Curriculum Vitae for David L. Alderson, Ph.D.
January 2023

Professor
Operations Research Department
Naval Postgraduate School
Monterey, California 93943-5000

Office: Glasgow 258
Email: dlalders@nps.edu
Office Phone: 831-656-1814
Website: https://faculty.nps.edu/dlalders

EDUCATION

Stanford University, School of Engineering
Ph.D., Department of Management Science and Engineering, June 2003
Dissertation Title: *Congestion-Induced Collapse in Networks: Managing Failure Cascades in Complex Systems and Infrastructure Protection*
Advisors: William J. Perry, Nicholas Bambos
M.S., Department of Engineering-Economic Systems and Operations Research, June 1998

Princeton University, School of Engineering and Applied Science
B.S.E., Department of Civil Engineering and Operations Research, June 1993

HONORS AND AWARDS

2021 Richard W. Hamming Annual Teaching Award
2017 Richard W. Hamming Annual Faculty Award for Interdisciplinary Achievement
2016 ACM SIGCOMM Test of Time Paper Award
2014 Carl E. and Jessie W. Menneken Faculty Award for Excellence in Scientific Research
2011, 2014 Military Operations Research Society Richard H. Barchi Prize
2009 American Institute of Astronautics and Aeronautics 2006-2009 Homeland Security Award
2007, 2018 RADM John J Schiffelin Teaching Award Finalist (top 5% of faculty)
2002 Research Fellow, Institute for Pure and Applied Mathematics, UCLA, Los Angeles, CA
2000 Steinmetz Fellow, Santa Fe Institute, Santa Fe, NM

PROFESSIONAL EXPERIENCE
ACADEMIC POSITIONS:

Naval Postgraduate School, Monterey, CA
Professor, Operations Research Department — July 2019 – Present
Associate Professor, Operations Research Department — July 2012 – June 2019
Assistant Professor, Operations Research Department — Sept. 2006 – June 2012
Responsible for instruction and advising of military officer graduate students, as well as the creation and delivery of sponsored research projects.

Founding Director, NPS Center for Infrastructure Defense — February 2010 - Present
Developing new theoretical and applied techniques to assess infrastructure vulnerability from deliberate and non-deliberate threats and identify optimal investments for resilience.

California Institute of Technology, Pasadena, CA — June 2003 – September 2006
Postdoctoral Scholar, Division of Engineering and Applied Science
Working with John Doyle to understand the "robust, yet fragile" characteristics of infrastructure network systems, with emphasis on design, architecture, and protocols.

Stanford Center for International Security & Cooperation, Stanford, CA — 2003 - 2006
Senior Research Associate, Preventive Defense Project
Ongoing development of a research program to address the technological, economic, social, and legal challenges that confront efforts to secure the national cyber infrastructure.

PROFESSIONAL EXPERIENCE (CONT.)

INDUSTRY POSITIONS:

Flywheel Ventures, Santa Fe, NM   May 2003 – Present
- Strategic advisor to venture capital firm focused on seed- and early-stage technology businesses.

Independent Consultant, Redwood City, CA   January 2002 – May 2003
- Technical assessment of technology, product, and market for high-tech startups.
- Clients consist primarily of venture capital firms and venture-backed startups.

Reactivity, Inc., Belmont, CA   June 2000 – February 2001
- Member of a core team of employees who conceived, founded, and launched enterprise software spinout with funding from top-tier venture capital firm.
- Responsibilities included product strategy, marketing, and financial modeling.

Xerox Palo Alto Research Center, Palo Alto, CA   Summer 1997
Summer Intern
- Prototype design and implementation of job management system for network-based document services delivery system.

Internet Connect, Inc., Salt Lake City, UT   Summer 1996
Founding Employee and Co-Owner
- Setup, operation, and co-owner of local Internet Service Provider (ISP) company.

Goldman, Sachs & Co., New York, NY   June 1993 – May 1996
Programmer Analyst, Equity Derivative Systems
- Development and maintenance of in-house position and risk management system supporting volatility trading of equity derivative securities.
- Senior programmer and co-technical lead. 24-hour system, 50+ users, 5 global locations.

ACADEMIC PROFILE

RESEARCH OVERVIEW:

My research focuses on the function and operation of critical infrastructures, with particular emphasis on how to invest limited resources to ensure efficient and resilient performance in the face of accidents, failures, natural disasters, or deliberate attacks. Tradeoffs between efficiency, complexity, and fragility in networks are evident in a wide variety of public and private cyber-physical systems; these range from computer communications systems such as the Internet, to transportations systems such as railroads and highways, to the electricity grid and other energy distribution networks. As the engineering complexities and practical importance of these networks continue to grow, there is an emerging need for new methods to assess, manage, and mitigate the associated risks. The use of constrained optimization models to represent the decisions of an infrastructure operator who guides the behavior of her system as a whole, even in the presence of disruptions, makes it possible to systematically evaluate the consequences associated with the loss infrastructure components, and leads to a precise notion of "operational resilience" that facilitates model verification, validation, and the creation of reproducible results. Such understanding is critical for the development of appropriate management strategies and design of next generation infrastructures.

THESIS SUPERVISION

36 M.S. theses at NPS as advisor, 15 as co-advisor and 28 as second reader.

RESEARCH FUNDING

2021-2025	Principal Investigator, Advancing Resilience Theory and Tools to Combat Environmental Surprise, Strategic Environmental Research and Development Program (SERDP)
2020-2023	Co-Principal Investigator, Modeling Compound Threats to Interdependent Infrastructure Systems on Military Installations, Strategic Environmental Research and Development Program (SERDP)
2017-Pres.	Principal Investigator, Infrastructure Systems (IS) Recovery Support Function (RSF) in the US Virgin Islands, Federal Emergency Management Agency
2015-2020.	Co-Principal Investigator, Operational Resilience of Command and Control Systems to Maintain Multilayered Network Functionality in Response to Large-Scale Disruptive Events, Defense Threat Reduction Agency (6.1 Research)
2014-2015	Principal Investigator, Assessing Risk and Identifying How to Improve Resilience of the Energy Supply Chain in the Pacific Theatre: Refinery Capacity Analysis, Office of the Assistant Secretary of Defense
2011-2017	Co-Principal Investigator, Defending Interdependent Infrastructure Systems, Defense Threat Reduction Agency (6.1 Research)
2012-2012	Principal Investigator, Analysis and Testing of the Defender-Attacker-Defender (D-A-D) Model, United States Coast Guard
2011-2012	Principal Investigator, Improving the Resilience of Guam Military Infrastructure, Air Force Research Laboratory
2010-2011	Co-Principal Investigator, Vulnerability Analysis of Electric Power Infrastructure Supporting Vandenberg AFB, Office of the Secretary of Defense
2010-2011	Co-Principal Investigator, Reinforced Infantry Battalion Mobile Ad-hoc Network (MANET) Study Technical Support, Marine Corps Combat Development Command (MCCDC)
2010-2010	Co-Principal Investigator, Performance Analysis of Ground Soldier Mobile Ad-Hoc Networks, U.S. Army Training and Doctrine Command (TRADOC) Analysis Center
2008-2014	Co-Principal Investigator, Next-Generation Network Science, Office of Naval Research, Multiple University Research Initiative (MURI) Award (6.1 research)
2007-Pres.	Co-Principal Investigator, Military Applications of Optimization, Office of Naval Research (6.2 research)
2006-2008	Principal Investigator, Optimization-Based Reverse Engineering of Router-Level Internet Infrastructure, NPS Research Initiation Program (6.1 research)

PUBLICATIONS

PEER-REVIEWED PAPERS

- Kitsak M, Ganin A, Elmokashfi A, Hongzhu C, Eisenberg DA, Alderson DL, Korkin D, & Linkov I, 2023 "Finding shortest and nearly shortest path nodes in large substantially incomplete networks by hyperbolic mapping," *Nature Communications* 14, Article number: 186, 1-9.

- Woods DD, Alderson DL, 2022 "Progress Toward Resilient Infrastructures: Are we falling behind the pace of events and changing threats?," *Journal of Critical Infrastructure Policy*, 2(2):5-18. doi: 10.18278/jcip.2.2.2.
- Alderson DL, Darken RP, Eisenberg DE, Seager TP, 2022 "Surprise is inevitable: How do we train and prepare to make our critical infrastructure more resilient?," *International Journal of Disaster Risk Reduction*, 72: 102800, 1 April 2022
- Alderson DL, 2021 "Interactive Computing for Accelerated Learning in Computation and Data Science," *INFORMS Transactions on Education*. 1-16. Published online in Articles in Advance 05 Oct 2021.
- Sharkey TC, Nurre Pinkley SG, Eisenberg DA, Alderson DL. "In search of network resilience: An optimization-based view," *Networks*. 2020;1-30. https://doi.org/10.1002/net.21996
- Alderson, D.L., Funk, D., and Gera, R., 2019, "Analysis of the global maritime transportation system as a layered network," *Journal of Transportation Security*, Online First: First published: 29 November 2019, DOI:10.1007/s12198-019-00204-z.
- Eisenberg, D.A., Seager, T.P., and Alderson, D.L., 2019, "Rethinking Resilience Analytics," *Risk Analysis*, 39(9): 1870-1884, DOI:10.1111/risa.13328.
- Eisenberg, D.A., Alderson, D.L., Kitsak, M., Ganin, A.A., and Linkov, I., 2018, "Network Foundation for Command and Control (C2) Systems: Literature Review," *IEEE Access* 6(1):1-13, December, DOI: 10.1109/ACCESS.2018.2873328.
- Nicholas, P., Alderson, D.L., 2018, Fast Design of Wireless Mesh Networks to Defend Against Worst-Case Jamming, *Military Operations Research*, Vol. 23, No. 3, pp. 5-20.
- Kitsak, M., Ganin, A.A., Eisenberg, D.A., Krapivsky, P.L., Krioukov, D., Alderson, D.L., and Linkov, I., 2018, "Stability of a giant connected component in a complex network," Physical Review E, 97, 012309.
- Alderson, D.L., Brown, G., Carlyle, W.M., and Wood, R.K., 2017, "Assessing and Improving the Operational Resilience of a Large Highway Infrastructure System to Worst-Case Losses," *Transportation Science*, Published Online in Articles in Advance: July 19, 2017, https://doi.org/10.1287/trsc.2017.0749.
- Alderson, D.L., Brown, G., and Carlyle, W.M., 2015, "Operational Models of Infrastructure Resilience," *Risk Analysis* 35(4): 562-586. (received Society for Risk Analysis Award for Best Paper of 2015 in Risk Analysis)
- Yuan, E.C., Alderson, D.L., Stromberg, S., and Carlson, J.M., 2015, "Optimal vaccination in a stochastic epidemic model of two non-interacting populations," *PLoS ONE* 10(2): e0115826. doi:10.1371/journal.pone.0115826.
- Schramm, H.C., Alderson, D.L., Carlyle, W.M., and Dimitrov, N.B., 2014, "A Game Theoretic Model of Strategic Conflict in Cyberspace," *Military Operations Research*, 19(1), pp. 5-17
- Carlson, J.M., Alderson, D.L., Stomberg, S.P., Bassett, D.S., Craparo, D.M., Gutierrez-Villareal, F., Otani, T., 2014, "Measuring and Modeling Behavioral Decision Dynamics in Collective Evacuation," *PLoS ONE*. DOI: 10.1371/journal.pone.0087380
- Alderson, D., Brown, G., Carlyle, M., and Cox, L. A., 2013, "Sometimes There is No "Most-Vital" Arc: Assessing and Improving the Operational Resilience of Systems," *Military Operations Research*, 18(1), pp. 21-37.
- Salmerón, J., Alderson, D. and Brown, G., 2013, "Analyzing the Resilience of Electric Power Infrastructure Supporting Vandenberg Air Force Base (U)," *National Security and Operations Research*, Volume 1, No. 2.

- Bassett, D.S., Alderson, D.L., Carlson, J.M., 2012, "Collective decision dynamics in the presence of external drivers," *Physical Review E* 86, 036105.
- Nicholas, P., Alderson, D.L., 2012, "Fast, Effective Transmitter Placement in Wireless Mesh Networks," *Military Operations Research*, Vol. 17, No. 4, pp. 69-84.
- Petrovic, N., Alderson, D.L., and Carlson, , J.M., 2012, Dynamic Resource Allocation in Disaster Response: Tradeoffs in Wildfire Suppression, *PLoS ONE*, 7(4): e33285. doi:10.1371/journal.pone.0033285.
- Page, M. T., Alderson, D., and Doyle, J., 2011, The magnitude distribution of earthquakes near Southern California faults, *Journal of Geophysical Research*, 116, B12309.
- Alderson, D.L., and Doyle, J.C., 2010, Contrasting Views of Complexity and Their Implications for Network-Centric Infrastructures. *IEEE Transactions on Systems, Man, and Cybernetics-Part A*, 40(4): 839-852.
- Alderson, D., 2008. Catching the "Network Science" Bug: Insight and Opportunity for the Operations Researcher. *Operations Research* 56(5):1047-1065.
- Alderson, D. and Li, L., 2007. Diversity of graphs with highly variable connectivity. *Physical Review E* 75 (1), 046102.
- Alderson, D., Chang, H., Roughan, M., Uhlig, S., and Willinger, W., 2006. The Many Facets of Internet Topology and Traffic. *AIMS Journal on Networks and Heterogeneous Media*, 4(1):569-600.
- Li, L., Alderson, D., Doyle, J., and Willinger, W., 2006. Towards a Theory of Scale-Free Graphs: Definition, Properties, and Implications. *Internet Mathematics* 2(4): 431-523.
- Whitney, D. and Alderson, D., 2006, Are Technological and Social Networks Really Different? *Proc. International Conference on Complex Systems*, Boston, MA, 25-30 June, 2006.
- Alderson, D., Li, L., Willinger, W., and Doyle, J.C., 2005. Understanding Internet Topology: Principles, Models, and Validation. *IEEE/ACM Transactions on Networking* 13(6): 1205-1218.
- Doyle, J., Alderson, D., Li, L., Low, S.,, Roughan, M., Shalunov, S., Tanaka, R., and Willinger, W., 2005. The "Robust Yet Fragile" Nature of the Internet. *Proceedings of the National Academy of Sciences USA*. 102(41): 14497-14502.

TECHNICAL REPORTS
- Alderson, D.L., Eisenberg, D., Ganin, A., Kitsak, M., and Linkov, I., 2020, Operational Resilience of Command and Control Systems to Maintain Multilayered Network Functionality in Response to Large-Scale Disruptive Events, Naval Postgraduate School Technical Report NPS-OR-20-003, December.
- Alderson, D.L. and Darken, R.P., 2019, Dystopia: A Virtual Environment for Education, Training, and Exercises, Naval Postgraduate School Technical Report NPS-OR-19-002, December.
- Alderson, D.L., Bunn, B.B., Eisenberg, D.A., Howard, A.R., Nussbaum, D.A., and Templeton, J., 2018, Interdependent Infrastructure Resilience in the U.S. Virgin Islands: Preliminary Assessment, Naval Postgraduate School Technical Report NPS-OR-18-005, December.
- Salmerón, J., Alderson, D.L, and Brown, G.G., 2018, "Resilience Report: Analysis of Hawaiian Electric Power Grid Vulnerability to Physical Attack (U)", Naval Postgraduate School Technical Report NPS-OR-18-001R, February.
- Alderson, D.L., Brown, G.G., Dell, R.F., Witwer, T.M., 2017, Studies of the Fuel Supply Chain in the Pacific Area of Responsibility (U), NPS Technical Report NPS-OR-17-003R, October.
- Nicholas, P.J., Alderson, D.L., 2015, Designing Interference-Robust Wireless Mesh Networks Using a Defender-Attacker-Defender Model, Naval Postgraduate School Technical Report NPS-OR-15-002, February.

- Alderson, D., Brown, G., Carline, A., DeGrange, W., Fleischmann, M, and Salmerón, J., 2014, Assessing Risk and Identifying How to Improve Resilience of the Energy Supply Chain in the Pacific Theater Bulk Fuel Transport and Prepositioning (U), Center for Infrastructure Defense Technical Report NPS-OR-14-001R, February.
- Alderson, D., Brown, G., DiRenzo, J., Engle, R., Jackson, J., Maule, B., and Onuska, J., 2012, "Improving the resilience of coal transport in the Port of Pittsburgh – an example of defender-attacker-defender optimization-based decision support," NPS Technical report NPS-OR-12-004.
- Salmerón, J., Alderson, D., Brown, G., and Wood, R.K., 2012, "Resilience Report: The Guam Power Authority Electric Power Grid: Analyzing Vulnerability to Physical Attack (U)," Center for Infrastructure Defense Technical Report NPS-OR-12-002, May.
- Salmerón, J., Alderson, D., and Brown, G., 2011, "Resilience Report: Electric Power Infrastructure Supporting Mission Assurance at Vandenberg Air Force Base (U)," Center for Infrastructure Defense Technical Report NPS-OR-11-008, December.
- Schramm, H.C., Alderson, D.L., Carlyle, W.M., Dimitrov, N., 2011, A Game Theoretic Model of Strategic Conflict in Cyberspace, Naval Postgraduate School Technical Report NPS-OR-005, December.
- Alderson, D.L., Craparo, E.M., Fry, W.J., 2011, Assessing Tradeoffs in Mobile Ad-Hoc Network Deployment: A Case Study in Ground Soldier Mobile Systems, Naval Postgraduate School Technical Report NPS-OR-002, January.
- Alderson, D., 2004. Technological and Economic and Economic Drivers and Constraints in the Internet's "Last Mile", Technical Report CIT-CDS-04-004, Engineering Division, California Institute of Technology, February.
- D. Alderson and K. Soo Hoo. The Role of Economic Incentives in Securing Cyberspace. Stanford Center for International Security and Cooperation, November 2004.

BOOK CHAPTERS
- Alderson, D.L., 2019, "Overcoming Barriers to Greater Scientific Understanding of Critical Infrastructure Resilience," in M. Ruth & S. G. Reisemann (Eds), Handbook on Resilience of Socio-technical Systems, Edward Elgar Publishing, Northampton, MA. (Forthcoming)
- Seager, T.P., S. Spierre Clark, D.A. Eisenberg, J.E. Thomas, M.M. Hinrichs, R. Kofron, C. Nörgaard Jensen, L.R. McBurnett, M. Snell, and D.L. Alderson, 2017, "Redesigning resilient infrastructure research." In *Resilience and Risk*, Springer, Dordrecht, 81-119.
- Alderson, D.L., G.G. Brown, W.M. Carlyle. 2014. Assessing and Improving Operational Resilience of Critical Infrastructures and Other Systems. A. Newman, J. Leung, eds., *Tutorials in Operations Research: Bridging Data and Decision*. Institute for Operations Research and Management Science, Hanover, MD, 180-215.
- Alderson, D.L., Brown, G.G., Carlyle, W.M., and Wood, R.K., 2011, Solving Defender-Attacker-Defender Models for Infrastructure Defense, in *Operations Research, Computing, and Homeland Defense,* R.K. Wood and R.F. Dell, editors,INFORMS, Hanover, MD, pp. 28-49.
- Willinger, W., Alderson, D., and Doyle, J.C., 2009, Mathematics and the Internet: A source of enormous confusion and great potential, Notices of the American Mathematical Society 56(5): 286-299. Republished as a chapter in *The Best Writing on Mathematics 2010*, M. Pitici, Ed., Princeton University Press, Princeton, NJ, 2010.
- Alderson, D., Willinger, W., Li, L., and Doyle, J., 2006. An Optimization-Based Approach to Modeling Internet Topology. In Telecommunications Planning: Innovations in Pricing, Network Design and Management. S. Raghavan and G. Anandlingham, eds. Springer.

CONFERENCE PAPERS

- Alderson, D., Brown, G., Chankij, M., Mislick, G., Nussbaum, D., Salmerón, J., and Schramm, H., 2014, "Assessing and Improving Resiliency of the Air Force Jet Fuel Distribution System on Guam, Including Recommendations and Cost Estimates for Major Hardening Military Construction (U)", **Winner 2014 Military Operations Research Society Barchi Prize**.

- Trassare, S., Beverly, R., Alderson, D., 2013, "A Technique for Network Topology Deception," Proceedings of the Military Communications Conference (MILCOM 2013), San Diego, CA.

- McPherson, D.B., Alderson, D.L., A Contrasting Look at Network Formation Models and Their Application to the Minimum Spanning Tree, Proceedings of the Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA, November 6-9, 2011.

- Nicholas, P. and Alderson, D., 2011, Optimal Transmitter Placement in Wireless Mesh Networks, 79th Military Operations Research Society Symposium, 20-23 June, 2010, Monterey, CA. **Winner of 2011 Military Operations Research Society Barchi Prize**

- Alderson, D., and Doyle, J.C., 2007, Can Complexity Science Support the Engineering of Critical Network Infrastructures? Proc. 2007 IEEE Internat. Conf. Systems, Man and Cybernetics. Montreal, Canada, October 7-10, 2007.

- Alderson, D.L., and Perry, W.J., 2006, The Role of Quantitative Modeling in National Security Decisions. First Annual Conference on Quantitative Methods & Statistical Applications in Defense and National Security (SDNS), February 15-16, 2006. American Statistical Association.

- Willinger, W., Alderson, D., Doyle, J., and Li, L., 2004. More "Normal" Than Normal: Scaling Distributions and Complex Systems. *Proceedings of the 2004 Winter Simulation Conference.* R.G. Ingalls, M.D. Rossetti, J.S. Smith, and B.A. Peters, eds.

- Willinger, W., Alderson, D., Doyle, J., and Li, L., 2004. A pragmatic approach to dealing with high variability in network measurements. *Proc. ACM SIGCOMM Internet Measurement Conference 2004*, Taormina, Sicily, Italy, October 25-27, 2004.

- Li, L., Alderson, D., Willinger, W., and Doyle, J., 2004. A First-Principles Approach to Understanding the Internet's Router-Level Topology. *Proc. ACM SIGCOMM 2004*, Portland, Oregon, Aug.30-Sept.2, 2004. **Winner of 2016 ACM SIGCOMM Test of Time Paper Award.**

- Alderson, D., Doyle, J., Govindan, R., and Willinger, W., 2003. Toward an Optimization-Driven Framework for Designing and Generating Realistic Internet Topologies. In *ACM HotNets-I,* Princeton, NJ, October 2002. Published in ACM SIGCOMM Computer Communications Review, 33(1): 41-46, January 2003.

OTHER PUBLICATIONS

- D.D. Woods, T.P. Seager, D.L. Alderson, 2020, When Can We Move Forward From COVID-19? When Four Capabilities Are In Action. (Version 1.0). Zenodo. http://doi.org/10.5281/zenodo.3748052, 10 April 2020.

- Alderson, D., Willinger, W., and Doyle, J., 2019. Lessons from "A First-Principles Approach to Understanding the Internet's Router-Level Topology". *ACM SIGCOMM Computer Communication Review*, 49(5):96-103.

- McLemore, C. and Alderson, D., 2018, "The Shell Game: Fueling a War in the Pacific", *War on the Rocks*, July 20.

- Nicholas, P.J. and Alderson, D.L., 2017, "Method for Interference-Robust Transmitter Placement in Wireless Mesh Networks," United States Patent 9,788,213 B1. 10 October 2017.

- Nicholas, P.J. and Alderson, D.L., 2014, "Method for Optimal Transmitter Placement in Wireless Mesh Networks," United States Patent 8,654,672. 18 February 2014.
- Alderson, D., and Willinger, W., 2005, A contrasting look at self-organization in the Internet and next-generation communication systems. IEEE Communications Magazine. July, 2005, pp. 94-100.

KEYNOTE, PLENARY, AND SEMI-PLENARY PRESENTATIONS

- D.L. Alderson and D.D. Woods, "Outmaneuvering Complexity in Worlds of Surprise: Managing Fundamental Tradeoffs" (part 1) and "Outmaneuvering Complexity in Worlds of Surprise: How adaptive capacities in human-technology systems are built, extended, sustained, degraded, and collapse" (part 2), Keynote address at workshop "Complexity: Advancing the State of Thought and Practice Across Navy, DoD, and FedGov", hosted at NSWC Carderock Aug 27-29, 2019.
- Alderson, D.L., "Attacker-Defender Models for Assessing and Improving Infrastructure Resilience," Keynote presentation, Resilience Week 2018, Denver, CO, 22 August, 2018.
- Alderson, D.L, "Overcoming Barriers to Greater Scientific Understanding of Critical System Resilience," Keynote presentation, MORS Special Meeting on Developing and Assessing Resilient Systems in Support of National Security Missions, US Army Engineer Research and Development Center, Vicksburg, MS, 10 April 2018.
- Alderson, D.L., "Organized Complexity in Networks: Insights and Opportunities," Keynote address, 22nd International Command and Control Research & Technology Symposium (ICCRTS) 2017, Los Angeles, CA, 08 November, 2017.
- Alderson, D.L., "Geospatial Analytics for National Defense and Security: Objectives and challenges in infrastructure analysis, disaster response, operations, and logistics," Keynote address, NextGEO Summit, Seattle, WA, 14 September 2017.
- Alderson, D.L., "Modeling and Analysis of Critical Infrastructure: Case Studies and Lessons Learned," Plenary presentation, Workshop on Advanced Concepts and Technology for Meeting Current and Future Demands in Public Security, Technical University Graz, Austria, 4 Sept. 2017.
- Alderson, D.L. and Woods, D.D., "Moving Forward in Resilience Engineering: Fundamentals, Barriers, and Progress," Keynote presentation, 2017 Resilience Engineering Association Symposium, Liege, Belgium, 30 June 2017.
- Alderson, D.L., "Risk and Resilience: Key Insights and Lessons Learned for Assessing and Improving Mission Assurance," Keynote presentation, 2017 Joint Staff Mission Assurance Conference sponsored by Joint Staff J33, Falls Church, VA, 01 March 2017.
- Alderson, D.L., "Assessing and Improving Operational Resilience for Critical Systems and Missions," Keynote presentation, Military Operations Research Society (MORS) Emerging Techniques Special Meeting, Alexandria, VA, 06 December 2016.
- Alderson, D.L., "Robustness, Design, and Complexity and Their Implications For Network-Centric Infrastructures," Semi-Plenary Lecture, International Conference on Operations Research (OR2011), Zurich, Switzerland, August 30-September 2, 2011.

PROFESSIONAL ACTIVITIES

- Area Editor (Network Optimization & Algorithms), INFORMS J. on Computing, July 2015 - present
- Editorial Board, Risk Analysis: An International Journal, June 2014 - present
- Editorial Board, Environment Systems and Decisions, January 2016 - present
- Associate Editor, IEEE Transactions on Network Science and Engineering, July 2013 - July 2017
- Founding Co-Chair, track on Resilient Critical Infrastructure, Resilience Week: 2014 (Denver, CO), 2015 (Philadelphia, PA), 2016 (Chicago, IL), 2017 (Wilmington, DE), 2018 (Denver, CO).