

## **Annex 1: Select NSF Programs to Foster Innovation**

### **Innovation Corps (I-Corps)**

This program is designed to help bridge the gap between the many scientists and engineers with innovative research and technologies, but little knowledge of the first steps to take in starting a company. I-Corps will help scientists take the first steps from the research lab to commercialization.

Over a period of six months, each I-Corps team, guided by experienced mentors (entrepreneurs and VC's) will build their product and get of their labs (and comfort zone) to discover who their potential customers are, and how those customers might best use the new technology/invention. They'll explore the best way to deliver the product to customers, the resources required, as well as competing technologies. They will answer the question, "What value will this innovation add to the marketplace? And they'll do this using the business model / customer development / agile development solution stack.

At the end of the program each team will understand what it will takes to turn their research into a commercial success. They may decide to license their intellectual property based on their research. Or they may decide to cross the Rubicon and try to get funded as a startup (with strategic partners, investors, or NSF programs for small businesses). At the end of the class there will be a Demo Day when investors get to see the best this country's researchers have to offer. (Steve Blank *Huffington Post* 7/28/11)

### **Industrial Innovation and Partnerships Division (IIP)**

The Directorate for Engineering's newly created division of Industrial Innovation and Partnerships (IIP) serves the entire Foundation by fostering partnerships to advance technological innovation, and plays an important role in the public-private innovation partnership enterprise.

One of the four strategic goals of the Engineering Directorate is to effectively invest in fundamental engineering innovation that has the potential for high impact in meeting national and societal needs. The focus of IIP is to successfully invest in engineering research and innovation by leveraging federal, small business, industrial, university, state and community colleges resources. Genuine partnerships are dynamic and growing relationships based upon shared interests, trust, and an evolving technical relationship. Partnerships require a vision and performance goals and benchmarks, passionate and visionary leaders, and partners bound by an essential interdependency and shared commitment to hold them together. Partnerships should facilitate the sorts of infrastructure that can sustain and nurture the spread of innovative activity over the long term.

These infrastructures are to educate and train human capital for the research enterprise and the entrepreneurial aspects of innovation; develop the social networks characterized by shared commitment and trust that embeds the intellectual capital and know-how embodied in scientists and engineers honed through advanced education and training; and to build a base of operational support without which sustainable partnerships cannot exist. This includes a diversified base of private investment, the physical place to provide a context for incubation, technical, management, and administrative support, laboratory and other capacity, communications services, and reliable sources of capital. One end of the innovation spectrum within the Directorate constitutes the unsolicited research proposals with ideas generated by the academic community to the other end with small business research proposals aimed at pursuing opportunities to commercialize products and services.

IIP is home to the two congressionally mandated small business research programs, the Small Business Innovation Research (SBIR) program and the Small Business Technology Transfer (STTR) program.

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Several programs in the Directorate that have non-academic partnerships as an important component to facilitate the engineering innovation process have been brought under the IIP umbrella. Thus, IIP also manages the Partnerships for Innovation (PFI) program, which stimulates innovation by building partnerships across the scientific and engineering community. In addition, the IIP leverages industrial support through two research programs, the Industry/University Cooperative Research Centers (I/UCRC) program and the Grants Opportunities for Academic Liaison with Industry (GOALI) program.

### **NSF Industry/University Cooperative Research Centers**

This program develops long-term partnerships among industry, academe, and government. The program was initiated in 1973 to develop long term partnerships among industry, academe and government. The National Science Foundation invests in these partnerships to promote research programs of mutual interest, contribute to the Nation's research infrastructure base and enhance the intellectual capacity of the engineering or science workforce through the integration of research and education.

The centers are catalyzed by a small investment from the National Science Foundation (NSF) and are primarily supported by industry center members, with NSF taking a supporting role in the development and evolution of the center. Each center is established to conduct research that is of interest to both the industry members and the center faculty. An I/UCRC contributes to the Nation's research infrastructure base and enhances the intellectual capacity of the engineering and science workforce through the integration of research and education. As appropriate, I/UCRC uses international collaborations to advance these goals within the global context. (Source: NSF 12-516)

The IIP Division accepts only those proposals that are submitted in response to an open solicitation and will not accept proposals for past solicitations that are closed. Unsolicited proposals are not accepted except for the GOALI program, where the proposals are submitted to the respective disciplinary programs.

### **Grant Opportunities for Academic Liaison with Industry (GOALI)**

Grant Opportunities for Academic Liaison with Industry (GOALI) promotes university-industry partnerships by making project funds or fellowships/traineeships available to support an eclectic mix of industry-university linkages. Special interest is focused on affording the opportunity for:

- Faculty, postdoctoral fellows, and students to conduct research and gain experience in an industrial setting;
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- Industrial scientists and engineers to bring industry's perspective and integrative skills to academe; and
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- Interdisciplinary university-industry teams to conduct research projects.

This solicitation targets high-risk/high-gain research with a focus on fundamental research, new approaches to solving generic problems, development of innovative collaborative industry-university educational programs, and direct transfer of new knowledge between academe and industry. GOALI seeks to fund transformative research that lies beyond that which industry would normally fund.

### **Small Business Innovation Research (SBIR) program**

The Small Business Innovation Research (SBIR) Program stimulates technological innovation in the private sector by strengthening the role of small business concerns in meeting Federal research and development needs, increasing the commercial application of federally supported research results, and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses.

### **Small Business Technology Transfer (STTR) program**

The Small Business Technology Transfer program stimulates technological innovation in the private sector by strengthening the role of small business concerns in meeting Federal research and development needs, increasing the commercial application of federally supported research results, and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses.

The Small Business Technology Transfer Program (STTR) requires researchers at universities and other non-profit research institutions to play a significant intellectual role in the conduct of each STTR project. These researchers, by joining forces with a small company, can spin-off their commercially promising ideas while they remain primarily employed at the research institution. The program is governed by Public Law 112-17.