



SBIR/STTR
IUCRC
GOALI
PFI

IIP Programs

IIP Programs

Small Business Innovation Research (SBIR): The SBIR program stimulates technological innovation in the private sector by providing seed money for high-risk, high-reward ventures.

Small Business Technology Transfer (STTR): The STTR program further expands the public-private partnership to include joint venture opportunities for small businesses and nonprofit research institutions.

Industry University Cooperative Research Centers (IUCRC): The IUCRC program develops long-term research partnerships among industry, academe, and government.

Grant Opportunities for Academic Liaison with Industry (GOALI): The GOALI program seeks to stimulate exchange of knowledge and personnel between universities and industry.

Partnerships For Innovation (PFI): PFI promotes innovation by bringing together colleges and universities, state and local governments, private-sector firms, and nonprofit organizations to work creatively on a research topic.

IIP Website: www.nsf.gov/div/index.jsp?div=IIP



Technology Areas

- Advanced Materials
- Biotechnology
- Chemical Technology
- Education and Special Topics
- Information and Communication
- Manufacturing
- Nanotechnology

Industrial Innovation and Partnerships Grantees

The Directorate for Engineering's (ENG) division of Industrial Innovation and Partnerships (IIP) serves a wide range of grantees. While most programs incorporate all different shareholders it is recommended that the new applicants begin by using the following guide.

Faculty: SBIR, IUCRC, GOALI and PFI

Small businesses: SBIR, IUCRC, GOALI and PFI

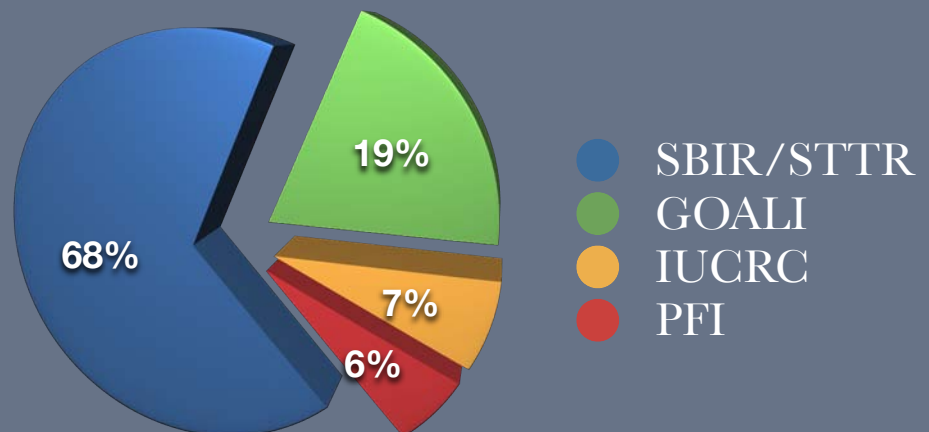
Students: SBIR, IUCRC, GOALI and PFI

Industry members and investors: SBIR, IUCRC, GOALI and PFI

K-12 educators: SBIR, IUCRC, and GOALI

Not-for-profits: GOALI and PFI

IIP Award Dollar Distribution



SBIR/STTR

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.

Solicitation Deadlines:

- Phase I (June and December)
- STTR Phase I (November)
- Phase II (January and July)

Supplemental Opportunities:

- Phase IB
- Phase IIB
- Phase II TECP
- Phase IIA
- Phase IIC
- RAHSS
- REU
- RET

Maximum Grant Values and duration:

- Phase I (\$150,000) (6 mo)
- Phase IB (\$150,000) (6 mo)
- Phase II (\$500,000) (2 yr)
- Phase IIB (\$500,000) (2 yr)
- Phase II TECP (\$100,000) (6 mo)
- Phase IIA
- Phase IIC
- RAHSS, REU and RET

SBIR Investments 2007-2009

SBIR grants:

1,436

SBIR funding:

\$330,484,630

Small Business Innovation Research / Small Business Technology Transfer

Program Information

Phase I: SBIR Phase I is a six-month experimental or theoretical investigation on the proposed innovative research or activity. It should determine the scientific, technical and commercial merit, and feasibility of the idea or concept. The STTR Phase I project is a collaborative effort with a Research Institution and is a 12-month effort.

Phase II: Phase II further develops the proposed concept, building on the feasibility project undertaken in Phase I and incorporating the reassessment of scientific, technical, and commercial merit and feasibility, as well as other relevant information in the Phase II plans. Only an NSF SBIR/STTR Phase I grantee who successfully completes a Phase I project and submits an acceptable Phase I Final Report is eligible to submit an NSF SBIR/STTR Phase II proposal pursuant to that Phase I award. Phase II SBIR/STTR awards have an expected period of performance of 24 months.

Phase IB: The Phase IB option will provide additional funds to Phase I grantees that are able to obtain third party investment to support the project. The objective of the Phase IB option is to extend the R&D efforts beyond the current grant to meet the product/process/software requirements of a third party investor to accelerate the Phase I project to the commercialization stage and enhance the overall strength of the commercial potential of the subsequent Phase II project. The Phase IB option extends the Phase I grant for six months,

and the combined Phase I and IB project will typically not exceed one year in duration for the SBIR grant and one and one half years for the STTR grant.

Phase IIB: The Phase IIB Option helps bridge the gap in funding between Phase II and Phase III. The Phase IIB Option will provide additional funds to Phase II grantees that obtain third party funds. The objective of the Phase IIB Option is to extend the R&D efforts beyond a current grant to meet the product/process/software requirements of a third party investor to accelerate the Phase II project to the commercialization stage and/or enhance the overall strength of the commercial potential of the Phase II project. A Phase IIB Supplement up to \$250,000 extends the Phase II grant for one year while a Phase IIB supplement in excess of \$250,000 extends the Phase II grant for two years.

Phase IIA: The SBIR/STTR Phase IIA will award a research supplement to a current SBIR/STTR Phase II grantee able to partner with a CREST/HBCU-RISE institution. The goals of the supplemental research are to: 1) further the understanding of the SBIR/STTR Phase II research; (2) facilitate the development of a stronger technology base within the SBIR/STTR organization; (3) investigate the scientific or engineering underpinnings of the SBIR Phase II technology; (4) utilize the supported research capabilities of the CREST/HBCU-RISE institutions; and (5) enhance the educational objectives associated with NSF HRD support.

Phase IICC: The SBIR/STTR programs, in collaboration with the Division for Research on Learning in Formal and Informal Settings (DRL) and the Human Resources Division (HRD), invites all active SBIR/STTR Phase II grantees to participate in a supplemental funding opportunity.

The goals of this supplemental program are to: (1) undertake research with high potential economic pay-off; (2) promote partnerships between small business and community college researchers; and (3) increase participation of underrepresented groups in both academic and small business research by encouraging careers in science and engineering.

Phase IITECP: This supplemental funding program is intended to challenge small businesses to begin to develop an outward focus and to more rigorously evaluate their strategic business and commercialization options. It is anticipated that this research will not only benefit the small business enterprise but also provide a mechanism for large and mid-sized corporations and investors to have input into the commercial development of new technology, products and services.

RAHSS: The Research Assistantship Supplements for High School Students (RA) supports active research participation by high schools students in the SBIR/STTR Program. This opportunity broadens the participation of women and minority students in academic and small business research to foster interest in pursuing science, technology, and engineering studies at the college level. RAHSS projects involve students in meaningful ways in ongoing advanced applied research projects. High school student participants must be citizens or permanent residents of the United States or its possessions. It is permissible to apply for support for up to two students per project year.

REU: The Research Experiences for

Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. REU projects involve students in meaningful ways in ongoing research programs or in research projects designed especially for the purpose. There are two mechanisms for support of student research: (1) REU Supplements and (2) REU Sites. REU Supplements are the concern of this document. In the context of the SBIR/STTR Program, REU Supplements may be requested for ongoing NSF SBIR/STTR-funded research projects. It is permissible to apply for support for up to two students per project year. Undergraduate student participants must be citizens or permanent residents of the United States or its possessions.

RET: The Research Experiences for Teachers (RET) program supports the active involvement of K-12 teachers and community college faculty in engineering research in order to bring knowledge of engineering and technological innovation into their classrooms. There are two mechanisms for support of in-service and pre-service K-12 teachers and/or community college faculty research: (1) RET Supplements and (2) RET Sites. RET Supplements are the concern of this document. In the context of the SBIR/STTR Program, supplements may be

requested for ongoing NSF SBIR-STTR-funded research projects. It is permissible to apply for support for up to two teachers per project year.

Grantee Opportunities

Industry members and investors: Partners for Phase I, Phase IB, Phase II, and Phase IIB

K-12 educators: RET Supplement

Faculty: Sub-awardees for SBIR and STTR projects

Not-for-profits: Partners for Phase I, Phase IB, Phase II, and Phase IIB

Small businesses: Sub-awardees and Partners for SBIR and STTR projects

Students: REU and RAHSS supplements

SBIR Example Star

Solar home combined heating and power system

A third-generation low-temperature Stirling engine developed by Cool Energy, Inc. was developed with NSF SBIR Phase II support. This engine is currently producing 100 Watts of electrical power and will be installed with a solar field in 2010.



IUCRC

The Industry/University Cooperative Research Centers (I/UCRC) program develops long-term partnerships among industry, academe, and government. 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.

Solicitation Deadlines:

- Planning Grants (March and September)
- Full Center Proposals Phase 1, 2 & 3 (March and September)

Supplemental Opportunities:

- CORBI
- Deputy Director Support
- International IUCRC Support

Maximum Grant Values and duration:

- Planning Grants (\$10,000/institution) (1 yr)
- Full Center Proposals Phase I (\$400,000) (5 yr)
- Full Center Proposals Phase II (\$300,000) (5 yr)
- Full Center Proposals Phase III (\$75,000) (5 yr)

IUCRC Investments 2007-2009

IUCRC grants:

368

IUCRC funding:

\$33,593,974

Industry University Cooperative Research Centers

Program Information

Planning Grant: A planning grant award of \$10,000 is awarded to each of the participating universities to hold a joint meeting with potential sponsors of the proposed center including non-NSF federal agencies and NSF to discuss the mission and vision of the proposed center, potential industry relevant research projects, membership agreement and funding opportunities. The planning grant award is typically for one year.

Full Center Proposals Phase I: The initial I/UCRC award to a center has a potential duration of five years. NSF support is intended to augment the support that a center receives from industry and other sponsors.

Full Center Proposals Phase II: After the first five years, centers that continue to meet the minimum IUCRC requirements may request support for a second five-year period. NSF support is intended to augment the support that a center receives from industry and other sponsors.

Full Center Proposals Phase III: After the second five years, centers that continue to meet the minimum IUCRC requirements may request support for a third five-year period. NSF support is intended to augment the support that a center receives from industry and other sponsors.

Collaborative Opportunity for Research Between two IUCRCs (CORBI): Maximum funding to a center is \$50,000 from NSF.

Grantee Opportunities

Industry members and investors: Sponsoring members through financial support

K-12 educators: RET supplements

Not-for-profits: Sponsoring members through financial support

Faculty: Site directors

Small businesses: Sponsoring members through financial support

Students: Graduate research through center support

Grant Opportunities for Academic Liaison with Industry

Program Information

Program 1 (Industry - University Collaborative Projects):

Opportunities are made available for collaborative industry-university projects for individuals or small groups. These research and education projects are jointly designed and implemented by university and industry engineers and scientists. The principal investigators and their students are encouraged to perform some of their research at the industrial sites.

Program 2 (Faculty and Students in Industry):

Opportunities are made available for academic personnel to gain research experience in an industrial setting. Industrial partners can help frame the research and refine the projects for relevancy. The proposal must include the research and education plans, industry-university collaboration plan, and facilities and resources that will be available to support the research during the visit. Industry fellowships and opportunities are available for faculty, postdoctorates, graduate students, and undergraduate students.

Program 3 (Industry Engineers and Scientists in Academe):

Opportunities are made available for industry personnel to interact with the academic community. The proposal is submitted by the host university on behalf of an academic principal investigator or the student's adviser and a co-principal investigator or student's co-adviser from industry. The visitor must maintain his/her initial affiliation in industry during the project. Two examples for the Industry Engineers and Scientists in Academe opportunity are Industry Presence on

Campus and Industry Based Graduate Assistantship.

Grantee Opportunities

Industry members and investors:

Partnership required for Programs 1, 2, and 3

K-12 educators: RET supplements

Not-for-profits: Third party member

Faculty: Applicants for Programs 1, 2, and 3

Small businesses: Act as industry members

Students: Direct funding through Program 2 and REU through faculty support

GOALI

The GOALI program seeks to stimulate interactions and staff exchange between universities and industry. For example, faculty, postdoctoral fellows, and students are encouraged to develop creative modes of collaborative interactions with industry through individual or small group projects, and industry based fellowships or traineeships for students and post doctoral fellows.

Solicitation Deadlines:

- Program 1 (Rolling deadline)
- Program 2 (Rolling deadline)
- Program 3 (Rolling deadline)

Supplemental Opportunities:

- Supplements available
- REU
- RET

Maximum Grant Values and duration:

- Program 1 (\$400,00) (3 yr)
- Program 2 (\$75,000) (1 yr)
- Program 3 (\$75,000) (3 yr)

GOALI Investments

2007-2009

GOALI grants:

314

IIP GOALI co-funding:

\$15,327,057

Total NSF GOALI funding:

\$92,844,845

PFI

The Partnerships for Innovation Program (PFI) stimulates the transformation of knowledge created by the research and education enterprise into innovations that create new wealth; build strong local, regional, and national economies; and improve the national well-being. Aligned with this goal, the PFI competition for FY 2011 funds will provide support for innovation capacity building to sustained, dynamic interactive knowledge enhancing partnership groups composed of academic researchers and small business practitioners focused on intense exploration, redefinition, and creation of novel platforms for translating research and moving it towards impact. The basic organizational core of each proposed knowledge enhancing partnership group must be composed of an academic lead institution and, at a minimum, two small businesses.

Solicitation Deadlines:

- PFI (December)

Supplemental Opportunities:

- NA

Grant Values and duration maximums:

- PFI (\$600,000) (3 yr)

PFI Investments 2007-2009

PFI grants:

46

PFI funding:

\$29,622,942

Partnerships For Innovation

Program Information

PFI: Each partnership project will be composed of a knowledge-enhancing small group consisting, at a minimum, of the lead institution and two or more existing small businesses. This knowledge-enhancement unit could be embedded in a broader partnership: Additional partners can include other academic institutions (from which one or more members of the project research team could be drawn); public sector institutions; and other private sector businesses as well as not-for private sector organizations. Partnerships that include state and local government entities are encouraged as are partnerships that include international partners which advance the goals of the partnership project. The substantive core of the project focuses on exploration, redefinition, and creation of a novel platform, that is, one that can be applied to many markets and problems/opportunities (multi-product or process

platform technologies). It should not be research that will lead to a product or process that has a single application (or an application that is represented by a single product or process). The breadth as well as the depth of the opportunity is essential so that the knowledge-enhancement partner companies can truly collaborate and all can benefit.

Grantee Opportunities

Industry members and investors:

Partners for PFI

K-12 educators: NA

Not-for-profits: Partners for PFI

Faculty: Applicants for PFI

Small businesses: Minimum of two required

Students: REU through faculty support

PFI Example Star

Advanced composites for offshore wind energy

This conceptualization of floating turbines using new composite technologies was designed by the University of Maine's Advanced Structures and Composites Center in conjunction with the National Renewable Energy Lab.

