‘Accidental’ Entrepreneur

How Engineering Professor Eric Beckman’s novel tissue adhesive gave this academic an entrepreneurial education of a lifetime

By Daniel Bates

Eric Beckman, a professor of chemical engineering at the University of Pittsburgh who studies urethane-based polymers, had been working on a research project with Michael Buckley, then a professor and maxillofacial surgeon in the School of Dental Medicine, when he stumbled onto a bio-compatible adhesive that was developed during some of his experiments. Beckman describes the experiments as simply a “stepping stone” for their final research.

But as Beckman tells it, Buckley, who had been researching ways to improve the healing process in tissue regeneration, saw potential in the adhesive itself as a post-surgical tool.

“I said ‘No, it’ll stick to everything.’” Beckman recalls of that initial “aha” moment with Buckley. “How could something as simple as surgical adhesive have escaped you for so long? This was an accident.”

An accident, perhaps, but a serendipitous one that not only would test his academic abilities, but which ultimately would give him a trial-by-fire education in technology commercialization and product
development, and which would immerse him in the true entrepreneurial life for a time.

Testing the entrepreneurial waters

Beckman, no shrinking violet when it comes to openly discussing this mid-career experience, describes what the pair had developed as a strong, urethane-based glue designed at the molecular level to hold soft or hard tissue together but eventually degrade in a nontoxic manner. Called TissuGlu®, the innovation has become the foundation of a Pittsburgh-based start-up company called Cohera Medical Inc. Beckman’s entrepreneurial lessons began, though, long before the company was formed.

Beckman says that more than 50 patented innovations have emerged from his research over the years, although when asked whether he envisioned himself as an inventor rather than a professor and researcher, he quickly responds, “No, absolutely not.”

And he’s just as quick to point out that he certainly never before had considered participating in a start-up company. “We’re both nerds,” he says of himself and his research partner.

Still, he committed to a process early on – with assistance from Pitt’s Office of Enterprise Development and Office of Technology Management – that included partnering with local technology-based economic development organizations, developing a business plan, and carefully studying market factors and potential commercial applications.

All the while, he continued to work on the tissue adhesive itself, from formulations to preliminary efficacy and safety issues. The plan: to start a company that would license the innovative glue from Pitt and develop it into a product. The first target was in plastic surgery, which could use the glue to reduce fluid accumulation after abdominoplasty surgery. Still, he wasn’t quite ready to jump into the venture head-first.

“To our credit, we realized that we each could handle the scientific work very well,” Beckman says. “But neither of us was good [at the business side of things].”

So initially, Beckman, while securing a minority ownership in the start-up (within the parameters set by Pitt policy), decided to remain at Pitt while a seasoned entrepreneurial chief executive officer was recruited and then hired to run the company and raise capital. Meanwhile, the OED’s Dottie Clower, who helped shepherd the technology commercialization and start-up effort, left the University to serve as chief operating officer of the fledgling firm.

“I had [worked] in industry in the early 1980s,” he says of his professional past. “But I had been comfortably ensconced in academia ever since.”

A mid-life crisis?

But then Beckman himself caught the entrepreneurial bug. Working with the University’s Conflict of Interest Office and Entrepreneurial Oversight Committee, he took advantage of a Pitt policy that allows faculty members to leave the University temporarily to work with a start-up company, and he became chief scientific officer of the company. That’s when his real entrepreneurial education began.

“If the company was going to go, it needed a ‘molecular nerd’ on board,” Beckman says he decided one day. Why did he do it? He laughs. “It’s my way of doing a midlife crisis.”

Lessons learned

In general, Beckman mainly gushes about the experience he had during his entrepreneurial leave of absence from Pitt, but he also isn’t afraid to acknowledge that entrepreneurship isn’t for the feint of heart.
Says Beckman: “During those 18 months, there were times when I wanted to cry, give up and quit.”

But he didn’t. As such, here five lessons he learned along his entrepreneurial journey:

**A start-up environment requires a much faster pace than academia** – In a university environment, Beckman says, the time scale is “measured in semesters or years. Companies measure things in terms of days – days and weeks.” Even when it has come to networking and relationship building, “everything is accelerated. In academia, things take months, even years, to develop into a relationship.” In the future, he adds, this aspect of entrepreneurship will “make me a lot less patient, now that I’m used to things moving quickly. It’s hard to go back to the glacial pace of academia.”

**The product has to meet specific market needs** – “At Cohera, the product has to work,” he says. “It can’t just be reproducible. In academia, that means publication.”

From a technology development perspective, that has meant developing an adhesive – one that can be sprayed – which “surgeons can use with ease.” And that has meant paying “very close attention to what surgeons want.”

The management team also had to identify a commercial application with the most potential for propelling the company strategically into aggressive-growth mode. For a health sciences-related company such as Cohera, that also means choosing an application with a clear and viable U.S. Food and Drug Administration approval path.

**Product development requires a team effort** – Given the importance of getting quickly to market, the development strategy must include a range of development partners.

“As a researchers, you’re used to doing everything by yourself,” he says. “At Cohera, we have partners all across the country.” For instance, the final product is being produced in San Diego, sterilized in Ohio and then packaged in Massachusetts. Says Beckman: “That was a surprise – a very pleasant one.”

**Hiring is based as much on attitude as aptitude** – “It’s interesting, I’m used to hiring based on aptitude [in academia], but here you need attitude as much as aptitude,” Beckman suggests. “You need somebody willing to fall on the sword for the sake of the company.”

**Recognize your limitations and recruit a “real” management team early** – As entrepreneurially minded as Beckman may have been, he says he wasted little time in acknowledging his strengths on the science end of
the process – as well as his weakness in leading an entrepreneurial company.

“Just because you’re a good researcher doesn’t mean you’ll be good in business,” he says. “I should probably stick to science.” And he did, assuming the role of chief scientific officer. The company’s management team also includes seasoned medical device executive Patrick Daly, who serves as the president and chief executive officer, and Chad Coberly, vice president of clinical, regulatory and legal affairs.

Beckman also noted the importance of putting together a strong and knowledgeable board of directors and taking the time to stretch your own entrepreneurial knowledge. For instance, he says he did take a course in accounting during his entrepreneurial leave to better understand the financial side of the business.

**Future goals**

Asked about his goal for Cohera and his innovation, Beckman noted his dream for the company’s entrepreneurial success, which would support a number of careers in the Pittsburgh region. But when pressed, he was quick to respond:

“I guess significant wealth and fame aren’t enough?”