

***Research Opportunities  
Reserved for Small Business***

**SMALL BUSINESS INNOVATION  
RESEARCH (SBIR) PROGRAM**

**SMALL BUSINESS TECHNOLOGY  
TRANSFER (STTR) PROGRAM**

Updated 01/31/05

**SBIR / STTR Program  
Mission**

**Supporting scientific excellence and  
technological innovation  
through the investment of federal  
research funds  
in critical American priorities  
to build a strong national economy...  
one small business at a time.**

**Program Descriptions**

- **Small Business Innovation Research (SBIR)**  
2.5% Set-aside program for small business concerns to engage in federal R&D -- with potential for commercialization.
- **Small Business Technology Transfer (STTR)**  
0.3% Set-aside program to facilitate cooperative R&D between small business concerns and U.S. research institutions -- with potential for commercialization.

***WHY SBIR????***

Small Business Innovation Development Act of 1982

**Congress designated 4 major goals**

- Stimulate technological innovation
- Use small business to meet federal R&D needs
- Foster and encourage participation by minorities and disadvantaged persons in technological innovation
- Increase private-sector commercialization innovations derived from federal R&D

**2000 REAUTHORIZATION**

MAJOR PROVISIONS OF P.L. 106-554; Signed 12/21/00

- **Program Extension until 9/30/2008**
- **Output and Outcome Data**
  - **Public Database:** basic award information  
(Tech-Net-- <http://technet.sba.gov>)
  - **Government Database:** program evaluation  
(Phase II awardees -- e.g., new product sale revenues; other investment funding sources)

***WHY STTR????***

Small Business Research and Development Enhancement Act of 1992

- **Stimulate and foster scientific and technological innovation through cooperative research and development carried out between small business concerns and research institutions**
- **Foster technology transfer between small business concerns and research institutions**

## 2001 STTR REAUTHORIZATION

- Reauthorized through FY2009
- Set-aside increased from 0.15% to 0.30% in FY 2004
- Phase II award levels increased from \$500,000 to \$750,000 in FY 2004
- Participating agencies to implement similar outreach efforts as SBIR

## SBIR/STTR: 3-Phase Program

### PHASE I

- ⇒ Feasibility Study
- ⇒ \$100K and 6-month (SBIR) or 12-month (STTR) Award



### PHASE II

- ⇒ Full Research/R&D
- ⇒ \$750K and 2-year Award (SBIR/STTR)



### PHASE III

- ⇒ Commercialization Stage
- ⇒ Use of non-SBIR/STTR Funds



## SBIR PROGRAM ELIGIBILITY CHECKPOINTS

- ✓ Organized for-profit U.S. business
- ✓ At least 51% U.S.- owned by individuals and independently operated or it must be a for-profit business concern that is at least 51% owned and controlled by another (one) for-profit business concern that is at least 51% owned and controlled by one or more individuals

## SBIR PROGRAM ELIGIBILITY CHECKPOINTS

- ✓ 500 employees or fewer including affiliates
- ✓ PI's primary employment must be with the small business concern at the time of award and for the duration of the project period.

## STTR PROGRAM ELIGIBILITY CHECKPOINTS

- ✓ Applicant is Small Business Concern
  - Subsidiaries are NOT eligible for STTR program
- ✓ Formal Cooperative R&D Effort
  - ⇒ Minimum 40% by small business
  - ⇒ Minimum 30% by U.S. research institution
- ✓ U.S. Research Institution
  - ✓ College or University; other non-profit research organization; Federal R&D center
- ✓ Intellectual Property Agreement
  - ⇒ Allocation of Rights in IP and Rights to Carry out Follow-on R&D and Commercialization

## SBIR / STTR ELIGIBILITY OWNERSHIP AND CONTROL

got questions?

- Contact the SBA Size Specialists
- Request an eligibility determination

<http://www.sba.gov/size/indexcontacts.html>

## PERFORMANCE of RESEARCH ACTIVITIES

“All research/R&D must be performed in its entirety in the U.S.”

- Rare cases to conduct testing of specific patient populations outside U.S. is allowable
- Travel to scientific meeting in foreign country allowable
- Foreign consultants/collaborators allowable, but must perform consulting in U.S.

## FEE/PROFIT

Up to 7% of total direct and F&A costs may be requested for fee

- Must be REQUESTED/JUSTIFIED in application/proposal
- Only SBC eligible; no contracts, consortium or other third party are eligible for fee
- Not direct or indirect cost

## SBIR / STTR Participating Agencies



**TOTAL ~ \$2.0 + B  
FY 2005**

• DOD	SBIR/STTR
• HHS	SBIR/STTR
• NASA	SBIR/STTR
• DOE	SBIR/STTR
• NSF	SBIR/STTR
• DHS	SBIR
• USDA	SBIR
• DOC	SBIR
• ED	SBIR
• EPA	SBIR
• DOT	SBIR



## Standard Phase I Process

Solicitation Topics

- Agencies describe R&D topics in solicitations.

Proposal Submission

- Small Business Concerns prepare short (usually 25-page) proposals. Unsolicited proposals not accepted.

Evaluation

- Agencies evaluate based on technical merit, firm's qualifications, and commercial potential / societal benefit.

Ph I award

- Agencies make Phase I awards.

About 6-9 months

## Agency SBIR Differences

- Number and Timing of Solicitations
- R&D Topic Areas -- (Broad vs. Focused)
- Dollar Amount of Award (Phase I and II)
- Proposal Preparation Instructions
- Financial details (e.g., Indirect Cost Rates, Gap Funding)
- Receipt Dates
- Proposal Review Process
- Proposal Success Rates
- Type of Award (Contract or Grant)

## Agency SBIR Differences

- |                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• <b>Contracting Agencies</b> <ul style="list-style-type: none"> <li>➤ Agency establishes plans, protocols, requirements</li> <li>➤ Highly focused topics</li> <li>➤ Procurement mechanism for DOD and NASA</li> <li>➤ More fiscal requirements</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>• <b>Granting Agencies</b> <ul style="list-style-type: none"> <li>➤ Investigator initiates approach</li> <li>➤ Less-specified topics</li> <li>➤ Assistance mechanism</li> <li>➤ More flexibility</li> </ul> </li> </ul> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**DOD  
NASA  
EPA  
DOC**

**HHS/NIH  
ED  
DOT**

**HHS/NIH  
ED  
DOE**

**NSF  
USDA**

## SBIR AND STTR PROGRAMS CRITICAL DIFFERENCES

### • Research Partner

**SBIR:** Permits research institution partners

[Outsource ~ 33% Phase I and 50% Phase II R&D]

**STTR:** Requires research institution partners  
(e.g., universities)

[40% small business concerns (for-profit) and  
30% U.S. research institution (non-profit)]

**AWARD ALWAYS MADE TO SMALL BUSINESS**

## SBIR AND STTR PROGRAMS CRITICAL DIFFERENCES

### • Principal Investigator

**SBIR:** Primary (>50%) employment must  
be with small business concern

**STTR:** Primary employment not stipulated

[PI can be from research institution and/or  
from small business concern\*]

**\*DISCUSS WITH AGENCIES**

	DOD	NASA	DOT	EPA	DOE	DHS	DOC	NSF	USDA	DoED	NIH
Award Type Contract Grant	C	C	C	C	G	C	C	G	G	G/C	G/C
Award Amount Phase I	70K-100K <sup>a</sup> Options <sup>b</sup>	70K SBIR 100K STTR	100K	70K	100K 9 mos	100K	75K	100K	80K	100K	100K <sup>c</sup>
Award Amount Phase II	750K	600K	720K	225K <sup>c</sup>	750K	TBD	300K	500K <sup>c</sup>	325K	750K	750K <sup>c</sup>
Review Process	I	I	I	I	E	I	I	E	E	I	E
Research Topics	S	S	S	S	S	S	S	B	B	S	B
Gap Funding	Y	N	N	N	Y	N	N	Y	Y	N	Y
Communication	R	R	R	R	R	R	R	O	O	O	O

**C** - Contract  
**I** - Internal Review  
**S** - Specific  
**R** - Restricted  
**G** - Grant  
**E** - External Review  
**B** - Broad  
**O** - Open  
**Y** - Varies among DOD subcomponents.  
**N** - Deviations permitted with justification.  
**C** - Some agencies offer Ph II options.

**Agency Differences  
ALWAYS CHECK  
WITH AGENCIES**

### Utilize Internet Resources .....

### Searching Agency Topic Areas

<http://www.sbirworld.com>

Search: Nano

AIR FORCE

ARMY

NSF

MDA

NIH

List continues...

### Utilize Internet Resources ..... (cont.)

### Searching Agency Topic Areas

<http://www.sbirworld.com>

Search: Sensors

DARPA

MDA

DOT

NIH

NAVY

### Utilize Internet Resources .... (cont.)

### Searching Agency Solicitations

<http://www.sbirworld.com>

SBIR/STTR KEY SOLICITATION DATES

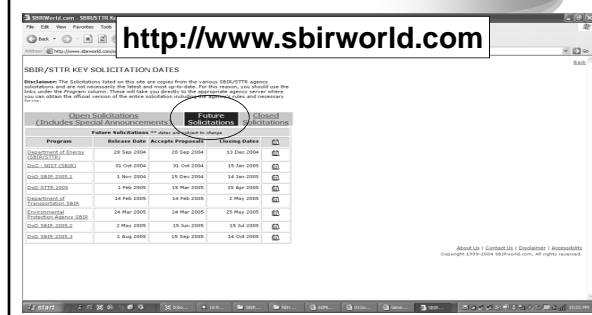
Background: The Solicitations listed on this site are copies from the various SBIR/STTR agency websites. They are not intended to be used as the official version of the agency's rules and regulations. They are provided for informational purposes only.

Program	Release Date	Acceptance Period	Closing Date
NSF - SBIR/STTR (Grants)	2 Aug 2004	2 Aug 2004	2 Sep 2004
NSF - SBIR/STTR (Grants)	2 Aug 2004	15 Sep 2004	15 Oct 2004
NSF - SBIR/STTR (Grants)	25 Sep 2004	8 Nov 2004	8 Dec 2004
NSF - SBIR/STTR (Grants)	7 Oct 2004	7 Oct 2004	9 Sep 2004
NSF - SBIR/STTR (Grants)	2 Oct 2004	2 Oct 2004	26 Aug 2004
NSF - SBIR/STTR (Grants)	9 Jan 2004	9 Jan 2004	1 Apr 2004
NSF - SBIR/STTR (Grants)	9 Jan 2004	9 Jan 2004	1 Apr 2004
NSF - SBIR/STTR (Grants)	9 Jan 2004	9 Jan 2004	1 Apr 2004
NSF - SBIR/STTR (Grants)	9 Jan 2004	9 Jan 2004	1 Apr 2004
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Special Announcements

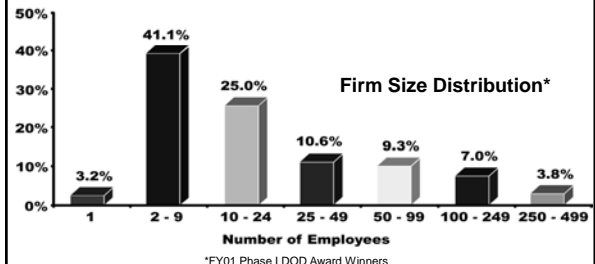
## Utilize Internet Resources ..... (cont.)

### Searching Agency Solicitations



## Who Participates in SBIR?

- ✓ Firms are typically small and new to the program.
- ✓ About 1/3 are first-time Phase I awardees.
- ✓ Small hi-tech firms from across the country.



## Important Facts to Remember

- Eligibility is determined at time of award
- No appendices allowed in Phase I
- The PI is not required to have a Ph.D. or M.D.
- The PI is required to have expertise to oversee project scientifically and technically
- Applications may be submitted to different agencies for similar work
- Awards may not be accepted from different agencies for duplicative projects

## Advice from Awardees

- ✓ **Don't judge an agency's interests by its "name"**
- ✓ **Understand agency's mission & needs**
- ✓ **Get to know your agency Program Manager**
- ✓ **Read solicitation and follow instructions**

## Advice from Awardees

- ✓ **Don't depend solely on SBIR funding**
- ✓ **Don't go it alone - use support systems**
- ✓ **Have an outcome**
- ✓ **Win or lose - get and review evaluations**
- ✓ **Be PERSISTENT**

## Utilize Your State Resources .....

<http://www.sbirworld.com/statecontacts.asp?mnUState=1>



### For more information.....

- Contact individual agency websites
- Cross-agency website:  

<http://www.sbirworld.com>

  - Conferences / workshops
  - Topic search engine for *all* agencies
  - Partnering Opportunities
  - State Newsletters

### Entrepreneurial Research Institutions

Universities / Industry Partnerships  
and  
Cultural Differences

### **UNIVERSITY-BUSINESS PARTNERSHIP OPPORTUNITIES**

- Own small firms (assign *someone else* PI)
- Principal Investigator  
(with official permission from university)
- Senior Personnel on SBIR/STTR
- Consultants on SBIR/STTR
- Subcontracts on SBIR/STTR
- University facilities provide analytical and other service support

### **UNIVERSITY AND INDUSTRY: Two diverse cultures**

*Industry Researchers  
are from MARS*

*University Researchers  
are from Venus*

### **UNIVERSITY AND INDUSTRY: Two diverse cultures**

#### University culture

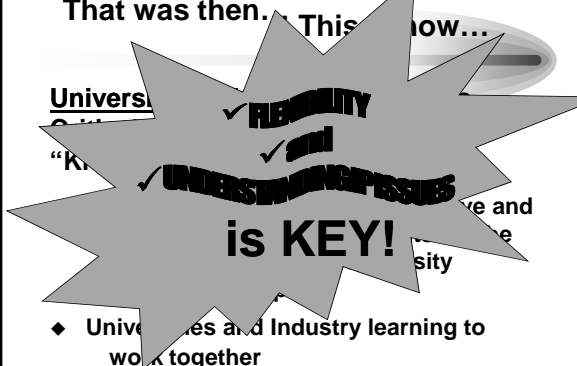
- ◆ Research, discover, educate and train future workforce
- ◆ Pace is slower - aligned to academic cycle
- ◆ Mission = basic and applied research
- ◆ Technology transfer activities are companion to applied research mission
- ◆ Fertile ground for economic development

### **UNIVERSITY AND INDUSTRY: Two diverse cultures**

#### Industry culture

- ◆ Mission toward research / R&D / commercialization
- ◆ Quick-paced
- ◆ Solve problems - develop new products ⇒ profit
- ◆ Maintain control of science to explore full potential of discovery (initially)
- ◆ Economic impact: Jobs, societal benefit

**CULTURAL DIVERSITY**  
That was then... This now...



University  
“K...  
...ve and  
...sity

- ◆ Universities and Industry learning to work together

**Entrepreneurial Research Institution**  
Key Ingredients

- ◆ Develop common goals between faculty-initiated business and mission of research institution
- ◆ Create environment that enables innovation and entrepreneurship
- ◆ Protect IP assets of university
- ◆ Establish policies to manage, reduce or eliminate conflict of interest (COI)

**Examples of Successful Entrepreneurial Research Institutions**

- The Ohio State University
- Purdue University
- University of Wisconsin
- N.C. State University
- Georgia Tech
- Virginia Tech
- Texas A&M University
- Penn. State University
- UC San Diego
- University of Utah
- Carnegie Mellon University
- Stanford University

Source: Innovation U. “New University Roles in A Knowledge Economy”  
Southern Technology Council and Southern Growth Policies Board

**Examples of Successful Entrepreneurial Research Institutions (cont.)**

- The Ohio State University


**Models: Start-ups involving RI employees**

- ❖ Managed Start-Up Model
- ❖ Faculty-Owned Business Model
- ❖ Early Stage Development Model
- ❖ Entrepreneurial Leave Model

<http://www.techtransfer.rf.ohio-state.edu>

**Examples of Successful Entrepreneurial Research Institutions (cont.)**

- Purdue University: Purdue Research Park
  - ❖ 3 business incubators
  - ❖ Companies benefit from shared office concept, flexible leases, attractive rental rates, and more ...
  - ❖ Gateways Program
  - ❖ Financial assistance



<http://www.purdueresearchpark.org>

**Examples of Successful Entrepreneurial Research Institutions (cont.)**

- Purdue University
  - ❖ Environment for business to have **frequent and mutually beneficial interactions** with University
  - ❖ Policies / Procedures to address COI -- **not to eliminate**, but to **minimize and manage**

### SUCCESS STORY

- **Endocyte, Inc.** (Purdue Research Park)
  - Researcher, Philip Low, discovered way to diagnose, potentially cure, ovarian cancer using vitamin folate
  - Sell technology or start own company to develop and market treatment????
  - Resisted VC offers: wanted control of science
  - Now exploring use of folate in arthritis

- ❖ **ADVICE:** Hire experienced CEO to handle all **but** science
- ❖ **BENEFIT:** Purdue retains talent

### Final Exam

## The Top 10 List

#### Top 10 Reasons to Seek SBIR / STTR Funding Opportunities

10. Over \$2.0 Billion available
9. NOT A LOAN - no repayment
8. Provides recognition, verification and visibility
7. Potential leveraging tool to attract venture capital/other sources of \$\$\$

#### Top 10 Reasons to Seek SBIR / STTR Funding Opportunities

6. Fosters partnerships (e.g., large corporations, academia)
5. Stimulates local and state economies = stronger national economy
4. Provides seed money to fund high risk projects

#### Top 10 Reasons to Seek SBIR / STTR Funding Opportunities

3. Intellectual property rights are normally retained by the small business
2. Small business concerns are recognized as a unique national resource of technological innovation

#### Top 10 Reasons to Seek SBIR / STTR Funding Opportunities

1. To make economic and societal contributions to America