Entrepreneurship + Design

Two areas—and the intersections between them—are defining McCormick as an innovator in engineering education.

The Farley Center for Entrepreneurship and Innovation
Building a culture of entrepreneurship

Next to the Red Line “L” tracks in Chicago’s Lakeview neighborhood you’ll find the makeshift one-room office of Datascope Analytics. Its contents are sparse: a conference table, a television, two computers, a few small appliances. The décor is minimal—white boards full of equations and ideas—except for one splash of color: the entrance wall is painted a color dubbed “Datascope Analytics orange” by the start-up’s founders. Outside, a train rumbles by.

At the whiteboards or the computers on any given weekday are Datascope’s cofounders, Dean Malmgren and Mike Stringer, the self-effacing Northwestern PhD graduates who founded the company because, as the name might suggest, they love analyzing large data sets. “It sounds kind of nerdy,” Stringer admits.
Two years ago they were students in the lab of Luis Amaral, professor of chemical and biological engineering, examining large communication networks and databases of scientific journals to figure out what information might be culled from them. (Malmgren also worked with Julio M. Ottino, professor in chemical and biological engineering as well as dean of McCormick.) This sort of large data analysis was an emerging research area at the time, and Malmgren and Stringer thought it might also be profitable. “Between e-mails and social networks, everyone is storing huge amounts of data,” Stringer says. “We realized there was a lot of potential to use this data. We thought, ‘This is what we like doing. We might as well start a business.’”

It turns out they were good at more than just analyzing data—they also knew how to communicate their results. They understood that static columns of figures and graphs couldn’t accurately portray the complexity of their analysis, so they created what they call LivingReports™—websites with interactive graphics. “We wanted to change how research is communicated,” Malmgren says.

Stringer and Malmgren were unlikely entrepreneurs. They’d spent most of their adult lives in academia—in the sciences, not in management school. Yet it turns out that instead of honing their business skills, they were cultivating something perhaps more important: a network they could turn to for help. When they were hatching their idea for a business, they met with Ottino, who sent them to Mike Marasco, the director of McCormick’s Farley Center for Entrepreneurship and Innovation. That connection would turn them from two guys with an idea into business owners with a full-fledged, profitable company in less than two years. The center provided the support—office space, legal and business advice, networking opportunities—the idea needed to flourish.

Identifying viable opportunities
McCormick launched the Farley Center for Entrepreneurship and Innovation in 2007 with the goal of taking ideas in engineering and turning them into successful businesses. The need at Northwestern was clear: the few entrepreneurship courses offered at the time were continually oversubscribed, while many faculty and students who had created cutting-edge technology lacked the knowledge and resources to bring their ideas to market. In the last four years the Farley Center has dramatically expanded course offerings in entrepreneurship, created an incubator space for start-up businesses, allocated preseed funds for start-ups, and provided guidance to students and professors who wanted to make their ideas successful. In other words, it has made entrepreneurship an integral part of the McCormick culture.

“Engineering is more than just prototypes and research,” says Marasco. “A design that never sells is not a great design. A product that never gets traction in the market is not a great product. The Farley Center gives students and professors the means to leverage an idea and build it into a company.”

The center’s first course, NUvention: Medical Innovation, was offered in 2008. The brainchild of a Northwestern medical student, it brought together 82 graduate and undergraduate students from four Northwestern schools (McCormick, the Kellogg School of Management, the Feinberg School of Medicine, and the School of Law) to develop medical devices and create business plans for the ideas (see McCormick by Design magazine, spring 2008). The students observed doctors and surgeons to determine where new devices and products were needed and were mentored by professors and industry leaders from across the country. When the course was over, the students had created several innovative medical devices and would eventually file 11 provisional patents.

“One of our keys is interdisciplinary, experiential learning,” Marasco says. “McCormick had a number of case-based entrepreneurship courses, but we wanted to go beyond that. NUvention turned out to be a resounding success.”

In fact, the NUvention courses have set a new standard in entrepreneurship education. The Farley Center has introduced two variations on that first course: NUvention: Web, involving the design and launch of online applications, and NUvention: Energy, in which energy research innovations from Northwestern and Argonne National Laboratory are developed into viable businesses. These courses...

Left: Students in the McCormick School’s Ford Motor Company Engineering Design Center. Photo by Andrew Campbell. Right: Mike Stringer and Dean Malmgren of Datascope Analytics. Photo by Sally Ryan.
Michael Marasco, director of the Farley Center for Entrepreneurship and Innovation, teaching a NUvention class.

Far right: Zack Johnson, CEO of Syndio Social, in the start-up’s office.

Photos by Sally Ryan.

are among the most popular at McCormick: this year they enrolled more than 160 students from nearly every school at the University.

“These courses bring together two areas that are key strengths at McCormick: entrepreneurship and product design and development,” Marasco says. “You can learn about them through traditional academic approaches, but there’s another level of learning associated with actually doing it. We’re doing everything we can to simulate real-world experiences.”

In some cases, the experience goes beyond simulation. One start-up that has emerged from NUvention is Adapt.ly, a service that allows businesses to buy ads simultaneously on multiple social network ad platforms. Cofounded by Nikhil Sethi (electrical engineering ’10) last spring, the company has received its first round of venture capital financing. The founders went directly to venture capitalists. Now the company has 15 employees and powers social ad campaigns for large agencies and brands.

“NUvention helped put the right ideas into our heads and pointed us in the right direction,” Sethi says. “It showed us that we don’t have to work for big software companies. There is a different way of doing things. We can create a business to rival them ourselves.”

In addition to the NUvention courses, the Farley Center annually offers seven undergraduate and four graduate courses in entrepreneurship and advises four undergraduate student groups focused on for-profit and social entrepreneurship. “Through our courses, we’re able to engage alumni, faculty, and students and empower them so they feel that entrepreneurship is a viable opportunity,” Marasco says.

An incubator for innovation

When Malmgren and Stringer first met Marasco in July 2009, they were finishing up their degrees and thinking about starting what would become Datascope Analytics. Marasco told them about the Farley Center’s incubator space in downtown Evanston, where Northwestern students starting a business can work rent-free while getting business and financial advice from the incubator’s staff. A few minutes later, he invited them to hop in his car and take a look at the space. It wasn’t pretty—two little offices with eight desks—but it provided a physical location and something money can’t buy: legitimacy.

“When you are trying to get things started, it’s nice to know that you have a place to work for a while and not have pressure to get out,” Malmgren says.

Marasco helped them navigate paperwork, and an attorney at the incubator provided pro bono legal advice. With this help, Malmgren and Stringer were confident that their idea could be turned into a business. But how did they know it would be successful?

“We didn’t—until we got our first client,” Malmgren laughs. “We didn’t have any marketing or advertising. We relied on referrals, and then we did a good job so our clients would hire us again. So far we’ve gotten repeat business from everyone we’ve worked with.”

Among the company’s first clients was the McCormick School of Engineering and Applied Science. Using data from the Thomson-Reuters ISI Web of Science, Datascope charted the num-

“A design that never sells is not a great design.” MIKE MARASCO

ber of collaborative scientific articles authored by faculty at McCormick and other schools at Northwestern. The resulting interactive graphics showed the strength and extent of collaboration at the University (see McCormick magazine, spring 2009).

That spirit of collaboration is evident at the incubator as well. There Malmgren and Stringer found not only potential clients but also potential partners—such as Zack Johnson, an undergraduate in Northwestern’s School of Communication and CEO of Syndio Social.

Johnson’s story shows that there is more than one way to become an entrepreneur at Northwestern. After taking a network analysis course with Noshir Contractor, the Jane S. and William J. White Professor of Behavioral Sciences and professor of industrial engineering and management sciences and of communication studies, Johnson realized he loved the math and science behind social networks and became a research assistant in Contractor’s lab.

Johnson, who was already doing social media music marketing on the side, saw a business opportunity in Contractor’s research. “I was interested in mapping and measuring how communication happens on a daily basis inside an organization,” Johnson says. Contractor himself had done some consulting with his C-IKNOW
software (a web-based tool designed to map and measure social networks), but the time and bandwidth needed to turn his ideas into a full-fledged business were constrained by his research commitments. So, Johnson spent a quarter creating a business plan under the tutelage of Marasco and Bill White, professor of industrial engineering and management sciences.

“Three months later, we figured out the business plan,” Johnson said. “We said, ‘Yeah, let’s give it a shot. Let’s see what happens.’”

Since Contractor’s research takes most of his time, he knew that he needed someone like Johnson—someone with an entrepreneurial spark—who could run day-to-day operations and build a viable business. “The Farley Center provided me with guidance about different models that faculty members could use to create businesses, which was helpful,” Contractor says. “I chose a model that helped me engage just enough to keep me intellectually honest—to make sure that my research program continues to be responsive to questions that have real relevance in society.”

Johnson set up shop in the Farley Center’s incubator in summer 2009. “Just being able to get away from campus was huge,” he says. “We had a small window that got two minutes of sunshine a day, but it was a place to go to work, and it makes you feel better about doing it.”

Johnson says he also received guidance from the Farley Center’s advisory board, many of whose members are active in industry (including James Farley ’50, whose James N. and Nancy J. Farley Foundation generously endowed the center). “A lot of people hit a wall because they don’t have a network,” Johnson says. “I know I can go to this group for help.”

Using employee surveys and digital trace data like e-mails, Syndio Social looks at internal communication networks “to see how communication unfolds,” Johnson says. “You get an emergent structure of what actually happens in a company.” That, he says, can help managers see which employees are most trusted and how to make good teams.

Johnson met Malmgren and Stringer at the incubator. When one of Johnson’s clients—Procter & Gamble—approached him about a project that was beyond Syndio Social’s scope, he asked if Datascope wanted to collaborate. Procter & Gamble was interested in finding the best way to enact organizational change. Typically, if a company wants employees to use a new practice, it will ask managers whom they should train first—who could best spread the word and teach other employees. Procter & Gamble realized, however, that asking managers wasn’t always the best way to identify the most trustworthy, influential people in the company.

Datascope and Syndio Social worked together for months to understand the network of influences within the corporation. Using Syndio’s C-IKNOW software to survey thousands of employees, they found a set of highly influential people who were widely distributed throughout the organization, and they presented the data in one of Datascope’s LivingReports. That allowed Procter & Gamble officials to model scenarios of how best to distribute information and whom to train. Procter & Gamble is already in talks with the two companies for future projects.

“It was a great example of how the Farley Center helped put two teams together,” Johnson says. “Neither company could have done this project alone, but together we worked as a tight-knit team.”

Using their first big successful project as a boost, both Datascope and Syndio Social have moved out of the incubator and into their own Chicago offices. Both have hired interns and co-op students through McCormick’s career development office and look forward to helping the next generation of McCormick alumni to become successful entrepreneurs. Contractor says that one Syndio Social intern was even inspired to start her own business. “The Farley Center has had a ripple effect that goes beyond Syndio,” he says.

Entrepreneurship for the future

The Farley Center continues to look for new and better ways to empower students and faculty. It has established certificate programs for undergraduate and graduate students, and it recently created the Farley Pressed Program, which allows alumni to invest in businesses that come out of McCormick courses or labs. There’s a catch: investors must give at least a quarter of their profit back to the University. “It gives alumni an opportunity to invest very early on in new businesses,” Marasco says. “And it truly highlights their commitment to the University.”

Farley board members began identifying potential investment projects this winter.

Since its inception four years ago, the Farley Center has grown alongside McCormick’s Segal Design Institute to become a major asset for students, faculty, and alumni. It’s that connection that makes the center so strong, Marasco says.

“Many engineering schools do both design and entrepreneurship,” says Marasco. “I think we’re unique in that we’ve really tried to integrate the two. Segal and Farley have put us at a different level. One of our missions is to empower our students to become entrepreneurs. We want them to know it’s something they can do. Their core skill sets of design and analysis can be expanded into a successful business, and we’ll show them how.”