

**U.S. Small Business Administration**



**Your Small Business Resource**

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

**ANNUAL REPORT – FY 2005**

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

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## Introduction

This is the 23<sup>rd</sup> annual report on the Small Business Innovation Research (SBIR) program, which summarizes program activities and results for FY 2005. 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 2005 Summary

- In FY 2005, the 11 agencies participating in the SBIR program released a total of 21 Phase I solicitations. The Environmental Protection Agency released four solicitations, the Department of Defense released 3 solicitations; the Department of Commerce, the Department of Homeland Security, the Department of Education, the Department of Health and Human Services and the National Science Foundation each released two solicitations; and the other four agencies released one each.
- Participating agencies received 26,003 Phase I proposals from small high-tech business concerns. Agencies subsequently made 4,300 Phase I awards, representing 16.5 percent of proposals received.
- A total of 4,180 Phase II proposals were received by participating agencies, resulting in 1,871 awards. These awards represented 45 percent of Phase II proposals received.

- In total, 30,183 Phase I and Phase II proposals were received in FY 2005. Phase I and Phase II awards totaled 6,171, representing 20 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 participating agencies made 58 Phase I awards and 17 Phase II awards to HUBZone SBCs, for a total of 75 awards. Phase I awards totaled \$5.4 million, and awards for Phase II totaled \$10.9 million for a total of \$16.3 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.

The Office of Management and Budget has recently approved the SBA's survey form for SBIR program applicants, which requests information regarding the commercialization of work completed under past Phase II SBIR awards. The survey form is part of SBA's current enhancement of its Tech-Net data system. This reporting system will be required for SBIR applicants as well as STTR 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 is in the process of amending the SBIR Policy Directive to address the Executive Order. See 70 Federal Register 28975 (May 19, 2005). During FY 2005, there were a total of 1,162

SBIR Phase I and Phase II awards that involved manufacturing topics. Those awards totaled \$366.5 million.

## **Federal and State Technology Partnership**

Because funds were not appropriated for the Federal and State Technology Partnership (FAST) program for FY 2005, there is no new activity to report for that period. However, during FY 2005, 16 FY 2004 FAST award recipients requested no-cost extensions to complete proposed projects. Those award recipients were Alaska, Arizona, Arkansas, Indiana, Kentucky, Louisiana, Maryland, Mississippi, New Mexico, North Dakota, Oklahoma, Pennsylvania, Puerto Rico, South Dakota, Washington, and Wyoming.

## **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. Sections 4(c)(7) and 10(b)(13) of the Policy Directive require 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 works directly with the participating agencies and program awardees to resolve cases where a violation or misunderstanding of the program may have occurred. In such cases, SBA acts first to clarify the rules of the program and to help resolve 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 I: SBIR Program Data

Fiscal Year 2005 SBIR Agency Obligations Summary (dollars in thousands)

|                                      | DOA     | DOC     | DOD        | DOE       | DOT     | ED      | EPA     | DHS     | HHS        | NASA      | NSF       | TOTAL      |
|--------------------------------------|---------|---------|------------|-----------|---------|---------|---------|---------|------------|-----------|-----------|------------|
| Agency Extramural Budget             | 768,030 | 355,837 | 42,943,645 | 4,113,116 | 140,000 | 296,032 | 232,100 | 919,860 | 23,161,906 | 4,400,000 | 3,590,000 | 80,920,526 |
| Agency SBIR Budget                   | 19,200  | 8,895   | 1,074,332  | 101,445   | 3,500   | 7,401   | 5,800   | 22,988  | 579,048    | 110,000   | 89,750    | 2,022,359  |
| Dollars Obligated                    | 18,933  | 8,857   | 1,074,332  | 100,787   | 3,707   | 8,439   | 5,694   | 21,358  | 582,638    | 112,984   | 92,094    | 2,029,823  |
| Percent of SBIR to Extramural Budget | 2.47%   | 2.49%   | 2.50%      | 2.45%     | 2.65%   | 2.85%   | 2.45%   | 2.32%   | 2.52%      | 2.57%     | 2.57%     | 2.51%      |
| Deficit/Surplus                      | -267    | -38     | 0          | -658      | 207     | 1,038   | -106    | -1,630  | 3,590      | 2,984     | 2,344     | 7,464      |

Fiscal Year 2005 Award Profile (dollars in thousands)

|  | DOA    | DOC   | DOD     | DOE    | DOT   | ED    | EPA   | DHS    | HHS     | NASA   | NSF    | TOTAL     |
|--|--------|-------|---------|--------|-------|-------|-------|--------|---------|--------|--------|-----------|
| Total Phase I Awards                         | 91     | 49    | 2,344   | 259    | 5     | 22    | 38    | 62     | 988     | 290    | 152    | 4,300     |
| Minority/Disadvantaged Phase I Awards        | 8      | 2     | 174     | 39     | 1     | 2     | 4     | 11     | 42      | 38     | 32     | 353       |
| Total Phase II Awards                        | 40     | 19    | 998     | 108    | 4     | 14    | 14    | 13     | 390     | 139    | 132    | 1,871     |
| Minority/Disadvantaged Phase II Awards       | 3      | 2     | 93      | 13     | 0     | 2     | 1     | 2      | 14      | 19     | 21     | 170       |
| Total Phase I Dollars Awarded (\$)           | 7,195  | 3,497 | 213,209 | 25,732 | 680   | 1,647 | 2,462 | 6,158  | 165,393 | 20,160 | 15,054 | 461,187   |
| Minority/Disadvantaged Phase I Dollars (\$)  | 639    | 125   | 16,294  | 3,894  | 96    | 150   | 280   | 1,099  | 6,423   | 2,652  | 3,177  | 34,829    |
| Total Phase II Dollars Awarded (Obligations) | 11,738 | 5,360 | 712,617 | 74,344 | 3,027 | 6,792 | 3,142 | 15,786 | 414,982 | 92,824 | 64,101 | 1,404,713 |
| Minority/Disadvantaged Phase II Dollars (\$) | 888    | 500   | 66,395  | 9,229  | 0     | 0     | 225   | 1,500  | 14,344  | 11,373 | 10,073 | 114,527   |
| Average Amount for Phase I Awards (\$)       | 79     | 71    | 91      | 99     | 136   | 75    | 65    | 99     | 167     | 70     | 99     | 107       |

Fiscal Year 2005 Agency Solicitation Profile

|  | DOA | DOC | DOD    | DOE   | DOT  | ED  | EPA | DHS | HHS   | NASA  | NSF   | TOTAL  |
|--|-----|-----|--------|-------|------|-----|-----|-----|-------|-------|-------|--------|
| Number of Solicitations Released           | 1   | 2   | 3      | 1     | 1    | 2   | 4   | 2   | 2     | 1     | 2     | 21     |
| Number of Research Topics in Solicitations | 11  | 18  | 871    | 49    | 8    | 5   | 26  | 12  | 189   | 28    | 3     | 1,220  |
| Number of Copies Distributed               | 0*  | 0*  | 0*     | 0*    | 250* | 0*  | 0*  | 0*  | 0*    | 0*    | 0*    | 750    |
| Number of Phase I Proposals Received       | 561 | 344 | 13,480 | 1,490 | 66   | 162 | 363 | 423 | 5,462 | 2,170 | 1,482 | 26,003 |
| Number of Phase II Proposals Received      | 79  | 44  | 1,649  | 227   | 5    | 38  | 37  | 18  | 1,539 | 273   | 271   | 4,180  |
| Number of Phase I Awards                   | 91  | 49  | 2,344  | 259   | 5    | 22  | 38  | 62  | 988   | 290   | 152   | 4,300  |
| Number of Phase II Awards                  | 40  | 19  | 998    | 108   | 4    | 14  | 14  | 13  | 390   | 139   | 132   | 1,871  |

Dollars obligated can include modifications to previous year's awards: DOD \$165,228K HHS \$2,263K, NSF \$12,838K, DOE 711K, DHS 567K

\*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 2005**

| 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  |
| 05          | 4,300   | 1,871    | 6,171  |
| Total       | 64,504  | 24,664   | 89,168 |

- During FY 2005, participating agencies awarded over \$2.0 billion through the SBIR program.
- FY 2005 Phase I awards totaled over \$461 million.
- Phase II awards aggregating over \$1.4 billion were made in FY 2005.
- In FY 2005, minority/disadvantaged-owned firms received 523 awards totaling over \$35 million.

There have been parallel long-term upward trends in the dollar amount of Phase I and Phase II totals, except for the FY 2005 to 2005 totals. Please see Table 3, immediately following.

**Table 3: Value of SBIR Awards-- FY 1983 through FY 2005 (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  |
| 05          | 461.2   | 1,404.7  | 1,865.9  |
| *Total      | 5,068.8 | 13,730.0 | 18,798.8 |

Total does not include 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 2005.

**Table 4: FY 2005-- Phase I Time Frame**

| Agency | Total FY 05 Phase I Awards | No. within 6 Months of Solicitation Close | No. More Than 6 Months After Solicitation Close |
|--------|----------------------------|---|---|
| DOA    | 91                         | 0   | 91  |
| DOC    | 49                         | 49  | 0   |
| DOD    | 2,344                      | 2,103                                     | 241   |
| DOE    | 259                        | 259                                       | 0   |
| DOT    | 5                          | 5   | 0   |
| ED     | 22                         | 22  | 0   |
| EPA    | 38                         | 38  | 0   |
| DHS    | 62                         | 61  | 1   |
| HHS    | 988                        | 323                                       | 665   |
| NASA   | 290                        | 290                                       | 0   |
| NSF    | 152                        | 152                                       | 0   |
| TOTAL  | 4,300                      | 3,302++                                   | 998   |

## 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 2005 R&D Budget | Intramural Budget & Other | Extramural Budget | \$SBIR     | Overall Compliance | Other Comments   |
|--|--------------------|---------------------------|-------------------|------------|--------------------|--|
| Dept. of Air Force                         | \$ 20,675,365      | \$ 7,962,883              | *\$12,713,352     | \$ 317,834 | Yes                | Used the reported Extramural Budget \$12,713,352K for calculating the \$SBIR   |
| Dept. of Army                              | 10,698,989         | 1,345,549                 | 9,353,440         | 233,836    | Yes                |  |
| DOD Washington HQs Services                | 2,331,226          | 251,626                   | 2,079,600         | 51,990     | Yes                |  |
| US Special Operations Command              | 583,422            | 66,391                    | 517,031           | 12,926     | Yes                |  |
| DOD Defense Missile Defense Agency (MDA)   | 3,090,279          | 398,350                   | 2,691,929         | 67,298     | Yes                |  |
| Dept. of Navy                              | 17,297,699         | 7,150,020                 | 10,147,679        | 253,692    | Yes                |  |
| Defense Adv. Research Project Agency       | 3,090,279          | 398,350                   | 2,691,929         | 67,298     | Yes                |  |
| Defense Threat Reduction Agency            | 455,373            | 209,668                   | 245,705           | 6,143      | Yes                |  |
| Dept. of Energy                            | 4,199,465          | 86,349                    | 4,113,116         | 102,828    | Yes                |  |
| Dept. of HHS (including NIH)               | 23,161,906         | N/A                       | 23,161,906        | 579,048    | Yes                |  |
| Nat'l Institute of Standards & Technology  | 442,644            | 296,798                   | *121,914          | 3,048      | Yes                | A discrepancy of \$23,932K existed in the Extramural Budget calculations, i.e., \$145,846K vs. \$121,914K as reported. |
| Nat'l Oceanic & Atmospheric Administration | 574,400            | 351,100                   | 223,300           | 5,583      | Yes                |  |
| Nat'l Science Foundation                   | 3,593,943          | -0-                       | 3,416,529         | 85,410     | Yes                | \$177 million budgeted for FFRDC was excluded from calculations.   |
| Dept. of Transportation (Combined)         | 723,847            | 175,405                   | *140,000          | 3,500      | Yes                | Both FAA (\$205,000K) and FHWA (\$203,442K) were excluded from SBIR assessment.  |
| Dept. of Education                         | 315,997            | 17,375                    | *298,943          | 7,474      | Yes                | \$298,943K was reported and used for \$SBIR calculations.  |
| EPA  | 618,000            | 385,800                   | 232,200           | 5,805      | Yes                |  |
| NASA                                       | 13,399,700         | N/A                       | *4,320,400        | 108,010    | Yes                | FY 05 Extramural Budget (\$4,320,400K) represents 32.2% of the actual FY 04 R&D Budget.                                |
| Dept. of Agriculture                       |                    |                           |                   |            |                    | Non-Submission   |
| Dept. of Homeland Security                 |                    |                           |                   |            |                    | Non-Submission   |