



DAVID FEINSTEIN '08
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STAYING AHEAD OF THE TECHNOLOGY CURVE

David Feinstein was already an established business owner of his product invention company, INNOVENTIONS, Inc., when he decided to get his Ph.D. in electrical engineering. He always had a passion for academics and the potential to take this next step, but that's not why he decided to pursue an advanced degree. Rather, the decision was prompted during an interview with a foreign columnist. Feinstein shares this funny anecdote: "In 2003, when I was interviewed by a major Japanese newspaper regarding one of my inventions, the journalist kept referring to me as 'Dr. Feinstein.' Our marketing director and I had to correct her several times. That's when I decided that it was time for me to act and truly become Dr. Feinstein."

Feinstein first looked at universities in Houston, where INNOVENTIONS, a leader in computer memory testing equipment and smart scroll technology, is located. His search criteria included some non-negotiables: the school had to be a private, first-class research university, he wanted to pay for his own tuition so as not to compete for financial aid with younger fellow graduate students, and he wanted to learn from the best research advisor. "When I reviewed professor Mitch Thornton's profile on the SMU Lyle School of Engineering

website, I knew he would be the optimal advisor," Feinstein says. "He is a prolific researcher, deeply involved in cutting-edge science, and he actually had a background in real-world engineering." Dr. Thornton is the Cecil H. Green Chair of Engineering and a professor with appointments in both the Electrical and Computer Engineering department and the Computer Science department, as well as director of the Darwin Deason Institute for Cyber Security at SMU.

What clinched Lyle for Feinstein was that he could earn almost all of his degree through distance education. For the first two years of coursework, he was able to access the bulk of class materials online and travel several times a month to meet with Thornton and his other professors or to present research papers. Through the learning management tool Canvas, class video recordings and livestreaming lectures, students can participate in a class and give presentations.

Since Feinstein was considered a well-known expert in electronic testing and computer user interface, he chose to focus his Ph.D. research in an emerging technology in 2004, quantum computing. Quantum computing is focused on developing computer technology based on the principles of quantum theory, which explores the nature and behavior of energy and matter at the atomic and subatomic level. It enables computers to be smaller and more powerful, with processors that can work millions of times faster than traditional computer models.

As the head of INNOVENTIONS' research and development team, Feinstein was keen on doing his evening research on quantum computing that was many years ahead of the state-of-the-art electronics he handled on a day-to-day basis. He believes the research proficiencies he learned at SMU changed his approach to product development. "The computer engineering skills I learned during my research with professor Thornton improved the overall quality of my engineering work. Now I tend to spend much more time analyzing both the theoretical and practical limits of various projects and technologies before I even start the actual product development. This was not the case in the past," he attests.

Feinstein has stayed connected to Lyle through research. After graduation, he has been involved in publishing research papers and is exploring potential collaboration between Thornton's research group and INNOVENTIONS.

As an experienced entrepreneur, Feinstein has advice for the next generation of innovators in today's knowledge-based economy. "Entrepreneurs should constantly learn new skills, dig deeper for information and monitor relevant new technologies," he shares. "Rather than focusing all attention on big issues, like profit margins and salaries, startup companies should pay attention to secondary items and recurring expenses that can sink an otherwise good business."

His best advice is not to pursue copycat products. After 34 years at INNOVENTIONS, Feinstein says the company still exemplifies its original mission and tagline, "innovative products from inventive minds." Feinstein adds, "We proudly display a poster from 1984, the first year of INNOVENTIONS, right next to all of our patents. It has a crucial message—in a world full of copycats...be an original!" ■

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