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GREETINGS FROM NORTHWESTERN ENGINEERING

Lately, headlines cry out problems regarding water: too much in places like Florida, North Carolina, and Puerto Rico after destructive hurricanes; too little in places like South Africa, Israel, and Northern California after devastating droughts. Never has it been so critical to study the vital fluid that sustains all life.

With our work at the Center for Water Research, faculty are designing, simulating, and integrating innovative materials and engineered bioprocesses into water systems. Led by Aaron Packman, professor of civil and environmental engineering, our researchers collaborate with others from a variety of disciplines across Northwestern, a mindset so typical at our University and so necessary to solve such a complex issue.

As you will read in this issue, other McCormick researchers are thinking beyond this planet. An interdisciplinary team is looking to improve life on Mars—human life, that is. Led by Associate Professor Gianluca Cusatis, the group created “Marscrete,” a concrete developed from native materials in the Martian landscape which could be used to build homes with 3D printing technology on the Red Planet. Already, the work has received kudos from NASA. As with many technologies developed for NASA initiatives, think of the Gemini and Moon missions, I suspect that many of these new ideas may find applications here at home.

This type of work inspires our students to aim for ever more ambitious targets. That is very clear at Design for America (DFA), the Northwestern-based national network that addresses community-based challenges using the human-centered design process. This fall, DFA earned the prestigious National Design Award for Corporate and Institutional Achievement from the Cooper Hewitt, Smithsonian Design Museum. This honor puts DFA in the good company of previous winners, including Apple, Etsy, and TED. We could not be prouder.

The breadth of work at Northwestern Engineering continues to grow. You can see it in other stories in this issue, ranging from teaching high school students the concepts of synthetic biology to collaborations with psychology to study personality types. Engineering touches every part of campus and our lives, and our alumni go on to make a difference in fields as varied as artificial intelligence to medical devices. It is an exciting time to be an engineer.

As always, I welcome your feedback.

JULIO M. OTTINO
Dean, McCormick School of Engineering and Applied Science

On the Cover Two PhD candidates check a water level sensor at Gensburg-Markham Prairie, working to understand how the prairie responds to major rainfall events under a changing climate.

Photograph by Alex Garcia

Northwestern Engineering is published by the Robert R. McCormick School of Engineering and Applied Science, Northwestern University, for its alumni and friends.

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Northwestern | McCORMICK SCHOOL OF ENGINEERING

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Produced by The Grillo Group, Inc.