developing World, *2014 Conference on Earth and Energy Research*, CEER 2014.

29. I. Ramp^{22,21}, D.L. Van Bossuyt. Toward a Geometric Method for Function Failure Propagation Across Uncoupled Systems, *2014 Conference on Earth and Energy Research*, CEER2014.
30. D.L. Van Bossuyt²¹. Computer-Aided Risk-based Complex Conceptual System Design and Decision-Making, *2011 ASME International Design Engineering Technical Conferences & Computers and Information in Engineering Conference*, IDETC/CIE2011.
31. D.L. Van Bossuyt²¹, K. Wilson, C. Moen, R. Hess, E. Miles, K. Seniow. When to Quit: What to Consider Before Abandoning a Project, *2007 Engineers Without Borders International Conference*.
32. C. Moen²¹, K. Wilson, K. Seniow, D.L. Van Bossuyt, R. Hess, E. Miles. Water System, *2007 Engineers Without Borders International Conference*.

Other

I have published: 1 dissertation, 1 master’s thesis, 2 undergraduate theses, 1 undergraduate capstone report, 24 magazine and newsletter articles, and a variety of other publications.

RESEARCH

The following nomenclature is used to condense this section: a) Title, b) Period of performance, c) Sponsor(s), d) Funding level, e) Identification of the principal investigator, f) Brief description of the project, g) Level of effort (i.e., fraction of work year (WY) supported by project funds), h) Students participating, i) Numbers of staff and other faculty supported, j) My role in the project, k) Other staff and faculty roles.

Projects on Which I am the PI or Co-PI at the Naval Postgraduate School

	a)	Additive Manufacturing Digital Twins
	b)	October 2022 - October 2023
	c)	Consortium for Additive Manufacturing Research and Education (CAMRE)
	d)	\$125,000
	e)	Douglas L. Van Bossuyt
1.	f)	This work will develop a 3D printer digital twin template that can be modified to represent any digital twin in the tri-maritime services fleet. There may be a number of potential uses for the digital twin such as capturing data from the ElemX printers, comparing between different ElemX instantiations for analysis purposes, conducting mission analysis using the ElemX digital twins, and other uses that have not yet been identified.
	g)	TBD
	h)	Mr. Adam Francoeur, Mr. Nelson Fernandes, Mr. Heron Da-Silva, Mr. Alain Francois Mbateng Tchuisseu
	i)	4
	j)	PI
	k)	NPS Co-PIs: Mark Rhoades, Joel Hagan, Other Senior Associate: Bryan O’Halloran

	a)	Cyber Security for Additive Manufacturing
	b)	October 2022 - October 2023
	c)	Consortium for Additive Manufacturing Research and Education (CAMRE)
	d)	\$125,000
	e)	Britta Hale
2.	f)	This research examines cyber security issues from a Tri-Maritime Services perspective for additive manufacturing and 3D printers to prioritize future CAMRE-funded research and development efforts, with attention to the protocol links in use and remote communications. Existing efforts and funding sources will be identified. Gaps will be identified, and predictions of vulnerabilities based on those gaps will be made. This research will setup a trajectory for future year research to fill identified gaps.
	g)	TBD
	h)	TBD
	i)	3
	j)	Co-PI
	k)	Co-PI: Douglas L. Van Bossuyt

	a)	Operationalizing UAS Aboard Navy and USCG Ships
	b)	October 2022 - October 2023
	c)	Naval Research Program
	d)	\$125,000
	e)	Douglas L. Van Bossuyt
3.	f)	Implementing uncrewed aerial system (UAS) technologies that can untether UAS operations from current radar/air domain controller requirements presents an evolutionary leap in our surface fleets maritime domain awareness capability. This research will attempt to answer the following questions: What CONOPS are possible when incorporating UAS on small and large Navy & USCG surface platforms and how can they be integrated into current air control practices? What is the return on investment using UAS versus crewed aircraft to execute Navy & USCG missions? What UAS employment strategies are appropriate for various vessel types based on launch and recovery capabilities? What roles can UAS realistically assume from crewed aircraft?
	g)	TBD
	h)	TBD
	i)	3
	j)	PI
	k)	Co-PI: Britta Hale, Other Senior Associate: Jonathan Lussier

	a)	High Value Unit (HVU) Self-Escort against Autonomous Aerial Threats
	b)	January - December 2023
	c)	Naval Research Program
	d)	\$125,000
	e)	Britta Hale
4.	f)	Uncrewed aerial and surface vehicles (UAV/USV) pose an increasing threat to self-escort for High Value Units (HVU). Such vehicles are highly adaptable and can often operate autonomously. Their ability to carry destructive payloads has been demonstrated in recent conflicts, and the use of AI in such vehicles further adds to their capabilities. This projects looks at self-escort for HVUs through mirroring capabilities with C-UAV/C-USV that may operate autonomously. We consider a cross-section of existent C-UAV techniques and use a systems engineering approach to model the efficacy.
	g)	TBD
	h)	TBD
	i)	2
	j)	Co-PI
	k)	TBD

5.	a)	UxS Security Stakeholder Analysis
	b)	August – December 2022
	c)	Office of Naval Research
	d)	\$40,000
	e)	Britta Hale
	f)	This work focuses on initial transitional steps towards practice in security protocols for autonomous systems in line with DoD goals. In particular, the work will undertake a DoD-stakeholder study on protocol security and usability priorities. It covers the ATO process, potential security protocol guarantees, and other usability goals as presented by stakeholders in the uncrewed vehicle domain.
	g)	3% of WY labor charged
	h)	TBD
	i)	TBD
	j)	Co-PI
	k)	TBD

6.	a)	UxS Manned/Unmanned Secure Teaming
	b)	March - December 2022
	c)	Consortium for Robotics and Unmanned Systems Education and Research
	d)	\$146,200
	e)	Britta Hale
	f)	Modern UxS rely upon secure data links to provide C2 in limited and contested environments, and against threats posted by cyberattacks. Current security frameworks rely on synchronicity of connections, leaving C2 links prone to high-latency and persistent session establishment issues and operational failure. We perform a simulation and hands-on test of the multi-device MLS protocol for UxS.
	g)	1% of WY labor charged
	h)	TBD
	i)	TBD
	j)	co-PI
k)	TBD	

7.	a)	Who Makes Johnny 5 Come Alive? Using Diverse Perspectives to Drive Requirements for Human-Robot Teams
	b)	March – December 2022
	c)	Consortium for Robotics and Unmanned Systems Education and Research (CRUSER)
	d)	\$146,200
	e)	NPS PI: Douglas L. Van Bossuyt, UAH PI: Kristin Weger, West Point PI: Rob Semmens
	f)	Who decides the requirements for autonomous systems? Further, how do we know that they considered all of the possibilities in the design space to create the best set of requirements? These questions are particularly salient for autonomous systems (AS) because AS likely represent a revolution in military affairs. Because AS have the opportunity to “change everything,” we should encourage broad thinking in designing the AS to maximize capability in an uncertain battlespace.
	g)	1% of WY labor charged
	h)	NPS Students: CPT. Stergios Barmapas, LT. Peter Sebastian Dowling, LT Devon L. Florendon UAH Students: TBD.
	i)	NPS: 3, UAH: 3, West Point: 1
	k)	NPS Co-PIs: Kristen Fletcher, Britta Hale. Other Senior Associates: Jonathan Lussier. UAH Co-PIs: Bryan Mesmer, Amy Guerin, Nicholaos Jones.

8.	a)	Verification and Validation of Funding Prioritization Model
	b)	February – September 2022
	c)	Naval Air Warfare Center Aircraft Division (NAWCAD)
	d)	\$310,000
	e)	Douglas L. Van Bossuyt
	f)	This work will investigate potential verification and validation process issues , present potential best practices for accomplishing said work in a typical defense sustainment project, and support final verification and validation of selected NAVAIR air-frame sustainment models (P-8 Poseidon, F18).
	g)	27% of WY labor charged
	h)	LT. Jasmine Sweet LT. Denntrick Horton)
	i)	3
	j)	PI
	k)	co-PIs: Ron Giachetti, Daniel Reich. Other Senior Associates: Bryan O’Halloran, Jonathan Lussier.

9.	a)	Base and Operational Energy Microgrid Interoperability
	b)	March - December 2022
	c)	NextSTEP
	d)	\$150,000
	e)	NextSTEP PI: Anthony Gannon, Project PI: Douglas L. Van Bossuyt
	f)	This research assess existing electrical infrastructure to determine current levels of interoperability; legal and policy hurdles to enabling sharing of equipment, etc.; potential COTS solutions to improve interoperability of existing hardware and future purchases; and methods of transporting equipment where it is needed when it is needed. This will allow energy managers to determine potential resilience improvements from specific interoperability improvements on systems within their control.
	g)	16% of WY labor charged
	h)	MAJ. Daniel W. Varley ; Mr. Jordan Drake, Mr. Graham D. Hardman, Mr. William C. Kimble, Mr. Andrea Rodriguez, Mr. Bradley I. Smith
	i)	2
	j)	PI of the project
	k)	Other Senior Associates: Ross Eldred, Jonathan Lussier

10.	a)	Operational Energy Studies and Analysis: Counter-UAV Cyberattack Hijacking for Counter-Unmanned System Power Efficiency
	b)	January 2022 - February 2023
	c)	Deputy Assistant Secretary of the Navy - Operational Energy
	d)	\$210,000
	e)	Operational Energy Studies and Analysis PI: Alejandro Hernandez, Project PI: Britta Hale
	f)	Current counter unmanned systems (C-UxS) against smaller UxS groups rely largely on jamming and denial-of-service (DoS) against the adversarial UxS. Such systems are in use onboard ships as well as strategic weapons facilities. This research project considers the energy feasibility to execute C-UxS efficiently and effectively, shapes design and operation recommendations for C-UxS, and explores cyber-attacks as a low energy, high impact alternative to existing C-UxS systems.
	g)	0% of WY labor charged
	h)	Capt. Christian Thiessen ; MAJ Choon Seng Tan (10) ; MAJ. Boon Kien Lee ; MAJ. Chee Hoe Lee ; LCDR. Boswyck Offord ; LT. Allen Golphin ; Mr. Jason A. Behling, Mr. Fernando Fuentes, Mr. Larry D. Mannings, Ms. Golda R. Morgan, Mr. Jonathan T. Schinowsky
	i)	1
	j)	Project Co-PI
	k)	Other Senior Associates: Kevin Jones

11.	a)	Operational Energy Studies and Analysis: Replicable Microgrid Design and Implementation to Increase Energy Resilience of Critical Infrastructure and Loads
	b)	January 2022 - February 2023
	c)	Deputy Assistant Secretary of the Navy - Operational Energy
	d)	\$310,000
	e)	Operational Energy Studies and Analysis PI: Alejandro Hernandez, Project PI: Douglas L. Van Bossuyt
	f)	Microgrid design is not a straightforward engineering exercise when the goal is energy resilience on a military facility. Critical loads must be identified, existing infrastructure and resources must be considered, as well as cost, maintenance, operation and optimal location of DERs. This project will create design guidelines and software to assist facility energy managers and engineers in the design of resilient microgrids with the goal to increase energy resilience on their facility.
	g)	1.5% of WY labor charged
	h)	MAJ. Jiawei He LT. Janice Mallery (7) ; Lt. Edward Anuat ; Maj. David Jones ; Capt. Robert Lindstrom ; Mr. Thomas M. Butow, Mr. James D. Ingalls, Mr. Michael J. Ledden Jr., Mr. Andrew R. Palmer, Mr. Ricardo Perez ; Mr. Jacob M. Bell, Mr. John L. Berry, Mr. Christian F. Bowers, Mr. Charles D. Slagle
	i)	4
	j)	Project PI
	k)	Project Co-PI: Giovanna Oriti; Other Senior Associates: Ron Giachetti, Mark Rhoades, Daniel Reich

12.	a)	Electrical Energy Storage Strategy to Support Electrification of the Fleet
	b)	October 2021 - October 2022
	c)	Naval Research Program
	d)	\$143,000
	e)	Douglas L. Van Bossuyt
	f)	This research aims to identify current advanced battery requirement and project anticipated battery requirements for the operating force in 2035 and 2050. The analysis may include battery chemistry, energy density, charge/discharge rate, safety concerns, etc. of the battery.
	g)	5% of WY labor charged
	h)	Mr. Sean G. Auld, Mr. Daniel V. Camp, Mr. Paul Kylander, Mr. Nathan Vey, Mr. Jerald J. Willis
	i)	4
	j)	PI
k)	Co-PIs: Giovanna Oriti, Ron Giachetti; Other Senior Associates: Ross Eldred, Jonathan Lussier	

13.	a)	Utilizing Virtual and Augmented Reality to Augment Real World Operational Training to Improve Proficiency
	b)	October 2021 - October 2022
	c)	Naval Research Program
	d)	\$138,002
	e)	Amela Sadagic
	f)	Recent years have been marked by the emergence of affordable off-the-shelf solutions in Virtual Reality (VR) and Augmented Reality (AR) technology. We propose to identify best in class contemporary VR/AR training solutions used by the U.S. Navy and map those systems' capabilities to the U.S. Coast Guard's (USCG) needs.
	g)	0% of WY labor charged
	h)	LT. Steven Arnold
	i)	1
	j)	Co-PI
k)	N/A	

14.	a)	Microgrid Resilience on Naval Installations by Adoption of Shipboard Zonal Distribution -Hardware-in-the-Loop and Pilot Hardware Demonstrations
	b)	July 2021 - December 2023
	c)	Naval Facilities Engineering Systems Command (NAVFAC) - Navy Shore Energy Technology Transition and Integration (NSETTI) Program
	d)	\$600,000
	e)	Giovanna Oriti
	f)	The goal of this project is to apply the zonal shipboard power distribution approach to the design of microgrids on shore installations to achieve energy security, with the additional benefit of allowing modular and progressive upgrades in future years. Zones will be nanogrids, which will manage existing back-up generators with added energy storage and other distributed energy resources to meet the mission requirements of the naval facility. NAS Sigonella and NSA Rota will be case studies.
	g)	6% of WY labor charged
	h)	LT. Alissa Kain ; CPT. Kirk J. Porter, MAJ. Christian T. Ray, MAJ. Eric C. Scholl, CPT. David E. Terhune, CPT. Andrew K. Umstead
	i)	5
	j)	Co-PI
	k)	Other Senior Associates: Ron Giachetti, Daniel Reich, Mark Rhoades

15.	a)	Systems Engineering Research and Technology in Integrated Space Systems Concepts and Methodology
	b)	April 2021 - March 2024
	c)	NASA Marshall Space Flight Center
	d)	\$65,000
	e)	Douglas L. Van Bossuyt
	f)	This project consists of two research questions: 1) What decisions can be left up to an autonomous system to make and what decisions must have concurrence from an operator when humans are present? 2) Are there cost effective approaches to improve the resilience of electrical microgrid infrastructure aboard lunar bases to ensure continued power delivery to mission critical loads?
	g)	0% of WY labor charged
	h)	Noah Weitz
	i)	4
	j)	PI
	k)	Co-PIs: Giovanna Oriti, Britta Hale, Rob Semmens; Other Senior Associates: Noah Weitz

16.	a)	Formation, Implementation, and Verification of Requirements for Human-Autonomy Teaming
	b)	February 2021 - February 2022
	c)	Consortium for Robotics and Unmanned Systems Education and Research (CRUSER)
	d)	\$300,000
	e)	NPS PI: Douglas L Van Bossuyt, UAH PI: Kristin Weger
	f)	This examines the formation and verification of requirements for autonomous systems (AS) from policy to design, and verification and validation. To accomplish this, a collaboration between NPS and UAH, and a UAH-Army research center is formed with diverse domain expertise and equipment.
	g)	0% WY of labor charged
	h)	CPT. Mehmet Bahadir, LT. Jamie Dubyoski
	i)	2
	j)	PI
	k)	NPS Co-PIs: Rob Semmens, Kristen Fletcher; UAH Co-PIs: Bryan Mesmer, Nathan Tenhundfeld, Nicholas Jones

17.	a)	Navy Expeditionary Additive Manufacturing (AM) Capability Integration
	b)	October 2020 - October 2021
	c)	Naval Research Program
	d)	\$139,000
	e)	Douglas L. Van Bossuyt
	f)	The Navy Expeditionary Combat Force (NECF) wishes to understand how to maximize return on investment when deploying AM equipment in DMO/LOCE/EABO and other situations while ensuring interoperability with existing efforts by the Navy and Marine Corps and minimizing duplicated efforts. This research aims to aid decision makers in understanding how to best integrate future NECF AM efforts with existing and near-term Naval efforts.
	g)	20% WY of labor charged
	h)	Ms. Meagan B. Parker, Ms. Leslie J. Amodio, Mr. Brian B. Dick, Mr. Charles P. Flynn, Ms. Rebecca A. Nagurney
	i)	1
	j)	PI
	k)	Co-PI: Amela Sadagic

18.	a)	The Integration of Reliability, Availability, and Maintainability (RAM) into Model-Based Systems Engineering (MBSE)
	b)	October 2020 - October 2021
	c)	Naval Research Program
	d)	\$100,000
	e)	Bryan O'Halloran
	f)	Model-Based Systems Engineering (MBSE) has emerged as a tool to transition the system's design into the digital space. The ability to employ MBSE is currently limited by the availability of both the knowledge of its employment and the availability of models including reliability, availability, and maintainability (RAM). This research investigates the various elements of modeling RAM (i.e., the development of a RAM domain model) into MBSE.
	g)	0% WY of labor charged
	h)	LT. Kyle Diatte
	i)	1
	j)	Co-PI
	k)	N/A

19.	a)	Counter Unmanned Aerial Systems for the Navy and Marine Corps: Future Hardware Development Needs
	b)	October 2020 - October 2021
	c)	Naval Research Program
	d)	\$130,000
	e)	Britta Hale
	f)	Counter unmanned aerial systems (CUAS) technology is used by the Navy and Marine Corps to provide defense for a multitude of mission facets to include fixed installations, forward operating bases, maritime assets, and mobile ground elements. This work addresses the future hardware and interoperability development needs for Navy and Marine Corps CUAS kill chains by distinguishing where and when interoperability is appropriate, and identifying operational interferences.
	g)	9% WY of labor charged
	h)	LCDR. Boswyck Offord , LT. Allen Golphin
	i)	1
	j)	Co-PI
	k)	N/A

20.	a)	Motivating Use of Unmanned Assets in Human-Autonomy Teaming
	b)	January 2020 - December 2020
	c)	Consortium for Robotics and Unmanned Systems Education and Research (CRUSER)
	d)	\$150,000
	e)	NPS PI: Douglas L. Van Bossuyt, UAH PI: Bryan Mesmer
	f)	The proposed work aids autonomous systems (AS) designers interfaces that incorporate mechanisms to incentivize warfighters to use AS. This research will benefit the integration of human-autonomy teaming in multiple domains.
	g)	0% of WY of labor charged
	h)	LT. Janice Mallery, LT. William Melton, LT. Austin Taylor
	i)	1
	j)	PI
	k)	NPS Co-PI: Rob Semmens, UAH Co-PI: Kristin Weger

21.	a)	Unmanned Aerial System Cybersecurity Risk Management Decision Matrix for Tactical Operators
	b)	October 2019 - September 2020
	c)	Naval Research Program
	d)	\$120,000
	e)	Douglas L. Van Bossuyt
	f)	Operators on the ground need the ability to assess if a COTS UAS can still complete its mission while posing an acceptable risk even when potentially compromised by an adversary. We will conduct a survey of DoD COTS UAS to identify technology used on each COTS UAS. This information will be used to develop the cybersecurity operational risk management decision matrix.
	g)	29% of WY of labor charged
	h)	Mr. Aaron Daponte, Mr. Gregory Maguire, Mr. Calvin Rolan
	i)	1
	j)	PI
	k)	Co-PI: Britta Hale

22.	a)	Navy Additive Manufacturing (AM) Afloat Capability Laydown
	b)	October 2019 - September 2020
	c)	Navy Research Program
	d)	\$120,000
	e)	Douglas L. Van Bossuyt
	f)	Several years ago, DON began installing AM capabilities aboard Surface Vessels, and an increased AM deployment to the fleet is planned over the next years. This research aims to aid decision makers in understanding how to best deploy AM resources to the Surface Fleet.
	g)	11% of WY of labor charged
	h)	Mr. Nathan Banks, Mr. Daniel Ferreira, Mr. Jerome McCauley, Mr. Joseph Trinh, Mr. Kenneth Zust
	i)	1
	j)	PI
	k)	Co-PI: Amela Sadagic

23.	a)	Nuclear Reactor Ontology Formal Verification Using Monterey Phoenix
	b)	April 2019 - September 2020
	c)	Idaho National Lab
	d)	\$25,000
	e)	Kristin Giammarco
	f)	The construction, aerospace, and automotive industries have achieved considerable cost and schedule savings by utilizing virtual design. This approach is not shared by the nuclear industry where the current ecosystem of tools and solutions for nuclear technology development implement proprietary data ontologies to capture design information. This project develops a formal representation of information called a data ontology for the nuclear industry.
	g)	0% of WY of labor charged
	h)	Ms. Landa McClure
	i)	4
	j)	Co-PI
	k)	Co-PI: Anthony Pollman, Mark Stevens, Cliff Whitcomb

24.	a)	Modeling, Analysis and Design of the Energy Storage System for a Naval Facility with Focus on Energy Efficiency and Energy Security
	b)	October 2018 - October 2021
	c)	Naval Facilities Engineering Systems Command (NAVFAC) - Navy Shore Energy Technology Transition and Integration (NSETTI) Program
	d)	\$480,000
	e)	Giovanna Oriti
	f)	This project supports the energy storage system design of naval facilities where distributed energy resources are available. The focus of this project is to create a design tool that can be used to determine the size, distribution and best location for the energy storage system (ESS) needed to ensure the efficient, resilient, and secure operation of a naval facility.
	g)	12% of WY of labor charged for FY19, 17% of WY of labor charged for FY20, 8% of WY of labor charged for FY21
	h)	LT. Alissa Kain; Mr. Christopher Peterson ; LT. Joshua Hildebrand ; LT. Daniel Beaton ; LT. Marcella Herster-Dudley ; LT. Curtis D. Bolen, Ms. Victoria Chu, Mr. Andy Q. Dang, Mr. Paul T. Kim, Mr. Christian Proctor, Ms. Bridget R. Shideler ; Capt. Ruth Fish
	i)	4
	j)	Co-PI
	k)	Co-PI:L Ron Giachetti, Andy Hernandez

	a)	Autonomous Systems Adoption Challenges and Requirements Management Solutions
	b)	January 2019 - December 2019
	c)	Consortium for Robotics and Unmanned Systems Education and Research (CRUSER)
	d)	\$150,000
	e)	NPS PI: Douglas L. Van Bossuyt, UAH PI: Bryan Mesmer
25.	f)	Autonomous systems (AS) have inherent challenges with traditional systems engineering requirements generation and management due to the way warfighters and DOD acquiring/constructing organizations perceive autonomous systems. This research aims to: 1) Develop a questionnaire and semi-structured interview that solicits preference and beliefs on perceived challenges of the adoption of AS. 2) Conduct a study on NPS resident students, warfighters, DOD engineers, and DOD contractors. 3) Analyze evidence using content analysis and descriptive statistics. Examine using human study evidence and systems engineering approaches of value modeling, game theory, and risk analysis.
	g)	0% WY of labor charged
	h)	N/A
	i)	3
	j)	PI
	k)	Other Senior Associate: Rob Semmens, UAH Co-PI: Kristin Weger

	a)	Modeling and Simulation for Lifetime Predictions
	b)	October 2018 - October 2019
	c)	Naval Research Program
	d)	\$100,000
	e)	Bryan O'Halloran
26.	f)	Service life assessments and reliability predictions for electronics need improvement early in the design phase to avoid uncertainties, inaccurate results, and poor design decisions. This research develops a merged probabilistic physics of failure (PoF) approach to account for the physical location of micro-electronics and determine the resulting time-to-failure based on randomly placed failure mechanisms.
	g)	10% of WY of labor charged
	h)	Mr. Matthew Morningstar
	i)	1
	j)	Co-PI
	k)	N/A

	a)	Identifying Traits that May Lead to Unethical Decision Making and Destructive Behavior in Navy Recruiters
	b)	October 2018 - October 2019
	c)	Naval Research Program
	d)	\$100,000
	e)	Douglas L. Van Bossuyt
27.	f)	Recruiting for the Navy is a unique and challenging duty that requires strong ethics and sound decisionmaking, and the pressures inherent in the job can lead to unethical recruiting practices. Our research is designed to assist the Navy Recruiting Command (NRC) in better identifying individuals who have the propensity for poor decision making and increased risk taking.
	g)	9% of WY of labor charged
	h)	LT. Benjamin Rathwell
	i)	2
	j)	PI
	k)	Co-PIs: Anthony Pollman, Joseph Sweeny

28.	a)	Applying (MBSE) to Examine the Operational Effects of SH-60/MH-60 Helicopter with Enhanced Weapon Systems in a Near Peer Surface Warfare (SUW) Mission
	b)	October 2017 - September 2018
	c)	Naval Research Program
	d)	\$80,000
	e)	Eugene Paulo
	f)	The United States Navy (USN) employs distributed maritime operations (DMO) by increasing the offensive capabilities of its surface fleet, known as adaptive force packages (AFP). One component of DMO, rotary wing aircraft supporting anti-surface warfare (ASuW), lacks a long-range weapon capability. The purpose of this research is to determine the benefit to DMO of providing the MH60S fleet with a long-range standoff weapon capability, determine the feasibility of integrating a long-range missile (LRM) onto the MH-60S, and determine the capabilities required of that weapon system.
	g)	1% of WY of labor charged
	h)	Ms. Meredith Broadfoot, Ms. Catherine Bush, Ms. Beth Harpel, Mr. Thomas Lajoie, Mr. Paul Laube, LT. Michael OGrady, Ms. Emily Overman, Ms. Allison Parcus.
	i)	4
	j)	Co-PI
	k)	Co-PIs: Bryan O'Halloran, Paul T. Beery

29.	a)	Risk And Failure Analysis as System Design Tools for Complex Systems
	b)	February 2018 - October 2019
	c)	Naval Postgraduate School Research Initiation Funds
	d)	\$96,935.68
	e)	Douglas L. Van Bossuyt
	f)	The primary purpose of this Research Initiation Proposal is to develop methods and tools focused around risk and failure analysis to aid practitioners in designing and engineering large, complex systems. This research is positioned at the intersection of systems engineering, risk analysis, model-based design, system informatics, trade-off studies, and conceptual design.
	g)	30% of WY of labor charged
	h)	N/A
	i)	0
	j)	PI
	k)	N/A

Projects on Which I was the PI or CO-PI External to the Naval Postgraduate School

1.	a)	ASME-CIE Hackathon
	b)	January - August 2022
	c)	American Society of Mechanical Engineers (ASME) Tech Development Fund
	d)	\$18,902
	e)	Zhuo Yang
	f)	This funding supports the annual CIE Hackathon at the ASME IDETC/CIE Conference. All funds go toward running the Hackathon and paying for the Hackathon prizes.
	g)	0% of WY of labor charged
	h)	TBD - many students external to NPS
	i)	0
	j)	Co-PI
	k)	Non-NPS Co-PIs: Dazhong Wu, Zhenghui Sha, Yan Lu, Hyunwoong Ko

Contributions to Other Research Projects (Not as PI or co-PI) at the Naval Postgraduate School

The below is a listing of other research project to which I have made contributions at the Naval Postgraduate School but am not PI or co-PI.

	a)	Consortium for Additive Manufacturing Research and Education (CAMRE)
	b)	June 2022 - TBD (1-3 years dependent upon Congressional action)
	c)	Congress; Assistant Secretary of the Navy for Research, Development and Acquisition (ASN/RDA)
	d)	\$15,000k-45,000k dependent upon Congressional action
	e)	Kevin Smith
1.	f)	The project's goal is to establish a consortium for additive manufacturing research and education at NPS that will accelerate widespread adoption of additive manufacturing across the Department of Defense. The Consortium will drive the adoption of 3D rapid prototyping methods in support of the Tri-Service Maritime Strategy. The Consortium will partner with additive manufacturing companies to help the Navy advancing additive manufacturing research.
	g)	1% of WY labor charged
	h)	TBD
	i)	16-20
	j)	Other Senior Associate
	k)	Other Senior Associates: Erick, Alley, Troy Ansell, Donald Brutzman, David Dausen, John Gibson, Emre Gunduz, Garth Hobson, Stefan Kohlgrueber, Claudia Luhrs, Christopher Manuel, Brandon Naylor, Terry Norbraten, Chanman Park, Amela Sadagic, Douglas Seivwright, Walter Smith, Warren Yu
	l)	TBD

	a)	Naval Postgraduate School (NPS) Collaboration on Energy Resiliency
	b)	October 2020 - Present (ongoing)
	c)	Office of Naval Research
	d)	\$125,000 per year, renewed annually
	e)	Daniel Nussbaum
2.	f)	NPS will provide technical support for the Energy Resilience project, including: Direct support to ONR in monitoring and reviewing the work by the two principal investigative teams at UMass-Lowell and SUNY-Stony Brook, including some travel in support of this effort; and a research effort in an area that complements the work of the two principal investigative teams.
	g)	24% of WY of labor charged in FY21, 0% of WY of labor charged in FY22
	h)	N/A
	i)	2
	j)	Other Senior Associate
	k)	N/A
	l)	TBD

External Funding Received While an the Colorado School of Mines

The below funding was received from external sources while at the Colorado School of Mines. The funding supported me and several graduate and undergraduate students to pursue my research agenda.

1. Irradiation Performance Testing of Specimens Produced by Commercially Available Additive Manufacturing Techniques, NEET-NSUF-1.3c: Irradiation Testing of Materials Produced by Innovative Manufacturing Techniques. PI: Jeff King. Co-PI: Douglas L. Van Bossuyt. Total Funding: \$499,928. October 2016-September 2020.³⁴
2. Metals Additive Manufacturing Consortium. Colorado Office of Economic Development and International

³⁴While I was co-PI on this project at submission and award, I did not participate in the project after I departed CSM.

- Trade³⁵. PI: Aaron Stebner. Co-PI: Douglas L. Van Bossuyt. Total Funding: \$8,053,405³⁶ CSM Portion: \$3,084,000.³⁷ 2016.
3. Colorado School of Mines Nuclear Science and Engineering Fellowship Program. Nuclear Regulatory Commission. PI: Jeffrey King. Co-PI: Douglas L. Van Bossuyt. Total Funding: \$400,000. September 2015 - September 2019
 4. Colorado School of Mines Faculty Development Program. PI: Douglas L. Van Bossuyt³⁸. Nuclear Regulatory Commission. Total Funding: \$598,863 including \$150,000 match from Colorado School of Mines. August 2014 - August 2017

Internal University Funding Received While at the Colorado School of Mines

The below funding was received through a competitive process from internal sources while at CSM to support classroom instruction, expansion of the department's Maker Space, and other teaching-related endeavors.

1. Low Speed Saw for Precision Cutting. PI: Douglas L. Van Bossuyt. CSM Technology Fee Grant. May 2016. Funding: \$17,898
2. Software Toolchain for 3D Scanning to Bridge the Gap Between the 3D Scanner and SolidWorks. PI: Douglas L. Van Bossuyt. CSM Technology Fee Grant. May 2015. Funding: \$3,740
3. Prototyping Laboratory 3D Printers. PI: Douglas L. Van Bossuyt. Co-PIs: Jered Dean, Cameron Turner. Co-Sponsors: Jenifer Blacklock, Susan Reynolds, Xiaoli Zhang, Ozkan Celik, Joel Bach, John Berger, John Steele, Anthony Petrella, Ventzi Karaivanov, Anne Silverman, Aaron Stebner, Chris Dryer, Brian Gorman, Ivar Reimanis, Jeffery King, Angel Abbud Madrid, Greg Jackson. CSM Technology Fee Grant. January 2014. Funding: \$25,317
4. CSM Department of Mechanical Engineering Phillips 66 Money: Video Camera Equipment. PI: Douglas L. Van Bossuyt. November 2013. Funding: \$5,000

University Undergraduate Research Assistant Funding Received While at the Colorado School of Mines

The below funding was received through a competitive process from internal sources to employ undergraduate research assistants in my research group while at CSM. I wrote applications for each funded undergraduate research assistant position and actively recruited undergraduates to work in my research group.

1. Colorado School of Mines Undergraduate Research Fellowship: Development of 3D Printed Radiation Shielding. PI: Douglas L. Van Bossuyt. October 2016. Funding \$1,500
2. Colorado School of Mines Undergraduate Research Fellowship: Development of Risk-Enabled Autonomous Decision Making Processes in Simulated Extraterrestrial Rovers. PI: Douglas L. Van Bossuyt. October 2016. Funding: \$1,500
3. Colorado School of Mines Undergraduate Research Fellowship: Montrac System Development. PI: Douglas L. Van Bossuyt. January 2016. Funding: \$1,500
4. Colorado School of Mines Undergraduate Research Fellowship: Electromechanical Development of Micro Underwater ROVs Incorporating Prognostics and Health Management. PI: Douglas L. Van Bossuyt. January 2016. Funding: \$1,500
5. Colorado School of Mines Undergraduate Research Fellowship: Development of Risk Enabled Autonomous Decision Making Processes in Simulated Extraterrestrial Rovers. PI: Douglas L. Van Bossuyt. January 2016. Funding: \$1,500
6. Colorado School of Mines Undergraduate Research Fellowship: Electromechanical Development of Micro Underwater ROVs for Flooded Mine Shaft Exploration. PI: Douglas L. Van Bossuyt. January 2015. Funding: \$1,500
7. Colorado School of Mines Undergraduate Research Fellowship: Development of Software Simulator for Mul-

³⁵Founding consortia members include CSM, Manufacturer's Edge, Lockheed Martin, Ball Aerospace, Faustson Tool.

³⁶\$2,500,000 funding from COEDIT plus \$5,553,405 cost-share from proposing organizations.

³⁷\$1,034,000 cost share from VPRF for new lab space in Coorstek center plus \$2,050,000 external funding from COEDIT via Manufacturer's Edge subcontract to Mines.

³⁸Note that originally this grant had PI: Tom Boyd, Co-PIs: Douglas L. Van Bossuyt and Cory Ahrens. Due to Cory's departure from CSM, the grant was consolidated under Douglas. Cory and Douglas each wrote 50% of the original grant application and Tom served as the institutional PI for submission and initial monitoring purposes.

- multiple Robotic Agents Cooperating on Mars. PI: Douglas L. Van Bossuyt. January 2015. Funding: \$1,500
8. Colorado School of Mines Undergraduate Research Fellowship: Autonomous Decision-Making for a Mars Rover using Prognostics and Health Management Data. PI: Douglas L. Van Bossuyt. August 2014. Funding: \$1,500
 9. Colorado School of Mines Undergraduate Research Fellowship. Development of an Underwater Remote Operated Vehicle Testbed for Dangerous Environment Reconnaissance and Construction. PI: Douglas L. Van Bossuyt. August 2014. Funding: \$1,500
 10. Colorado School of Mines Undergraduate Research Fellowship. Underwater Autonomous Vehicle / Remote Operated Vehicle (ROV) Research Platform. PI: Douglas L. Van Bossuyt. January 2014. Funding: \$2,000
 11. Colorado School of Mines Undergraduate Research Fellowship. Mars Rover and Orbiter Analogue Platform Development & Prognostics and Health Management Hardware Upgrade. PI: Douglas L. Van Bossuyt. January 2014. Funding: \$2,000
 12. Colorado School of Mines Undergraduate Research Fellowship. Mars Campaign Software Suite Development. PI: Douglas L. Van Bossuyt. January 2014. Funding: \$2,000
 13. Colorado School of Mines Undergraduate Research Fellowship. Mars Rover and Orbiter Analogue Platform Development. PI: Douglas L. Van Bossuyt. September 2013. Funding: \$2,000

SERVICE

Naval Postgraduate School Service

1. NPS Systems Engineering Department Ph.D. Program Committee – April 2018 - Present
Academic Associate and Chair of the Systems Engineering Department Ph.D. Program Committee
2. NPS Discovery Day Rapid Innovation Design Challenge – Summer 2021 - May 2022
Additive Manufacturing Challenge Champion, Judge
3. Barrow Fellowship Review Committee – August 2021
4. Consortium for Additive Manufacturing Research and Education (CAMRE) Planning Committee – June 2022 - Present
5. NPS Climate and Security Network Planning Team – March 2021 - Present
Planning Team Member
6. Ad-Hoc L^AT_EX Group for the Thesis Processing Office and Graduate Writing Center – January 2020 - Present
Co-leader of the group, quarterly L^AT_EX seminar presenter (January 2021, April 2021, July 2021, October 2021, January 2022, April 2022, October 2022, April 2023), L^AT_EX expert in the MS Teams “L^AT_EX Ask Us Anything!” channel, L^AT_EX thesis and dissertation template developer
7. Systems Engineering 522 and 711 Programs Capstone Competition Judge - June 2022, November 2021, August 2021

Navy/DoD Service Activities

1. Special Advisory Board to the Office of Naval Research (ONR) on UMASS Lowell and SUNY Stony Brook University Navy Research Collaboration on Energy Resiliency – 2020 to Present
2. NAVFAC Microgrid Unified Facilities Criteria Team – 2022 to Present

Colorado School of Mines Service

1. Graduate Admissions and Recruiting Committee - Department of Mechanical Engineering, Colorado School of Mines - Fall 2013 Through Fall 2016
2. Humanitarian Engineering Curriculum Development Committee - Division of Liberal Arts and International Studies, Colorado School of Mines - Fall 2015 Through Fall 2016

External Professional and Personal Service Activities

Technical Journal Editorial Boards

1. American Society of Mechanical Engineers (ASME) Journal of Computing and Information Science in Engineering (JCISE): Digital Media Board Member – 2021 to Present

Standards Committees

1. American National Standards Institute (ANSI) / American Nuclear Society (ANS) - ANSI/ANS 30.3-2022: Light Water Reactor Risk-Informed Performance-Based Design: Committee Member – 2020 to Present

National/International Organization Committees

1. National Defence Industrial Association (NDIA) - Education and Technology Committee Member – April 2022 - Present
2. engrXiv Steering Committee, Committee Member – 2016 - Present
3. ASME Early Career Engineers Programming Committee (ECEPC) Design and Advanced Manufacturing Market Segment, Leadership Team Member – 2015 - 2016

International Council on Systems Engineering (INCOSE) Working Groups

1. System Safety Working Group (SSWG) Member – January 2019 - Present
2. Resilient Systems Working Group (RSWG) Member – January 2019 - Present
3. Critical Infrastructure Protection and Recovery Working Group (CIPRWG) Member – January 2019 - Present

Funding Review Panels

1. Department of Energy (DoE) SBIR/STTR Phase II Release 2 - 2022
2. DoE NEUP R&D Reviewer - 2021
3. DoE Small Business Research Initiative (SBRI) / Small Technology Transfer Innovation Research (STTR) Phase II Release 2 - 2020
4. DoE Consolidated Innovative Nuclear Research (CINR) Reviewer - 2019
5. DoE SBIR/STTR Phase II Release 1 - 2019
6. DoE CINR Reviewer - 2018
7. DoE SBIR PIR 1 Reviewer - 2018
8. National Aeronautics and Space Administration (NASA) Innovative Advanced Concepts (NIAC) Phase 1 Review Panel - 2015
9. NASA NIAC Phase 1 Review Panel - 2014

Technical Conference Organizing Committees

1. ASME Computers and Information in Engineering (CIE) Conference: Systems Engineering, Knowledge, and Information Management (SEKIM) Technical Committee (TC) Chair – August 2022 - August 2023
2. ASME CIE Conference: SEKIM TC Secretary – August 2021 - August 2022
3. Prognostics and Health Management (PHM) Society Conference: Education Component Co-Chair – 2018 Conference
4. ASME CIE Conference: SEKIM TC Secretary – August 2016 - August 2017
5. PHM Society Conference: Education Component Co-Chair – 2016 Conference

External Student Mentoring

1. Practitioner Mentor - Interdisciplinary Undergraduate Experience - University of Alabama Huntsville - 2022

Scholarship Review Committees

- Oregon Community Foundation Scholarship Review Committees
 1. Glenn and Juanita Struble Memorial Scholarship - 2017-Present
 2. Juanita Brown Struble Scholarship - 2018-Present
 3. Glenn R. and Juanita B. Struble Scholarship II - 2017-Present

Prior Administrative Roles

1. Engineers Without Borders - Oregon State University Chapter – President 2006-2008, Advisor 2009-2012, Member 2005-2012
2. American Society of Mechanical Engineers Oregon State Student Section – Advisor 2007 - 2012, Sophomore Class Co-Representative 2003-2004, Member 2001 - 2012

3. Engineers Without Borders-USA / West Coast Region – State of Oregon Representative to the Board 2007-2009
4. Phi Delta Theta - Oregon Beta Chapter – Fraternity House Dad – 2009-2013, Brother in the Bond
5. Associated Students of Oregon State University Congress – Graduate Student Representative – 2009-2012, Chairperson of the Ways and Means Committee – 2009-2012, Graduate Student Senator – 2008-2009, Student Government Committee Member – 2008-2009
6. Student Alumni Association of Oregon State University – Board of Directors Member – 2008-2011
7. NHS Robotics Team – Team Leader and Shop Steward – 1999-2001, Designer and Machinist – 1997-2001

External Professional Activities

Consulting

1. Trails Off-Road – Consultant – Off-Road 4x4 Trails Mapper and Contributing Author - August 2017 - Present
2. The Sexton Company – Engineering and Business Consultant - December 2017 - January 2018
3. Alion Science and Technology – Additive Manufacturing Consultant - November 2014
4. The 3D Printing Store – Additive Manufacturing Consultant - January 2014 - October 2016
5. A Human Right.org - Buy This Satellite.org – Satellite Systems Development and Design Consultant - December 2010 - August 2013

Technical Journal Peer Review

The below are technical journals that I have performed peer review services for in the last several years. I generally review 10 to 15 journal manuscripts per year.

1. Wiley Journal of Systems Engineering
2. ASME Journal of Mechanical Design
3. ASME Journal of Computing and Information Science in Engineering
4. Artificial Intelligence for Engineering Design, Analysis and Manufacturing (AIEDAM)
5. IEEE Access
6. Journal of Risk and Reliability
7. Design Science Journal
8. Journal of Engineering Design
9. MDPI Systems
10. MDPI Journal of Applied Sciences
11. Journal of Mechanical Engineering Science
12. Engineering Management Journal
13. Journal of Space Safety Engineering

Additional Technical Conference Service

Technical Conference Session/Symposium Organizer

1. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2020) - DTM-3-01: Trends Impacting Design Processes
2. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2019) - CIE/MESA Joint Symposium: Cyber-Physical Systems
3. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2018) - CIE-28 Design of Complex and Cyber-Physical Systems
4. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2018) - DTM Symposium: DTM-11 Design of Complex Systems
5. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2018) - CIE/MESA Joint Symposium: Cyber-Physical Systems
6. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2017) - SEIKM: Systems Engineering
7. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2017) - Risk-Aware Cyber-Physical Systems
8. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2016) - SEIKM: Systems Engineering

9. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2016) - SEIKM: Risk-Aware Cyber-Physical Systems

Technical Conference Topic Organizer

1. ASME International Mechanical Engineering Congress and Exposition (IMECE2017) - Track 15-5: Design Under Uncertainty
2. ASME International Mechanical Engineering Congress and Exposition (IMECE2016) - Track 15-5: Design Under Uncertainty

Technical Conference Session Chair

1. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2022) - CIE-24-01: AMS-CAPPD-SEIKEM: Artificial Intelligence and Machine Learning in Design and Manufacturing
2. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2022) - CIE-13-01: SEIKEM: Design Informatics
3. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2021) - CIE-03-01: Artificial Intelligence and Machine Learning in Design and Manufacturing
4. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2020) - DTM Design Decision-Making
5. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2018) - CIE-17-1 Design of Complex and Cyber-Physical Systems
6. 2016 PHM Society Annual Conference - Industrial & Manufacturing Applications I
7. ASME International Mechanical Engineering Congress and Exposition (IMECE2014) - 14-2-2 Design Innovations, Methodologies and Philosophies II

Technical Conference Session Co-Chair

1. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2020) - CIE Cyber-Physical Systems
2. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2019) - MESA/CIE Joint Symposium: Smart Cyber-Physical Systems - MESA-10-1 Smart Cyber-Physical Systems
3. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2016) - DTM-6
4. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2019) - DTM-6-2 Human Behavior in Design
5. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2019) - CIE/MESA-10-1 Smart Cyber-Physical Systems
6. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2018) - DTM-5-1 Human Behavior in Design I
7. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2018) - DTM-1-5 Metrics for Design Research³⁹
8. IEEE 13th System of Systems Engineering Conference (SoSE2018) - Reliability in System of Systems Engineering Special Session
9. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2016) - DTM-6-2 Model-Based Design Methods and Tools
10. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2015) - DFMLC-6 Design for Additive Manufacturing

Technical Conference Cafe Host

1. INCOSE International Symposium (INCOSE IS 2020) - Monday Virtual Cafe #2 Host
2. INCOSE International Symposium (INCOSE IS 2020) - Tuesday Virtual Cafe #2 Host

Technical Conference Review Coordinator

³⁹I filled in for B.M. O'Halloran who could not attend the conference.

1. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2023) - CIE-15 SEIKEM: Systems Engineering and Complex Systems
2. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2022) - CIE-15 SEIKEM: Systems Engineering and Complex Systems
3. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2022) - CIE-17 SEIKEM: Mission Engineering
4. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2021) - CIE-02: CIE: Cyber-Physical Systems
5. ASME International Design Engineering Technical Conference (IDETC/CIE2020) - Trends Impacting Design Processes – Design Theory and Methodology (DTM)
6. ASME International Design Engineering Technical Conference (IDETC/CIE2020) - Design & Engineering for Global Development – Design Theory and Methodology (DTM)
7. ASME International Design Engineering Technical Conference (IDETC/CIE2016) - Design Theory and Methodology (DTM)

Technical Conference Review Co-Coordinator

1. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2021) - DTM 02: Design Method
2. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2019) - DTM: Human Behavior in Design
3. ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2017) - DTM: Design of Complex Systems
4. ASME International Design Engineering Technical Conference (IDETC/CIE2013) - Computers and Information in Engineering (CIE)

Technical Conference Competition Organizer

1. ASME 2022 Hackathon at the ASME International Design Engineering Technical Conference & Computers and Information in Engineering (IDETC/CIE2022)

Workshop Breakout Session Host

1. NSF Engineering Design and Systems Engineering Workshop, Purdue University, October 2019 – Aerospace and Defense Systems

Other External Service Activities, Including Community Service

1. Forked Meadow Restoration
Heavy Equipment Operator, Mechanic, and Ecosystem Restoration Technician – 2018 - Present
2. Honda Pacific Coast PC800 Motorcycle Community
Member – 2010 - Present

Visiting Researchers Attracted

- VRA 1. Ryan Arlitt, Oregon State University, July 2016
- VRA 2. Nikolaos Papakonstantinou, VTT Technical Research Centre of Finland, August 2015
- VRA 3. Yan Wang, George W. Woodruff School of Mechanical Engineering, Georgia Tech, December 2014
- VRA 4. Alessondra Springmann, National Astronomy and Ionosphere Center, Arecibo Observatory, October 2013