He prefers not to take credit, but without Stephen Carr, McCormick would look quite different today. As senior associate dean of undergraduate engineering for the past 23 years, Carr has helped steer McCormick through a dramatic reimagining of the undergraduate curriculum and the emergence of a culture of whole-brain engineering. As he closes out his tenure in this position, Carr took time to reflect on how McCormick came to embrace the whole-brain concept, what he’s enjoyed most as dean, and what he plans to do next.

What advances at McCormick stand out as most memorable during your tenure as senior associate dean?

Back in 1994, this was a research-intensive institution with a huge untapped potential to add engineering thinking and the full power of engineering to our education and culture. In the years since, we’ve accomplished much toward realizing that, most notably with Engineering First, our overhaul of the undergraduate curriculum to embrace design thinking. This was the beginning of creating the culture that we would eventually call whole-brain engineering.

Revamping the curriculum sounds like a major endeavor. How did McCormick accomplish it?

Doing something as radical as overhauling the freshman curriculum was a bold move, but we weren’t shy about the undertaking. Everyone really pitched in and carried their weight.

Of course, real change in the curriculum couldn’t have happened if the dean didn’t believe in it. Fortunately for McCormick, [former dean] Jerry Cohen embraced it, as did his successor John Birge, and our current dean Julio Ottino. We also needed the faculty to believe in it. I knew that if we empowered faculty to do what they really thought was important, they would go after it with surprising vigor, and they did. Overall, it took about 20 months to bring the proposed changes forward for approval. We finally rolled out Engineering First in 1997.

“ENGINEERING FIRST WAS THE DEFINITIVE OPENING STATEMENT OF A NEW ERA, WHERE A SMALL RESEARCH-INTENSIVE ENGINEERING SCHOOL COULD MAKE GREAT PROGRESS IN MANY AREAS.”  STEPHEN CARR

What else has changed at McCormick?

The curriculum, of course, has evolved over the years, but Engineering First was the definitive opening statement of a new era, where a small research-intensive engineering school could make great progress in many areas. And boy, have we! Since the curriculum overhaul, we’ve constantly stressed systematic and continuous improvement, believing that everything could be subject to radical revision, cancellation, or replacement. Out of the curriculum changes, other accomplishments have arisen. Converting the co-op office into a comprehensive career development office, developing our Office of Personal Development, which was the first at any of the nation’s engineering schools, and creating a full-service freshman advising center all stand out.

The Ford Motor Company Engineering Design Center is also a great manifestation of our cultural and programmatic change. Launching the Segal Design Institute and hiring individuals with a design focus have been pivotal in promoting engineering thinking. And the entrepreneurial spirit that we’ve seen flourish here has allowed engineering to have its full impact on the creative acts of human-centered design, inventiveness, and ingenuity.

What have you enjoyed most about serving in this role?

It’s been thrilling to see so many of our students get fabulous jobs, either straight out from here or after having become established in their careers. Some students from 10 and 20 years ago are now appearing on the pages of Forbes and Science with their accomplishments. Others have become professors with great distinction. I love to see them realize—and appreciate—the opportunities that McCormick has made possible.

I’ve also worked with some great people. For a decade [professor] Ted Belytschko and I were once-a-week racquetball opponents at the Henry Crown Sports Pavilion and Norris Aquatics Center. We shared a vision for McCormick, but we also loved to goad each other on the racquetball court.

What’s next for you? Will we still see you around McCormick?

Yes, I’ll be teaching the materials selection course in the Department of Materials Science and Engineering. For the past 40 years, I have been committed to the field of materials science and to growing it through materials selection so it more directly informs and propels other engineering fields. It’s a real opportunity area that’s not been developed well enough.

I would also like to lead a larger effort to help engineers across the country learn materials selection; whether that will be through a Northwestern MOOC or webinar remains to be seen. And, I’ll continue to teach the freshman Design Thinking and Communication course, and remain a member of several university committees, including One Book One Northwestern and the Taskforce on the Undergraduate Academic Experience.

You’ve witnessed a dramatic evolution at McCormick. What do you think the future holds for undergraduate engineering here?

We’ve undergone a significant cultural shift where our students and faculty now think on a much broader scale. It’s no longer just national, now it’s global. We’re seeing the results of our intentional emphasis on creativity and expressiveness coupled with professionalism.

I’d prefer not to say a lot about the future of undergraduate engineering here. McCormick should control its own destiny. But, I think what we’re doing is right, and nothing we’re doing now will be obsolete or eclipsed over the next 30 to 40 years. We have a winning formula in place.

ALEX GERAGE

Photograph by Chris Strong