Center for Urban Built Environment (CUBE)

Seminar Series

Adaptive and Deployable Lightweight Civil Infrastructure

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Civil and Environmental Engineering

Tuesday, March 3, 2026 @11:30 am
Location: DUDL 4331

A structure that can self-identify damage, adapt, and learn for future events addresses the emerging field of intelligent infrastructure and structural health monitoring through inspiration from biology. To achieve this type of structure requires balance of structural engineering, architecture, mechanical engineering, computer science, and robotics. Although deployable structures are already fairly common, deployable active structures that change shape either autonomously or remotely to accommodate challenging environments are rare. Tensegrity structures are geometrically non-linear, they are ideal candidates for studying deployable structures (http://youtu.be/FeXxjerleZE). Through actuation, origami-inspired structures can also be repeatedly deployed for ease of transportation and installation. The grand challenge of this work is addressing uncertainties between modeling and experimental testing for large-scale shape changing structures. This seminar will present work on adaptive and deployable structures using sustainable materials and control algorithms for resilient infrastructure.

DEPLOYABLE STRUCTURES

ABOUT DR. SYCHTERZ

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QUESTIONS?

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