

NSF Awards \$10 Million Grant to Stanford University to Launch National Center to Educate Entrepreneurial Engineers

Next generation of engineers will combine innovation and entrepreneurial know-how with technical skills to power the nation's growth

The National Science Foundation has awarded a five-year, \$10 million grant to launch a national center for teaching innovation and entrepreneurship in engineering, based at Stanford University. Directed by the Stanford Technology Ventures Program (STVP), the entrepreneurship center at Stanford's School of Engineering, the new center addresses the critical need for innovative and entrepreneurial engineers. STVP's key partner on this initiative is the National Collegiate Inventors and Innovators Alliance (NCIIA).

The center, which launches operation in September 2011, will catalyze major changes in undergraduate engineering programs by developing an education, research and outreach hub for the creation, collection and sharing of resources among the almost 350 engineering schools in the United States. The center will actively engage participation by U.S. faculty and students in helping to create the next wave of innovators and entrepreneurs who will build lasting economic growth and will conduct an ongoing assessment to enhance its impact and reach. Project principal investigators include Stanford Professors Tom Byers, Kathleen Eisenhardt and Sheri Sheppard.

"This center is an opportunity for U.S. engineering educators to openly share knowledge about preparing students to be entrepreneurial leaders," says Byers. "With the participation of faculty across America, the center will fundamentally change how engineers are educated in this country."

Fellow principal investigator Kathleen Eisenhardt emphasizes the importance of tailoring the center to address the distinct innovation education issues in the various engineering disciplines. She also takes the long view of the center's influence on corporations and, ultimately, national economic growth.

"This grant can serve as a spark to ignite a social movement that reaches into the leading technology-based corporations and promising ventures of the country," says Eisenhardt. "The hope is to link innovation-savvy students with revolutionary technology companies, and influence significant job creation."

Collaboration is a key component of the center, as evidenced by STVP's partnership in developing the center with NCIIA. Leveraging their membership of nearly 200 universities across the United States, NCIIA will be involved in developing, disseminating and delivering the center's offerings across the country. NCIIA Executive Director Phil Weilerstein sees real value in creating a center with such a dedicated focus.

"The need for innovation and entrepreneurial engineers is at an all-time high," says Weilerstein. "NCIIA is looking forward to applying its expertise to helping universities build cultures of innovation on their campuses, and to supporting the entrepreneurial endeavors of engineering students and faculty."

Based on evolving tools and techniques in engineering education, the center will provide U.S. engineering students and faculty with resources for curriculum, program and professional development.

"Hundreds of educators are already working to develop new programs addressing creativity, innovation and entrepreneurship as essential components in an engineering education," says Dr. Tina Seelig, STVP's executive director. "We look forward to gathering the most effective approaches and to sharing them with faculty and students across the country."

The center's efforts to deliver the latest research and insights into classrooms will not only benefit students, but will also allow participating faculty to leverage the center's network to disseminate research on the efficacy of entrepreneurship education. This accelerated approach will also impact the future development of the center and its processes.

"This center will adopt the iterative approach powering the most successful startups in America," says principal investigator Sheri Sheppard. "As our research explores how engineers develop the skills and mindset to bring ideas to life, what we learn can be immediately incorporated into the resources the center provides to students and faculty."

In anchoring the center, the Stanford Technology Ventures Program will leverage its extensive experience in entrepreneurship education. STVP's entrepreneurship and innovation courses are built upon the program's passionate commitment to experiential learning.

"STVP's approach embraces key ideas to unlocking entrepreneurship and innovation, such as learning to reduce barriers, understanding customers and developing scalable business models," says serial entrepreneur Steve Blank, who serves as a Stanford adjunct faculty member. "Stanford's willingness to throw open the doors to new ideas is very attractive to students and is an incredible opportunity for faculty who want to make a real impact."

To augment NSF funding and provide additional real world experience, the center has established a set of corporate partners, including some of the most innovative companies and venture capital firms in the United States, including Raytheon, Microsoft, MWH Global, Draper Fisher Jurvetson (DFJ), Edison International, Accel Partners, the X-Prize Foundation and Kleiner, Perkins, Caufield and Byers. These partners will provide resources for curriculum development, dissemination tools and student access to industry mentors.

"Now is the best time for the creation of this center," according to DFJ Partner Tim Draper. "Engineers are technical wizards, but their skills can be raised to new heights when infused with the drive and knowledge to turn ideas into the products and organizations that will shape our nation's collective future."

About the Stanford Technology Ventures Program (STVP)

The Stanford Technology Ventures Program is the entrepreneurship center at Stanford University's School of Engineering, hosted by the department of Management Science and Engineering. Located in the heart of Silicon Valley, STVP is dedicated to accelerating technology entrepreneurship education and creating scholarly research on technology-based firms that provide new insights for students, scholars and entrepreneurs.

About the National Collegiate Inventors and Innovators Alliance (NCIIA)

The NCIIA provides funding and support to help U.S. student innovators move their technology ideas from lab to market, creating ventures that produce positive social and environmental impacts. NCIIA helps universities build cultures of innovation and entrepreneurship by funding new programs and emerging ventures, training faculty and student innovators, and offering 2 million dollars of annual support for technology innovation and entrepreneurship in higher education.

About the National Science Foundation (NSF)

The National Science Foundation is an independent federal agency that supports fundamental research and education across all fields of science and engineering. In fiscal year (FY) 2011, its budget is about \$6.9 billion. NSF funds reach all 50 states through grants to nearly 2,000 universities and institutions. Each year, NSF receives over 45,000 competitive requests for funding, and makes over 11,500 new funding awards. NSF also awards over \$400 million in professional and service contracts yearly.