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Jeremy Gregory

Concrete Sustainability Hub names Jeremy Gregory as executive director

Denise Brehm | Civil and Environmental Engineering
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Jeremy Gregory — an engineer who studies the economic and environmental implications of materials, their recycling and end-of-life recovery — has been named executive director of the MIT Concrete Sustainability Hub (CSHub), effective July 1. Professor Franz-Josef Ulm, faculty director of the research center, announced the appointment June 28.

“We are all very much looking forward to working with Jeremy as he leads the CSHub in its continued implementation efforts of science-enabled engineering,” Ulm says. “In addition to his expertise in this field, Jeremy’s background in solid mechanics is ideal for creating synergies between the science-platform and life-cycle analysis teams of the center.”

Gregory replaces Hamlin Jennings, an adjunct professor in the Department of Civil and Environmental Engineering, which is administrative home to the CSHub. Jennings is widely known for developing the first fully quantitative model of the nanostructure of the major component of hydrated cement while on the faculty of Northwestern University. He was the first executive director of the CSHub.

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“We have been extremely fortunate to have Professor Hamlin Jennings leading us out of the starting blocks since 2010 and establishing the CSHub as the recognized epicenter of concrete science and engineering worldwide, far beyond our wildest expectations,” Ulm says.

The CSHub was established in 2009 with grants from the Portland Cement Association and Ready Mixed Concrete Research & Education Foundation with the goal of accelerating emerging breakthroughs in concrete science and swiftly transferring those research advances into industry. (The hub’s acronym is a play on the calcium silicate hydrate of cement’s nanostructure.)

Concrete is the most widely used building material on Earth. But the production of cement — its basic building block at the nanoscale — accounts for about 5 percent of the world’s total carbon dioxide emissions. One goal of the research center is to find ways of reducing that carbon footprint through manipulation of the material at the nanoscale and through more sustainable practices in use of the material.

Gregory has led the research and development and implementation efforts of the CSHub’s life-cycle assessment and life-cycle costs analysis teams for the past two years. He previously worked as a research scientist in the Engineering Systems Division, and has done studies on the life-cycle environmental impacts for pavements and conventional and electric vehicles, on recycling systems and on material availability in supply chains. He received a BS from Montana State University-Bozeman in 1998, the an MS from MIT in 2000 and a PhD from MIT in 2004, all in mechanical engineering.

“The Concrete Sustainability Hub is a wonderful example of a successful industry-academia partnership and I am honored to be chosen to lead such a strong team of investigators at MIT and collaborate with our partners in the cement and concrete industries,” Gregory says. “I will work hard to build upon the foundation that has been built in the Hub and create new opportunities to translate the research conducted at MIT into opportunities for industry.”

Scientists and engineers from five MIT departments participate in the research of the CSHub: The departments of chemical engineering, civil and environmental engineering, materials science and engineering, nuclear science and engineering and the Engineering Systems Division.

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