

# Spirit of the LAW

A master's program for STEM professionals provides valuable legal context for engineers and innovators.

By Pierre Home-Douglas

With degrees in electrical and computer engineering and technology management, Neil Misak ascended the ranks at Microsoft. The former technical sales leader oversaw more than 700 salespeople and the \$3 billion Azure cloud enterprise, working at the intersection of technology and business. But, increasingly, he dealt with issues outside those two worlds. Intellectual property was a prominent topic in crafting custom global agreements with customers, Misak explains. "It was at the forefront of how we differentiate ourselves from the competition." In addition, the area was "central" to his interest in becoming an entrepreneur.

Misak realized that his training was missing an essential component: legal knowledge. In the past, acquiring that knowledge would have meant investing three years to earn a JD degree and become a lawyer. Instead, Misak found what he needed in a program offered by Northwestern University: a master of science in law (MSL) geared to STEM professionals.

Today, the 33-year-old Misak is cofounder and chief technology officer at REUSO, whose software promotes reusability in the food and beverage sector. He is "thrilled" to be working on that mission, he says, while wearing all three hats—engineering, business, and law. The role allows him to help "promote a circular economy and prioritize the global community over the wasteful ways of the past," he says. "I couldn't have done that without what I learned at Northwestern."

## Not for Lawyers

This year, the MSL program celebrates its 10-year anniversary. The only degree of its kind in the US focused on STEM professionals, the initiative developed out of an experience director Leslie Oster had as an associate professor in Northwestern's Pritzker School of Law. She was teaching an interdisciplinary class on medical issues that included engineering students, doctors, and science students. "I was watching how all the various members of the team were interacting," she recalls. "A medical student would come up with the idea for a particular medical device, an engineer would figure out the best way it could be built, and a law student would say 'but if you design it that way you would face certain regulatory hurdles.'"

Oster recognized the need to provide STEM professionals with legal, regulatory, and intellectual property knowledge. The program is not for budding lawyers, she emphasizes. "It's for STEM professionals who want to understand all the legal issues that may impact what they are doing in their job."

With Northwestern's dean of law and another faculty member, Oster helped launch the master of science in law program in 2014. Since then, more than 600 students have graduated. One hundred students are enrolled in the 2023–24 cohort. Eighty percent of them are pursuing the degree online, which typically takes two to four years. Those who study full-time at Northwestern's Chicago campus can complete the program in nine months.

The program offers 80 different courses, including eight mandatory ones that give students a basic legal background, such as classes in contract law, legal and regulatory processes, and intellectual property fundamentals. The rest of the credits are chosen from a list of electives ranging from Negotiation Skills and Strategies to Medical Devices: Regulation and Compliance.

Oster explains that the online program and the residential version "have the same requirements, same faculty, and the same subject matter." She adds that 100 percent of the online students have work experience, whereas around a half to two-thirds of the residential students do. Online students tend to have more advanced degrees and, on average, they are a decade older than residential ones.



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— MSL Director Leslie Oster explaining the genesis of the program

## *Different Languages*

Matthew Wilson, 45, chose to study online because he couldn't afford to take nine months off of his job as chief engineer at Trek Bicycle. The classes fit in well with his work schedule and the program is well-organized, he says. “I had taken some online classes prior to the pandemic and they were hit and miss, but every one of the courses I have taken for the MSL is really solid.” As someone with cochlear implants for hearing issues, he finds the accessibility of the online classes a bonus. “In-person classes can be problematic for me, and that's one thing I really liked about the online version. I could control the environment and be on the same level as everyone else.”

Wilson had worked at Trek for 10 years when he enrolled in the MSL program in 2021. He was propelled by his desire to understand more about an important issue at his company: liability. A host of regulations govern bicycle manufacturers in Europe and the United States. As Wilson points out, “bicycles obviously don't have air bags,” which partly explains why they are actually classified as “hazardous materials” in the US. The former triathlete says a lot of design work focuses—proactively and reactively—on minimizing safety issues for consumers and legal risk for Trek, based in Wisconsin.

In the MSL program, Wilson learned subtle meanings of terms that “seem generic” but aren't. As the engineer explains, “a term like ‘reasonable person standard’—what a reasonable person can be expected to do with a product—has a specific legal meaning, but it also has a conversational meaning. Engineers typically hear just the conversational meaning, but the legal meaning has an impact on the work we do.” Wilson says that his understanding of such legal particulars enables him to serve as an effective liaison between Trek's legal team and the 100 or so engineers who work at the company.

## *Choppy Waters*

Several of the lawyers who teach in the MSL program also have a background in engineering. David Schwartz, a Northwestern law professor, was previously a chemical engineer. He has taught in the program from its inception and says his students fall into two basic cohorts: the recent engineering graduates “who are maybe thinking like I was before I went to law school, ‘I don't want to just design products during my career, but I want to be close to technology and I want to see what else is out there.’” Then there are the experienced engineers—people who have worked in the field for 10 or 20 years. They've gotten a taste of some skills that others have, such as understanding intellectual property strategy—“how you can protect what you have created, how to build a moat around our property so other competitors can't get in.” They want to gain that skill, even if they remain engineers.

According to Schwartz, the program emphasizes communication: writing and speaking clearly, persuasively, and succinctly. “That’s a useful skill for any engineer,” he says, whether they’re angling for a promotion or raise, or trying to convince colleagues about the merits of a project.

The professor notes that many engineers don’t realize they enter choppy legal waters even before they start working at a company, whatever discipline they practice. “Everybody signs employment agreements. Understanding what those rights are and which ones you may be giving away is really useful,” he says. Although companies commonly own the rights to any projects completed during work hours, engineers with side projects done on their own time may inadvertently give away the rights in a boilerplate employment agreement. If you have other projects, you should be careful about what you sign, Schwartz stresses. Don’t think, “Oh, this is a nine-page agreement. I don’t really know what it is. I signed it just like I signed my health-care document.”



## Entrepreneurs or Employees

Like many MSL students who are engineers, Cheyenne Cazaubon wanted to start her own company. She loved watching the TV show *Shark Tank*, in which people with startup ideas pitch their concepts to venture capitalists. A lot of the courses she took in the program aligned with her interest in entrepreneurship. “I knew I didn’t want to practice law; I just wanted to apply it in a business setting,” she says. The Georgia Tech industrial engineering graduate managed to launch a health-tech startup while pursuing the MSL full-time and doing an internship at GE. Working with a couple of cohort peers, Cazaubon created an AI platform that focuses on improving pregnancy outcomes. Her company Edith Technologies was chosen as a semifinalist for VentureCat, Northwestern’s business plan competition for student founders.

Before Neil Misak generated the idea for REUSO, he created several startups while in the MSL program, including an ed-tech platform for high school entrepreneurship students and a DJ company.

He believes that what he learned at Northwestern would still prove valuable for engineers who prefer to work for an established firm. “It used to be that the best engineers became engineering managers, but in 2023 that’s not how it works,” he says. “The leaders of the team are often the ones who can wear the most hats and who can understand what’s going on in the other silos of the business.

“Whatever you produce, whether it’s code or pharmaceuticals or chemical compositions, you need others to rally around that cause,” Misak says. “STEM professionals want to change the world,” he adds. “But the perfect product will sit on the shelf if you don’t know how to go out and move and shake it. And that involves not only technical knowledge but [also] business acumen and legal training.”

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