

CEE @ Illinois



News from the Department of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign



January 2012

[Subscribe](#) | [Read Online](#) | [Forward](#) | [Unsubscribe](#)

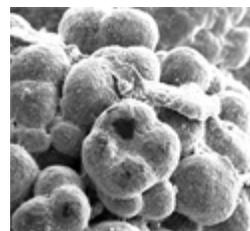
[New, multidisciplinary program: Sustainable and Resilient Infrastructure Systems](#)

CEE at Illinois has launched a new multidisciplinary program, Sustainable and Resilient Infrastructure Systems (SRIS), which offers an undergraduate primary area and enables graduate students with an interest in integrated research, education and practice to obtain cross-disciplinary M.S. and Ph.D. Civil Engineering degrees. The curriculum will address emerging approaches to infrastructure systems, focusing on resiliency and sustainability of interconnected infrastructure—for example, structural, geotechnical, and water interactions in urban environments—and aims to prepare new generations of civil engineers who are ready to address pressing societal issues while developing needed infrastructure. [More about the SRIS program](#)



[Biom mineralization: the key to self-healing concrete](#)

CEE researchers are investigating the use of bacteria to create concrete that heals itself after cracking. The technique mimics the way limestone forms in nature, said Assistant Professor Paramita Mondal, who is working with professors Wen-Tso Liu and Leslie Struble. The team is using a non-pathogenic microorganism commonly found in soil to stimulate the growth of calcium carbonate in concrete. Their hope is that a method can be designed that would enable the bacteria to be added to concrete during mixing, after which it would form spores, or hibernate. If the concrete cracked, the exposure to air would activate the bacteria and stimulate the deposit of calcium carbonate, repairing the crack. [Read more about self-healing concrete research](#)



[New materials, designs help create seismically sounder bridges](#)

Two current research projects are addressing the design for safety and functionality of bridges after an earthquake. Associate Professor James LaFave and Assistant Professor Larry Fahnestock have worked with the Illinois Department of Transportation (IDOT) on a three-year project to evaluate IDOT's earthquake resisting system strategy for the design and construction of new bridges in Illinois. A second project that will advance research in the area of retrofitting and repairing current structures, is one being undertaken by Assistant Professor Bassem Andrawes, who is investigating the use of smart materials to reinforce lifeline concrete structures with the aim of mitigating damage from strong earthquakes. [More about the bridge research](#)



[New faculty member: Paolo Gardoni](#)

Associate Professor Paolo Gardoni joined the faculty in December. He will teach undergraduate and graduate courses in the area of structural engineering, including structural analysis, and interdisciplinary courses including engineering risk analysis, reliability analysis and engineering ethics. "The new frontiers of engineering are interdisciplinary," Gardoni said. "My teaching and research are focused on developing a new kind of engineer and researcher that has interdisciplinary knowledge and, as a result, the unique skills required to solve the most pressing global challenges of the 21st century." [More about Paolo Gardoni](#)



[Jeff Roesler wins technical achievement award for pavement work](#)

Professor Jeffery Roesler was honored by the American Concrete Pavement Association (ACPA) with the Marlin J. Knutson Award for Technical Achievement. Roesler was cited in recognition of his research, which has advanced the understanding and use of thin, economical concrete pavement systems; his contributions to an advanced design procedure for thin concrete overlays on asphalt; and groundbreaking work to unlock the science behind the structural benefits of fiber reinforcement for thin slabs. Roesler is the Illinois Chapter-ACPA Faculty Scholar. He has served on the faculty since 2000. [More about Roesler's award](#)



[Study of photo-radar speed enforcement highlighted as "high value" research](#)

An Illinois Center for Transportation (ICT) study on the effectiveness of photo-radar speed enforcement in construction zones was voted a high-value research project by members of the American Association of State Highway and Transportation Officials (AASHTO) and featured in an AASHTO publication highlighting high-value research from around the nation. Professor Rahim Benekohal's study, "Speed Photo-Enforcement in Illinois Work Zones," compared photo-radar enforcement with traditional methods like police presence and speed indicator signs. Photo-radar enforcement was found to be most effective. As a result, Illinois has implemented speed photo-radar enforcement statewide in work zones. [More about the research](#)



[Winter 2012 issue of CEE magazine now online](#)

The winter 2012 issue of the CEE magazine is now online. This issue features a special section on research and instruction in the department that addresses infrastructure renewal, photos of the M.T. Geoffrey Yeh Student Center dedication event, alumni news and department news, including a feature on CEE's own student rapper. The CEE magazine is published twice a year for alumni and friends of the department. Those who donate annually to the department receive every issue in print form. [Read the CEE magazine online](#)



Links



[CEE Website](#)

[CEE Magazine](#)

[CEE Research Reports on IDEALS](#)

Rankings

[Undergraduate](#)

[Graduate](#)

[Environmental](#)

Follow us on [Facebook](#) and [Twitter](#)

CEE at Illinois on [YouTube](#)

[Corporate Partners Program](#)

[Yeh Student Center](#)

[CEE Online](#)

[International 3+2 Programs](#)

The Department of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign
205 North Mathews Ave., Urbana, IL 61801-2352 • 217-333-8038 / FAX: 217-333-9464 • civil@illinois.edu