

CONTACT DETAILS

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PROFESSIONAL SUMMARY

GS-15 Research Social Scientist and incoming President of the Society for Risk Analysis (2025–2027) specializing in the anticipatory governance of high uncertainty and AI-biotech convergence. Manages a \$10 million+ federally funded research portfolio with over 100 peer-reviewed publications shaping national and international standards. Recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE) and the USACE Researcher of the Year Award.

EDUCATION

Doctor of Philosophy (Ph.D.): University of Michigan, USA School of Public Health, Department of Health Management and Policy Dissertation: <i>A Comparative Analysis of Variations in Synthetic Biology Regulation</i>	2016
Master of Science (M.S.): Carnegie Mellon University, USA Public Policy and Management. H.J. Heinz School. Thesis: <i>Risk Management within the U.S. Department of Defense</i>	2012
Bachelor of Science (B.S.): Carnegie Mellon University, USA Political Science (University Honors). Science and Humanities Scholars Program. Thesis: <i>Civilian Agencies and Personnel in U.S. Foreign Policy</i>	2011

ACADEMIC APPOINTMENTS

University of Michigan, Ann Arbor, USA	2019 – Pres.
Adjunct Associate Professor, School of Public Health	2025 – Pres.
Adjunct Assistant Professor, School of Public Health	2019 - 2025
University of Lisbon, PORTUGAL	2016 - 2019
Postdoctoral Research Fellow, Faculdade de Psicologia	

FEDERAL EMPLOYMENT & RELEVANT SCIENTIFIC EXPERIENCE

Tor Intelligence LLC, USA President	2025 – Pres.
United States Army Engineer Research and Development Center, USA Lead, Center for Health Engineering (CHE)	2019 - 2025 (MAY 2022 – MAY 2025)

Senior Research Social Scientist (GS-15) (SEPT 2022 - MAY 2025)
Research Social Scientist (GS-14) (JAN 2019 - SEPT 2022)

US Department of State, USA 2023 - 2025
Embassy Science Fellow (ESF), Ashgabat, Turkmenistan

Federal Emergency Management Agency, USA 2020 - 2022
Strategic Planner, Region I COVID-19 Emergency Detail

Oak Ridge Institute for Science and Education (ORISE), USA 2016 - 2019
Postdoctoral Research Fellow

Institute of Occupational Medicine (IOM), SINGAPORE 2014
Research Intern

RESEARCH INTERESTS

- Governance of synthetic biology and engineered biology
- Societal implications of emerging biotechnologies and converging AI-biotech
- Risk and resilience analytics for complex adaptive systems
- Anticipatory governance and dual-use technology frameworks
- Quantitative and stress-testing methods for critical infrastructure
- Risk governance of artificial intelligence; use of machine learning and deep learning for improved decision making

COMPETITIVE RESEARCH GRANTS & CONTRACTS

Resilience Stress Testing and Artificial Intelligence Modeling (2023 – 2029) Total Funding: \$6MM

- Lead and PI of a five-year research program to develop artificial intelligence tools to quantitatively stress test DFW International Airport
- Led a team of fifteen scientists, engineers, and developers to develop the world's first infrastructure stress testing capability using machine learning and deep learning
- Created a platform for resilience analysis and quantification, including publications with the United Nations Office for Disaster Risk Reduction (UNDRR), the OECD, the World Bank, DFW Airport, and NATO Science for Peace and Security

Emerging Technology Governance and Biosecurity (2021 – 2026) Total Funding: \$3.2M+

- OSD – Biotechnology Risk Governance and Modernization (*PI, \$2.05M*)
Led a strategic governance program for Department of Defense biotechnology modernization. Designed risk assessment frameworks addressing dual-use concerns and informed policy directives across federal stakeholders.
- NATO Biotechnology Modernization Workshop Series (*Co-PI, \$430K, 2019 - 2026*)
Organized three Advanced Research Workshops across NATO countries on synthetic biology and AI-biotech convergence. Each ARW brought together over 60 international experts to define dual-use risk and governance strategies.

- Environmental Quality Initiative/SynBio Risk Governance Frameworks (*PI, \$386K*)
Developed sociotechnical risk analysis and governance models for engineered biology applications intended for environmental release
- DHS – Emerging Risk Governance Systems (*Co-PI, \$340K*)
Created governance tools for managing emerging threats including those at the intersection of cyber, AI, and biotech systems, emphasizing anticipatory risk.
- NNI (OSTP) – National Nanotechnology EHS Strategy (*PI contribution*)
Served as senior editor overseeing multi-agency contributions to the U.S. strategy on environmental health and safety of AI-integrated nanomaterials.

International Water and Environmental Security (2023–2025)

Total Funding: \$2M

- USAID / State / USACE – Resilience Engagements in Iraq, Libya, Jordan, Turkmenistan (*PI-equivalent*)
Led water infrastructure, environmental, and climate risk engagements across four nations. Outcomes included national strategy revisions and the first U.S.–Libya scientific partnership in over a decade.
- U.S. Embassy Science Fellow – Turkmenistan (2023 and 2024-2025)
Advised ministries on environmental security, including water stress, air quality, and heat vulnerability.

Pandemic Planning and Infrastructure Resilience

Total Funding: \$3M+

- COVID-19 Strategic Planner – FEMA Region 1 (*PI, \$1.4M*) (2020 – 2022)
Led analytics for New England regional response, including surge hospital forecasting, scenario modeling, and infrastructure coordination. Scientific leadership extended to federal planning doctrine.
- COVID-19 Modeling for National Doctrine (*PI, \$920K*)
Developed operational guidance tools for USACE and FEMA integrating pandemic, infrastructure, and climate risks. Outputs supported INDOPACOM, EUCOM, AFRICOM, INSCOM-Army Intelligence, and VOAD.
- CDC Ensemble Forecast Contributor & State-Level Engagements
Supported COVID scenario modeling for state governments and regional hospital systems. Lead public health scientist for US Army model included in CDC Ensemble Forecast (only US Government owned and operated model included)
- SERDP – Environmental and Cyber Resilience (*Co-PI, \$380K*)
Assessed resilience of integrated environmental and cyber systems under compound threat conditions.
- Army Research Institute – Small Team Resilience (*PI, \$369K*)
Developed resilience-building frameworks for tactical army teams, emphasizing real-time decision dynamics.

Internal Research Center Leadership

Total Funding Attracted: \$2.5M+ (FY2023–FY2025)

- Founder and Lead, Center for Health Engineering
Founded and led USACE's internal research center at the intersection of public health, occupational safety, biomanufacturing, and complex systems engineering. Guided strategy and built out reimbursable research programs across multiple agencies.

AWARDS & HONORS

Presidential Early Career Award for Scientists and Engineers (PECASE) The White House	2025
US Army Superior Unit Award Department of the US Army	2025
Richard J. Burke Outstanding Service Award Society for Risk Analysis	2024
Civilian Service Commendation Medal Department of the US Army	2024
Best Reviewer of 2024 Journal, <i>Risk Analysis</i>	2024
International Research and Development Award USACE-ERDC	2024
Award for Outstanding Technology Transfer to Federal Agencies USACE-ERDC	2024
Laboratory Innovation of the Year USACE-ERDC Environmental Laboratory	2024
IEEE TCHS Young Researcher Award IEEE Systems, Man, and Cybernetics Technical Committee on Homeland Security	2023
Civilian Award for Humanitarian Service Department of the US Army	2023
Innovative Applications in Analytics Award (IAAA) Finalist Institute for Operations Research and the Management Sciences (INFORMS)	2023
USACE Researcher of the Year	2023
Chauncey Starr Distinguished Young Risk Analyst Award Society for Risk Analysis	2022
Superior Civilian Service Medal Department of the US Army	2022
USACE-ERDC Researcher of the Year	2022
USACE-ERDC Environmental Laboratory (EL) Researcher of the Year	2022
Region 1 Federal Coordinating Office – Pandemic Emergency Service Coin	2022

Meritorious Civilian Service Medal Department of the Army	2021
USACE Innovation of the Year Award (Team Award) COVID-19 Model & Analysis Team (C-MAT) US Army Corps of Engineers	2020
Emerging Leaders in Biosecurity Initiative (ELBI), Class of 2019 John's Hopkins University, Bloomberg School of Public Health	2019
Specialty Group Best Paper Award Society for Risk Analysis, Advanced Materials and Technologies Specialty Group	2015
Honoree, Program for Excellence in Science American Association for the Advancement of Science (AAAS)	2013-2015
Practice Award Finalist Journal of Multi-Criteria Decision Analysis	2012

BOOKS

1. Linkov, I., Trump, B.D., Moberg, E., Yatsalo, B., Keisler, J. (2020). Multi-Criteria Decision Analysis: Case Studies in Engineering and the Environment. CRC Press.
2. Merad, M., Trump, B. D. (2020). Expertise Under Scrutiny: 21st Century Decision Making for Environmental Health and Safety. Springer International Publishing. DOI: 10.1007/978-3-030-20532-4
3. Linkov, I., Trump, B. D. (2019). The Science and Practice of Resilience. Springer International Publishing. DOI: 10.1007/978-3-030-04565-4

EDITED BOOKS

1. Cummings, C., Trump, B.D., Prado, V., Ellinport, B., Linkov, I. (eds.) (2026). Biotechnology and AI: Technological Convergence and Information Hazards. Springer Nature.
2. Linkov, I., Trump, B.D., Chemerys, O. (eds.) (2025). Digital Technologies for Enhancing Resilience. IOS Press.
3. Trump, B.D., Florin, M-V., Perkins, E., Linkov, I. (2021). Emerging Threats of Synthetic Biology and Biotechnology. NATO Science for Peace and Security Programme. Springer International Publications.

4. Linkov, I., Keenan, J., Trump, B.D. (eds). (2021). COVID-19: Systemic Risk and Resilience. Springer Nature.
5. Trump, B.D., Hossain, K., Linkov, I. (eds). (2020). Governance and Resilience for Cybersecurity in the Arctic. NATO Science for Peace and Security Programme. IOS.
6. Trump, B.D., Linkov, I., Cummings, C., Kuzma, J. (eds). (2020). Synthetic Biology 2020: Frontiers in Risk Analysis and Governance. Springer International Publications.
7. Linkov, I., Trump, B.D., Roslycky, L. (eds). (2019). Risk and Resilience for Hybrid Threats. NATO Science for Peace and Security Programme. IOS.
8. Trump, B.D., Florin, M.-V., Linkov, I. (eds.). (2018). IRGC Resource Guide on Resilience, Volume 2. EPFL International Risk Governance Center (IRGC). Available from: irgc.epfl.ch

JOURNAL PUBLICATIONS

Google Scholar: <https://scholar.google.com/citations?user=L8TM0mAAAAAJ&hl=en&oi=ao>

1. Trump, B.D, et al. (accepted, in press). Governing the AI-biotech convergence. **EMBO Reports**.
2. Ellinport, B., Wells, E., Rai, D., Rader, B., Cummings, C., Trump, B.D., Linkov, I. (In Press). A Systems Approach for Anticipating Post-Pandemic Forecast Challenges for Pediatric Influenza and Hospital Burden. **Scientific Reports**.
3. Trump, B., Keenan, J. M., & Linkov, I. (2025). A brief history of the COVID-19 pandemic: perspectives in risk science and data analytics. **Journal of Risk Research**, 1-27.
4. Keenan, J. M., Trump, B. D., & Linkov, I. (2025). Urban carrying capacity in practice: supporting growth management and climate planning in the United States. **Journal of Environmental Policy & Planning**, 1-19.
5. Vecherin, S. N., Meyer, A. C., Cummings, C. L., Trump, B. D., Ehlschlaeger, C. R., & Linkov, I. (2025). Infection risk assessment for socially structured population using stochastic microexposure model. **Journal of Exposure Science & Environmental Epidemiology**, 1-12.
6. Trump, B. D., Galaitsi, S., Cegan, J., & Linkov, I. (2025). How Will AI Shape the Future of Pandemic Response? Early Clues From Data Analytics. **Risk Analysis**.
7. Pescaroli, G., McMillan, L., Gordon, M., Aydin, N. Y., Comes, T., Maraschini, M., ... & Linkov, I. (2025). Definitions and taxonomy for High Impact Low Probability (HILP) and outlier events. **International Journal of Disaster Risk Reduction**, 127(10550), 4.

8. Trump, B. D., Trump, J., Antunes, D., Palma-Oliveira, J., & Keisler, J. (2025). Fusing technology readiness levels (TRLs) and safe-by-design (SbD) for guiding investment in emerging technologies. *Environment Systems and Decisions*, 45(3), 1-13.
9. Groff-Vindman, C. S., Trump, B. D., Cummings, C. L., Smith, M., Titus, A. J., Oye, K., ... & Linkov, I. (2025). The convergence of AI and synthetic biology: the looming deluge. *Nature Biomedical Innovations*, 2(1), 20.
10. Trump, B. D., Mitoulis, S., Argyroudis, S., Kiker, G., Palma-Oliveira, J., Horton, R., ... & Linkov, I. (2025). Threat-Agnostic Resilience: Framing and Applications. *International Journal of Disaster Risk Reduction*, 105535.
11. Dulin, S., Smith, M., Ellinport, B., Trump, B., Keenan, J. M., & Linkov, I. (2025). Quantifying the compounding effects of natural hazard events: a case study on wildfires and floods in California. *Nature Natural Hazards*, 2(1), 1-11.
12. Galaitsi, S. E., Trump, B. D., Cline, E. H., Kitsak, M., & Linkov, I. (2025). Navigating the precipice: Lessons on collapse from the Late Bronze Age. *Risk Analysis*.
13. Horton, R., Trump, B. D., Trump, J., Knowles, H. S., Linkov, I., Jones, P., & Kiker, G. (2025). Performance metrics for resilience of airport infrastructure. *Transportation Research Part D: Transport and Environment*, 104676.
14. Klasa, K., Trump, B. D., Dulin, S., Smith, M., Jarman, H., & Linkov, I. (2025). A Resilience-Augmented Approach to Compound Threats and Risk Governance: A Systems Perspective on Navigating Complex Crises. *Environments*, 12(2), 64.
15. Haldon, J., Mordechai, L., Dugmore, A., Eisenberg, M., Endfield, G., Izdebski, A., ... & Trump, B. (2025). Past Answers to Present Concerns. The Relevance of the Premodern Past for 21st Century Policy Planners: Comments on the State of the Field. *Wiley Interdisciplinary Reviews: Climate Change*, e923.
16. Cummings, C. L., Jin, A. S., Trump, B. D., Pinigina, E., Adley, M., Jarman, H., & Linkov, I. (2024). Longitudinal evaluation of COVID-19 vaccine hesitancy in the United States: analysis of the US Census Household Pulse survey. *Journal of Risk Research*, 1-13.
17. Strelzoff, A., Stoddard, K., Henslee, A., Dozier, H., Abraham, A., Fries, S., ... & Linkov, I. (2024). Resilient Construction of Critical Infrastructure: Anticipating and Measuring Supply Chain Delays from Global Disruptions. *Journal of Infrastructure Systems*, 30(4), 05024005.
18. Trump, B. D., & Linkov, I. (2024). Supreme Court ruling alters risk landscape. *Nature*, 632(8023), 29-29.

19. Kott, A., Dubynskyi, G. Y., Paziuk, A., Galaitsi, S. E., Trump, B. D., & Linkov, I. (2024). Russian Cyber Onslaught Was Blunted by Ukrainian Cyber Resilience, Not Merely Security. **Computer**, 57(08), 82-89.
20. Keenan, J. M., Trump, B., Kytömaa, E., Adlakha-Hutcheon, G., & Linkov, I. (2024). The role of science in resilience planning for military-civilian domains in the US and NATO. **Defence Studies**, 1-32.
21. Pavur, G., Marcellin, M. C., Loose, D. C., Cardenas, J. J., Trump, B. D., Linkov, I., ... & Lakshmi, V. (2024). Sensitivity of development goals to water scarcity of Iraq and transboundary regions. **Sustainable Horizons**, 12, 100121.
22. Cummings, C. L., Wells, E. M., & Trump, B. D. (2024). Engineering and public health: converging disciplines for resilient solutions. **Environment Systems and Decisions**, 1-10.
23. Galaitsi, S. E., Wells, E., Zemba, V., Blue, S., Cato, C., Wood, M., ... & Linkov, I. (2024). Family and Community Interventions: A Meta-Analysis on Family and Community Resilience, Cohesion, and Functioning. **International Journal of Disaster Risk Reduction**, 104597.
24. Marcellin, M.C., Pavur, G., Loose, D.C., Cardenas, J.J., Denehy, D., Almashhadani, M., Waheed, S.Q., Trump, B.D., Polmateer, T.L., Linkov, I. and Lakshmi, V., (2024). Systems analysis for energy assets of Iraq influenced by water scarcity. **Environment Systems and Decisions**, pp.1-21.
25. Strelzoff, A., Trump, B., Cummings, C., Smith, M., Galaitsi, S., Keisler, J., ... & Linkov, I. Human Intuition and Algorithmic Efficiency Must Be Balanced to Enhance Data Mesh Resilience: Improving data governance methodologies. **Communications of the ACM**.
26. Linkov, I., Galaitsi, S. E., Trump, B. D., Pinigina, E., Rand, K., Cline, E. H., & Kitsak, M. (2024). Are civilizations destined to collapse? Lessons from the Mediterranean Bronze Age. **Global Environmental Change**, 84, 102792.
27. Galaitsi, S. E., Corbin, C., Cox, S. A., Joseph, G., McConney, P., Cashman, A., ... & Linkov, I. (2023). Balancing Climate Resilience and Adaptation for Caribbean SIDS: Building Institutional Capacity. **Integrated Environmental Assessment and Management**.
28. Trump, B. D., Cummings, C., Loschin, N., Keisler, J., & Linkov, I. (2023). The Worsening Divergence of Biotechnology: the importance of risk culture. **Frontiers in Bioengineering and Biotechnology**, 11, 1250298.
29. Carter, J., Bjorkland, R., Boyes, W. K., Geraci, C., Hackley, V. A., Howard, J., ... & Nadadur, S. (2023). US federal perspective on critical research issues in nanoEHS. **Environmental Science: Nano**.
30. Trump, B. D., Antunes, D., Palma-Oliveira, J., Nelson, A., Hudecova, A. M., Rundén-Pran, E., ... & Linkov, I. (2023). Safety-by-design and engineered nanomaterials: the need to move from theory to practice. **Environment Systems and Decisions**, 1-12.

31. Trump, B. D., Jin, A., Galaitsi, S., Cummings, C., Jarman, H., Greer, S., ... & Linkov, I. (2023). Equitable Response in Crisis: Methodology and Application for COVID-19. *ASCE-ASME J Risk and Uncert in Engrg Sys Part B Mech Engrg*, 9(3).
32. Wu, F., & Trump, B. D. (2023). "Modest doubt is called the beacon of the wise"—Incorporating uncertainty in risk analysis from Shakespeare to today. *Risk Analysis*.
33. Trump, B.D., Cummings, C., Klasa, K., Galaitsi, S., Linkov, I. (2023). Governing biotechnology to provide safety and security and address ethical, legal, and social implications. *Frontiers in Genetics*. 13.
34. Greer, S. L., Dubin, K. A., Falkenbach, M., Jarman, H., & Trump, B. D. (2022). Alignment and authority: Federalism, social policy, and COVID-19 response. *Health Policy*.
35. Linkov, I., Trump, B. D., Trump, J., Pescaroli, G., Hynes, W., Mavrodieva, A., & Panda, A. (2022). Resilience stress testing for critical infrastructure. *International Journal of Disaster Risk Reduction*, 103323.
36. Barnard, M., Mark, S., Greer, S. L., Trump, B. D., Linkov, I., & Jarman, H. (2022). Defining and analyzing health system resilience in rural jurisdictions. *Environment Systems and Decisions*, 1-10.
37. Cramer, E. Y., Ray, E. L., Lopez, V. K., Bracher, J., Brennen, A., Castro Rivadeneira, A. J., ... & Georgescu, A. (2022). Evaluation of individual and ensemble probabilistic forecasts of COVID-19 mortality in the United States. *Proceedings of the National Academy of Sciences*, 119(15), e2113561119.
38. Hynes, W., Trump, B. D., Kirman, A., Haldane, A., & Linkov, I. (2022). Systemic resilience in economics. *Nature Physics*, 18(4), 381-384.
39. Trump, B. D., & Linkov, I. (2022). Resilience and lessons learned from COVID-19 emergency response. *Environment Systems and Decisions*, 1-3.
40. Linkov, I., Trump, B., Trump, J., Pescaroli, G., Mavrodieva, A., & Panda, A. (2022). Stress-test the resilience of critical infrastructure. *Nature*, 603(7902), 578-578.
41. Linkov, I., Trump, B., & Kiker, G. (2022). Diversity and inclusiveness are necessary components of resilient international teams. *Humanities and Social Sciences Communications*, 9(1), 1-5.
42. Vecherin, S., Chang, D., Wells, E., Trump, B., Meyer, A., Desmond, J., ... & Linkov, I. (2022). Assessment of the COVID-19 infection risk at a workplace through stochastic microexposure modeling. *Journal of Exposure Science & Environmental Epidemiology*, 1-8.

43. Horton, R., Kiker, G. A., Trump, B. D., & Linkov, I. (2022). International airports as agents of resilience. *Journal of Contingencies and Crisis Management*. 30(2), 217-221.
44. Mahoney, E., Golan, M., Kurth, M., Trump, B. D., & Linkov, I. (2022). Resilience-by-Design and Resilience-by-Intervention in supply chains for remote and indigenous communities. *Nature Communications*, 13(1), 1-5.
45. Trump, B. D., Golan, M. S., Keisler, J. M., Cegan, J. C., & Linkov, I. (2022). Vaccine supply chain: Resilience-by-design and resilience-by-intervention. *Vaccine*. 40 (12), 1695.
46. Ligo, A. K., Mahoney, E., Cegan, J., Trump, B. D., Jin, A. S., Kitsak, M., ... & Linkov, I. (2021). Relationship among state reopening policies, health outcomes and economic recovery through first wave of the COVID-19 pandemic in the US. *PloS one*, 16(11), e0260015.
47. Linkov, I., Trump, B. D., Golan, M., & Keisler, J. M. (2021). Enhancing Resilience in Post-COVID Societies: By Design or By Intervention?. *Environmental Science & Technology*.
48. Keenan, J. M., Trump, B. D., Hynes, W., & Linkov, I. (2021). Exploring the Convergence of Resilience Processes and Sustainable Outcomes in Post-COVID, Post-Glasgow Economies. *Sustainability*, 13(23), 13415.
49. Golan, M. S., Mahoney, E., Trump, B., & Linkov, I. (2021). Resilience and Efficiency for the Nanotechnology Supply Chains Underpinning COVID-19 Vaccine Development. *Current Opinion in Chemical Engineering*, 100759.
50. Jin, A. S., Trump, B. D., Golan, M., Hynes, W., Young, M., & Linkov, I. (2021). Building resilience will require compromise on efficiency. *Nature Energy*, 1-3.
51. Keisler, J. M., Trump, B. D., Wells, E., & Linkov, I. (2021). Emergent technologies, divergent frames: differences in regulator vs. developer views on innovation. *European Journal of Futures Research*, 9(1), 1-6.
52. Kott, A., Golan, M. S., Trump, B. D., & Linkov, I. (2021). Cyber Resilience: by Design or by Intervention?. *Computer*, 54(8), 112-117.
53. Cegan, J. C., Trump, B. D., Cibulsky, S. M., Collier, Z. A., Cummings, C. L., Greer, S. L., ... & Linkov, I. (2021). Can Comorbidity Data Explain Cross-State and Cross-National Difference in COVID-19 Death Rates?. *Risk Management and Healthcare Policy*, 14, 2877-2885.
54. Rowland, M. A., Swannack, T. M., Mayo, M. L., Parno, M., Farthing, M., Dettwiller, I., ... & Bridges, T. (2021). COVID-19 infection data encode a dynamic reproduction number in response to policy decisions with secondary wave implications. *Scientific Reports*, 11(1), 1-7.

55. Trump, B. D., Linkov, I., & Hynes, W. (2020). Combine resilience and efficiency in post-COVID societies. *Nature*, 588(7837), 220-220.
56. Trump, B. D., & Linkov, I. (2020). Risk and resilience in the time of the COVID-19 crisis. *Environment Systems and Decisions*. (Editorial; Special Issue Introduction).
57. Golan, M. S., Trump, B. D., Cegan, J. C., & Linkov, I. (2021). Supply chain resilience for vaccines: review of modeling approaches in the context of the COVID-19 pandemic. *Industrial Management & Data Systems*.
58. Galaitsi, S. E., Cegan, J. C., Volk, K., Joyner, M., Trump, B. D., & Linkov, I. (2021). The challenges of data usage for the United States' COVID-19 response. *International Journal of Information Management*, 102352.
59. Linkov, I., Rand, K., Ligo, A., Bassett, J., Galaitsi, S., Trump, B. D., ... & Collins, T. (2021). Comparing the Emergence of Technical and Social Sciences Research in Artificial Intelligence. *Frontiers in Computer Science*, 3, 25.
60. Whelshula, M., Hill, M., Galaitsi, S. E., Trump, B., Mahoney, E., Mersky, A., ... & Linkov, I. (2021). Native populations and the opioid crisis: forging a path to recovery. *Environment Systems and Decisions*, 1-7.
61. Cegan, J. C., Trump, B. D., Joyner, M. D., Volk, K. M., Surette, M. A., Garrett, J. P., ... & Linkov, I. (2020). A systems approach for resources management during the COVID-19 pandemic: Multi-agency perspectives from New England. *Journal of Emergency Management*, 18(7), 209-223.
62. Trump, B. D., Keisler, J. M., Galaitsi, S. E., Palma-Oliveira, J. M., & Linkov, I. (2020). Safety-by-design as a governance problem. *Nano Today*, 35, 100989.
63. Hynes, W., Trump, B. D., Love, P., Kirman, A., Galaitsi, S. E., Ramos, G., & Linkov, I. (2020). Resilient Financial Systems Can Soften the Next Global Financial Crisis. *Challenge*, 1-8.
64. Linkov, I., Galaitsi, S., Trump, B. D., Keisler, J. M., & Kott, A. (2020). Cybertrust: From Explainable to Actionable and Interpretable Artificial Intelligence. *Computer*, 53(9), 91-96.
65. Galaitsi, S. E., Keisler, J. M., Trump, B. D., & Linkov, I. (2020). The Need to Reconcile Concepts that Characterize Systems Facing Threats. *Risk Analysis*.
66. Isigonis, P., Afantitis, A., Antunes, D., Bartonova, A., Beitollahi, A., Bohmer, N., ... & Doak, S. (2020). Risk Governance of Emerging Technologies Demonstrated in Terms of its Applicability to Nanomaterials. *Small*, 2003303.
67. Trump, B. D., Galaitsi, S. E., Appleton, E., Bleijs, D. A., Florin, M. V., Gollihar, J. D., ... & Merad, M. (2020). Building biosecurity for synthetic biology. *Molecular Systems Biology*, 16(7).

68. Hynes, W., Trump, B., Love, P., & Linkov, I. (2020). Bouncing forward: a resilience approach to dealing with COVID-19 and future systemic shocks. *Environment Systems and Decisions*, 1-11.
69. Trump, B.D., Bridges, T., Cegan, J., Cibulsky, S., Greer, S., Jarman, H., Lafferty, B., Surette, M., Linkov, I. (2020). An Analytical Perspective on Pandemic Recovery. *Health Security*, 18 (3), 250-256.
70. Linkov, I., Trump, B., Keisler, J., Cegan, J., Foran, C., Collier, Z., ... & Kuklja, M. (2020). Signals and Metrics Identifying Partnerships for Innovation. *IEEE Engineering Management Review*, 48 (2), 39-46.
71. Klasa, K., Trump, B., Linkov, I., & Lambert, J. (2020). Identifying New Partnerships for Innovation: Governance and Policy Challenges. *IEEE Engineering Management Review*, 48 (2), 26-38.
72. Trump, B.D., Keisler, J., Volk, K., Linkov, I. (2020). Biosecurity Demands Resilience. *Environmental Science & Technology*.
73. Greer, S., & Trump, B.D. (2019). Regulation and regime: the comparative politics of adaptive regulation in synthetic biology. *Policy Sciences*, 52(4), 505-524.
74. Zemba, V., Wells, E., Wood, M., Trump, B.D., Boyle, B., Blue, S., Cato, C., Linkov, I. (2019). Defining, Measuring, and Enhancing Resilience for Small Groups. *Safety Science*, 120, 603-616.
75. Linkov, I., Baiardi, F., Florin, M-V., Greer, S., Lambert, J., Pollock, M., Rickli, J-M., Roslycky, L., Seager, T., Thorisson, H., Trump, B.D. (2019). Applying Resilience to Hybrid Threats. *IEEE Security & Privacy*, 17(5), 78-83.
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3. United Nations Office for Disaster Risk Reduction. (2023). Stress-Testing The Resilience of Critical Infrastructure. <https://sdgs.un.org/sites/default/files/2023-05/B43%20-%20Stoddard%20-%20Stresstesting%20the%20resilience%20of%20critical%20infrastructure.pdf>

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TEACHING AND MENTORSHIP

Masters (M.S.)	Doctorate (Ph.D.)
Trajan Gering, Texas A&M University (2021)	Emily Wells – Carnegie Mellon University (2022)
Sienna Mark, University of Michigan (2022)	Anca Rusu - Paris Dauphine University (2023)
Josie Decherd, Texas A&M University (2022)	Katarzyna (Kasia) Klasa – University of Michigan, School of Public Health (2024)
Liam Kozma, University of Georgia (2025)	Gigi Pavur – University of Virginia (2024)
Gabby Fisher, University of Florida (2025)	Robert Horton – University of Florida (2024)
	Jack Watson – Northeastern University (2025)
	Sienna Mark – Northeastern University (2026)

COURSES TAUGHT

Environmental Toxicology Guest Lecturer Duquesne's School of Public Health, Pittsburgh, Pennsylvania	02/25
Public Health Policy and Practice Guest Lecturer University of Michigan	11/24
Water Security: Modeling and Data Analytics Distinguished Lecturer Niyazov Turkmen Agricultural University, Ashgabat, Turkmenistan	09/23
Water Security and Infrastructure Development Distinguished Lecturer Dashoguz Agricultural University, Dashoguz, Turkmenistan	09/23
Cybersecurity and Resilience in the Arctic Distinguished Lecturer and Course Facilitator Ted Stevens Center for Arctic Security Studies	08/23
Seminar: Data Analytics and Emergency Response Guest Lecture, (Dr. Ken Oye) MIT	11/22
Seminar: Environmental Risk Assessment (568) Guest Lecture, (Dr. Kerry Hamilton, Instructor of Record)	11/22

Arizona State University

Honors Seminar: Synthetic Biology and Ecological Systems (ES 518) 11/18
Guest Lecture, (Dr. Wayne Landis, Instructor of Record)
Western Washington University, Huxley College of the Environment

Health and the Public Policy Process (HMP 619) 01/16 – 05/16
Instructor, 3 Credit Hours
University of Michigan School of Public Health

Introduction to Public Health Policy (HMP 615) 09/15 – 12/15
Graduate Student Instructor, 3 Credit Hours
University of Michigan School of Public Health

Meaning Across the Millennia (99-242) 01/11 – 05/11; 01/12 – 05/12
Teaching Assistant, 3 Credit Hours
Carnegie Mellon University

TRAININGS & CERTIFICATIONS

Leadership in Homeland Security 2022
Harvard University, Kennedy School of Government

Emerging Leaders in Biosecurity Initiative (ELBI) 2019
Johns Hopkins University

EDITORIAL BOARDS

Risk Analysis 2024-Pres.
• Editorial Board

ELSI in Science and Genetics 2020-Pres.
• Associate Editor
• Specialty Section in Frontiers in Genetics, Frontiers in Bioengineering and Biotechnology, Frontiers in Pharmacology and Frontiers in Sociology

Medicine and Public Health 2018 – Pres.
• Editorial Board

Environment Systems and Decisions 2017 – Pres.
• Editorial Board

GOVERNMENT PANELS & PUBLIC DELIVERABLES

US National Academy of Sciences (NAS).
Panelist, State-of-the-Science of Cumulative Impact Assessment. 2024.

United States National Nanotechnology Initiative (NNI).

Senior Editor, Environmental, Health, and Safety Research Strategy. 2023-2024.

United Nations (UN).

Stress-Testing the Resilience of Critical Infrastructure. May 2023.

United States Office of Science and Technology Policy (OSTP).

Biden-Harris Fast-Track Action Committee (FTAC) on Climate Services. 2022-2023.

Organization for Economic Cooperation and Development (OECD).

Health Committee. Directorate for Health, Labour, and Social Affairs. 30 June 2022

Speaker, Health System Resilience Post-COVID-19

Federal Emergency Management Agency (FEMA).

Region 1 COVID-19 Detail (Role: Strategic Planner). 28 MAR. 2020 – 30 MAR. 2022

COVID-19: Inclusion in Center for Disease Control (CDC) Ensemble Forecast

ERDC-SEIR Compartmental Model. 2020-2021

Organization for Economic Cooperation and Development (OECD).

Committee for Science and Technology Policy. Delegate for the United States of America. Paris, France. March 23-24, 2017.

Organization for Economic Cooperation and Development (OECD).

36th Meeting of the Global Science Forum. Delegate for the United States of America. Paris, France. March 20-22, 2017.

PROFESSIONAL LEADERSHIP

Society for Risk Analysis, Executive Committee

President	12/25-12/27
President-Elect	12/24
Past-Treasurer	12/23
Treasurer	12/20-12/22
Treasurer-Elect	12/19

The International Society of Regulatory Toxicology and Pharmacology
Council Member

04/22-12/25

Society for Risk Analysis, Resilience Analysis Specialty Group

Past-President	12/21
President	12/20
President-Elect	12/19

Society for Risk Analysis, Decision Analysis and Risk Specialty Group

Past-President	12/20
President	12/19

President-Elect	12/18
Secretary	12/15

CONFERENCE & WORKSHOP LEADERSHIP

Society for Risk Analysis: Annual Meeting Washington, DC (Program Committee Chair)	12/25
NSF-NATO Workshop on Critical Infrastructure Resilience Varna, Bulgaria (Co-Principal Investigator)	08/25
NATO Advanced Research Workshop: Biotechnology Standardization Valletta, Malta (Program Committee)	05/25
NATO Advanced Research Workshop: Resilience for Countries in Crisis Varna, Bulgaria (Program Committee)	09/24
NATO Advanced Research Workshop: AI and Biotechnology Cartagena, Colombia (Conference Director)	04/24
Society for Risk Analysis: Annual Conference Washington, DC, USA (Executive Board)	12/23
Society for Risk Analysis: Annual Conference Tampa, Florida, USA (Executive Board)	12/22
Society for Risk Analysis: Annual Conference ONLINE (Program Committee)	12/20
Society for Risk Analysis: Annual Conference Crystal City, VA, USA (Program Committee)	12/19
NATO Advanced Research Workshop: Synthetic Biology & Biosecurity Lausanne, Switzerland (Program Committee)	07/19
Society for Risk Analysis: World Congress on Risk Cape Town, South Africa (Program Committee)	05/19
National Science Foundation: Science of Science Policy Workshop Washington, DC, USA (Program Committee)	02/19
NATO Advanced Research Workshop: Arctic Cybersecurity Rovaniemi, Finland (Conference Director)	01/19
Society for Risk Analysis: Annual Conference New Orleans, Louisiana, USA (Program Committee)	12/18

NATO Advanced Research Workshop: Hybrid Threats Pärnu, Estonia (Program Committee & Working Group Chair)	08/18
Workshop on Quantitative Risk Assessment for Synthetic Biology Vicksburg, Mississippi, USA (Workshop Chair)	03/18
Conference on Information Systems for Crisis Response and Management Albi, Occitanie Pyrénées-Méditerranée, France (Program Committee)	05/17
Society for Risk Analysis: Policy Forum Venice, Italy (Program Committee)	03/17
NATO Advanced Research Workshop: Risk and Resilience Ponta Delgada, Azores, Portugal (Group Rapporteur)	06/16
Society for Risk Analysis: World Congress on Risk Biopolis, Singapore (Program Committee)	07/15
Engineered Nanomaterial Risk & Governance Workshop Royal Academy of Sciences, London, UK (Scribe)	07/13