

# Frangopol awarded 2019 George W. Housner Structural Control and Monitoring Medal

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## ASCE honor recognizes impact of pioneering work in integrating structural health monitoring in life-cycle engineering of civil, marine infrastructure systems

George W. Housner is widely considered the father of seismic engineering, which ushered in safer, more cost-effective construction in earthquake-prone areas.

So it's fitting that a medal bearing his name would be bestowed on a researcher who's played a similarly foundational role in ensuring the reliability of modern civil infrastructure systems.

Dan M. Frangopol, the inaugural Fazlur R. Khan Endowed Chair of Structural Engineering and Architecture at Lehigh University, has been awarded the 2019 [George W. Housner Structural Control and Monitoring Medal](#) in recognition of his groundbreaking work and leadership in the field of life-cycle engineering.

The Engineering Mechanics Institute (EMI) of the American Society of Civil Engineers (ASCE) selected Frangopol for the honor, citing his "pioneering contributions to the integration of structural health monitoring and control in reliability-based life-cycle assessment, design and optimization of civil and marine infrastructure," according to ASCE Executive Director Thomas W. Smith III.

Life-cycle engineering employs complex, computationally intense analyses to determine the long-term value and risk associated with infrastructure investments.

More than two decades ago, research by Frangopol and his team launched this novel way to define success in the design and assessment of infrastructure systems. His contributions— using probabilistic modeling and analysis, as well as advanced computer simulation—have fostered a global shift in policies and practices in building infrastructure components for long-term risk, resilience, and sustainability, rather than just initial cost and performance.

Since his early seminal work, Frangopol has made continuous and significant contributions to advancing the integration of structural health monitoring and life-cycle engineering for ever-involving, interrelated infrastructure systems in multi-hazard environments. His contributions provided a viable approach to solving the challenge of sustainable development and sprouted widespread effort in developing life-cycle management strategies of structures. According to ASCE, his work "has not only saved time and money, but very likely also saved lives."

His team's recent work—which includes developing a first-of-its-kind comprehensive risk assessment framework that integrates the most common failure modes for bridges exposed to flooding, hurricanes, tsunamis, and other extreme water-related events—continues to advance the scope and capabilities of life-cycle analysis.

"This award is yet another indication of Dan's role as an authority in structural systems reliability and calls attention to impact of life-cycle analysis on how we design and maintain infrastructure systems," says [Panos Diplas](#), P.C. Rossin Professor and chair of [civil and environmental engineering](#) at Lehigh.

The George W. Housner Structural Control and Monitoring Medal is presented to an individual whose outstanding research has made a lasting mark in the broad area of structural control and health monitoring. Housner was a professor at the California Institute of Technology and his research profoundly influenced structural control and monitoring of civil infrastructure systems worldwide.



Dan M. Frangopol, Fazlur R. Khan Endowed Chair of Structural Engineering and Architecture, has been awarded the 2019 George W. Housner Structural Control and Monitoring Medal from the Engineering Mechanics Institute of the ASCE.

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Formal presentation of the medal will take place during the [ASCE-EMI 2019 Conference](#), held June 18-21, 2019, in Pasadena, CA.

*Story by Katie Kackenmeister, assistant director of communications, P.C. Rossin College of Engineering and Applied Science*

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