By Whitney L.J. Howell

Jeff Glass, electrical and computer engineering professor in the Duke University Pratt School of Engineering, is no stranger to patents. In fact, he holds 14 of them.

But, it isn’t those legal rights to products and discoveries that characterize his career. Instead, it’s how he’s used that experience to teach Duke students how to be successful entrepreneurs who connect well with potential customers.

“One of the most fun things I do is to apply what I know to the entrepreneurial environment,” said Glass, who is also faculty director of Pratt’s Master of Engineering Management Program (MEMP). “As entrepreneurship educators, we have to get our hands dirty and give students applied, experiential opportunities while providing mentorship and guidance in non-technological aspects of starting a venture so they understand what customers need.”

Glass began amassing his experience as a visiting researcher and faculty member at North Carolina State University (NCSU). He was involved with silicon carbide research – work which led to his first patents and the foundation of the LED lighting company Cree, Inc. After leaving NCSU, he worked with Kobe Steel to perfect the use of industrial diamonds in cutting tools, optical lasers, and heat sinks.

His two main projects at Duke, though, were borne out of a multi-faculty collaboration with RTI International and have focused on miniaturizing mass spectrometers that can conduct chemical analysis almost anywhere, including on the battlefield, in the doctor’s office, at a security checkpoint, or on an oil well pad. This work has been funded by the National Science Foundation, the U.S. Department of Energy and the Department of Homeland Security.

After earning his MBA from the Fuqua School of Business, Glass opted to apply his breadth of knowledge to teach engineering students how to apply their skills to broader audiences.

“Engineers need to be better all-around contributors to companies,” he said. “They need to understand the basics of marketing and finance. They can’t just be the technical experts who don’t understand the business basics.”

So, as the faculty director of the MEMP, he instructs students on how to recruit others to become team members and collaborators, on strategies to make their technologies attractive to investors, and methods for presenting their work as simple, novel, elegant solutions to real problems.

To do this, he and other faculty mentors work with students based on each individual’s level of entrepreneurial experience coming into the program. Students have space to freely build and test their ideas with advisory and support services close-at-hand. This kind of environment is designed to create a seamless boundary between the educational experience to the world of industry, start-ups, and larger corporations. It establishes the University as not only an education source, but also as a collaborator and partner in student entrepreneurial endeavors.

“Duke isn’t just about book and classroom learning,” Glass said. “The University is creating an environment where students can get real-world, experiential learning out of their education.”