

U.S. Small Business Administration



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

**ANNUAL REPORT - FY 2004**

**Office of Technology  
U.S. Small Business Administration**

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## Introduction

This is the 22<sup>nd</sup> annual report on the Small Business Innovation Research SBIR program, which summarizes program activities and results for FY 2004. The Small Business Innovation Development Act of 1982, Public Law 97-219, as amended, directs the U.S. Small Business Administration (SBA) to establish policy for monitoring, evaluating, and reporting on accomplishments of the SBIR program.

Public Law 97-219 was signed on July 22, 1982, and is set forth in section 9 of the Small Business Act. Congress reauthorized the SBIR program in 1986, and again in 1993, extending it to October 1, 2000. This reauthorization also increased the percentage of research and development (R&D) funds that participating Federal agencies must direct to small businesses under the program from 2 percent to 2.5 percent. On December 21, 2000, Public Law 106-554 was signed, reauthorizing the SBIR program through September 30, 2008.

## FY 2004 Summary

- In FY 2004, the 11 agencies participating in the SBIR program released a total of 20 Phase I solicitations. The Environmental Protection Agency and the Department of Defense released four solicitations; the Department of Commerce, the Department of Homeland Security, and the Department of Education each released two solicitations; and the other six agencies released one each.
- Participating agencies received 30,766 Phase I proposals from small high-tech business concerns. Agencies subsequently made 4,638 Phase I awards, representing 15.1 percent of proposals received.
- A total of 3,604 Phase II proposals were received by participating agencies, resulting in 2,013 awards. These awards represented 56 percent of Phase II proposals received.

- In total, 34,370 Phase I and Phase II proposals were received in FY 2004. Phase I and Phase II awards totaled 6,651, representing 19.3 percent of the total number of proposals received.

## HUBZone Small Business Concerns

The Small Business Act requires the SBA to report on the participation of HUBZone small business concerns (SBCs) in the program. The agencies received 624 Phase I and 96 Phase II proposals. The participating agencies made 41 Phase I awards and 9 Phase II awards to HUBZone SBCs, for a total of 50 awards. Phase I awards totaled \$3.6 million, and awards for Phase II totaled \$7.7 million for a total of \$11.3 million to HUBZone SBCs.

## Technology Resources Network

As defined in Section 9 of the Small Business Act, the SBA has designed and implemented the Technology Resources Network (Tech-Net) to streamline and standardize the reporting of SBIR awards and applicant information by the Federal agencies required to participate in the SBIR program. The SBA held several working sessions with the agencies to define the input data fields and a core set of output reports to facilitate the administration of the program. The SBA incorporated the unique needs of each agency into the design of the database system to ensure that the system would provide much needed award and applicant information. Information such as name, size, location, abstracts and identifying number of each SBC that has received a Phase I or Phase II award is available in this database. Agencies now have the ability to review awards and applicant information, and edit previously reported data interactively through Tech-Net. The public version of this database can

be accessed by visiting the website [www.tech-net.sba.gov](http://www.tech-net.sba.gov). The participating agencies are providing information needed in a timely manner to maintain the database.

The SBA is currently developing the Government database, an on-line commercialization reporting system, which will maintain information on all Phase II awards funded under the SBIR program. This database will not be accessible by the public; therefore, any confidential information that is provided by the SBIR Phase II awardees will not be disclosed to the public. A username and password will be required to access the database. The SBA will control the issuance of the username and passwords. The database is being designed to collect information that will allow the SBA, each participating agency, Government Accountability Office, the National Academy of Science and the Congress to effectively measure the impact and success of the program.

SBA is currently seeking the Office of Management and Budget's approval for a survey form for SBIR program applicants that will ask for information regarding the commercialization of work completed under past Phase II SBIR awards. The requested survey form is part of SBA's current enhancement of its TechNet data system. This reporting system will be required for STTR applicants as well as SBIR applicants.

## **Executive Order 13329**

On February 24, 2004, the President signed Executive Order 13329, Encouraging Innovation in Manufacturing. The Executive Order states that continued technological innovation is critical to a strong manufacturing sector of the United States economy. The Executive Order recognizes that the commercialization of technologies, products, or services funded through the SBIR and STTR programs play a crucial role in stimulating the United States economy. The Executive Order further acknowledges that the research and development work

performed by small businesses participating in these two important programs have contributed to our National defense, improved our health and welfare, protected the environment, and improved our production processes. SBA has proposed amending the SBIR Policy Directive to address the Executive Order. See 70 Federal Register 28975 (May 19, 2005).

During FY 2004, there were a total of 1,163 SBIR Phase I and Phase II awards that involved manufacturing topics. Those awards totaled \$359.4 million.

## **Federal and State Technology Partnership**

During FY 2004, the FAST program was funded and 21 awards were made. Public Law 106-554 requires the SBA to report on the status and implementation of the mentoring networks. The states that implemented a mentoring network during the third year of the FAST program were Alaska, Arizona, Arkansas, Indiana, Louisiana, Maine, Maryland, Mississippi, Missouri, New Mexico, North Dakota, Oklahoma, Pennsylvania, Washington, West Virginia, Wisconsin, Wyoming, and Puerto Rico. SBA issues an annual report on the FAST program which discusses the program and awards made, in more detail.

## **Reporting of Follow-on Non-SBIR Awards**

SBIR firms should be encouraged to develop and expand business applications of their SBIR research with the desired outcome of generating new employment and income. One purpose of follow-on funding agreements or Phase III is to commercialize the innovation and help the small business concern grow. Section 4(c)(7) and 10(b)(13) of the Policy Directive requires agencies to report only those instances where a follow-on award with non-SBIR funds was issued to a concern other than the SBIR awardee that developed the technology.

SBA is currently working with the participating agencies and program awardees on three cases where a violation or misunderstanding of the program may have occurred. On these cases, SBA is acting first to clarify the rules of the program and to help resolve issues or misunderstandings that may reside on the part of the participating agency or the small business concern. If the issue is not resolved, SBA will submit a report to Congress. SBA is not reporting any such cases to Congress in this year's annual report.

**Table 1: SBIR Program Data**

*Fiscal Year 2004 SBIR Agency Obligations Summary (dollars in thousands)*

	DOA	DOC	DOD	DOE	DOT	ED	EPA	DHS	HHS	NASA	NSF	TOTAL
Agency Extramural Budget	727,117	337,815	40,615,579	4,093,255	130,000	292,400	265,900	784,000	22,912,273	4,300,000	3,430,000	77,888,339
Agency SBIR Budget	18,177	8,554	1,016,072	102,331	3,250	7,310	6,738	19,600	572,807	107,500	87,780	1,950,119
Dollars Obligated	18,696	8,557	1,016,072	103,644	3,693	8,949	7,710	19,385	574,696	106,077	91,400	1,958,879
Percent of SBIR to Extramural Budget	2.57%	2.53%	2.50%	2.53%	2.84%	3.06%	2.90%	2.47%	2.51%	2.47%	2.66%	2.51%
Deficit/Surplus	519	3	0	1,313	443	1,639	972	-215	1,889	-1,423	3,620	8,760

*Fiscal Year 2004 Award Profile (dollars in thousands)*

	DOA	DOC	DOD	DOE	DOT	ED	EPA	DHS	HHS	NASA	NSF	TOTAL
Total Phase I Awards	99	49	2,075	247	12	46	43	97	1,212	311	447	4,638
Minority/Disadvantaged Phase I Awards	10	5	163	31	3	4	4	8	5	45	56	334
Total Phase II Awards	38	19	1,173	115	5	7	24	20	379	156	77	2,013
Minority/Disadvantaged Phase II Awards	3	1	86	11	2	0	4	1	4	19	8	139
Total Phase I Dollars Awarded (\$)	7,649	3,559	188,146	24,435	1,182	4,211	2,724	9,535	191,139	21,669	44,500	498,749
Minority/Disadvantaged Phase I Dollars (\$)	761	417	14,870	3,056	290	350	280	800	2,607	3,071	5,600	32,102
Total Phase II Dollars Awarded (Obligations)	11,047	4,998	741,187	79,209	2,511	4,738	4,986	9,850	380,766	84,408	45,000	1,368,700
Minority/Disadvantaged Phase II Dollars (\$)	764	300	64,482	8,045	500	0	900	750	2,607	11,014	4,000	93,362
Average Amount for Phase I Awards (\$)	77	73	91	99	99	92	63	98	158	70	100	108

*Fiscal Year 2004 Agency Solicitation Profile*

	DOA	DOC	DOD	DOE	DOT	ED	EPA	DHS	HHS	NASA	NSF	TOTAL
Number of Solicitations Released	1	2	4	1	1	2	4	2	1	1	1	20
Number of Research Topics in Solicitations	11	19	1,082	47	12	6	15	14	208	25	4	1,443
Number of Copies Distributed	500	0*	0*	0*	250*	0*	0*	0*	0*	0*	0*	750
Number of Phase I Proposals Received	582	345	15,681	1,312	127	437	487	525	5,871	2,695	2,704	30,766
Number of Phase II Proposals Received	65	43	1,721	201	5	7	63	33	944	297	225	3,604
Number of Phase I Awards	99	49	2,075	247	12	46	43	97	1,212	311	447	4,638
Number of Phase II Awards	38	19	1,173	115	5	7	24	20	379	156	77	2,013

*Dollars obligated can include modifications to previous year's awards: DOD \$165,228K HHS \$2,791K, NSF \$6,551K, and EPA 12K*

*\*Distributed over the Internet Website*

The number of awards for Phase I and Phase II have increased during the life of the program. (Please see Table 2 immediately following).

**Table 2: Number of SBIR Awards -- FY 1983 through FY 2004**

Fiscal Year	Phase I	Phase II	Totals
83	686	-	686
84	999	338	1,337
85	1,397	407	1,804
86	1,945	564	2,509
87	2,189	768	2,957
88	2,013	711	2,724
89	2,137	749	2,886
90	2,346	837	3,183
91	2,553	788	3,341
92	2,559	916	3,475
93	2,898	1,141	4,039
94	3,102	928	4,030
95	3,085	1,263	4,348
96	2,841	1,191	4,032
97	3,371	1,404	4,775
98	3,022	1,320	4,342
99	3,334	1,256	4,590
00	3,166	1,330	4,496
01	3,215	1,533	4,748
02	4,243	1,577	5,820
03	4,465	1,759	6,224
04	4,638	2,013	6,651
Total	60,204	22,793	82,997

- During FY 2004, participating agencies awarded \$1.9 billion through the SBIR program.
- FY 2004 Phase I awards totaled over \$499 million.
- Phase II awards aggregating over \$1.4 billion were made in FY 2004.
- In FY 2004, minority/disadvantaged-owned firms received 473 awards totaling over \$125 million.

There have been parallel long-term upward trends in the dollar amount of Phase I and Phase II totals. Please see Table 3, immediately following.

**Table 3: Value of SBIR Awards-- FY 1983 through FY 2004 (in millions of dollars)**

Fiscal Year	Phase I	Phase II	Totals
83	\$ 44.5	\$	\$ 44.5
84	48.0	60.4	108.4
85	69.1	130.0	199.1
86	98.5	199.4	297.9
87	109.6	240.9	350.5
88	101.9	248.9	389.1
89	107.7	321.7	431.9
90	118.1	341.8	460.7
91	127.9	335.9	483.1
92	127.9	371.2	508.4
93	154.0	490.7	698.0
94	220.4	473.6	717.6
95	232.2	601.9	834.5
96	228.9	645.8	916.3
97	277.6	789.1	1,106.9
98	262.3	804.4	1,066.7
99	299.5	797.0	1,096.5
00	302.0	888.2	1,190.2
01	317.0	977.3	1,294.3
02	411.4	1,023.3	1,434.7
03	455.3	1,215.0	1,670.3
04	498.8	1,368.8	1,867.6
Total	4,607.6	12,325.3	16,932.9

Total does not include \$176.5 million in award modifications

Through its SBIR Policy Directive, the SBA requires each participating agency to list the number of Phase I awards made both within 6 months and after 6 months of the closing date of its solicitation announcement. Table 4 (immediately following) provides this information for FY 2004.

**Table 4: FY 2004-- Phase I Time Frame**

Agency	Total FY 04 Phase I Awards	No. within 6 Months of Solicitation Close	No. More Than 6 Months After Solicitation Close
DOA	99	0	99
DOC	49	49	0
DOD	2,075	1,950	125
DOE	247	247	0
DOT	12	12	0
ED	46	46	0
EPA	43	43	0
DHS	97	97	0
HHS	1,212	529	683
NASA	311	311	0
NSF	447	447	0
TOTAL	4,638	3,731	907

## Extramural Budget Calculation

Public Law 106-554 directs each Federal agency with an SBIR program to provide to the SBA an annual report that includes a description of the methodology used for calculating the amount of the extramural budget of the Federal agency. Please see Table 5.

To monitor and report on the participating agencies' SBIR programs, the SBA has established a reporting base to compare against each agency's budget data. To determine extramural obligations as a base for the size of each agency's SBIR program, the Small Business Act provides a definition of R&D.

It should be noted that a 3-year budget cycle is used for establishing extramural R/R&D obligations. Within any given year, a participating agency's initial estimate can change due to congressional action on that agency's R/R&D budget. To ensure proper implementation of the program, each agency establishes an estimated budget as a basis for operations during the year.

The SBA's Chief Financial Officer's office has reviewed the methodology used in calculating each participating agency's extramural budget. The results of that review are in the following chart (Table 5).

**Table 5: CALCULATION OF EXTRAMURAL BUDGET  
(\$ In Thousands)**

Agency Name	FY 2004 R&D Budget	Intramural Budget & Other	Extramural Budget	SBIR	Overall Compliance	Other Comments
Dept. of Agriculture	\$ 1,997,000	\$ 1,270,000	\$ 727,000	\$ 18,175	Yes	
Dept. of Air Force	14,482,986	2,207,263	12,275,723	306,893	Yes	
Dept. of Army	10,261,080	1,145,597	9,115,483	227,887	Yes	
Defense Adv. Research Project Agency	2,831,400	283,100	2,548,300	63,708	Yes	
DOD Washington HQs Services	1,969,400	724,200	1,245,200	* 31,130	Yes	A discrepancy of \$3,224 existed in the SBIR calculations, i.e., \$31,130 vs. \$27,906 reported.
US Special Operations Command	583,879	43,953	539,926	13,498	Yes	
Defense Threat Reduction Agency	704,121	254,241	449,880	11,247	Yes	
Dept. of Navy (Office of Naval Research)	14,773,169	4,674,658	* 8,547,851	213,696	Yes	\$1,550 extramural was exempted.
Dept. of Energy	4,185,948	92,693	4,093,255	102,331	Yes	
Dept of HHS (including NIH)	22,912,273	N/A	22,912,273	572,806	Yes	
Nat'l Institute of Standards & Technology	461,021	270,782	* 190,239	4,756	Yes	A discrepancy of \$16,861 existed in the Extramural Budget calculations, i.e., \$190,239 vs. \$173,378 reported.
Nat'l Oceanic & Atmospheric Administration	566,400	349,600	216,800	5,420	Yes	
Nat'l Science Foundation	3,619,260	-0-	*3,430,984	85,775	Yes	\$188,000 budgeted for FFRDC was excluded from calculations.
Dept. of Transportation (Combined)	644,844	470,007	174,837	4,371	Yes	
Dept. of ED	311,407	15,375	296,032	7,401	Yes	
EPA	644,800	378,800	266,000	6,650	Yes	
NASA	* 13,399,700	N/A	* 4,320,400	*108,010	Yes	All numbers were 2005 projections.
Dept. of Homeland Security	874,000	90,000	784,000	19,600	Yes	
DOD Defense Missile Defense Agency (MDA)	6,178,766	1,118,357	5,060,409	126,510	Yes	