COMMERCIALIZING RESEARCH

NSF Program Offers Start-Up 101 To Its Grantees

New technologies are a dime a dozen. But a new technology with the right business plan behind it is much rarer. This week, the U.S. National Science Foundation announced it is expanding a program to teach budding scientific entrepreneurs how best to tailor ideas from their NSF-funded research to attract investors and, eventually, customers.

The program is called Innovation Corps, or I-Corps. It was launched last fall at Stanford University, which developed an 8-week pilot course to train scientists in how to take that first step from the laboratory to the marketplace. This month, Stanford-trained instructors welcomed the next round of 54 I-Corps grantees to classes being held at the Georgia Institute of Technology and the University of Michigan, each of which have received grants of $1.5 million to extend the program. On 18 July, NSF issued a solicitation to award similar grants to five more institutions. NSF hopes to spend a total of $19 million on I-Corps in 2013, up from $7.5 million this year.

"We're wildly supportive of I-Corps," says Lesa Mitchell, vice president of innovation and networks for the Ewing Marion Kauffman Foundation, which specializes in promoting entrepreneurship. "It's implementing everything that we have been trying to do. And we're eager to see how they scale up the program."

I-Corps has also caught the eye of some members of Congress, although a partisan divide has emerged about whether it's something NSF should do. Representative Dan Lipinski (D–IL), a member of the House science committee, is so gung ho about the program's potential to teach academics how to start a small business that he attended the final presentation of the second I-Corps cohort in May. He also cajoled Representative Mo Brooks (R–AL), who chairs the science committee's research panel, into holding a hearing on the topic this week in his Chicago district.

"NSF spends all of this money on basic research," says Lipinski, a systems engineer turned politician. "So let's try to teach some of these grantees how to be successful entrepreneurs and see if it winds up producing new products."

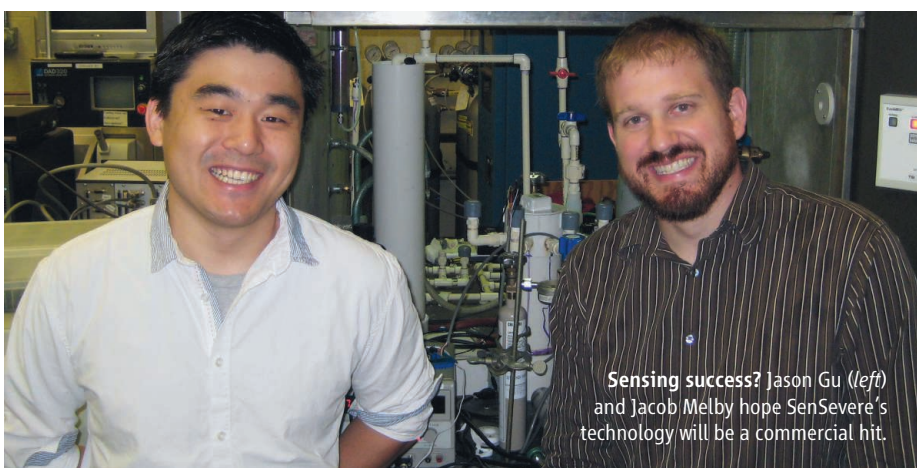
Brooks didn't address the program's educational component when he opened the hearing. Instead, he raised the familiar Republican criticism about federal programs that try, in his words, "to determine which companies succeed and which fail." He wondered if NSF has the expertise to make such decisions and if, as a $7 billion basic research agency, it should even be funding such activities.

Although NSF officials would be delighted if the program helps to revive a sluggish U.S. economy, program manager Errol Arkilic says the agency's goal is more modest: "to take an idea in an academic's head and somehow get it out of the academic institution." The process of testing the market is similar to what researchers do every day in their labs, explains serial entrepreneur Steve Blank, who agreed to adapt his Lean LaunchPad course at Stanford for I-Corps: "Come up with an idea, fail, learn from your failure, and repeat as necessary in the shortest possible amount of time." Toward that end, I-Corps grantees are expected to get feedback from at least 100 industry contacts while taking the course.

Each $50,000 I-Corps grant is shared among a three-member team: a principal investigator on a current or recent NSF grant that generated the underlying technology, a graduate student or postdoc with the itch to become an entrepreneur, and a mentor with a history of successful start-ups willing to share his or her experience. "Most professors aren't interested in leaving academia, and they have a lot of other things going on," Arkilic says. "But there may be someone in their lab who's motivated by all the potential upside of the technology and who's willing to jump over all the hurdles that stand in the way of commercializing it."

Jason Gu is such a person. In December 2010, Gu, then 26, received his Ph.D. from Carnegie Mellon University (CMU) in Pittsburgh, Pennsylvania, under Lisa Porter. By August 2011, he was co-founder and CEO of SenSevere, which, based on results from an NSF grant that Porter received, has developed a novel chemical sensor technology capable of withstanding high-pressure, high-temperature environments. Next month, the company will begin a field test of its sensors at an industrial plant in the Midwest. (A nondisclosure agreement prevents Gu from providing details.)

Gu, Porter, and Robert Davis, another CMU professor and successful entrepreneur, were in the first cohort of I-Corps grantees. Right now, Gu is the only paid employee of SenSevere, which maintains a lab at CMU under a licensing agreement with the university. "There's no such thing as a part-time entrepreneur," Gu says about his long days and weeks. But his new job, he adds, "is a lot more fun than being a postdoc because you have more ownership in what you're doing. I can even see a little bit of myself in the company."



Sensing success? Jason Gu (*left*) and Jacob Melby hope SenSevere's technology will be a commercial hit.

CREDIT: JASON GU

Porter has no plans to leave academia and become an entrepreneur. But she's pleased to assist those with such a bent. Another of her graduate students, Jacob Melby, expects to become SenSevere's second employee after he completes his Ph.D. this summer, and a third student is weighing the commercial applications of a potentially patentable invention from an unrelated project in her lab.

"A business plan for a start-up is completely different than a business plan for a large company," Porter says. "You have to be very flexible and nimble in adapting to what you're hearing. And I'm in a much better position now to recognize and help those around me who want to become entrepreneurs."

–JEFFREY MERVIS

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