

## Fueling Start-Ups: NSF Grant Helps Advance the School's Entrepreneurship Initiatives

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After a comprehensive review of the nation's top universities and research institutions, the National Science Foundation has awarded \$3.74 million to Columbia University, City University of New York, and New York University for a three-year research-to-startup initiative. The aim is to fast-track research to commercialization, and to foster start-ups in STEM (science, technology, engineering, and mathematics) research.



Investor at Neu Venture Capital and IEO Adjunct Assistant Professor Jerry Neumann BS'88, MS'90, seen here teaching a class in entrepreneurship, is on the teaching team for I-Corps NYCIN.

—Photos by Jeff Ballinger

“This award from the National Science Foundation reflects the determined entrepreneurial spirit thriving at Columbia, across our undergraduate, graduate, and professional schools—among students, faculty, and especially our accomplished alumni,” said University President Lee C. Bollinger. “Columbia Engineering is a critical source of the pioneering ideas that translate into new job-creating innovations and start-ups; but it is the interdisciplinary breadth of these initiatives that enhances the University’s enormous capacity to make meaningful contributions to our economy and society.”

With this new award, the three universities are partners in [NSF’s Innovation Corps](#) ([http://www.nsf.gov/news/special\\_reports/i-corps/](http://www.nsf.gov/news/special_reports/i-corps/)) (I-Corps), a set of activities and programs that prepares scientists and engineers to extend

their innovations beyond the laboratory and to commercialize their basic research projects. Columbia Engineering will work with CUNY and NYU to build the New York City Regional Innovation Node (NYCRIN)—the only I-Corps node in the Northeast. One million dollars will go directly to Columbia Engineering to set up the training programs and open-source tools required to boost tech entrepreneurship across the region.

“We are excited about building technology entrepreneurship across our institution,” said [Donald Goldfarb](#) (<http://engineering.columbia.edu/web/faculty/content/donald-goldfarb>), interim dean of [The Fu Foundation School of Engineering and Applied Science at Columbia University](#) (<http://engineering.columbia.edu/>). “It’s great to have the NSF recognize both the vibrant entrepreneurial community that is New York City and the healthy entrepreneurship ecosystem at Columbia. The timing of this award coincides with the launch of our [Institute for Data Sciences and Engineering](#) (<http://idse.columbia.edu/>), which will also encourage entrepreneurial ventures emerging from the research the Institute conducts.”

The I-Corps curriculum centers on “lean start-up development,” a rapid development process that allows early-stage ventures to iterate changes in emerging products quickly and efficiently match those products to appropriate customer segments. This curriculum is based on the one developed by well-known serial entrepreneur and Professor Steve Blank, who has recently started a course at Columbia open to both MBA and Engineering students to focus their talents on launching new ventures.

In addition to training, NSF-supported investigators will come to Columbia Engineering and NYCRI to access a set of open-source tools built by Engineering School data scientists to validate business assumptions, test market fit, establish revenue projections, and size customer populations.

The award comes as momentum for Columbia entrepreneurship programs continues to build across campus and across New York City's growing tech start-up community.

"The strong track record of Columbia's Engineering School in teaching entrepreneurship and in launching early-stage companies—by students, faculty, and young alumni—enables us to serve as a valuable I-Corps training and research partner," said [Chris H. Wiggins](http://www.columbia.edu/~chw2/) (<http://www.columbia.edu/~chw2/>), associate professor of applied mathematics at Columbia Engineering, [hackNY](http://hackNY.org) (<http://hackNY.org>) co-founder, and a co-investigator for NYCRI. "Columbia's role in NYCRI is not only to partner in training scientists to become founders but also to develop open-source, data-driven tools to help these founders assess product-market fit. These analytics tools will benefit from the expertise in data science and visualization provided by Columbia's new Institute for Data Sciences and Engineering, and will help advance technology innovation in New York City and nationally."



Jerry Neumann

Students, faculty, and staff are turning Columbia into a hotbed of entrepreneurship activity. In January and February, the University kicked off three business plan competitions and saw the student-led Application Development Initiative complete its third annual DevFest. The Engineering School is now finalizing preparations to host the seventh [hackNY](http://hackNY.org) student hackathon on April 6 and 7.

In addition, the Engineering School is working closely with the New York City Economic Development Corporation (NYCEDC) on both the launch of the new Institute for Data Sciences and Engineering and on a number of entrepreneurship programs, including the [NYC Next Idea](http://www.nycfedc.com/program/nyc-next-idea) (<http://www.nycfedc.com/program/nyc-next-idea>), a competition that encourages entrepreneurs from around the world to consider NYC as the natural place to start their new venture. The final round of the NYC Next Idea will be held at Columbia Engineering on March 13.

"Entrepreneurship is the celebration of disruptive innovation, complex problem solving, passionate diligence, and an insane work ethic—all exceptional core values of the Columbia Engineer," said Adnan Durrani BS'81 and chair of the [Engineering Entrepreneurship Advisory Board](http://engineering.columbia.edu/advisory-board_4648) ([http://engineering.columbia.edu/advisory-board\\_4648](http://engineering.columbia.edu/advisory-board_4648)). "By giving faculty and young Columbia entrepreneurs access to real-world start-up expertise, the University is creating a real culture of innovation and entrepreneurship across all levels of the institution."

The NYCRI Node will provide state-of-the-art lecture and digital learning resources and will host biannual I-Corps team training events. NYCRI will be active year-round, offering educational and networking services to all regional technology start-up entities as part of its long-term strategy to become the leading global center for research, development, and education in innovative technology-business development methodologies. It will also serve as the repository for all data and outcomes for technology innovation in the region. It is anticipated that research and execution of novel models based on these data and open-source tools will enable NYCRI to effect change in how entrepreneurship is performed throughout the U.S. and around the world.

—by Chris McGarry