



## *Risk Sciences, an Overview of Theoretical Foundations and Two Recent Applications*



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#### **Abstract**

Methods and applications of risk analysis have gone through more than 50 years of evolution and advancement, and currently enjoy wide acceptance in many fields of science, technology, policy, and planning. Over the past two decades significant progress has been made in formalization of the foundational theories and introduction of advanced techniques for more comprehensive quantitative risk assessments and more effective support for risk-informed decision making. These advancements are seen in all sub-disciplines of risk sciences including reliability engineering, system safety, cyber-physical system security, and resilience engineering. The talk will offer an overview of the discipline and two recent applications: Wildfire risk management of California electric power network, and COVID-19 risk-informed mitigation decision support.

#### **About the Speaker**

Ali Mosleh is a UCLA Distinguished University Professor, and Evalyn Knight Endowed Chair in Engineering. He is also the director of the UCLA Garrick Institute for the Risk Sciences. Prior to joining UCLA in 2014, he was the Nicole J. Kim Eminent Professor in Reliability Engineering and the Director of the Center for Risk and Reliability at the University of Maryland. He conducts research on methods for probabilistic risk analysis and reliability of complex systems, holds several patents, and has edited, authored, or co-authored over 700 publications including books, guidebooks, and technical papers. He was elected to the US National Academy of Engineering in 2010, is a Fellow of the Society for Risk Analysis and the American Nuclear Society, and recipient of several scientific achievement awards. He has served as technical advisor to numerous national and international organizations.