Farley Fellows
on the rewards and risks of entrepreneurship

The motivation for making the leap from engineer to entrepreneur takes many forms. Even more numerous are the challenges and pitfalls the engineer-cum-entrepreneur encounters on the road to success.

One thing the Farley Fellows, those entrepreneurially minded Northwestern faculty members who advise McCormick’s Farley Center for Entrepreneurship and Innovation, agree on: taking that difficult path has proven worth the effort. All 11 fellows have either founded companies or play key roles in significant entrepreneurial efforts and draw on their insight and experience as they mentor students and lead by example.

While student entrepreneurship has been growing at McCormick for years, more and more faculty are turning their research innovations into commercial success. McCormick faculty founded nine start-up companies in just the past year. In fact, McCormick researchers made up nearly half of the total issued patents and total invention disclosures at Northwestern in 2013.

Recently, a group of Farley Fellows shared their collective wisdom on becoming entrepreneurs, finding investors, and building a business team. They also acknowledge that as hard a bump as failure can be, it is often a necessary detour on the road to success for the entrepreneur.

AN INSPIRING FATHER.
THE INSPIRATION OF FATHERHOOD ITSELF.
A PASSION TO IMPROVE THE LIVES OF OTHERS.
I came to biomedical engineering because I wanted to make a positive impact on medicine. For that to happen, technologies have to be delivered to patients. Big corporations aren’t going to do it; that’s not their model. I realized I couldn’t sit around waiting for someone else to bring my ideas to life. It had to be me.

VADIM BACKMAN  Professor of biomedical engineering and founder of two biomedical device companies: BioOptics LLC, which develops fiber-optic technology to identify patients at high risk for colorectal cancer, and Nanocytomics, which develops nanocytology technology for early cancer detection.

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Why become an entrepreneur?

With my daughter’s birth in 1982, I suddenly felt an urge to contribute to society. I started to think seriously about creating technology. I knew I needed to start a company to market the design technology I developed, but I didn’t know how. That’s still true. I’m not really interested in business. I’m interested in enterprise. It’s a way to get my technology out in the world.

GREG OLSON  Professor of materials science and engineering and founder of QuesTek Innovations, a new-materials design company in integrated computational materials engineering. Olson recently sold half of his company to a Silicon Valley electronics company.

“Instead of starting directly from curiosity, I look at the world and see a problem that really needs to be solved.”

ED COLGATE  Professor of mechanical engineering and co-founder of Tangible Haptics, a company that brings haptic technology to touchscreens; Kinea Design, a leader in human/robotic collaboration technology for physical therapy; and Cobotics, Inc., which commercializes collaborative robots. Stanley Assembly Technology purchased Cobotics in 2002.

My father is a chemistry professor. He took a hiatus from research mostly so he could pursue his entrepreneurial ideas. Along with our neighbor, he developed a sprayer for garden chemicals. His influence, along with my own experience in starting my first company, has strongly colored my approach to research. Instead of starting directly from curiosity, I look at the world and see a problem that really needs to be solved.

ED COLGATE
How do you build a business?

"It's very important to do your research."

Chad Mirkin

It's very important to do your research. That's the biggest challenge a new entrepreneur faces: they talk to an investor, and the investor says, “This is the way we do things. This is the way we always do things.” That's baloney. Every deal is different. It depends on the investor, the time, the people, the technology, and how badly they want it.

Chad Mirkin

Chemistry professor and founder of four start-ups, which include NanoSphere Inc., a manufacturer of diagnostic equipment that uses nanotechnology principles to test for medical conditions, and AuraSense Therapeutics, a biotechnology company that commercializes spherical nucleic acid constructs as gene regulation and modulation agents for diseases.

I'm glad I never asked my friends or family for money. If you make money, they gladly take the profit. But if you lose money, you never hear the end of it. Also, larger investors often don't want to be involved with a whole bunch of small investors. Grants are the best, of course.

Michael Peshkin

Professor of mechanical engineering and co-founder of Tangible Haptics, a company that brings haptic technology to touchscreens; Kinea Design, a leader in human/robotic collaboration technology for physical therapy; and Cobotics Inc., which commercializes collaborative robots. Peshkin's first company, ZKAT, which later became MAKO Surgical, developed image-guided surgery and was recently bought by Stryker for more than a billion dollars.
How do you deal with failure?

Failure: you have to learn to define it differently. A company closing is not a failure. Most every entrepreneur fails a number of times before hitting it big. Failure prepares you to be successful. It gives you the experience to raise money for the next company.

MILAN MRKSICH  Professor of biomedical engineering and chemistry and co-founder of Arsenal Medical, Inc., a medical devices company that has a stent product in medical trials, and SAMDI Tech, an early-stage technology company based on Mrksich’s new platform for analyzing biochemical reactions.

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LARRY BIRNBAUM

When you fail, it’s actually liberating. Once you fail, and you see that it’s not all that painful, you say, “Yeah, I can do that again.” The first failure is the hardest, but you learn so much, it’s not a waste of time. The bigger question is: How can we change the culture to be not just “failure forgiving” but more “failure celebrating”?

LARRY BIRNBAUM  Professor of electrical engineering and computer science and co-founder of Narrative Science, which extracts insights from pools of data, turning it into stories. Narrative Science recently launched Quill Engage, a free app that interprets Google Analytics into narrative-style reports.

Is it all worth it?

The cool thing, from my standpoint, is to develop something that’s actually used in patient care. That’s the clinician’s ultimate goal and the ultimate prize. If you can develop something that helps someone else, then you’ve pushed the ball down the road a little bit farther.

DAVID MAHVI  Professor of surgery and co-founder of Medical Engineering Innovations, which commercializes new, more effective technologies to fight liver cancer. Mahvi is also a mentor to BriteSeed, a medical start-up that developed SafeSnips technology for surgical cutting tools.

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