

# On Risk and Resilience of Priorities for Engineering Systems

**Dr. James H Lambert**

Professor

Engineering Systems and Environment

University of Virginia

**Abstract:** This talk will address risk and resilience of enterprise and engineering systems, with an emphasis on the emergent and future conditions that are most and least influential to priority-setting. Risk and resilience are addressed from the perspective of scenarios that disrupt priorities. Priorities are across projects, assets, organizations, geography, products, services, policies, etc. Emergent and future conditions include technologies, regulations, environments, behaviors, missions, markets, pandemic, cyber threats, etc. Administration of programs for risk, resilience, safety, security, and trust considers: (i) what sources of risk are in the program scope, (ii) what are the allocations of resources, and (iii) how is the program evaluated on various time horizons. Examples to be discussed are: Charging of fleet electric vehicles, Airport runway safety, Logistics and transportation corridors, Infrastructure development for newly industrialized countries, 5G wireless networks for public safety, Automation of correctional facilities, Maritime container ports, and Resilience of coastal regions to sea-level rise.

**Bio:** Professor Lambert's interests are engineering systems and risk analysis. He is a Professor of Engineering Systems and Environment (Program in Systems Engineering, Program in Civil Engineering), Director of the Center for Risk Management of Engineering Systems, and Member of the Technical Advisory Council of the Commonwealth Center for Advanced Logistics Systems, each at the University of Virginia. He served as Chair of the Fifth World Congress on Risk (Cape Town, South Africa, 2019), as President (2015-2016) of the Society for Risk Analysis (SRA), and Chair (2015) of the SRA Annual Meeting with over 800 registered participants (Washington DC). He is a Fellow of the AAAS, Fellow of the IEEE, Fellow of the ASCE, Fellow of the SRA, Diplomate (D.WRE) of the American Academy of Water Resources Engineers, member of the International Council on Systems Engineering, and licensed Professional Engineer (P.E.). He is Editor-in-Chief of the Springer journal *Environment Systems & Decisions*. He is Area Editor of the Wiley journal *Risk Analysis*. He is Associate Editor of the ASCE/ASME *Journal of Risk & Uncertainty in Engineering Systems*. His publications appear in the above journals and Wiley journal *Risk Analysis*, Elsevier journal *Reliability Engineering and System Safety*, ASCE *Journal of Infrastructure Systems*, *Military Operations Research Society Journal*, *IEEE Transactions on Systems Man and Cybernetics*, Elsevier journal *Accident Analysis and Prevention*, et al. He received a Ph.D. (1994) and M.S. (1990) in Civil Engineering at the University of Virginia, and a B.S.E. (1988) in Mechanical Engineering with a Certificate in Engineering Physics at Princeton University.