

NSF I-CORPS™ NATIONAL INNOVATION NETWORK

The National Science Foundation (NSF) has been cultivating a pipeline of university-based researchers who can turn ideas into successful commercial products, and equipping our nation's science and technology faculty and students to be creative, technologically savvy leaders. Through its partnership with VentureWell (formerly NCIIA—the National Collegiate Inventors and Innovators Alliance), NSF has connected local program leaders from across the country to form the new "National Innovation Network" (NIN). To kick off the formation of the NIN, one hundred members of the NIN convened for the first time in April 2014 in Bethesda, MD to discuss their innovations and experiences on the road to commercialization.

An Audacious Experiment

This emerging movement of innovators is a key component of the NSF's [I-Corps™ program](#), which has grown rapidly from an 'audacious experiment' in teaching university researchers how to use customer discovery to commercialize scientific discoveries into a national network that has spawned 366 teams to date, and, through regional programs, over 600 more. More than 170 of these creative teams have launched companies since entering the program. The startups that I-Corps™ has made possible include AnchoviLabs, which was acquired by the cloud storage company Dropbox in 2012; Math Snacks, a company that produces short educational animations, mini-games, and interactive tools that help middle-schoolers better understand math concepts; and Bio-Adhesive Alliance, which produces an adhesive that is low cost and durable and is a substitute for petroleum-based asphalt. NIN members share more I-Corps™ stories and team "discovery journeys" at <http://venturewell.org/blog>.

Lean Startup Methodology

The NSF started I-Corps™ in 2011 when it adapted lean startup trailblazer Steve Blank's Lean Launchpad class for aspiring Stanford entrepreneurs, creating an accelerated seven-week curriculum to train university researchers to start companies that have developed new technologies based on NSF-funded research. Each I-Corps™ course admits about 24 teams of three: the principal investigator on an NSF research grant, a business mentor, and a student committed to pursuing the commercial potential of technology derived from the scientific work conducted under a previous research grant. Each team must conduct at least 100 customer interviews during the seven-week class. I-Corps™ instructors call this "getting out of the building," and they coach each team to use every interview to test their hypotheses about who their customers are and the problems their customers have that can be solved by the team's technology.

VentureWell

NSF has scaled its curriculum and dramatically expanded the community of emerging scientists and engineers by partnering with VentureWell, a not for profit higher education network with almost 20 years of experience in fostering innovative experiential entrepreneurship programs at U.S. universities and colleges. VentureWell works closely with NSF and funding partners such as The Lemelson Foundation, USAID, Intel and the Bill and Melinda Gates Foundation to create high impact education and training.

Fast-tracking Innovation

With the NIN, NSF has accelerated the development of a national innovation ecosystem that reaches deeply and broadly across the country to engage the most creative and consequential research discoveries and talents in the process of entrepreneurship. I-Corps™ Teams—the researchers whose innovations and energy drive the ecosystem—learn to be market focused entrepreneurs at trainings hosted by I-Corps™ Nodes, which are universities equipped by NSF to support regional needs for innovation education, infrastructure and research. Other universities host I-Corps™ Sites that accelerate this ecosystem by catalyzing and nurturing the formation of many more candidate I-Corps™ Teams. In the past two years, the NIN has grown from 3 to 33 universities.

Already the NIN has produced significant benefits:

1. Improvements to innovation and entrepreneurship programs

Directors and faculty at each node benefit significantly from their ability to tap into NIN for knowledge-sharing with their colleagues across the country. Training content remains cutting-edge and each node disseminates new developments to the schools in its region.

These discussions have catalyzed a host of successful adaptations of I-Corps™ to new settings. A notable example is the healthcare curriculum that emerged from NIN and is now being piloted by NIH. Other examples include the Michigan node's energy and transportation focused lean startup curriculum, NYCRI's Cleantech I-Corps™, and GA Tech's Startup Gauntlet. VentureWell has developed a faculty training program with Steve Blank and Jerry Engel to train hundreds more faculty from institutions across the US in this methodology.

2. Institutional culture change to promote regional collaboration

Multi-institutional nodes such as NYCRI, DMV, and Texas are founded on strong new partnerships forged by the I-Corps™ program. For example, DMV brings together the University of Maryland, George Washington, Virginia Tech, and Johns Hopkins. NIN has succeeded where previous efforts have failed to establish similar

partnerships in this region (such as the Chesapeake Crescent Initiative). In the case of the Texas or Southwest Node, simply applying for an I-Corps™ node grant catalyzed new partnerships between UT Austin, Texas A&M, and Rice, as these institutions recognized the opportunity to join NIN together as one new node.

3. Compelling national brand that enables unprecedented regional impact

The NIN brand enables the network to be greater than the sum of its parts, capturing the combined research horsepower of top universities and the entrepreneurial energy of the silicon valley start up culture with a strong connection to NSF's tradition of research excellence. As a result, I-Corps™ nodes have achieved regional impact that would otherwise not have been possible. The NIN brand has been extended beyond the initial focus to engage high school innovators. The DMV node has partnered with the U.S. Department of Health and Human Services to create the HHS Ignite Boot Camp, and it has also created I-Corps™ for Young Innovators for rising seniors in DC, MD, VA high schools. The NYCRIN node has leveraged its successful Cleantech I-Corps™ curriculum and the NIN brand to partner with state-wide agency NYSERDA in deploying I-Corps™ as the core training program for three proof-of-concept centers across New York state.

4. Unique mission that is transforming the scientific field of innovation and entrepreneurship

Dr. Keith McGreggor, Director of VentureLab at GA Tech, is lead instructor at one of the first two I-Corps™ nodes and has been a leading figure for many years in innovation and entrepreneurship. Before the NIN, McGreggor did not have any particularly good place to meet with colleagues from across the country and talk about his work. He attended AUTM (the Association of University Technology Managers) but found its agenda not sufficiently focused on innovation and entrepreneurship. The NIN has finally provided McGreggor with a home community. As he puts it, "The most important thing about the National Innovation Network is that it exists. There is nothing else like it." Thanks to the NIN, McGreggor not only has a home community for innovation and entrepreneurship, but he has also used its resources to dramatically strengthen the educational capabilities of VentureLab.

Andre Marquis, Executive Director of the Lester Center for Entrepreneurship and Innovation at Haas School of Business, UC Berkley, says, "Through NIN we are not only changing how we teach technology entrepreneurship regionally, we are changing how we teach it globally. It's the new model for the world."

Working together, the ingenious thinkers of the National Innovation Network are addressing America's needs for innovation education, infrastructure, research, and economic impact.

NIN ACTIVITIES

Annual NIN meeting

We convened almost 100 NIN members at the first annual meeting April 9-11, 2014, in Bethesda, MD. This meeting was a successful NIN kick-off with nodes and sites sharing knowledge that led to better programs, pedagogy, and research. The meeting also spawned the activities listed below, each of which promotes continuous improvements to the knowledge, connections, and impact of NIN. The second annual meeting is being planned for Spring 2015.

Webinars on key issues and best practices of NIN

Every 2-3 months we identify a topic/problem, find panelists and best practices, convene discussion, and share results to help nodes and sites address their key issues. One recent webinar covered recruiting mentors, which led to dissemination of a Mentor Recruiting handbook by Norm Rapino of Michigan. Materials are posted [here](#). Another recent webinar covered recruiting and forming teams, which led to sharing of resources developed by Christina Pellicane of NYCRIN. Materials are posted [here](#).

Videoconferences for nodes and sites

Every month we convene the leaders of the sites to share what they are doing and learn from each other. Occasionally a special burning topic emerges, such as tools to help manage teaching Lean-based curricula, and we convene a webinar to address that topic. We have recently started a similar monthly videoconference for nodes.

NIN homepage and blog

We have created a [NIN homepage](#) that provides a central point for information on the I-Corps™ programs with links to all the nodes, sites, and NSF resources for NIN. We publish a [blog](#) that promotes NIN activities and notable I-Corps teams.

NIN discussion forums

We have built a discussion forum platform into <http://venturewell.org> that we will use to support ongoing NIN discussions about key topics of innovation and entrepreneurship. We have reached out to all I-Corps alumni and learned what they want to discuss with each other as part of NIN and how we can improve upon the existing I-Corps™ LinkedIn groups to support those discussions. We will launch forum(s) and implement improvements to NIN discussions over the fall and winter of 2014.



CONTACT INFORMATION

[VentureWell NIN Homepage \(http://venturewell.org/i-corps/nin\)](http://venturewell.org/i-corps/nin)

[NSF I-Corps Homepage \(http://www.nsf.gov/news/special_reports/i-corps/index.jsp\)](http://www.nsf.gov/news/special_reports/i-corps/index.jsp)

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