

JUNE 28, 2010, 2:07 AM

## The Idea Incubator Goes to Campus

By *DEALBOOK*

Douglas P. Hart, a professor of mechanical engineering at the [Massachusetts Institute of Technology](#) who sold his last start-up for a tidy \$95 million, is already on to his next big thing.

On Tuesday, he expects to lock up \$1.5 million in funding for his new start-up, Lantos Technologies, Bob Tedeschi reports in The New York Times. The company has developed a 3-D scanner that it hopes will streamline the current generation of earphones and hearing aids by precisely fitting them to the dimensions of the ear canal, right up to the eardrum.

“We’re hoping people will be able to walk in the store and have their ears scanned like people get their ears pierced today,” he says. “That’ll lower the cost because they don’t have to go to a specialty doctor.”

Unlike other academics often left to their own devices, Professor Hart was able to bring his hearing aid concept closer to reality with \$50,000 in backing last year from the Deshpande Center for Technological Innovation, an M.I.T. entity originally funded by two private investors, Jaishree Deshpande and her husband, Gururaj.

“I wouldn’t have known the first thing about doing all of this,” says Professor Hart. “The people from the Deshpande Center led me through.”

By providing academics like Professor Hart a bridge to the business world, M.I.T. is in the vanguard of a movement involving a handful of universities nationwide that work closely with investors to ensure that promising ideas are nurtured and turned into successful start-ups.

At first glance, the centers look like academic versions of business incubators. But universities are getting involved now at a much earlier stage than incubators typically do. Rather than offering seed money to businesses that already have a product and a staff, as incubators usually do, the universities are harvesting great ideas and then trying to find investors and businesspeople interested in developing them further and exploring their commercial viability.

In the jargon of academia, the locations of such matchmaking are known as “proof-of-concept centers,” and they’re among a number of new approaches to commercializing university research in more efficient and purposeful ways — and to preventing good ideas from dying quietly. The first proof-of-concept center, the William J. von Liebig Center, was established in 2001 at the [University of California, San Diego](#).

So far, the von Liebig Center has helped start 26 companies that have created more than 180

jobs and attracted more than \$87 million in financing. Among those companies are Mushroom Networks, a developer of online video technology, and, more recently, Biological Dynamics, a maker of early cancer diagnostic technology.

“Many of the great ideas get stuck in labs because scientists don’t have access to the kind of ecosystem” that Deshpande and other proof-of-concept centers offer, says Amy Salzhauer, a founder of Ignition Ventures, an investment firm based in Boston and New York that works with scientists to set up companies. “This is a way to better harvest those ideas.”

WHILE the von Liebig and the Deshpande centers are the highest-profile successes in this realm, similar entrepreneurial surges are occurring at other schools, like the [University of Utah](#), [Georgia Tech](#), the [University of Kansas](#) and the [University of Southern California](#).

It’s an expensive proposition. Not including the cost of the technology itself, it can cost investors roughly \$250,000 to determine whether an idea will actually blossom into something that can be sold, Ms. Salzhauer says.

Academics and others have a term for the chasm that usually separates a good idea from people who will invest in it: the “valley of death.” An increasing lack of interest in initial public offerings over the last decade has left even less money for early-stage companies.

But even in such a challenging fund-raising environment, analysts say many universities continue to embrace old-fashioned methods for supporting and promoting potentially lucrative in-house research. Many schools have what are known as “technology transfer” offices that introduce businesses and investors to patented university research and help schools strike licensing deals.

Corporate executives and investors complain that overly rigorous, or simply overwhelmed, tech transfer offices take too long to negotiate licensing agreements. And the offices often try to sell ideas with unproven commercial relevance.

“It’s the way engineering was 50 years ago,” says Mr. Deshpande. “They’d design something, and then hire marketing people to peddle it. You wouldn’t do that now without understanding the customer’s needs.”

A proposal from the Obama administration would experiment with all of this by allocating \$12 million among several institutions next year in what proponents hope will be a continuing effort to support and study proof-of-concept centers. If successful, supporters say, universities could spread the model faster.

But the idea represents a shift in thinking about the federal government’s role in stewarding the more than \$50 billion it gives to university researchers annually. Until now, that money has been for the discovery, not commercialization, of scientific breakthroughs.

The idea of government-backed proof-of-concept projects has plenty of proponents, including W. Mark Crowell, a [University of Virginia](#) executive and past president of the Association of

University Technology Managers, and Lesa Mitchell, an executive at the Ewing Marion Kauffman Foundation, which finances entrepreneurship research and programs.

Others believe that the experiment, while worth trying, isn't likely to yield significant results.

Toby E. Stuart, a Harvard Business School professor who researches social networks and entrepreneurship, noted that virtually every government wants to replicate Silicon Valley's university-driven system of innovation.

"But you can't engineer it through policy means," he says.

He thinks proof-of-concept centers would be more useful at universities other than the likes of M.I.T., Stanford and [Harvard](#), which are already hubs in entrepreneurial clusters.

"But in any significant way, it will happen organically," he says, "and not through some bureaucratic intervention."

Indeed, organic progress is on display outside of some of the country's big tech corridors. At the University of Utah, the Technology Commercialization Office helped arrange early financing and networking resources for 25 companies. The university's president, Michael K. Young, aligned the office with the business school, and Brian A. Cummings, the office's executive director, says the new arrangement allows researchers and business students to work together more closely.

Last year, business and bioengineering students who worked with Mr. Cummings's office drew up a short list of promising research discoveries. One was an idea for a feeding tube that is fitted with a tiny video camera to help surgeons implant it more precisely. Dr. John C. Fang, a professor of medicine, first came up with the idea in 1999.

A team of graduate students then fashioned a business plan around the idea and shopped it to local venture capitalists. Dr. Fang says he expects to secure \$1.25 million in financing for it soon.

Mr. Crowell, at the University of Virginia, participates in proof-of-concept review sessions, where academics and investors evaluate ideas. He says several projects that attracted \$100,000 seed grants from the Wallace H. Coulter Foundation Translational Research Partnership have generated commercial licensing deals.

Among them is a project called HemoShear, which is developing a device that can decrease the time and cost needed to test new drug compounds.

And in Pittsburgh, a state-financed nonprofit group, Innovation Works, has invested \$45 million over the last decade to help the area's university researchers — and anyone else — prove their ideas and showcase them with investors. The companies have attracted more than \$800 million in venture capital and have gone on to create 3,000 local jobs, says Matt Harbaugh, the chief investment officer of Innovation Works.

One company, Bossa Nova Robotics, is made up of Carnegie Mellon robotics researchers who had a commercial hit last year with a pair of toy robots, the Prime-8 gorilla and Penbo, a

penguin.

UNIVERSITY executives say they sometimes struggle to find motivated entrepreneurial professors. Medical researchers with promising discoveries may plunge into the marketplace out of a sense of service. For others, though, the motivation can be as simple as the sight of a fellow professor in a new sports car — a behavior common enough that it is known in university circles as “the Porsche principle.”

When Professor Hart first thought of the technology for his most successful product to date, an oral scanner, he was focused on pure research, not profit. But he found that he wasn't entirely immune to a financial lure after learning that old friends at the [California Institute of Technology](#) had struck gold with some of their ideas.

“I was a little jealous,” he says. “I thought I'd try it.”

Although he wasn't sure exactly how to get started, the Deshpande Center had recently opened. Krisztina Holly, then the center's executive director, sent a request for proposals to faculty members.

After Professor Hart responded, he teamed up with Ms. Holly, who already had experience leading a pair of tech start-ups and had mechanical engineering degrees from M.I.T. After awarding Professor Hart a \$250,000 grant, she also encouraged him to participate in a business-plan competition, where he mentioned his idea to a pair of Harvard M.B.A. students, Eric Paley and Micah Rosenbloom.

Professor Hart's team incorporated the company as Brontes Technologies and tested more than 30 applications of his science, including technology for scanning faces in 3-D for security investigations. During that time, the team learned about the dental industry's need for digital scanning technologies. So Brontes adapted the technology for use in an oral scanner that could create images of the mouths of patients who needed new crowns on their teeth.

Next came an introduction to Jeffrey Bussgang, a partner at a Boston firm now known as Flybridge Capital Partners. Flybridge and two other firms invested \$8 million in Brontes. In 2006, [3M](#) bought the technology for \$95 million and late last year it began the national rollout of a \$29,900 product called the Lava Chairside Oral Scanner.

(While 3M does not break out the scanners' financial performance, it said that about 1,000 had been sold and that it employs about 125 people to manufacture and distribute them.)

Mr. Bussgang, who has since invested in four other companies created at the Deshpande Center, says the proof-of-concept model “is a much better use of federal dollars than so many of the other ways the government is trying to prop up industry.”

Ms. Holly is now a vice provost and executive director of the Stevens Institute for Innovation at the University of Southern California, where a program called Ideas Empowered started in May. It has begun seeking proposals from faculty members interested in commercializing their

research.

Congress has yet to allocate the proof-of-concept funding, but a House subcommittee held hearings this month on improving “innovation ecosystems” around universities to encourage the commercialization of taxpayer-financed research.

For his part, Professor Hart hopes that all of this will gather even greater momentum.

“The public’s paying for all these wonderful innovations that are just sitting in the drawer,” he says, “because there’s no way for them to make the leap to the commercial world.”

[Go to Article from The New York Times »](#)