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# AME Kececioglu Memorial Lecture: Dan M. Frangopol

Wednesday, August 23, 2023



Thursday, October 5, 2023 - 4:00 p.m.

**Dan M. Frangopol**

The Fazlur Rahman Khan Endowed Chair of Structural Engineering and Architecture  
Professor of Civil Engineering  
Department of Civil and Environmental Engineering  
Lehigh University

**"Life-Cycle Multi-Objective Optimization of Structures and Infrastructure Systems under Uncertainty"**

AME Lecture Hall, Room S212 | [Zoom Link](#)

The lecture will be followed by a reception in the AME courtyard.

*Hosted by Dr. Samy Missoum*

**Abstract:** Decisions regarding design, assessment and maintenance of structures and infrastructure systems should be supported by an integrated reliability-, risk-, resilience- and sustainability-based life-cycle multi-objective optimization framework by considering, among other factors, the likelihood of successful performance and the total expected cost accrued over their entire life. The primary objective of this memorial lecture is to present a life-cycle multi-objective optimization framework for reliability-, risk-, resilience- and sustainability-informed decision making for structures and infrastructure systems under lifetime hazards including corrosion, earthquake and climate change. Several important performance indicators such as reliability, risk, resilience and sustainability necessary to be implemented in the design, assessment and maintenance of structures and infrastructure systems under single and multiple hazards are introduced. Bridges and bridge transportation networks are used to illustrate the application of the proposed approach.



**Bio:** Dan M. Frangopol is the inaugural holder of the Fazlur R. Khan Endowed Chair of Structural Engineering and Architecture at Lehigh University. Before joining Lehigh University in 2006, he was professor of civil engineering at the University of Colorado at Boulder, where he is now professor emeritus. He is recognized as a pioneer in the field of life-cycle engineering of civil and marine structures under various types of hazards. Dr. Frangopol is the founding president of the International Association for Bridge Maintenance and Safety (IABMAS) and the International Association for Life-Cycle Civil Engineering (IALCCE). He has authored/co-authored 4 books, more than 60 book chapters, and over 470 articles in archival journals, including 14 prize winning papers. He is the founding editor of Structure and Infrastructure Engineering. Dr. Frangopol is the recipient of several medals, awards, and prizes, from ASCE, IABSE, IASSAR, ISHMII, SAE and other professional organizations, such as the Newmark, Freudenthal, Housner, Croes (twice), TY Lin, and Khan Medals, the Ang Award, and the Lifetime Achievement Award in Education (OPAL). He holds 4 honorary doctorates and 14 honorary professorships from major universities. Dr. Frangopol is an elected member of the US National Academy of Construction, and a foreign member of the Canadian, Japan and Mexican Academy of Engineering, Academia Europaea (London), Royal Academy of Belgium, Romanian Academy, Romanian Academy of Technical Sciences, and a Distinguished Member of ASCE.