

## Civil and Environmental Engineering

### FROM THE CHAIR / Fall 2024

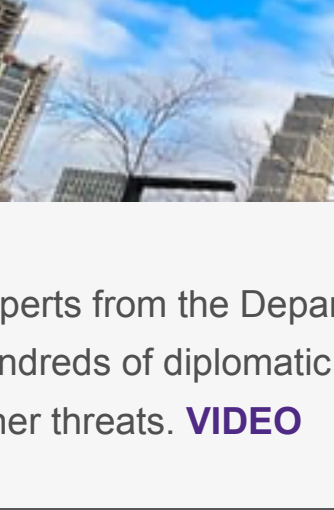
Dear friends and colleagues,

We have only been back in session a few weeks, but already have so much news to share with you.

After working for many years, we are immensely proud of a comprehensive study we recently completed for the US Department of State on future-proofing their vast and global expanse of diplomatic facilities from the unpredictable ravages of climate change. We believe that this work applies to all human settlement and hope that it can be useful to any community facing the challenges of climate resilience and adaptation.

At the molecular and cellular scale, Professors **Ludmilla Aristilde** and **Erica Hartmann** open our eyes to the intricacies of natural and built environment. Professor **Marco Nie** and his students are probing equity issues around public transit fares to reveal surprising tradeoffs. We include several stories about our recent and former graduates who are making significant and atypical accomplishments. Our faculty, too, are repeatedly recognized for their excellence and noteworthy achievements. Perhaps our most exciting news, though, is that we welcome three new assistant professors: **Giorgia Chinazzo**, **Federico Ciardo**, and **Lucia Stein-Montalvo**.

We hope you enjoy catching up with CEE news. Thank you very much for your support and I wish you a lovely, colorful autumn.



**Kimberly Gray**  
Roxelyn and Richard Pepper Family Chair  
Professor of Civil and Environmental Engineering  
McCormick School of Engineering

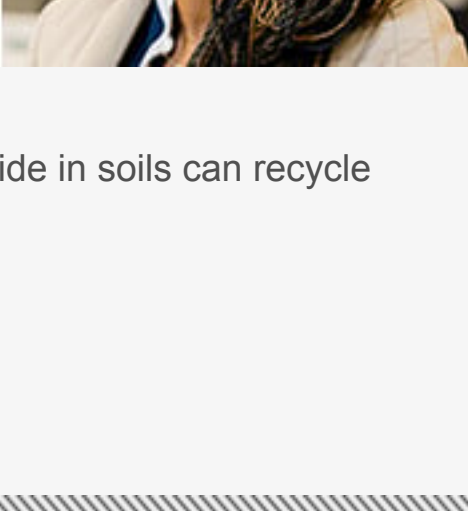
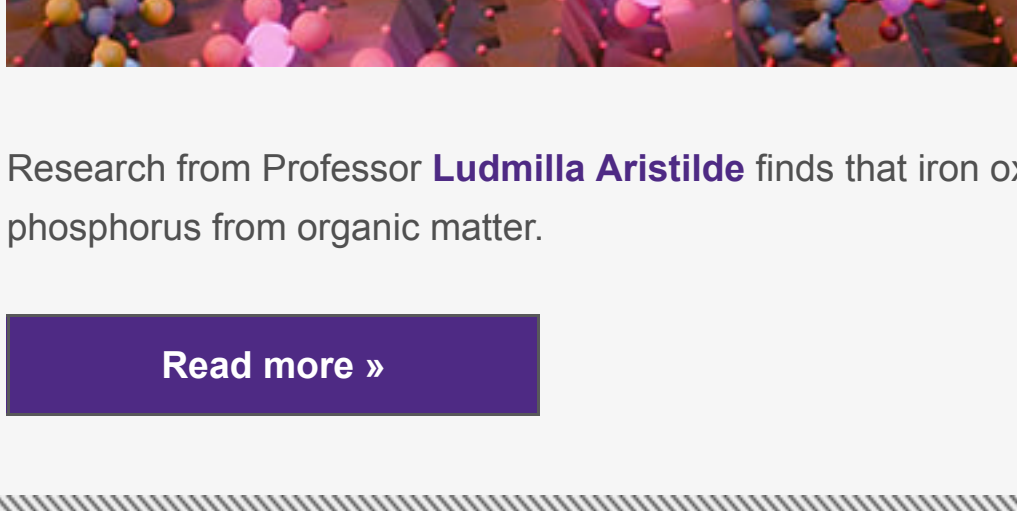
### Future-Proofing US Embassies and Consulates



Experts from the Department of Civil and Environmental Engineering reimagined how hundreds of diplomatic locations around the world can prepare for climate change and other threats. **VIDEO**

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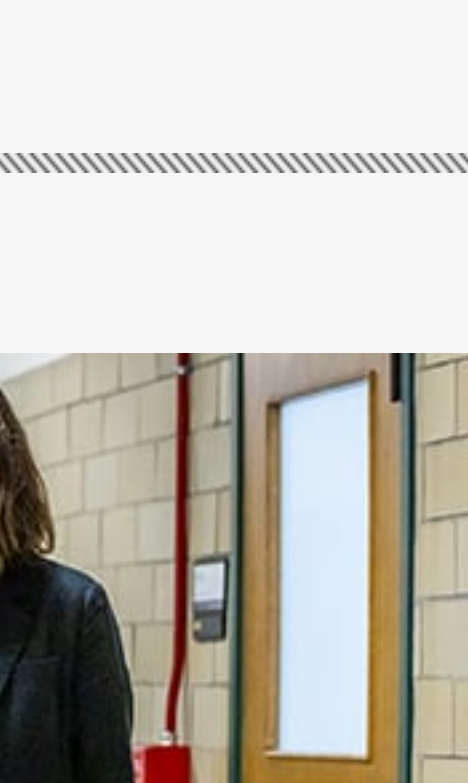
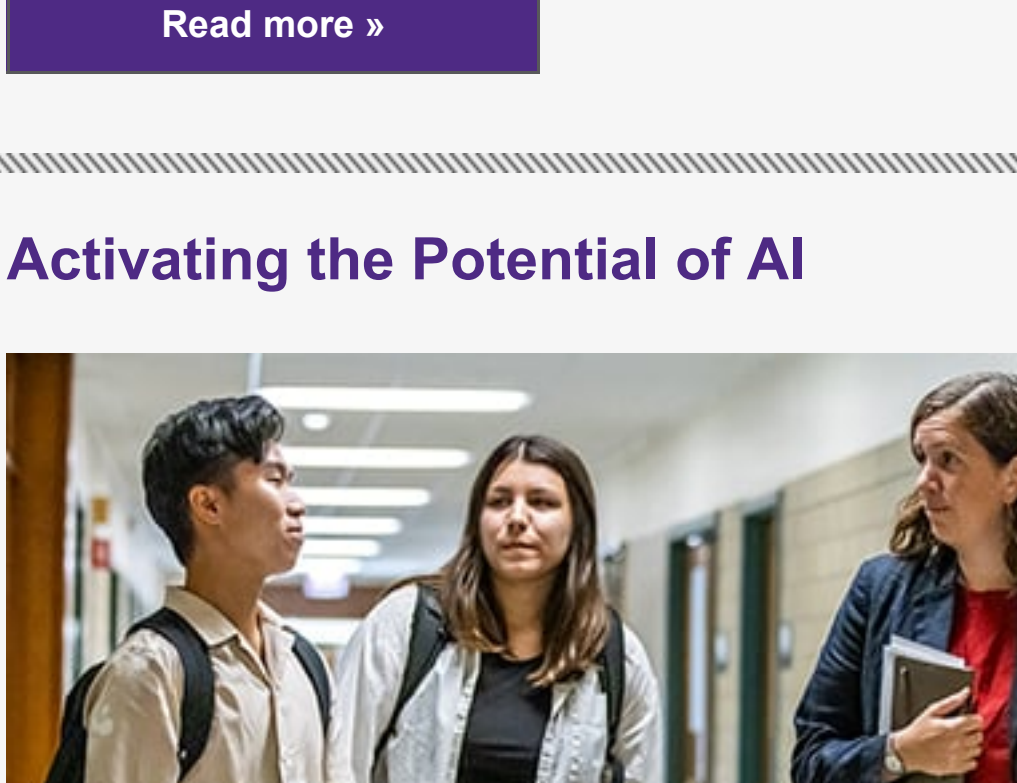
### Viruses Are Teeming on Your Toothbrush, Showerhead



A study by Professor **Erica Hartmann** finds there's a jungle of 'untapped biodiversity' in the bathroom.

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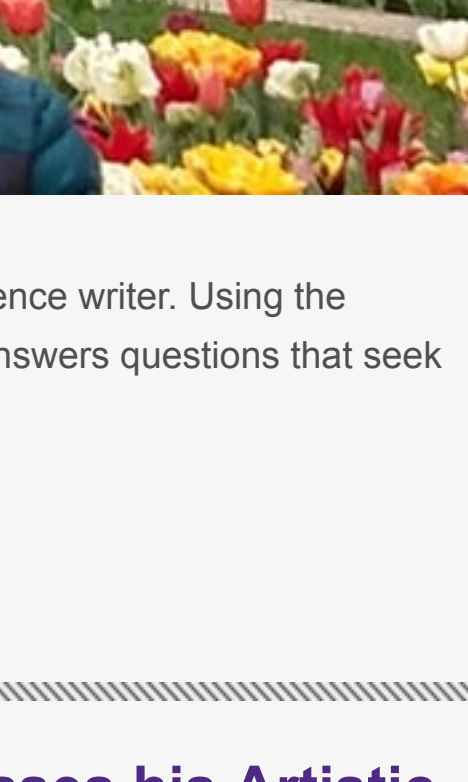
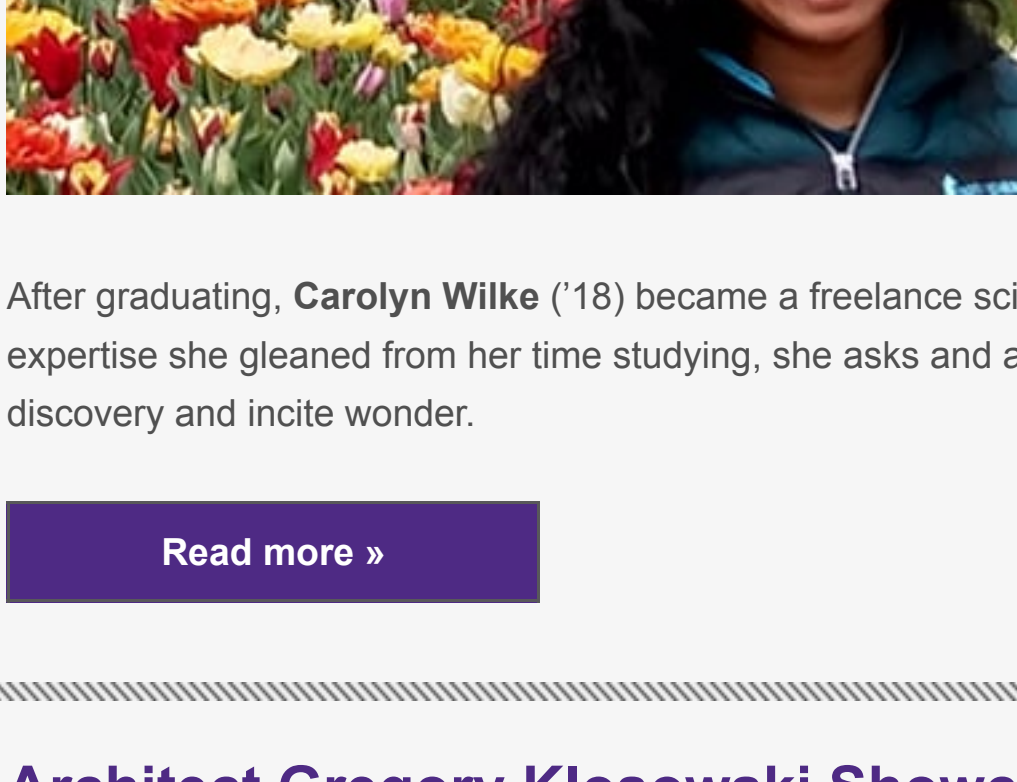
### Minerals Play Newly Discovered Role in Earth's Phosphorus Cycle



Research from Professor **Ludmilla Aristilde** finds that iron oxide in soils can recycle phosphorus from organic matter.

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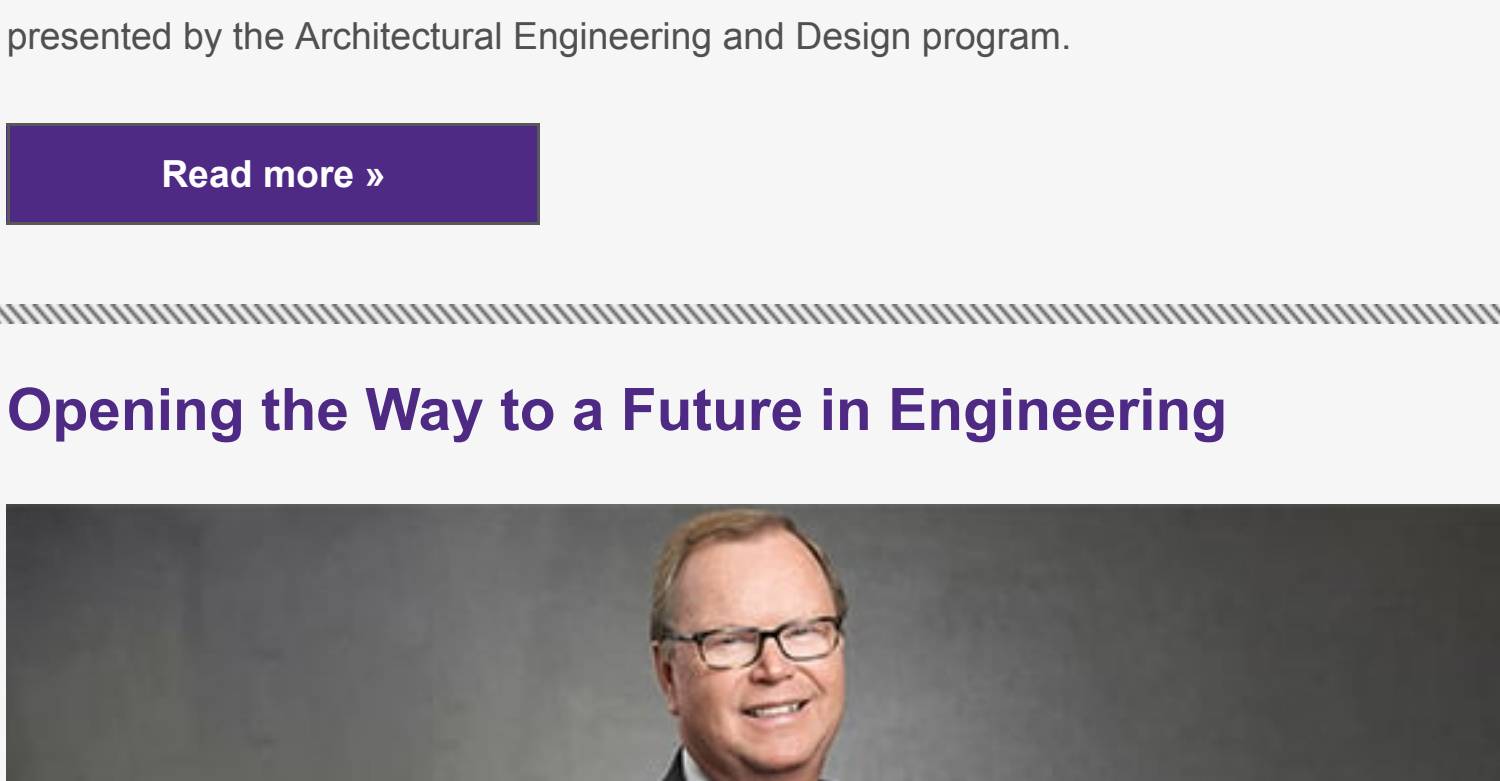
### What are the Equitable Guardrails of Fare-Free Transit?



In a recent paper, Professor **Marco Nie** and PhD students examined fare-free transit through the lens of distributive justice.

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### Activating the Potential of AI



Northwestern Engineering faculty such as Professors **Amanda Stathopoulos** and **Kimberly Gray** are at the forefront of artificial intelligence education and application. **VIDEO**

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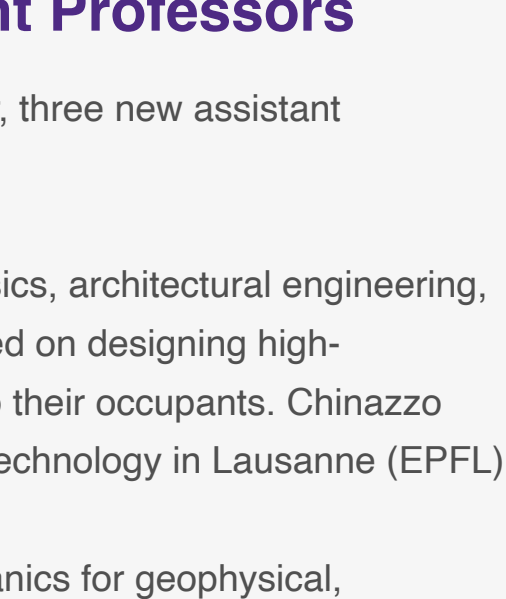
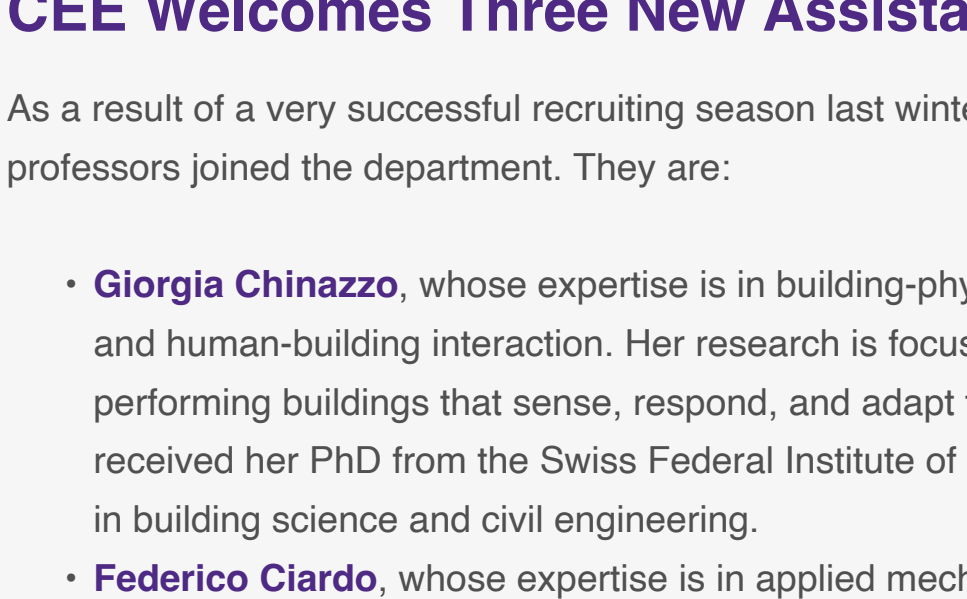
### Alumna Wilke Writes Her Story



After graduating, **Carolyn Wilke** ('18) became a freelance science writer. Using the expertise she gleaned from her time studying, she asks and answers questions that seek discovery and incite wonder.

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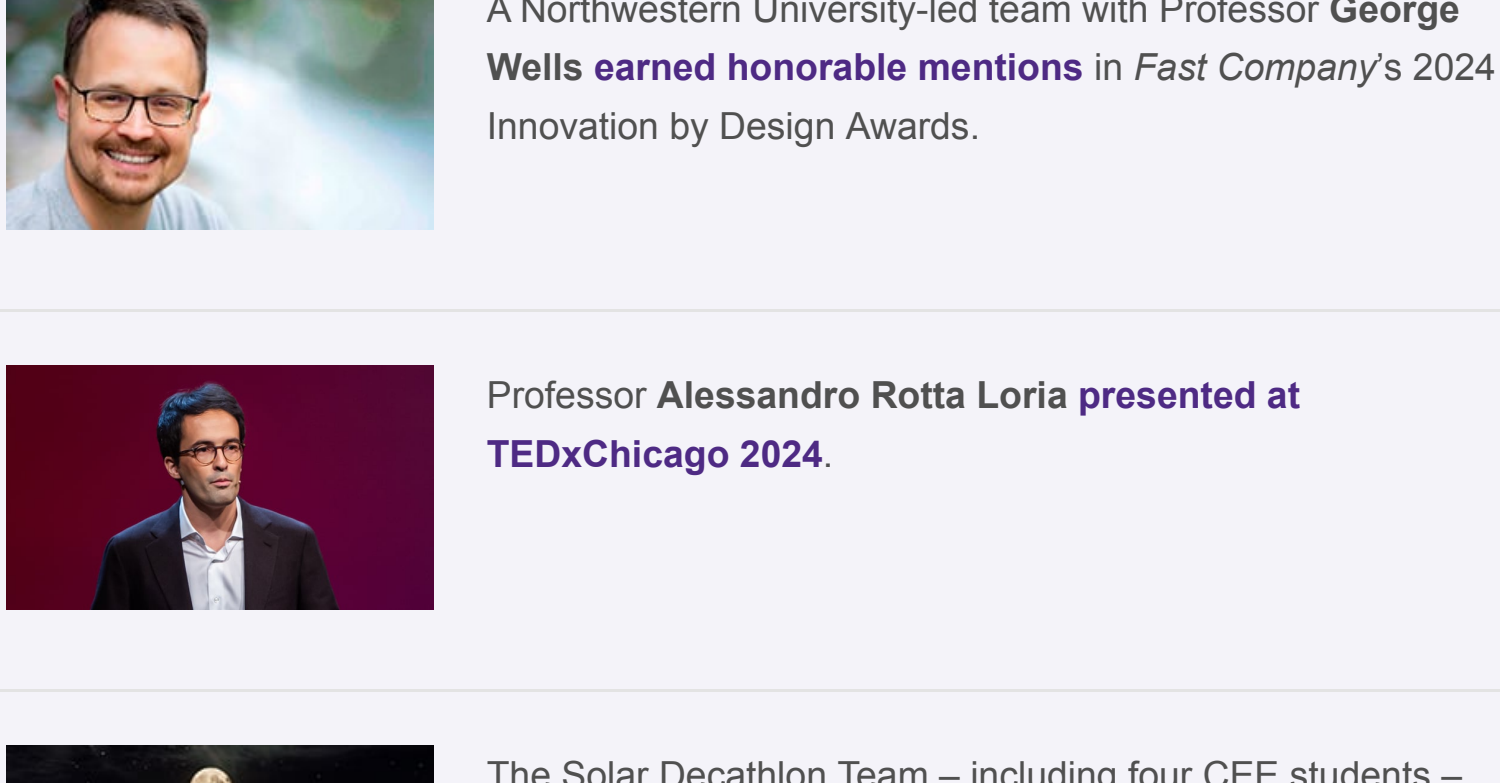
### Architect Gregory Klosowski Showcases his Artistic Sketches



Introduced by Professor **Giorgia Chinazzo**, Klosowski spoke in May during an event presented by the Architectural Engineering and Design program.

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### Opening the Way to a Future in Engineering



Engineering Tomorrow founder **Bill Woodburn** (MS '75) helps underserved high school students discover their potential for a career in engineering by introducing them to STEM subjects. **VIDEO**

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### CEE Celebrates the Class of 2024

The class included 20 graduates who earned a degree in civil engineering, while nine students graduated with degrees in environmental engineering.



### CEE Welcomes Three New Assistant Professors

As a result of a very successful recruiting season last winter, three new assistant professors joined the department. They are:

- **Giorgia Chinazzo**, whose expertise is in building-physics, architectural engineering, and human-building interaction. Her research is focused on designing high-performing buildings that sense, respond, and adapt to their occupants. Chinazzo received her PhD from the Swiss Federal Institute of Technology in Lausanne (EPFL) in building science and civil engineering.
- **Federico Ciardo**, whose expertise is in applied mechanics for geophysical, geomechanical and engineering problems. Using a combination of theoretical and numerical models, Ciardo studies how earthquakes nucleate and propagate on complex fault systems. He received his PhD in mechanics from EPFL.
- **Lucia Stein-Montalvo**, whose research explores the nonlinear mechanics of “shape-shifting” structures, and how they can be used for flexible, adaptive, and self-regulating architectural designs. She was a Presidential Postdoctoral Research Fellow in civil and environmental engineering at Princeton University, and holds a PhD in mechanical engineering from Boston University.

### FACULTY HONORS



A Northwestern University-led team with Professor **George Wells** **earned honorable mentions** in *Fast Company's* 2024 Innovation by Design Awards.



Professor **Alessandro Rotta Loria** **presented at TEDxChicago 2024**.



The Solar Decathlon Team – including four CEE students – **reached the finals** of the 2024 Department of Energy competition.



Professor **Zdeněk Bažant** was **named a fellow of the Royal Society of Canada** as part of the Class of 2024, and also was **elected a fellow** of the American Rock Mechanics Association.



Professor **Hani Mahmassani** **received two honors**: a lifetime achievement award from the International Association for Travel Behaviour Research, and also was named a fellow of the Institute for Operations Research and the Management Sciences.

### FACTS & FIGURES

**99**

Years of research and education

**7**

National Academy of Engineering members

**10**

Young Investigator Awards



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