# Getting from the Lab to the Bedside

Duke University

The keys to success in biomedical entrepreneurship are perseverance, technical experience, market knowledge, lifelong learning, and professional networking. So said the participants on the biomedical translation panel at the 40th anniversary celebration of the biomedical engineering department.

And they should know. The panelists—all Duke alumni—have achieved remarkable success combining engineering, science, and business.

Moderator Barry Myers began the panel by saying, “One definition of translation is the movement from bench to bedside in the context of the university. Another definition is: a polite word for commercialization.” Myers is a professor of biomedical engineering as well as the director of the Duke Center for Entrepreneurship and Research Commercialization. He’s earned three degrees from Duke: PhD, MD, and MBA.

Inventing a product is often easier for engineers and scientists than bringing it to market. Adam Wax, associate professor of biomedical engineering, said engineers who want to start companies to sell their products have got to have tenacity. “If this stuff was easy, someone else would have done it already,” he said. Wax founded a company called Oncoscope in 2007 to commercialize a noninvasive method to detect pre-cancerous cells.

Steve Sullivan, managing director of Skyline Ventures in Palo Alto, CA, echoed that sentiment, saying that he got to where he is today through “perseverance and luck.” Sullivan earned an undergraduate degree in biology from Duke in 1977 and worked as a physician for 20 years before making the leap to venture capital. He recommended that entrepreneurial hopefuls become an expert in a field of science, medicine, or engineering before branching out into business or venture capital.

Rose Ritts, the executive director of Duke’s office of licensing and ventures, worked as an engineer after graduating from Duke with a BSE in biomedical engineering, and then went on to earn her PhD in electrical engineering.

She was attracted to commercialization she said, because “I realized that connecting people and figuring out how to bring money and science together was something I was more interested in than the science.” Much of her business knowledge was self-taught and she said that successful people never stop learning. Her advice: “Cram for the opportunities that come your way outside of classes the way you crammed for classes. Cram to prepare yourself for experiences that could change your life, your career.”

Sullivan and the other venture capitalist on the panel, Scott Albert, talked about some of the ways scientists and engineers could be successful in pitching their

ideas to venture firms. Albert earned a BSE in electrical engineering at Duke and also has an MBA degree. He's managing general partner at The Aurora Funds, Inc.

Albert said that scientists and engineers who approach his firm with an idea often make the same mistakes. "You're going to tell me you can [develop the product] quickly. You're going to tell me it won't cost that much. You're going to tell me, don't worry, people will buy it. Those three are all lies. It takes immensely more money than you think. It takes immensely more time than you think."

And finding the customers is not simple either, he said. "Try talking to a few [potential] customers along the way. Make sure that [the product] actually solves a need in the marketplace."

Ritts pointed out that not every good product idea needs a new company; sometimes the best course is to license the product to an existing company. Albert said, "You have to do market research. If it's targeted to one particular application, licensing might be a better option."

Whether starting a company or licensing a product, professional networks are invaluable for digging up key information, learning new skills, and attracting partners and investors. Steve Sullivan said, "Use every contact you have. Be expert in selling. What's the first thing you're going to sell? Yourself. That's how we all go there."

Several times, panelists mentioned the challenges of working with the FDA to approve new drugs or devices. "It's very frustrating," Sullivan said. "A lot of times now, they're not logical. We are really, really afraid of them." In fact, Sullivan said, his venture capital firm now usually invests only in companies whose product has already been approved by the FDA.

At the end of the panel conversation, Myers summed up by saying to the students and potential entrepreneurs in the audience: "Work hard. Keep your skills up. Be open to opportunities. Build your network. And in 20 years we'll have you back for the 60th anniversary and you can be on the panel."

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