Daniel A. Eisenberg

Department of Operations Research ◇ Naval Postgraduate School
Glasgow Hall, Room 255 ◇ 1 University Dr., Monterey, CA 93943
daniel.eisenberg@nps.edu ◇ https://faculty.nps.edu/deisenberg

EDUCATION

Arizona State University
Ph.D., Civil, Environmental, and Sustainable Engineering May 2018
M.S.E., Civil, Environmental, and Sustainable Engineering May 2016
Dissertation Title: How to Think About Resilient Infrastructure Systems
Dissertation Advisors: Thomas P. Seager (ASU), Jeryang Park (Hongik University)

University of California, Davis
B.S., Chemical Engineering; Minor: Music Performance, Percussion Dec 2010

CURRENT ACADEMIC APPOINTMENTS

Naval Postgraduate School, Monterey, CA
Assistant Professor Department of Operations Research Jul 2022 - *Present*
Director Center for Infrastructure Defense Jan 2023 - *Present*

FUNDED RESEARCH (TOTAL $9.5M)

Lead PI - US Virgin Islands Water Resilience Jan 2024 - Dec 2026
Funding amount: $349,725
Funding Agency: Federal Emergency Management Agency (FEMA)
Conducting data collection, model development, and analysis to support replacement of USVI water distribution systems. Producing new knowledge on water source availability and cistern water use across the territory.

Lead PI - US Marine Corps Installation Resilience Nov 2024 - Oct 2025
Funding amount: $300,000
Funding Agency: Marine Corps Installations Command (MCICOM)
Support a new campaign of learning for MCICOM that involves the development of research and educational programs for installation energy security and climate resilience.

Lead PI - Climate Impacts on Water Infrastructure in the DoD Mar 2023 - Mar 2026
Funding amount: $1,664,660
Funding Agency: Environmental Security Technology Certification Program (ESTCP)
The objective of this Phase I project is to develop a seamless, integrated suite of established models and methods for climate vulnerability assessment specifically tailored for Department of Defense (DoD) installations and water infrastructure called the Climate Impacts on Water Infrastructure in the DoD (CIWI-D) [pronounced seaweed].

Co-PI - Assessing Infrastructure & Climate Surprise Mar 2021 - Mar 2025
Funding amount: $2,441,192
Funding Agency: SERDP; Award #RC21-12333
Advancing Resilience Theory and Tools to Combat Environmental Surprise (Lead PI: David Alderson, NPS). Funding supports advancing new knowledge on how surprise impacts critical infrastructure operations and military missions. Goal is to develop an integrated software and training platform for installation and community resilience to climate change.

Co-PI - Malign Foriegn Influence on Emerging Tech Nov 2022 - Oct 2024
Funding amount: $375,000
Funding Agency: Idaho National Labs Laboratory Directed Research and Development (LDRD)
Quantifying Organizational Influence on Critical Infrastructure Systems (Lead PI: Gabriel Weaver, INL). Developing automated and standard ways to model adversarial business behaviors—such as acquisitions, malicious updates, and spearphishing—as operations on a multilayered network. Using these techniques, we study adversarial business activities in emerging renewable energy technologies.

Past Awards
Lead PI - Infrastructure Resilience Collaboration & Assessment Mar 2020 - Mar 2023
Funding amount: $1,288,043
Funding Agency: Strategic Environmental Research and Development Program (SERDP): Award #RC20-1091
Modeling Compound Threats to Interdependent Infrastructure Systems on Military Installations. Funding supports the Critical Infrastructure Resilience Assessment and Collaboration (CIRCA) project on Naval Station Newport, Marine Corps Recruit Depot Parris Island, and Marine Corps Base Hawaii.

Co-PI - Interdependent Infrastructure Resilience in he USVI Apr 2020 - Jun 2023
Funding amount: $494,999
Funding Agency: Federal Emergency Management Agency (FEMA)
Operational Resilience and Capacity Building in the US Virgin Islands (Lead PI: David Alderson, NPS). Modeling and analysis efforts to guide efficient and effective disaster recovery and resilient adaptation of USVI lifeline infrastructure systems.

Proposal Author / Coordinator - Virtual Installations Oct 2017 - Sep 2019
Funding amount: $175,000
Funding Agency: Office of Naval Research (ONR)
Resilience Assessment for Emerging Energy Technology (Lead PIs: David Alderson, Dan Nussbaum, NPS). Creating models to test the viability and resilience benefits of new energy technologies in a virtual military installation.

Proposal Author / Coordinator - C2 Network Vulnerability Jun 2016 - Mar 2019
Funding amount: $450,000
Funding Agency: Defense Threat Reduction Agency (DTRA): Award #18681
Operational Resilience of Command and Control Systems to Maintain Multilayered Network Functionality in Response to Large-Scale Disruptive Events (Lead PI: David Alderson, NPS; Igor Linkov, US Army Corps of Engineers). Developed small- and large-scale sociotechnical models for infrastructure emergency response.

Lead PI - Navajo Tribal Energy Project Jun 2015 - Sep 2015
Funding amount: $23,626
Funding Agency: National Science Foundation (NSF)
NSF Integrative Graduate Research Education and Traineeship Innovation Fund. Navajo Tribal Energy Project to conduct techno-economic analysis of renewable energy systems.

Lead PI - Power Infrastructure Resilience in Korea Jun 2015 - Sep 2015
Funding amount: $5,000
Funding Agency: NSF
NSF Graduate Research Opportunities Worldwide (GROW) to conduct resilience analysis of electric power systems in South Korea.

Proposal Author / Coordinator - Infrastructure Resilience Sep 2014 - Aug 2018
Funding amount: $1,949,788
Funding Agency: NSF: Award #1441352
Resilience Simulation for Water, Power & Road Networks (Lead PI: Thomas Seager, ASU). Integrated modeling and simulation for resilience analysis of interdependent electric power, water, and transportation systems.

HONORS AND AWARDS

MORS Wayne P. Hughes Award for Outstanding Junior Analyst	2023
Naval Postgraduate School Teaching Fellow	2018 - 2019
NSF Graduate Research Fellowship	2015 - 2018
Resilience Engineering Associate Young Talents Program	2017
NSF IGERT Fellowship: Solar Utilization Network	2013 - 2015
NSF Graduate Research Opportunities Worldwide: South Korea	2015
NSF East Asia and Pacific Summer Institutes: South Korea	2014
Fulbright Research Fellowship: Brazil	2012 - 2013
UC Davis Faculty Award in Music Performance	2011

PROFESSIONAL EXPERIENCE

Naval Postgraduate School, Monterey, CA
Director Center for Infrastructure Defense Jan 2023 - *Present*
Deputy Director Center for Infrastructure Defense Jan 2019 - Dec 2022
Leading efforts on critical infrastructure research and education across NPS campus. Coordinating projects with infrastructure stakeholders, federal agencies, and national labs.

Assistant Professor Department of Operations Research Jul 2022 - *Present*
Research Assistant Professor Department of Operations Research Jun 2018 - Jul 2022
Advising active military officer students and delivering courses on critical infrastructure analysis.

Arizona State University, Temple, AZ
Ph.D. Student Sustainable Engineering Aug 2013 - May 2018
Advisors: Thomas Seager & Jeryang Park
Developed new theoretical perspective on resilience analysis and design. Used power grid and social network models to study the resilience of the South Korean power grid.

Hongik University, Seoul, South Korea
International Research Fellow Civil Engineering Summer 2014 & 2015
Advisor: Jeryang Park
Interviewed experts across the South Korean electric power and emergency management industries to assess and improve national blackout management plans.

US Army Research and Development Center, Concord, MA
Resilience Research Engineer Jan 2013 - Mar 2018
Director: Igor Linkov
Created network models to study the resilience of military and civil infrastructure systems. Designed a resilience metrics framework now widely used across the US Army Corps of Engineers.

Polo National Laboratories, Florianópolis, SC, Brazil
Advisor: Cesar Deschamps
Fulbright Scholar to Brazil Mar 2012 - Dec 2012
Assessed the use of sustainable materials and efficient designs for refrigeration compressors.

University of California, Davis, CA
Research Scientist Jan 2011 - Mar 2012
Advisors: Julie Schoenung & Ronald Phillips
Developed a hazard-based method to assess the impacts of thin film solar panels. Conducted fluid mechanics research on flows in non-Newtonian, shear thinning fluids.

Universidade Federal de São Paulo, Ilha Solteira, SP, Brazil
International Research Intern Jun 2010 - Aug 2010
Advisor: José Luis Gasche
Measured the relationship between orifice geometry and fluid velocity on compressor valve flows.

PUBLICATIONS

In Review

R1 Pesicka, E., **Eisenberg, D.A.** "When does Surprise Happen?: A Case Study of Hurricane Florence and Marine Corps Base Camp Lejeune" *IEEE Transactions on Engineering Management*.

R2 Seager, T.P., Pesicka, E., **Eisenberg, D.A.**, Alderson, D.L. "Infrastructure Resilience to Surprise" *Risk Analysis*.

Peer-Reviewed Articles

R3 Averitt, S., Dahl, E. and **Eisenberg, D.**, "The Electromagnetic Threat to the US: Resilience Strategy Recommendations." Journal of Critical Infrastructure Policy, 3(2), 125-150 (2023).

R4 Kitsak, M., Ganin, A., Elmokashfi, A., Cui, H., **Eisenberg, D.A.**, Alderson, D.L., Korkin, D., Linkov, I. "Finding shortest and nearly shortest path nodes in large substantially incomplete networks by hyperbolic mapping." *Nature Communications* 14 (1), 186 (2023).

R5 **Eisenberg, D.A.**, Fish, A.B., Alderson, D.L., "What's wrong with mission dependency index for U.S. federal infrastructure decisions?" *Risk Analysis* (2022).

R6 Klise, K., Moglen, R., Hogge, J., **Eisenberg, D.**, Haxton, T., "Resilience analysis of potable water systems after power outages in the US Virgin Islands," *ASCE Journal of Water Resource Planning and Management* 148 (12), 05022010 (2022).

R7 Alderson, D.L., Darken, R.P., **Eisenberg, D.A.**, Seager, T.P. "Surprise is inevitable: How do we train and prepare to make our critical infrastructure more resilient?" *International Journal of Disaster Risk Reduction*, 72, 102800 (2022).

R8 Sharkey, T.S., Nurre-Pinkley, S.G., **Eisenberg, D.A.**, Alderson, D.L., "In search of network resilience: An optimization-based view," *Newtorks*, 77 (2), 225-254, (2021).

R9 **Eisenberg, D.A.**, Park, J., Seager, T.P., "Linking cascading failure models and organizational networks to manage large-scale blackouts in South Korea," *ASCE Journal of Management in Engineering*, 36 (5), 04020067, (2020).

R10 **Eisenberg, D.A.**, Seager, T.P., Alderson, D.L., "Rethinking Resilience Analytics," *Risk Analysis*, 39 (9), 1870-1884, (2019).

R11 Kim, Y., Chester, M.V., **Eisenberg, D.A.**, Redman, C.L., "The infrastructure trolley problem: Positioning safe-to-fail infrastructure for climate change adaptation," *Earth's Future*, 7 (7), 704-717, (2019).

R12 Thomas, J.E., **Eisenberg, D.A.**, Seager, T.P., Fisher, E., "A resilience engineering approach to integrating human and socio-technical system capacities and processes for national infrastructure resilience," *Journal of Homeland Security and Emergency Management*, 16 (2), (2019).

R13 Clark, S.S., Chester, M.V., Seager, T.P., **Eisenberg, D.A.**, "The vulnerability of interdependent urban infrastructure systems to climate change: Could Phoenix experience a Katrina of extreme heat?" *Sustainable and Resilient Infrastructure*, 4 (1), 21-35, (2019).

R14 Markolf, S., Chester, M., **Eisenberg, D.**, et al., "Interdependent infrastructure as linked social, ecological, and technological systems (SETSs) to address lock-in and enhance resilience," *Earth's Future*, 6 (12), 1638-1659, (2018).

R15 Hollins, L.X., **Eisenberg, D.A.**, Seager, T.P., "Risk and resilience at the Oroville Dam," *Infrastructures*, 3 (4), 49, (2018).

R16 **Eisenberg, D.A**., Alderson, D.L., Kitsak, M., et al., "Network foundation for command and control (C2) systems: literature review," *IEEE Access*, 6, 68782-68794, (2018).

R17 Liu, R.R., **Eisenberg, D.A.**, Seager, T.P., Lai, Y.C., "The 'weak' interdependence of infrastructure systems produces mixed percolation transitions in multilayer networks," *Scientific Reports*, 8 (1), 1-13, (2018).

R18 Kitsak, M., Ganin, A.A., **Eisenberg, D.A.**, et al., "Stability of a giant connected component in a complex network," *Physical Review E*, 97 (1), 012309, (2018).

R19 Thomas, J.E., **Eisenberg, D.A.**, Seager, T.P., "Holistic infrastructure resilience research requires multiple perspectives, not just multiple disciplines," *Infrastructures*, 30 (3), (2018).

R20 Kim, Y., **Eisenberg, D.A.**, Bondank, E.B., et al., "Fail-safe and safe-to-fail adaptation: decision-making for urban flooding under climate change," *Climatic Change*, 145 (3), 397-412, (2017).

R21 **Eisenberg, D.A.**, Park, J. Seager, T.P., "Sociotechnical network analysis for power grid resilience in South Korea," *Complexity*, (2017).

R22 Kim, D.H., **Eisenberg, D.A.**, Chun, Y.H., Park, J., "Network topology and resilience analysis of South Korean power grid," *Physica A: Statistical Mechanics and its Applications*, 465, 13-24 (2017).

R23 Bartos, M., Chester, M., Gorman, B., Johnson, N., **Eisenberg D.**, et al., "Impacts of rising air temperatures on electric transmission ampacity and peak electricity load in the United States," *Environmental Research Letters*, 11 (11), 114008, (2016).

R24 Chen, Y.Z., Huang, Z.G., Zhang, H.F., **Eisenberg, D.**, Seager, T., "Extreme events in multilayer, interdependent complex networks and control," *Scientific Reports*, 5 (1), 1-13, (2015).

R25 **Eisenberg, D.A.**, Deschamps, J., "Experimental investigation of pressure distribution in turbulent flow between parallel and inclined disks," *Journal of Fluids Engineering*, 137 (11), (2015).

R26 Zhang, S.P., Huang, Z.G., Dong, J.Q., **Eisenberg, D.A.**, et al., "Optimization and resilience of complex supply-demand networks," *New Journal of Physics*, 17 (6), 063029, (2015).

R27 Larkin, S., Fox-Lent, C., **Eisenberg, D.**, et al., "Benchmarking agency and organizational practices in resilience decision making," *Environment Systems and Decisions*, 35 (2), 185-195, (2015).

R28 Wender, B.A., Foley, R.W., Prado-Lopez, V., Ravikumar, D., **Eisenberg, D.A.**, et al., "Illustrating anticipatory life cycle assessment for emerging photovoltaic technologies," *Environmental science & technology*, 48 (18), 10531-10538, (2014).

R29 Wender, B.A., Foley, R.W., Hottle, T.A., Sadowski, J., Prado-Lopez, V., **Eisenberg, D.A.**, et al. "Anticipatory life-cycle assessment for responsible research and innovation," *Journal of Responsible Innovation*, 1 (2), 200-207, (2014).

R30 **Eisenberg, D.A.**, Linkov, I., Park, J., et al., "Resilience Metrics: Lessons from Military Doctrines," *Solutions*, 5, 76-87, (2014).

R31 Linkov, I., **Eisenberg, D.A.**, Bates, M.E., et al., "Resilience metrics for cyber systems," *Environment Systems and Decisions*, 33 (4), 471-476, (2013).

R32 **Eisenberg, D.A.**, Yu, M., Lam, C.W., et al, "Comparative alternative materials assessment to screen toxicity hazards in the life cycle of CIGS thin film photovoltaics," *Journal of hazardous materials*, 260, 534-542, (2013).

Book Chapters

B1 **Eisenberg, D.A.**, Alderson D.L., "Operational Energy Vulnerability and Resilience." In: *Operational Energy*, Howard, A., Nussbam, D., Schaffer, B. (eds.). De Gruyter (2024).

B2 Seager, T.P., Spierre Clark, S., **Eisenberg, D.A.**, et al., "Redesigning Resilient Infrastructure Research," in: *Resilience and Risk: Methods and Application in Environment, Cyber and Social*, Linkov, I., Palma Olivera, J. (eds.), Ch. 3, Springer, (2017).

B3 Snell, M.L., **Eisenberg, D.A.**, Seager, T.P., et al., "A multidimensional review of resilience: Resources, processes, and outcomes," in: *The International Risk Governance Council Resource Guide on Resilience*, IRGC, (2016).

B4 **Eisenberg, D.A.**, Grieger, K.D., Hristosov, D.R., et al., "Risk assessment, life cycle assessment, and decision methods for nanomaterials," in: *Nanomaterials in the Environment*, ASCE press, 382-419, (2015).

B5 Tatham, E.K., **Eisenberg, D.A.**, Linkov, I., "Sustainable urban systems: A review of how sustainability indicators inform decisions," in: *Sustainable Cities and Military Installations*, Linkov, I. (ed.), Springer Netherlands, 3-20, (2014).

Peer-Reviewed Conference & Other Publications

O1 Weaver, G., **Eisenberg, D.A.**, Stewart, E., "Evaluating Direct and Indirect Influence on EV Charging Stations Across the US." IEEE Power and Energy Society Conference (2024).

O2 Pesicka, E.A., **Eisenberg, D.A.**, Alderson, D.L., "Installation Resilience to Weather Extremes and Climate Change: Learning from Recent Surprises." Naval Postgraduate School Technical Report NPS-OR-23-015, April (2024).

O3 Wigal, J., **Eisenberg, D.A.**, Alderson, D.L., "Cellular Coverage Mapping in the US Virgin Islands." Naval Postgraduate School Technical Report NPS-OR-23-001 (2023).

O4 **Eisenberg, D.A.**, "The Need to Consider Residual Risk," Nature Climate Change, (2021).

O5 Alderson, D.L., Bunn, B.B., **Eisenberg, D.A.**, et al., "Interdependent Infrastructure Resilience in the U.S. Virgin Islands: Preliminary Assessment," Technical Report, (2018).

O6 **Eisenberg, D.A**., Park, J., Kim, D., Seager, T.P. , "Resilience analysis of critical infrastructure systems requires integration of multiple analytical techniques," Urban Sustainability and Resilience Conference, London, U.K., (2014).

O7 Linkov, I., **Eisenberg, D.A.**, Bates, M.E., et al., "Measurable Resilience for Actionable Policy," Environmental Science & Technology, 47, 10108-10110, (2013).

O8 **Eisenberg, D.A.**, Bates, M.E., Seager, T.P., Linkov, I. "Resilience metrics of coupled coastal-energy systems," ANS Transactions, Risk Management Topical Meeting, American Nuclear Society, Washington D.C., (2013).

O9 **Eisenberg, D.A.**, Yu, M., Lam, C.W., Ogunseitan, O.A., Schoenung, J.M. "Overcoming the difficulties of accurate hazard assessment for electronic devices: A life cycle hazard projection approach," Presented at Electronics Going Green 2012+, Berlin, Germany, (2012).

THESES ADVISED

* indicates advisor or co-advisor

T1 *Hilaire, N., "Comparing the Benefits of Robustness and Extensibility for the Resilience of Queueing Systems," Master's Thesis in Operations Research, Naval Postgraduate School (2024, expected).

T2 *Romine, D., "Climate impacts on DoD water systems considering extreme weather and mission-essential services," Master's Thesis in Operations Research, Naval Postgraduate School (2024, expected).

T3 *Shannon, R., "Modeling and Analyzing Sociotechnical Networks for Alternative Vehicle Charging and Refueling Infrastructure," Master's Thesis in Operations Research, Naval Postgraduate School (2024, expected).

T4 *Perez, M., "Integrated Modelling for Climate Vulnerability Assessment of DoD Water Infrastructure Master's Thesis in Operations Research, Naval Postgraduate School (2024, expected)

T5 *Oliveros, O. "Test Model for Power Distribution on US Navy Installations," Master's Thesis in Operations Research, Naval Postgraduate School (2024, expected).

T6 *Goodell. F. "Emergency Fuel Distribution for Disaster Relief on Marine Corps Base Hawaii," Master's Thesis in Operations Research, Naval Postgraduate School (2023). ***Awarded Military Operations Research Society Stephen A. Tisdale Research Prize for Outstanding Thesis***

T7 *Wigal, J. "Optimal Hybrid Distribution of Food Supplies to Windward Oahu," Master's Thesis in Operations Research, Naval Postgraduate School (2023).

T8 *Johnson, G. "Optimal Geographic Alignment of US Army Recruiting Command Resources to Reduce Mission Risk," Master's Thesis in Operations Research, Naval Postgraduate School (2023).

T9 *Magno, J. "Vulnerability Analysis of Guam's Defense Posture," Master's Thesis in National Security Affairs, Naval Postgraduate School (2022).

T10 *Domanowski, C. "Robust Evacuation Plans for Naval Station Newport and Aquidneck Island," Master's Thesis in Operations Research, Naval Postgraduate School (2022).

T11 *Husemann, T. "Optimal Last-Mile Supply Distribution for Marine Corps Base Hawaii and Windward Oahu During Natural Disasters," Master's Thesis in Operations Research, Naval Postgraduate School (2022).

T12 Monson, A. "Resilience Analysis of DoD Ports and Port Operations," Master's Thesis in National Security Affairs, Naval Postgraduate School (2022).

T13 *Averitt, S. "The EMP threat to United States: Recommendations for Resilience," Master's Thesis in National Security Affairs, Naval Postgraduate School (2021).

T14 *Jones, A. "Mission-informed Evacuation Models for Naval Station Newport and Aquidneck Island," Master's Thesis in Operations Research, Naval Postgraduate School (2021). ***Awarded Chief Naval Officer's Award for Operations Research Outstanding Thesis***

T15 Holleman, C. "The Role of Public and Private Actors in Securing Clean Energy Infrastructure," Master's Thesis in National Security Affairs, Naval Postgraduate School (2021).

T16 *Fish, A.B. "Overcoming Flaws in the Mission Dependency Index (MDI) with Network Flow Analysis," Master's Thesis in Operations Research, Naval Postgraduate School (2021).

T17 *Pulliam, D. "Developing a Framework for Analyzing the Resilience of Forward Expeditionary Port Refueling Infrastructure," Master's Thesis in Operations Research, Naval Postgraduate School (2021). ***Awarded Military Operations Research Society Stephen A. Tisdale Research Prize for Outstanding Thesis***

T18 *Hester-Dudley, M. "Building Resilience within DoD Microgrids by Considering Human Factors in Recovery Procedures," Master's Thesis in Systems Engineering, Naval Postgraduate School (2021).

T19 *Kuc, M. "A Computational Framework for Optimization-based Interdependent Infrastructure Analysis and Vulnerability Assessment," Master's Thesis in Operations Research, Naval Postgraduate School (2020).

T20 Routley, R.D. "An Operational Model of the Critical Supply Chain for St. Thomas and St. John," Master's Thesis in Operations Research, Naval Postgraduate School (2020).

T21 *Bengigi, E. "Efficiency and Resilience Trade-offs for Roadway Intersection Design in the U.S. Virgin Islands," Master's Thesis in Operations Research, Naval Postgraduate School (2020).

T22 *Moeller, B.T. "Synthetic Network Generation and Vulnerability Analysis of Internet Infrastructure Systems in the U.S. Virgin Islands," Master's Thesis in Operations Research, Naval Postgraduate School (2020).

T23 *Wine, W.M. "Analyzing Cell Phone Network Resilience in the U.S. Virgin Islands," Master's Thesis in Operations Research, Naval Postgraduate School (2020).

T24 Borgdorff, A.J.. "Measuring and Modeling Potable Water Demand in the United States Virgin Islands," Master's Thesis in Operations Research, Naval Postgraduate School (2020).

T25 Harinandan, C.M. "How do Transportation Projects with Chinese Funding Compare to Transportation Projects without Chinese Funding in Ethiopia?," Master's Thesis in National Security Affairs, Naval Postgraduate School (2020).

T26 *Wille, D. "Simulation-optimization for operational resilience of interdependent water-power systems in the U.S. Virgin Islands," Master's Thesis in Operations Research, Naval Postgraduate School (2019).

T27 *Good, J.E. "An Operational Model of Critical Supply Chain for the U.S. Virgin Islands," Master's Thesis in Operations Research, Naval Postgraduate School (2019). ***Awarded Military Operations Research Society Stephen A. Tisdale Research Prize for Outstanding Thesis***

T28 Diaz, D.O. "An Optimization-based Approach to Measuring Robustness in Command and Control Networks," Master's Thesis in Operations Research, Naval Postgraduate School (2019).

T29 *Barrow III, H. "Network Shaping," Master's Thesis in Operations Research, Naval Postgraduate School (2019).

T30 *Bunn, B.B. "An Operational Model of Interdependent Water and Power Distribution Infrastructure Systems," Master's Thesis in Operations Research, Naval Postgraduate School (2019).

T31 *Rodriguez, J.R. "Assessing Water Distribution Infrastructure Recovery from Component Failures through a Resilience Lens," Master's Thesis in Civil, Environmental, and Sustainable Engineering, Arizona State University (2016).

T32 Kim, D.H. "Resilience analysis of Korean power grid using complex network theory." Master's Thesis in Civil Engineering, Hongik University (2016).

T33 Jang, G.U. "Self-organizing topology and resilience of urban road networks in South Korea," Master's Thesis in Civil Engineering, Hongik University (2016).

TEACHING EXPERIENCE

Naval Postgraduate School, Monterey, CA
Operations Research for Energy Systems Analysts (*Online*) 2023 - *Present*
Systems Optimization (*Online*) 2022 - *Present*
Critical Infrastructure Analysis & Defense (*Online and In-Person*) 2018 - 2021

Naval Facilities Command (NAVFAC) Civil Engineering Corps Officer School (CECOS)
Critical Infrastructure Vulnerability & Resilience *Intermediate* 2021 - *Present*
Critical Infrastructure Vulnerability & Resilience *Advanced* 2021 - *Present*

NATO Lituanian - Polish - Ukranian Brigade
Critical Energy Infrastructure Protection & Resilience *Short Course* 2023 - *Present*

The NATO School, Oberammergau, Germany
Critical Energy Infrastructure Protection & Resilience *Short Course* 2019
Critical Energy Infrastructure Protection & Resilience *Short Course* 2018

The NATO ICI Regional Center, Kuwait City, Kuwait
Critical Energy Infrastructure Protection & Resilience *Short Course* 2019

ADA University, Baku, Azerbaijan
Critical Energy Infrastructure Protection & Resilience *Short Course* 2021
Critical Energy Infrastructure Protection & Resilience *Short Course, Online* 2020
Critical Energy Infrastructure Protection & Resilience *Short Course* 2019

Arizona State University, Tempe, AZ, USA
Urban Infrastructure Anatomy *Guest Lecture* 2024
Earth Systems Engineering *Guest Lecture* 2023
Resilient Infrastructure Research Seminar 2017
Resilience Engineering *Lead TA* 2015
Sustainable Civil & Environmental Systems Engineering *Lead TA* 2015

ACADEMIC SERVICE

DoD and Federal Leadership Positions
Naval Postgraduate School
Director Center for Infrastructure DEfense 2022 - *Present*
Leader USMC Installations Campaign of Learning 2023 - *Present*
Leadership Committee NPS Climate Security Network 2022 - *Present*
Co-Chair LaTeX Users & Experts Group 2020 - *Present*

Marine Corps Installations Command (MCICOM)
Lead Organizer Marine Installations Board 2023
Lead Organizer Exercise Semper Durus Observer 2024

Environmental Security Working Group (ESWG)
Member Education, Research, and Training Committee 2020 - *Present*

Resource Competition, Environmental Security, and Stability (RECESS)
Member Education, Research, and Training Committee 2020 - *Present*

Military Energy Resilience Catalyst (MERC)
Member MERC Faculty 2020 - *Present*

Professional Societies
International Council on Systems Engineering (INCOSE)
Chair Critical Infrastructure Protection and Recovery 2020 - *Present*

Military Operations Research Society (MORS)
Co-Chair Critical Infrastructure Analysis, Protection, and Recovery (WG 3) 2022 - *Present*
Chair Critical Infrastructure Analysis, Protection, and Recovery (WG 3) 2018 - 2022

Workshop Organizer
INCOSE International Workshop
Lead Organizer CIPR Working Group Workshop Jan 2024
Lead Organizer CIPR Working Group Workshop Jan 2022
Lead Organizer CIPR Working Group Workshop Jan 2021
Organizer CIPR Working Group Workshop Jan 2020

Naval Postgraduate School, Monterey, CA
Lead Organizer Advancing Resilience from Theory to Practice Apr 2019
Organizer Making Infrastructure Work Sep 2016

Reviewer & Editorial Positions
Editorial Board Member Infrastructures 2021 - *Present*
Editorial Board Member ASCE Journal of Infrastructure Systems 2019 - *Present*

Reviewer Various High-Impact Journals, including: Nature Climate Change, npj Urban Sustainability, Operations Research, INFORMS Journal on Computing, Risk Analysis, and Reliability Engineering & System Safety among others.