"In these stories and throughout Northwestern Engineering, the importance of teamwork is key to success. With our track record, you can expect to read about more life-changing wins in future issues."

GREETINGS FROM NORTHWESTERN ENGINEERING

One of the key strengths of engineering is the capability to partner with other fields to unlock new opportunities.

This viewpoint comes shining through in John Rogers's collaboration with colleagues in both the McCormick School of Engineering and the Feinberg School of Medicine to develop a pair of soft, flexible wireless sensors that replace the standard wire-based sensors used on premature babies. These new sensors monitor vital signs—heart rate, respiration rate, and body temperature—and eliminate the rat's nest of wires. This innovation is not just important for its considerable technical achievements; it makes possible the crucial bonding that occurs between parents and their tiny babies through cuddling—an impact that lasts a lifetime.

In this issue, you'll also learn about our new Center for Physical Genomics and Engineering, which examines the regulation of global gene expression. When our researchers targeted the chromatin structure to limit a cancer cell's ability to evolve resistance to chemotherapy drugs, the technique eliminated virtually 100 percent of cancer cells in cell cultures and animal models. While the work is still in its early stages, it underscores Northwestern's spot at the forefront of this emerging field that has the potential to change the course of lives by changing the course of diseases.

You'll also read how Northwestern Engineering is at the center of collaborations with eight institutions to revolutionize the creation of new materials, how our TIDAL Lab combines music with computer science to draw younger, more diverse students, and how undergraduate students in the Segal Design Institute work with scientists from Shedd Aquarium to develop tools to conduct critical research to help aquatic life, much of which faces challenges as our seas change. This type of partnership is unique to Northwestern Engineering, and our students find meaning in the work.

Also, we hear from alumni who turned their student work into successful startups—which were then bought by prominent companies.

In these stories and throughout Northwestern Engineering, the importance of teamwork is key to success. With our track record, you can expect to read about more life-changing wins in future issues.

As always, I welcome your feedback.

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

On the Cover Tiny, flexible wireless sensors developed by Northwestern researchers eliminate the rat's nest of wires previously necessary to monitor premature babies' vital signs.

Photography by Sally Ryan

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