



# The Small Business Innovation Research (SBIR) & Small Business Technology Transfer (STTR) Programs

## Annual Report for Fiscal Year 2012

### Participating Agencies

Department of Defense  
Department of Health & Human Services  
Department of Energy  
National Aeronautics & Space Administration  
National Science Foundation  
Department of Agriculture  
Department of Homeland Security  
Department of Education  
Department of Commerce  
Environmental Protection Agency  
Department of Transportation

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## 1. Executive Summary

This report provides comprehensive performance results for the Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STTR) programs for Fiscal Year (FY) 2012, aggregating information as reported to SBA from the participating federal agencies (Agencies). Both programs require these Agencies (see below) to set aside certain percentages of their extramural Research and Development (R&D) budgets for small businesses engaging in R&D activities that are of specific interest to the U.S. Federal Government and have the potential for private sector commercialization. Additionally, this report highlights program improvements and key initiatives undertaken by SBA and the Agencies to improve small business access to federally funded R&D through the SBIR and STTR programs.

- SBIR:** Agencies with extramural R&D budgets exceeding \$100 million were required to set aside 2.6% of their FY 2012 extramural R&D budget for SBIR awards to small businesses. SBIR awards were provided by 11 Agencies with the goal of strengthening small business participation in meeting their individual R&D needs while also stimulating innovation, advancing technologies, and spurring entrepreneurial growth. Prior to FY 2012, Agencies were required to set aside 2.5% of their extramural R&D budgets for SBIR awards, but the percentage increased to 2.6% in FY 2012 and will continue to increase by 0.1% each year until FY 2016 when it reaches 3.0% and then the percentage will increase to 3.2% for FY 2017 and will remain at that minimum value of 3.2% for each FY thereafter unless subsequently modified by statute.
- STTR:** The STTR program, modeled on the SBIR program, requires that Agencies with extramural R&D budgets exceeding \$1 billion set aside 0.35% of their FY 2012 extramural R&D budget for small businesses working in cooperation with federal laboratories and non-profit scientific and educational institutions. STTR awards were provided by five Agencies (see below) with the goal of meeting their individual R&D needs while also stimulating innovation and accelerating the transfer of newly developed technologies from the lab to the marketplace. Prior to FY 2012, Agencies were required to set aside 0.3% of their extramural R&D budgets for STTR awards, but the percentage increased to 0.35% for FYs 2012 and 2013, and then increased to 0.40% for FYs 2014 and 2015, and will increase again to 0.45% for FY 2016 and thereafter, unless subsequently modified by statute.

The total dollar value of the Agencies' FY 2012 SBIR and STTR awards is listed in the table below. Actual individual agency performance varies significantly, given the complexities of implementing new directives and timelines with inconsistent budget cycles and stop-gap funding mechanisms.

Participating Agency		FY 2012 Amount of SBIR and STTR Awards (\$ Millions)		
		SBIR	STTR	Total
Department of Defense	DOD	\$ 1,070.8	\$ 118.8	\$ 1,189.60
Department of Health and Human Services	HHS	\$ 656.5	\$ 86.9	\$ 743.40
Department of Energy	DOE	\$ 169.8	\$ 23.5	\$ 193.3
National Aeronautics and Space Administration	NASA	\$ 139.2	\$ 18.5	\$ 157.70
National Science Foundation	NSF	\$ 131.3	\$ 15.6	\$ 146.90
Department of Agriculture	USDA	\$ 16.9	-	\$ 16.90
Department of Education	ED	\$ 13.1	-	\$ 13.10
Department of Homeland Security	DHS	\$ 12.9	-	\$ 12.90
Department of Transportation	DOT	\$ 9.1	-	\$ 9.10
Department of Commerce	DOC	\$ 4.5	-	\$ 4.50
Environmental Protection Agency	EPA	\$ 4.2	-	\$ 4.20
<b>Total</b>		<b>\$2,228.3</b>	<b>\$263.3</b>	<b>\$2,491.6</b>

## HIGHLIGHTS

### Milestones/Activities

- ✓ SBA issued new SBIR/STTR program Policy Directives in August 2012 to implement SBIR/STTR reauthorization changes, including new budgetary percentages, timelines, and provisions to encourage Venture Capital investing.
- ✓ Multiple cross-agency initiatives were launched to improve SBIR/STTR program effectiveness, share best practices, overhaul the TechNet database, refine the public-facing SBIR.gov, establish new small business outreach and marketing efforts, and institute honors to highlight program success stories via the Tibbetts Awards and SBIR Hall of Fame.

### Agencies' Performance/Compliance

- ✓ Collectively the Agencies exceeded the statutory requirement of awarding 2.6% of their extramural R/R&D budget for SBIR awards. Agencies collectively awarded an overall average of 2.7% of their extramural R/R&D budget for SBIR awards.
- ✓ Collectively the agencies did not reach the requirement of awarding 0.35% of their extramural R/R&D budget for STTR awards. Agencies collectively awarded an overall average of 0.34% of their extramural R/R&D budget for STTR awards.
- ✓ Timeliness for data reporting generally improved with 55% of Agencies reporting SBIR data and 80% of Agencies reporting STTR data receiving favorable ratings from SBA.

### SBIR Awards

- ✓ 5,509 awards totaling \$2.23 billion
  - 3,528 Phase I awards totaling \$534 million
  - 1,982 Phase II awards totaling \$990 million
- ✓ 77.4% of total awards obligated by DOD and HHS
- ✓ 20% of total awards obligated by DOE, NASA, and NSF
- ✓ Phase I average award size of \$151 thousand, per award
- ✓ Phase II average award size of \$500 thousand, per award
- ✓ 16.4% of proposals received Phase I Awards
- ✓ 58.5% of proposals received Phase II awards
- ✓ 15% of total award dollars went to women-owned small businesses
- ✓ 5.5% of total award dollars went to minority/disadvantaged-owned small businesses
- ✓ 2% of total award dollars went to HUBZone certified small businesses
- ✓ 54% of total award dollars went to 10 states: CA, MA, VA, NY, MD, CO, PA, TX, OH and FL

### STTR Awards

- ✓ 660 awards totaling \$263 million
  - 492 Phase I awards totaling \$70.7 million
  - 168 Phase II awards totaling \$67 million
- ✓ 78% of total awards obligated by DOD and HHS
- ✓ 22% of total awards obligated by DOE, NASA, and NSF
- ✓ Phase I average award size of \$144 thousand, per award
- ✓ Phase II average award size of \$582 thousand, per award
- ✓ 20.8% of proposals received Phase I Awards
- ✓ 35.7% of proposals received Phase II awards
- ✓ 15.4% of total award dollars went to women-owned small businesses
- ✓ 4.5% of total award dollars went to minority/disadvantaged-owned small businesses
- ✓ 1.5% of total award dollars went to HUBZone certified small businesses
- ✓ 60% of total award dollars went to 10 states: CA, MA, VA, MD, CO, AL, NY, IL, PA and OH

## 2. FY 2012 Program Administration

The US Small Business Administration (SBA) serves as the coordinating agency for all federal agencies participating in the Small Business Innovation Research (SBIR) program and the Small Business Technology Transfer (STTR) program. The SBIR/STTR programs require participating federal agencies (Agencies) to set aside certain percentages of their extramural Research and Development (R&D) budgets for small businesses engaging in R&D activities that are of specific interest to the U.S. Federal Government and have the potential for private sector commercialization. Specifically, SBA's Office of Investment and Innovation, Office of Technology, oversees the SBIR/STTR Agencies in their individual program implementations, provides policy guidance as authorized by statute, reviews the Agencies' progress and performance, collects required reporting data, and reports on the overall SBIR/STTR program results annually to the U. S. Congress. This report provides information on programmatic achievements and key initiatives undertaken by SBA and the Agencies during Fiscal Year (FY) 2012, including the Agencies' aggregated performance results for the SBIR/STTR programs.

### ***a. Implementation of SBIR/STTR Reauthorization and Funding Changes***

During FY 2012, SBA and the Agencies began implementing programmatic changes as a result of the SBIR/STTR Reauthorization Act of 2011 (the Reauthorization Act), which was included in the National Defense Authorization Act for Fiscal Year 2012, Public Law 112-81, 125-Stat. 1298, Section 5001, Division E. As required by the Small Business Act, SBA must issue Policy Directives to set forth guidance on how Agencies must conduct their SBIR/STTR programs. SBA's issuance of amended SBIR/STTR program Policy Directives serve as the SBIR/STTR program guidance governing Agencies' compliance, reporting, and small business eligibility requirements. Agencies may tailor SBIR/STTR activities to meet their individual agency needs, so long as they comply with the guidance outlined in the Policy Directives. SBA published the SBIR program's amended Policy Directive in the Federal Register on August 6, 2012, and the STTR program's amended Policy Directive on August 8, 2012, with requests for public comment<sup>1</sup>.

The Reauthorization Act and amended Policy Directives ensure the continuation of the SBIR/STTR programs through FY 2017 with several significant improvements and higher minimum percentages of extramural R&D budgets that Agencies' must use in calculating set aside amounts for SBIR and STTR awards to small business concerns. With Agencies devoting larger amounts of their budgets to the SBIR/STTR programs, more capital will be made available to spur small business innovative research and technology ventures.

***SBIR Percentages.*** The Reauthorization Act established the SBIR Agencies' FY 2012 minimum set aside percentage at 2.6%, which was an increase of 0.1% over FY 2011. The Agencies' set aside percentages will continue to increase annually by 0.1% until FY 2016 when it will reach 3.0% and then increase by 0.2% for FY 2017 reaching a minimum set aside of 3.2%.

***STTR Percentages.*** The Reauthorization Act established the STTR Agencies' FY 2012 and 2013 minimum set aside percentages at 0.35%, which was an increase of 0.05% over FY 2011. The Agencies' set aside percentages will continue to increase biannually by 0.05% until FY 2016 where it will reach 0.45%.

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<sup>1</sup> [http://sbir.gov/sites/default/files/sbir\\_pd\\_with\\_1-8-14\\_amendments\\_2-24-14.pdf](http://sbir.gov/sites/default/files/sbir_pd_with_1-8-14_amendments_2-24-14.pdf)

*SBIR/STTR Key Programmatic Changes.* The Reauthorization Act and Policy Directives include the following program changes related to eligibility, award processes, program administration, and curbing fraud, waste and abuse:

- Expands eligibility requirements for small business concerns that are majority-owned by multiple venture capital operating companies (VCOs), hedge funds or private equity firms (DOE-ARPA-e chose to undertake this option);
- Expands eligibility requirements to allow SBIR Phase I awardees to apply/receive STTR Phase II awards and STTR Phase I awardees to apply/receive SBIR Phase II awards;
- Permits small business awardees to apply/receive 1 sequential Phase II awards;
- Establishes measures for Agencies to evaluate STTR Phase I applicants' success with prior Phase I and Phase II awards;
- Permits Agencies to issue SBIR Phase II awards to small businesses that did not receive an SBIR Phase I award through a specific pilot where the small business meets certain qualifications;
- Ensures Agencies make award decisions within statutorily required timeframes to reduce gaps between submission of application and award;
- Increases both SBIR and STTR maximum dollar guidelines for Phase I awards to \$150,000 and for Phase II awards at \$1,000,000;
- Establishes benchmarking standards related to commercialization for measuring certain Phase I awardee successes in receiving Phase II awards and for measuring certain Phase I awardee successes in receiving Phase III awards;
- Expands requirements for providing technical assistance;
- Authorizes Agencies to use up to 3% of SBIR funds to cover certain SBIR/STTR administrative costs;
- Establishes the Commercialization Readiness Pilot (CRP) program to authorize civilian Agencies to invest up to 10% of SBIR/STTR obligated dollars in making awards and providing commercialization efforts;
- Sets forth new reporting and data collection requirements for both Agencies and applicants; and,
- Requires small business awardees to certify compliance during the funding agreement lifecycle.

***b. Interagency Policy Committee Goals and Accomplishments***

Section 5124 of the Reauthorization Act instructed the White House Office of Science and Technology Policy (OSTP) to create an Interagency Policy Committee (IPC) comprised of representatives from all SBIR/STTR Agencies, OSTP, and SBA. The IPC's purpose is to review issue areas and make policy recommendations on ways to improve SBIR/STTR program effectiveness and efficiency. The IPC seeks to strengthen the SBIR/STTR program by finding new ways to work together in the interest of promoting innovative research.

SBA, OSTP and the Agencies have worked through the IPC to achieve numerous accomplishments toward improving government data and reporting mechanisms, overhauling the public-facing website at SBIR.gov, and exploring several different mechanisms by which cooperative efforts can better help small businesses gain access to the SBIR/STTR program:

- *Joint funding*- is not a requirement of the SBIR program, but it can be an effective arrangement for some projects when financed by one or more Agencies.
- *Phase II awards*- may be issued by an agency other than the one that made the Phase I award. Prior to issuing the Phase II award, the agency head, or designee, must issue a written determination that the topics of the awards are the same, and the affected Agencies must submit a report to SBA.
- *Women- and Socially and Economically Disadvantaged Small Business*- outreach through independent and cooperative efforts between and among SBA and the Agencies to encourage SBIR participation.

The IPC is currently working on several other projects, including: flexibility in the amount given in Phase I and II awards and the criteria surrounding them; developing and incorporating a standard evaluation framework to enable systematic assessment of SBIR and STTR award activity; outreach and technical assistance efforts to increase participation of underrepresented small businesses in the SBIR and STTR programs.

**c. TechNet**

In FY 2012, SBA and the Agencies worked together through the IPC to improve the public and government databases' data and reporting mechanisms:

- Re-launched SBIR.gov to bring information about the SBIR/STTR programs into one site as a first-stop site for small businesses;
- Unified portal for solicitations across 11 Agencies on SBIR.gov to provide a searchable site for both Agencies and small business concerns;
- Cleaned-up data by reconciling differences in award data collected across Agencies and across years in the legacy Tech-Net system into company-centric profile information;
- Collected Agencies' annual reports electronically to SBA through SBIR.gov to prevent duplicate submissions; and,
- Translated the Reauthorization Act language into a proposed information architecture and detailed data structure framework for reporting and collection.

SBA amended the SBIR/STTR Policy Directives to address new Reauthorization Act reporting requirements for both SBIR/STTR Agencies and SBIR/STTR applicants to provide required information into one or more of 7 specific databases, collectively referred to as Tech-Net and available through SBIR.gov. The 7 databases are:

- (1) Solicitations- collecting information from the Agencies on all SBIR/STTR solicitations and topics;
- (2) Company Registry- collecting information from all SBIR/STTR small business applicants, including information on applicants that are majority-owned by multiple VCOCs, hedge funds or private equity firms;
- (3) Application Information- collecting information from the Agencies on all SBIR/STTR applications;
- (4) Award Information- collecting information from the Agencies about all SBIR/STTR awardees;
- (5) Commercialization- collecting information from the Agencies on commercialization of SBIR/STTR awards;
- (6) Annual Report- collecting information from the Agencies required by the Small Business Act and the Reauthorization Act that SBA submits to Congress; and,
- (7) Other Reports Databases- collecting information that is required by statute to be submitted, but does not fit into any of the other databases.

The primary purpose of the investment in TechNet was to meet the statutory reporting requirements with a secure, web-based electronic system capable of collecting, cataloguing, and displaying program metrics in one centralized place for both government and public use. Through an enhanced TechNet and SBIR.gov portal, interested stakeholders have a one-stop-shop repository of valuable information to learn about the SBIR/STTR programs, search solicitations and awards by the Agencies, gain insight on commercialization efforts, and view small business participation in Phases I-III of the SBIR/STTR programs and/or non-awardee participation. The platform collects and hosts proposals, small business applications, and award data as submitted by the Agencies, while providing transparency to mitigate fraud, waste, and abuse within the SBIR/STTR programs.

The upgrades to TechNet will help SBA and participating Agencies improve SBIR/STTR operations and commercialization outcomes. The enhanced TechNet system closes many performance gaps in the SBIR/STTR programs, including the ability to collect and maintain data that is required to assess the SBIR/STTR program. Before the investment in TechNet, the SBIR/STTR programs collected much of its information by paper, and SBA was often unable to reconcile the Agencies' paper-based annual reports with the information they had entered into TechNet.

The SBIR.gov portal provides:

- The ability to separate visitors into roles and create targeted splash/landing pages based on visitors' interests and needs: Applicant, Awardees, Investor, Large Business Concern, SBIR/STTR Agencies, Other Interested Citizens;
- Web-based outreach tools to users, such as conference listings and registration links, agency information and links, and blogging; and,
- An area for Licensing Opportunities for investors and entrepreneurs.

***d. SBIR/STTR Outreach***

In FY 2012, SBA's Office of Innovation and Office of Technology participated in many outreach initiatives that were both specific to the SBIR/STTR programs and as part of larger SBA outreach efforts to increase small business awareness of the full range of SBA programs and services available to them. The Office of Technology participated in a series of informational webinars to address commonly faced issues by small businesses in the R&D arena, such as "How To Take Your Company To The Next Level" and "SBIR Awards Among Underserved Communities". SBA continues to focus on outreach to women- and socially and economically disadvantaged businesses with planned panel discussions and webinars to better address the issues these businesses face and encourage their participation in the SBIR/STTR programs.

SBA also organized or sponsored conferences- or cosponsored conferences along with individual Agencies- to provide information updates, to connect-with and stay better connected-to the small business R&D community, and to help those businesses connect with each other. Bringing together entrepreneurs, business leaders in respective industries, government Agencies' representatives, innovators, universities, and community partners provides a means by which small businesses can develop beneficial relationships with peers of similar goals and interests. Some examples include the 14th Annual NIH SBIR/STTR Conference in Louisville, Kentucky, and the SBIR/STTR 2012 National Conference held in Portland, Oregon, which was hosted by the Micro-enterprise Inventors Program of Oregon (MIPO) and the Oregon Small Business Development Center Network (OSBDC).

***e. Tibbetts Awards and the SBIR Hall of Fame***

The annual Tibbetts Awards, named after SBIR program pioneer, Roland Tibbetts, are presented to SBIR awardees that are models of excellence for developing and commercializing new technologies through the SBIR program. Tibbetts Awards for small businesses that have participated in the SBIR award program are selected based upon the merit of their SBIR funded R&D, the economic impact of their technological innovation, the diversity participation, and the successful commercialization of developed technologies. Similarly, Tibbetts Awards for individuals are selected based upon the merit of their roles in SBIR-funded R&D but having received no economic assistance through the SBIR program.

The SBIR Hall of Fame recognizes companies with a long period of extraordinary success in research, innovation, and commercialization within the SBIR program. To be eligible for the award, a nominee must have previously won an SBIR award and continued to contribute significantly to the goals of the SBIR program by evincing remarkable ingenuity, resolve and success beyond participating in the program.

On April 25, 2012, during a White House ceremony with Todd Park, Chief Technology Officer of the United States as keynote speaker, SBA honored 18 high-tech small businesses and 6 individuals with the 2012 Tibbetts Awards and named 2 former SBIR program awardees to the SBIR Hall of Fame:

### **Small Businesses**

- Advanced Circulatory Systems, Inc.  
Roseville, MN
- Axion BioSystems, Inc.  
Atlanta, GA
- BioStrategies, LC  
State University, AR
- Bridger Photonics, Inc.  
Bozeman, MT
- CHI Systems, Inc.  
Ft. Washington, PA
- FHC, Inc.  
Bowdoin, ME
- Nanoparticle BioChem, Inc.  
Columbia, MO
- Piasecki Aircraft Corporation  
Essington, PA
- Primordial  
St. Paul, MN
- RMD, Inc.  
Watertown, MA
- San Diego Composites, Inc.  
San Diego, CA
- Sensor Electronic Technology, Inc.  
Columbia, SC
- Separation Design Group, LLC  
Waynesburg, PA
- Stottler Henke Associates, Inc.  
San Mateo, CA
- Systems Technology, Inc.  
Hawthorne, CA
- The Design Knowledge Company  
Fairborn, OH
- TRX Systems  
Greenbelt, MD
- Vida Health Communications, Inc.  
Cambridge, MA

### **Individuals**

- Clara Asmail  
NIST Manufacturing Extension  
Partnership  
Gaithersburg, MD
- Roy Keller  
LA Business & Technology Center  
Baton Rouge, LA
- Ronald Marchessault, Jr.  
General Dynamics Information  
Technology  
Silver Spring, MD
- Elizabeth Pyne  
U. S. Navy  
Crane, IN
- Christine Villa  
BRTRC  
Fairfax, VA
- John Waszczak  
John Waszczak & Associates, LLC  
Tucson, AZ

### **SBIR Hall of Fame**

- Genzyme Corporation  
Cambridge, MA
- Sensors Unlimited Goodrich Corp.  
Princeton, NJ

### 3. SBIR Program Performance

#### a. Overview

The Small Business Innovation Research (SBIR) program is a highly competitive program that encourages domestic small businesses to engage in federally funded R&D projects that may also have the potential for private sector commercialization and public benefit. Through a competitive awards-based program, SBIR enables small businesses to explore their technological potential and pathways to profit from the commercialization of developed technologies. By including qualified small businesses in the nation's R&D arena, the U.S. Federal Government gains access to cutting-edge technologies to meet the specific and diverse R&D needs of each participating agency while also spurring the type of entrepreneurial spirit and innovation that may lead to new products or services in the marketplace.

The mission of the SBIR program is to support scientific excellence and technological innovation through the investment of federal research funds in critical American priorities to build a strong national economy. The primary goals of the SBIR program are to:

- Stimulate small business technological innovation;
- Strengthen the role of small business in meeting Federal R&D needs;
- Increase private-sector commercialization of innovations derived from Federal R&D funding; and,
- Foster and encourage participation in innovation and entrepreneurship by socially and economically disadvantaged persons.

Federal agencies with extramural R&D budgets exceeding \$100 million are required to set aside a percentage of their R&D budgets for the SBIR program, specifically to fund SBIR Awards to qualified small businesses. The U.S. Small Business Administration (SBA) serves as the coordinating agency for the program and directs the participating federal agencies (Agencies) in their implementation of SBIR, reviews their progress, and reports annually to Congress on program results. To date, over \$16 billion has been awarded to small businesses through the SBIR program.

For FY 2012, the following 11 Agencies were required to set aside 2.6% of their R&D budgets for the SBIR program:

- Department of Defense (DOD)
- Department of Health & Human Services (HHS)
- Department of Energy (DOE)
- National Aeronautics & Space Administration (NASA)
- National Science Foundation (NSF)
- Department of Agriculture (USDA)
- Department of Homeland Security (DHS)
- Department of Education (ED)
- Department of Commerce (DOC)
- Environmental Protection Agency (EPA)
- Department of Transportation (DOT)

#### b. SBIR AWARD STRUCTURE

The SBIR program is structured to target award funding into the early phases of the development of new technologies:

Phase I | **Feasibility/Proof of Concept.** The objective of Phase I is to establish the technical merit, feasibility, and commercial potential of the proposed R&D efforts and to determine the quality of performance of the small business awardee organization prior to providing

any additional funding in Phase II. SBIR Phase I awards typically do not have costs exceeding \$150,000 for a 6 month period. Agencies are allowed flexibility to exceed by no more than 50%, and anything beyond that requires a waiver from SBA.

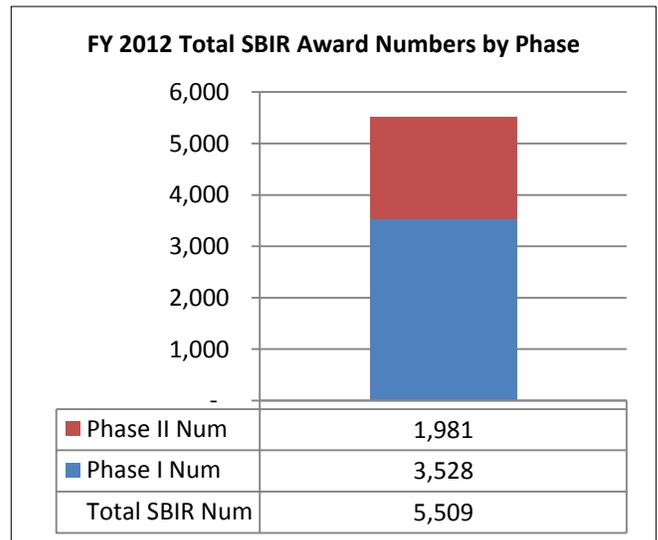
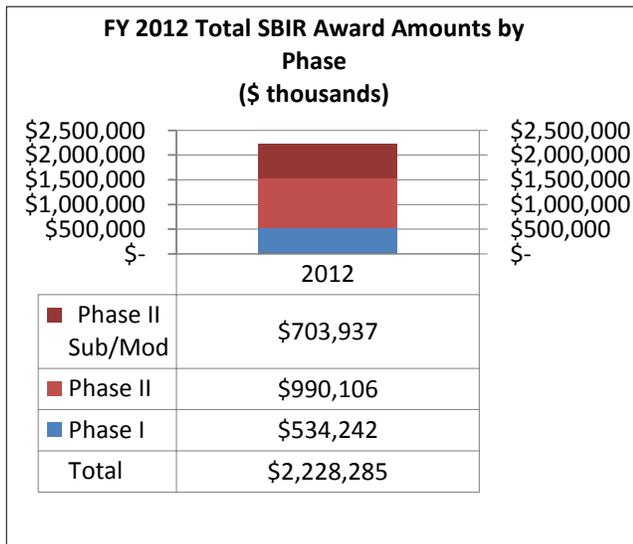
**Phase II Full Research and Development.** The objective of Phase II is to continue the R&D efforts initiated by a small business receiving Phase I funding. Funding is based on the results achieved in Phase I and the scientific and technical merit and commercial potential of the project proposed in Phase II. Only Phase I awardees are eligible for Phase II awards. SBIR Phase II awards typically do not have costs exceeding \$1,000,000 for a 2 year period. Additionally there are SBIR Phase IIB awards that can be made in supplementation to a previously awarded Phase II award, in order to aid in continue research and development scale up. These awards are made, in conjunction, when a qualifying third party financial investment/commitment has been received as a result of the Phase I and II awards. Agencies are allowed flexibility to exceed by no more than 50%, and anything beyond that requires a waiver from SBA.

**Phase III Commercialization.** The objective of Phase III is for the small business to pursue commercialization objectives of R&D activities as a result of Phase I and II funding. The SBIR program does not fund Phase III. When appropriate, Agencies may provide follow-on, non-SBIR funding for additional R&D and/or contracts for products, processes, or services intended for use by the U.S. Federal Government.

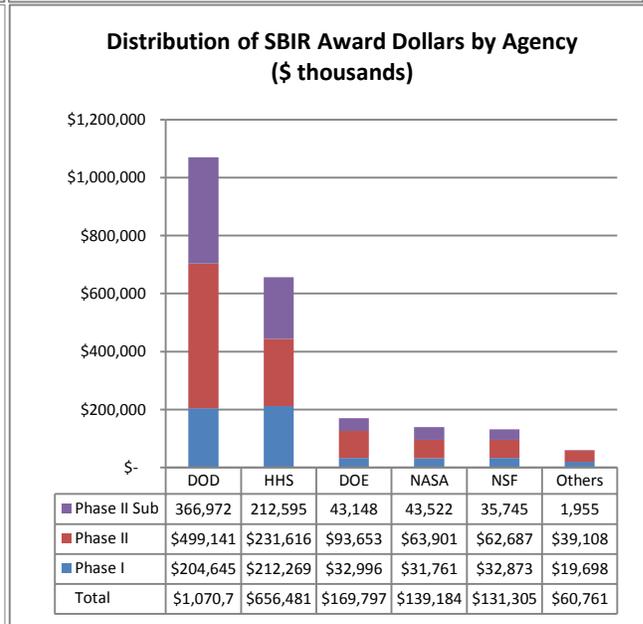
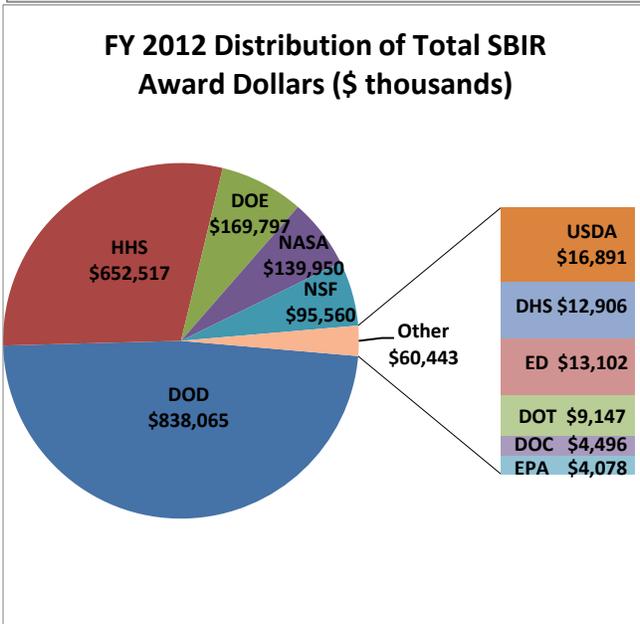
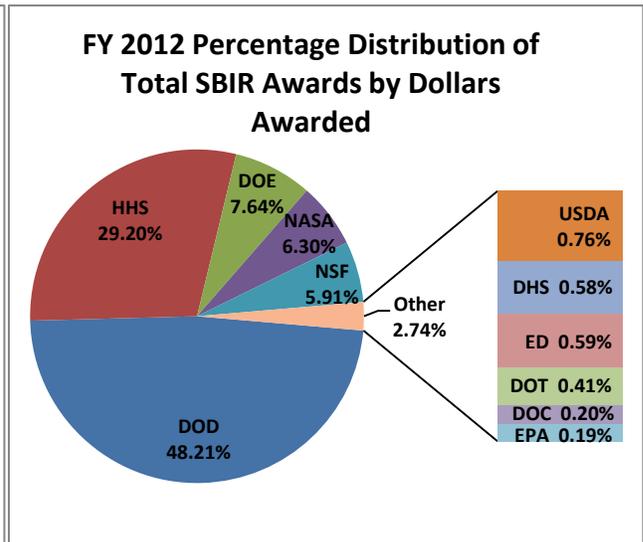
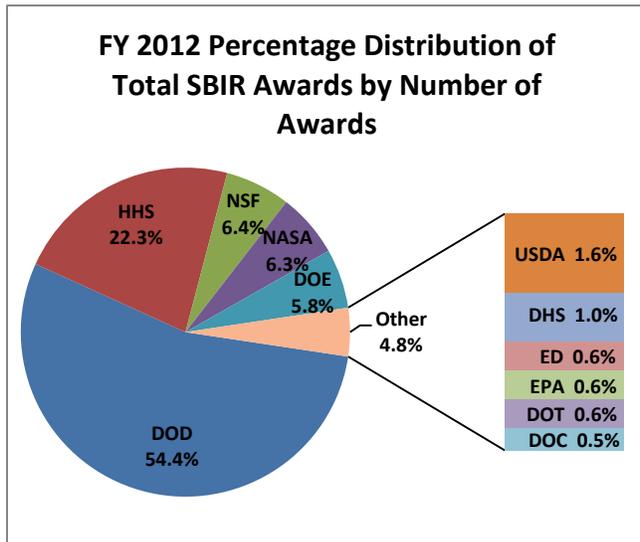
**c. SBIR Program Data**

**Award Dollars.** SBIR awards totaled over \$2.22 billion in FY 2012 with approximately 76% obligated to Phase II projects.

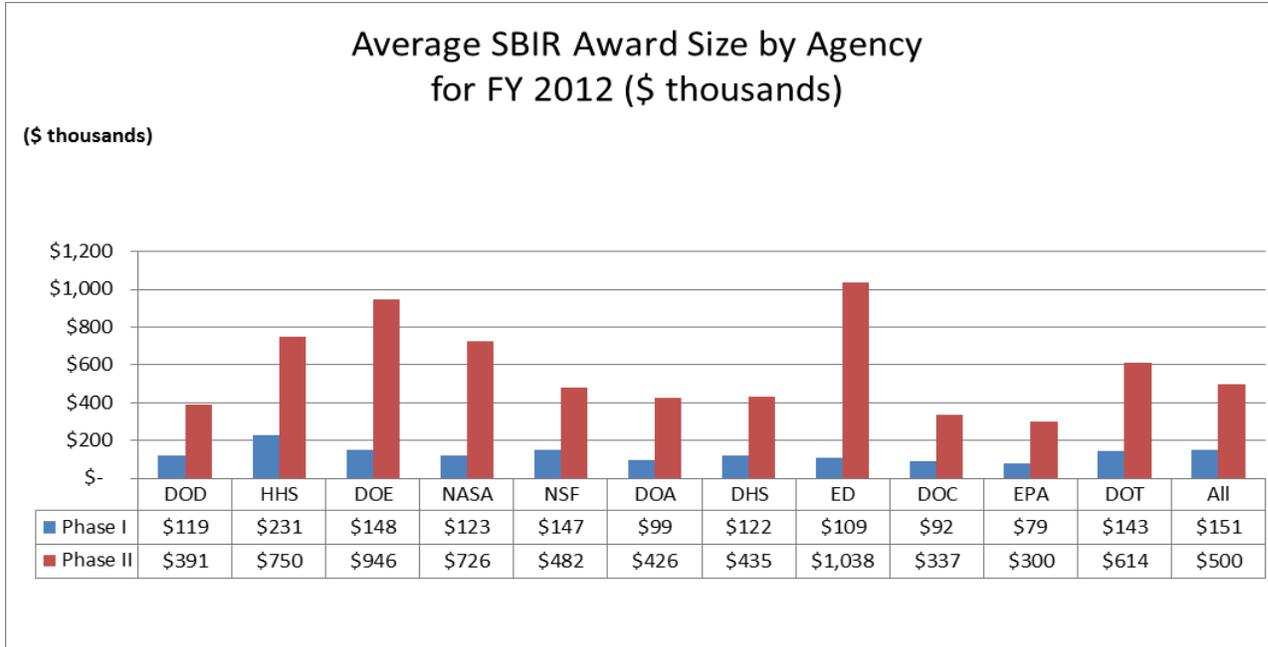
**Award Numbers.** Participating agencies made 5,509 SBIR awards in FY 2012. Approximately two-thirds of the total awards made are for Phase I awards. The number of awards are up slightly from FY 2011.



**Agency Distribution.** A little over 77% of the total \$2.22 Billion SBIR award dollars were obligated by DOD and HHS. Nearly 20%, of the total dollars, was obligated by DOE, NASA, and NSF, with the remaining 3% of total SBIR award dollars being obligated by USDA, DHS, DOC, ED, DOT, and EPA.

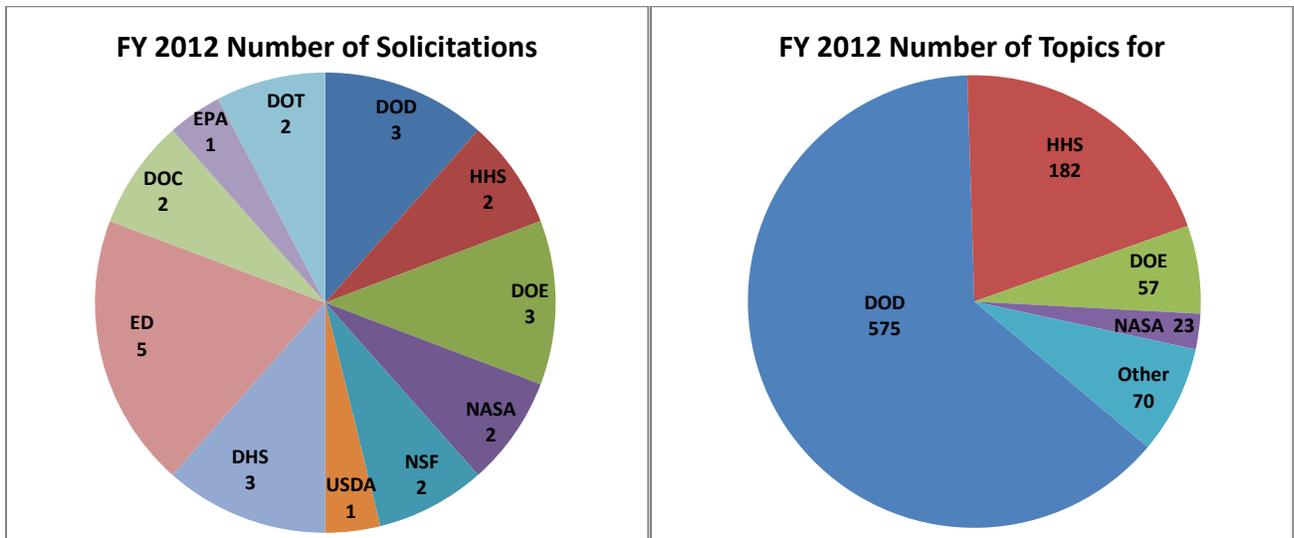


**Average SBIR Award Size.** For FY 2012, the average size for Phase I awards was \$151,000, and the average size for Phase II awards was \$500,000.

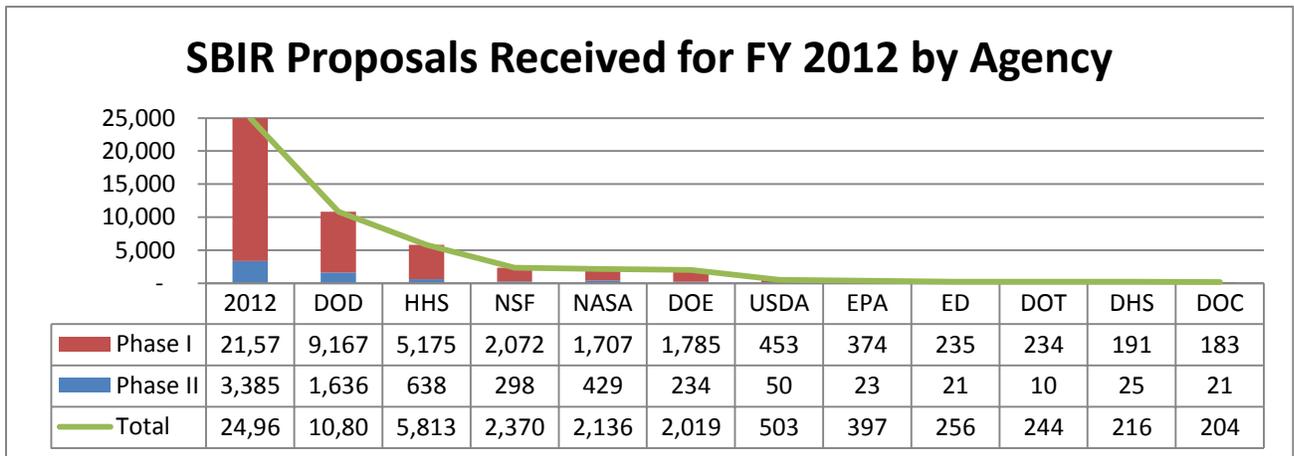


**d. Solicitations And Proposal Acceptance Rates**

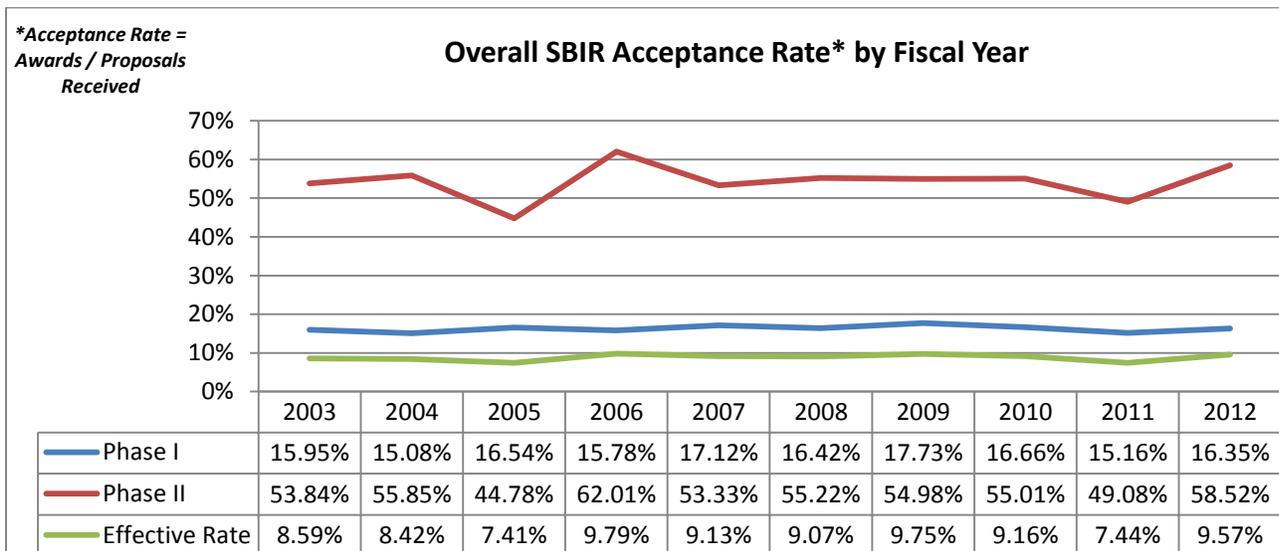
**Agency Solicitations.** In FY 2012, a total of 26 solicitations were issued with 907 topics. Agencies on average issue 20 solicitations each year with an average of 1,200 topics.



**Proposals Received.** Applicants submitted a total of 24,961 proposals with 43% to DOD.



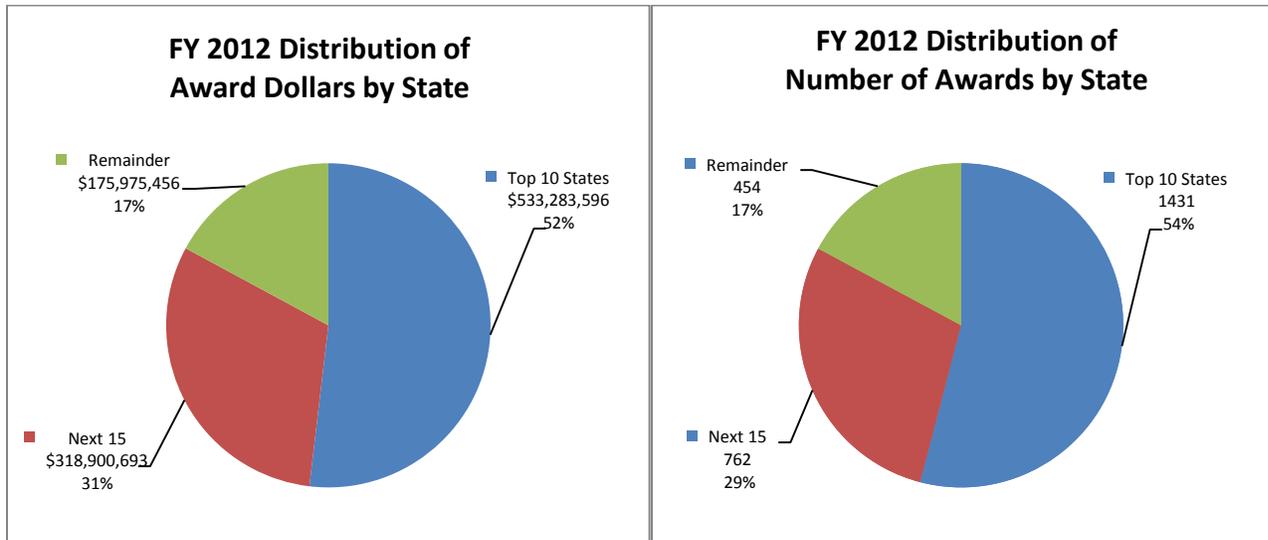
**Acceptance Rates.** SBA determines proposal acceptance rates based upon the number of awards provided divided by the number of proposals received. For FY 2012 the proposal acceptance rate was over 16% for Phase I applicants and almost 59% for Phase II applicants. To determine the likelihood that a new proposal would receive a Phase II Award, we multiply the proposal acceptance rates in Phase I by the proposal acceptance rates for Phase II. Based on data from 2003 to 2012, the effective proposal acceptance rate for the SBIR program is 9.57%, which meant that a Phase I awardee had a 9.57% chance of receiving a Phase II award.



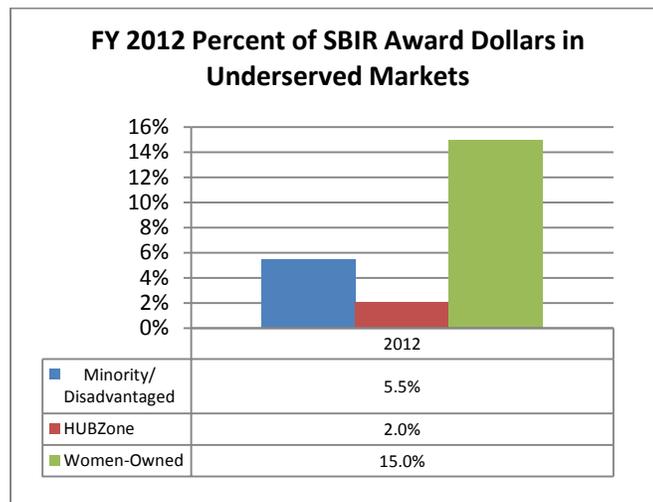
**e. Impact**

In considering the impact of the SBIR program, SBA measures the distribution of total awards both by geography and by participation of socially and economically disadvantaged small businesses. SBA determines the percentages of total award distribution to small businesses that are owned by socially and economically disadvantaged individuals, women-owned, and/or HUB Zone certified. SBA also looks at SBIR awards dedicated to manufacturing-related R&D and energy efficiency or renewable energy-related R&D.

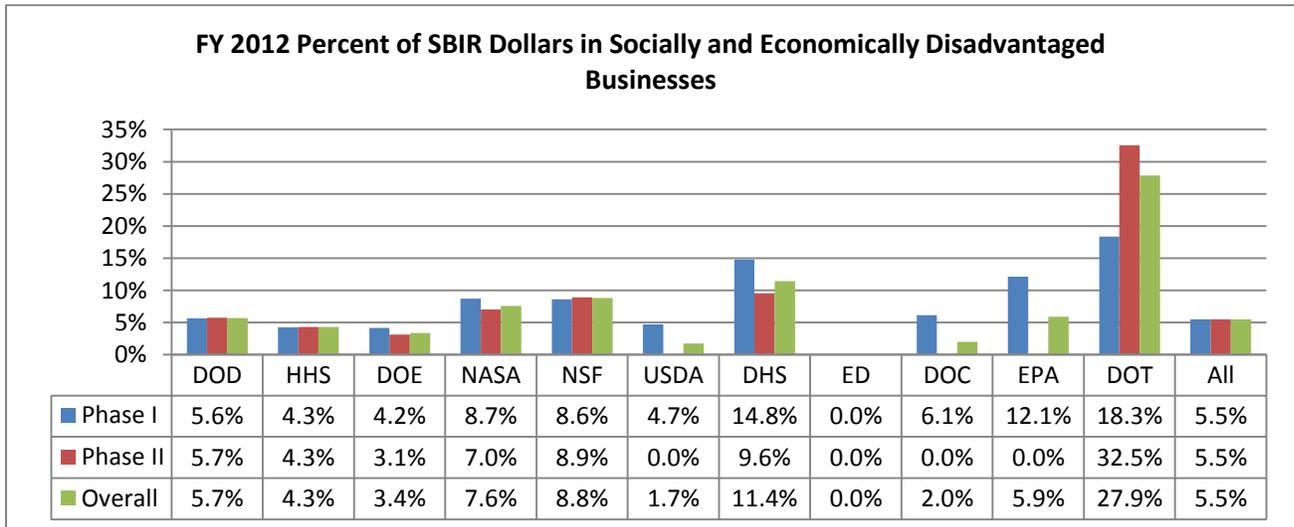
**Geographic Distribution.** Approximately 52% of total SBIR award dollars were concentrated among 10 states: CA, MA, VA, NY, MD, CO, PA, TX, OH and FL. Of the remaining 48%, approximately 17% of total SBIR award dollars were concentrated among 25 states and territories. Appendix A provides further detail on state breakdowns.



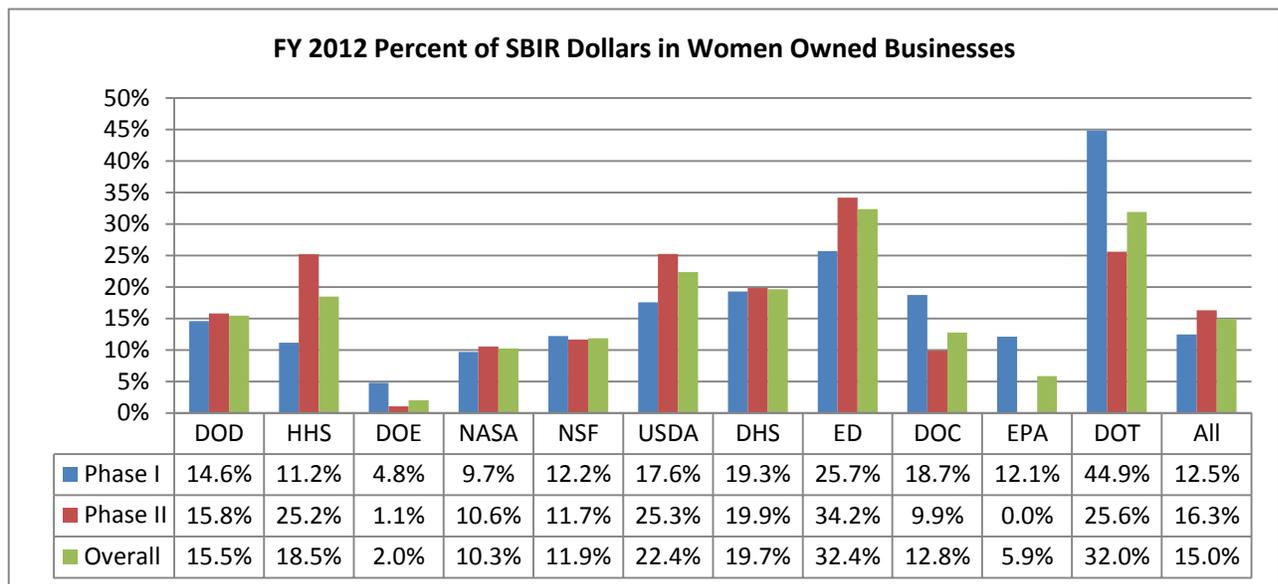
**Underserved Markets.** Approximately 5.5% of SBIR award dollars went to socially and economically disadvantaged businesses, 15% went to women-owned businesses, and 2% to HUBZone certified small businesses.



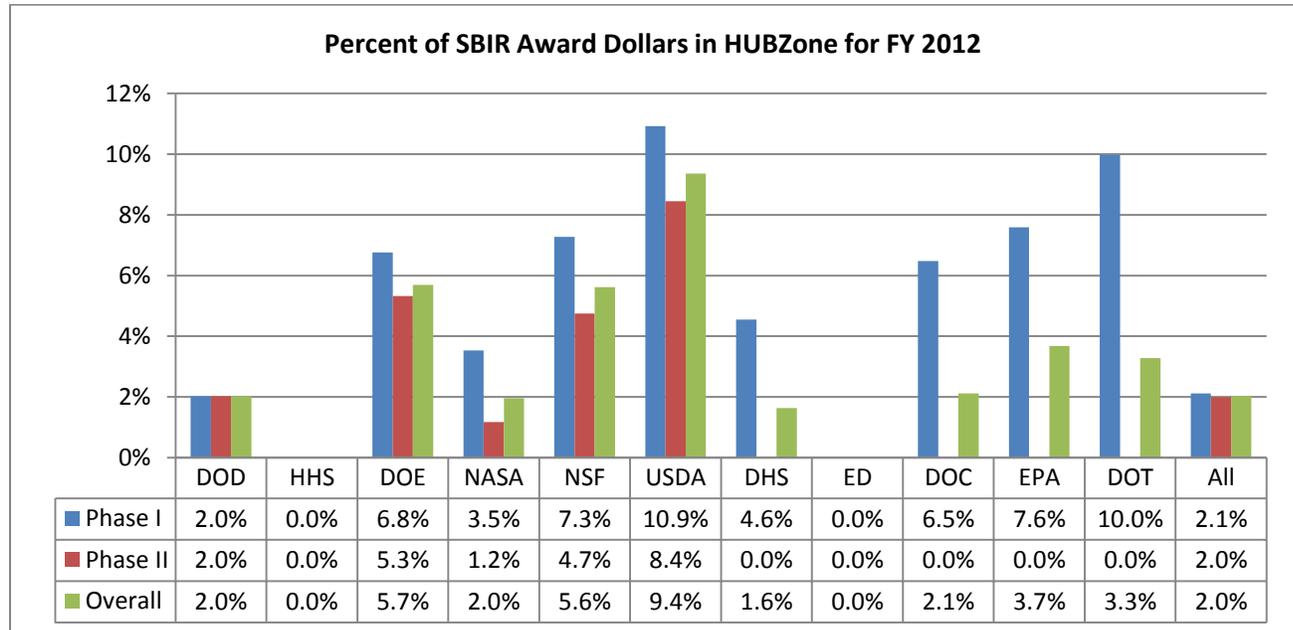
**Socially and Economically Disadvantaged Businesses.** The SBIR program awarded a total of \$84 million to socially and economically disadvantaged small businesses with \$29.5 million in Phase I awards and \$54.5 million in Phase II awards. All Agencies (with exception of ED) provided SBIR awards to socially and economically disadvantaged businesses with DOT comprising more than 25% of the total dollars awarded.



**Women-Owned.** The SBIR program awarded a total of \$228.5 million to women-owned businesses with \$66.8 million awarded in Phase I awards and \$161.7 million awarded in Phase II awards. All Agencies provided SBIR awards to women-owned businesses with ED and DOT each comprising over 30% of the total SBIR dollars awarded.



**HUBZones.** A total of \$11.3 million in Phase I awards and \$19.7 million in Phase II awards were given to HUBZone certified companies. USDA provided the highest percentage of dollars with an average of 9.4% of awards going to HUBZone certified businesses. ED and HHS did not award any dollars to HUBZone certified businesses.

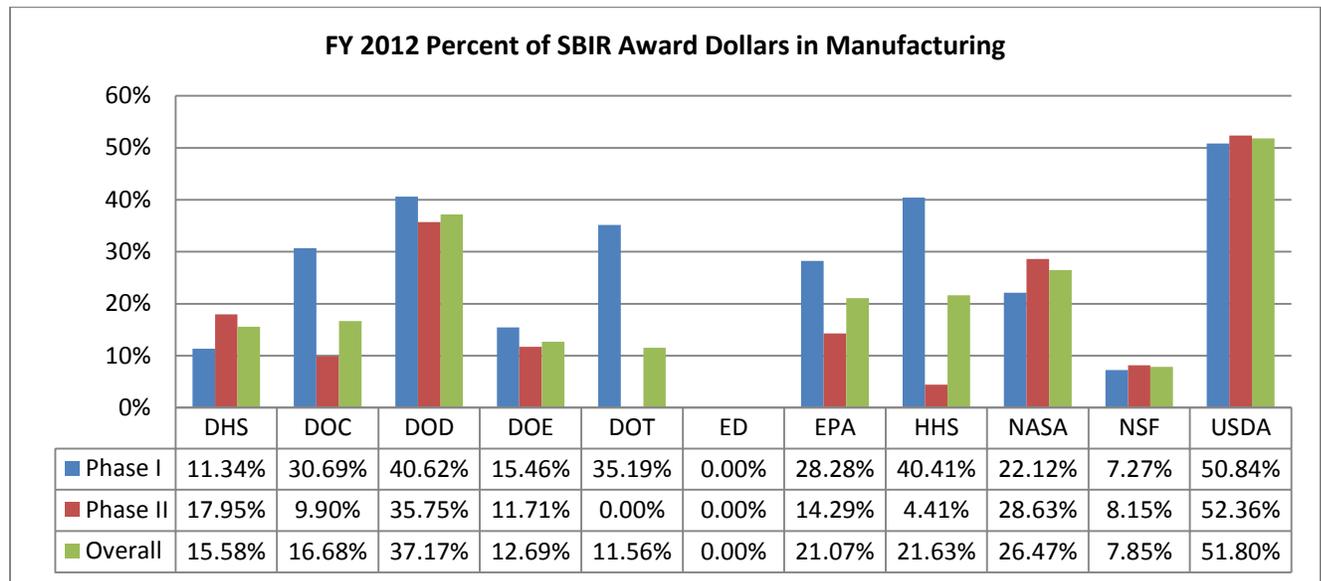


**f. Industry Related Focus**

SBA also looks at SBIR awards dedicated to manufacturing-related R&D and energy efficiency or renewable energy-related R&D. Often these goals become intertwined, as research that supports energy efficiency and renewable energy may also lead to the manufacturing of new products and/or improvements in manufacturing efficiency. This can be seen most easily in areas of defense where R&D projects focus on transformational technologies toward smaller, lighter, and faster military capabilities that enhance platform flexibility, survivability, lethality and effectiveness at reduced costs, fuel consumption, maintenance, and overall logistical footprint; for everything from the individual soldier to ground vehicles, ships, aircraft and other platforms improved-by or created-for next-generation power architectures. Relatedly, award applicants may achieve cost-cutting advantages with reduced energy consumption by utilizing advanced manufacturing processes.

**Manufacturing.** Pursuant to Executive Order (E.O.) 13329, SBIR/STTR Agencies give high priority within the SBIR and STTR programs to manufacturing-related R&D, which is defined as “relating to manufacturing processes, equipment and systems; or manufacturing workforce skills and protection.” E.O. 13329 is intended to help ensure that Agencies properly and effectively assist the private sector in its manufacturing innovation so as to sustain a strong manufacturing sector in the United States economy by advancing innovation, including innovation in manufacturing, through small businesses.

A total of \$534 million dollars in Phase I awards and \$990 million in Phase II awards were provided to small businesses in the manufacturing industry. USDA dedicated more than 50% of their budget to manufacturing awards.



**Energy Efficiency/Renewable Energy.** Pursuant to the Energy Independence and Security Act of 2007 (P. L. 110-140) and guidelines issued by SBA on September 3, 2008, SBIR/STTR Agencies give high priority within the SBIR and STTR programs to small business concerns that participate in or conduct energy efficiency or renewable energy system R&D. The law requires SBA to assist the Agencies in meeting energy-related priority requirements, consult with the heads of the Agencies to determine whether such priority has been given, and report to Congress on whether or not such priority is being carried out.

Agencies have found ways to give priority to energy related R&D projects beyond adding energy efficiency and renewable energy topics in the SBIR solicitations. Other mechanisms have been used, including providing instructions in solicitations that proposals should address energy related aspects of their technology development and that such information could have a “tie-breaker” advantage in the award process. Agencies have also begun stressing energy efficiency and renewable energy during outreach presentations to the small business community, teaching small businesses about energy-saving and sustainability practices, and educating students about underlying concepts related to energy efficiency and renewable energy. Some Agencies report success stories in their outreach materials and on their websites showing the impacts of the SBIR program on energy efficiency and renewable energy system technology research.

SBA and the Agencies continue to work together on ways to quantify energy-related award projects by both number and dollar. Below are 45 examples of priorities given to energy-related projects from FY 2012:

Self-Propulsion Glider for Siting of Marine Hydrokinetic Devices	Forward Osmosis Water Purification Membranes for Small Operations
Wave Energy Harvesting System	Novel High Density, Solid State Ultracapacitors
Smart Grid, energy efficient lighting, photovoltaics, net-zero-energy buildings, and software for “smart” buildings	Functional Advanced Concentrator Technology (FACT) for standard multi-junction and advanced IMM photovoltaics

Reliable, Low-Cost, Self-Powered Wireless Sensors for Commercial Buildings	Modular Ultra-High Power Solar Array Architecture
Technologies Related to Hybrid Electric Power-train Systems	High-Volume Production of Lightweight, Multi-Junction Solar Cells Using 6-inch GaAs
Photonics	Towable 100 kW Power Unit
Next Generation Processes for Carbonate Electrolytes for Battery Applications	Highly Efficient Water Management System for Lignocellulosic Biomass
Advanced Processing of Rare Earth Elements Distributed Production of Hydrogen from Waste Water	A Modular Silicon Carbide Based Electrical Distribution Unit
Hydrogen Storage Technologies for Near-Term Fuel Cell Applications	Manufacturing Tools for Reliability Testing in PV Module Manufacturing Environments
Process Intensification of Biochemical and Thermochemical Conversion Pathways for Fuels and Chemicals	Fiber Optic Distributed Chemical Sensors for Environmental Impact Monitoring in Carbon Sequestration
Innovative Technologies for Electricity Generation from Geothermal Heat and Fluid Resources	Long-life, High Voltage Lithium-Ion Battery for Portable Cardiac Defibrillators
Wind Energy Systems for Base Camp Applications	Creating Clean Energy out of Hot Air
Module and System Manufacturing Metrology, Diagnostics, and Process Control	Autonomous Power Management for Hearing Aids and Hearing Products
Mooring Technology for Floating Offshore Wind	Reactive Capture of Carbon Dioxide
Heat-pipe Embedded Foam Exhaust Recovery System	Self-powered Solar Water Heater
Advance Locomotive Energy Storage	Energy Reducing, Ruggedized, Solar Lighting System
Self-Sustaining Intelligent Pavement Systems	Nanotechnology for Enhanced Heat Transfer
High-Efficiency, Universally-Applicable Battery Energy Storage Railcar with Regenerative Braking Capability	Enhancing Biosynthesis of Biofuels from Cellulosic Biomass
STEM Solar Explorations for Students	Solar Heater to Prevent Stock Tank Freezing
New Technology for Electricity Monitoring and Reporting Built Into Electrical Receptacles and Switches	A 10 KW, Rankine Cycle Agricultural Waste to Energy Conversion Module
Improved TTHM Reduction Processing and Operational Efficiencies in Potable Water Distribution	Feasibility Demonstration of a Wind Energy Glider for Renewable Energy at Small and Mid-sized Farms
Solar Thermal Stirling Engine Combined Heat and Power System Low-Cost, Biodegradable Substitutes for Disposable Plastics	Enhanced Drying of Pipeline Ethanol
	Ultra Energy-Efficient Microprocessors

**g. Agency Compliance**

Two key measures of SBIR program compliance are: (1) the ratio of an agency’s SBIR award obligations to its extramural R&D budget, and (2) agency administrative response times. The obligation and extramural budget data that agencies reported to SBA for FY2012 indicate an overall compliance with the minimum required set-aside percentage. The data on administrative response times show a range of performance across the agencies and some improvement in a majority of agencies over the previous year.

***SBIR Funds Obligated as a percent of Extramural R&D.***

The minimum set-aside of agency extramural R&D, as required by statute, increased to 2.6% in FY 2012. As a whole, the SBIR program has met this minimum set-aside with an overall program average of 2.7% for FY 2012. Individual agency percentages vary with the larger and medium-sized agencies having the greatest impact on the overall program average. Appendix B provides additional information on each SBIR agency’s calculation of extramural budget.

**Agency SBIR Obligated to Extramural Budget Percentage**

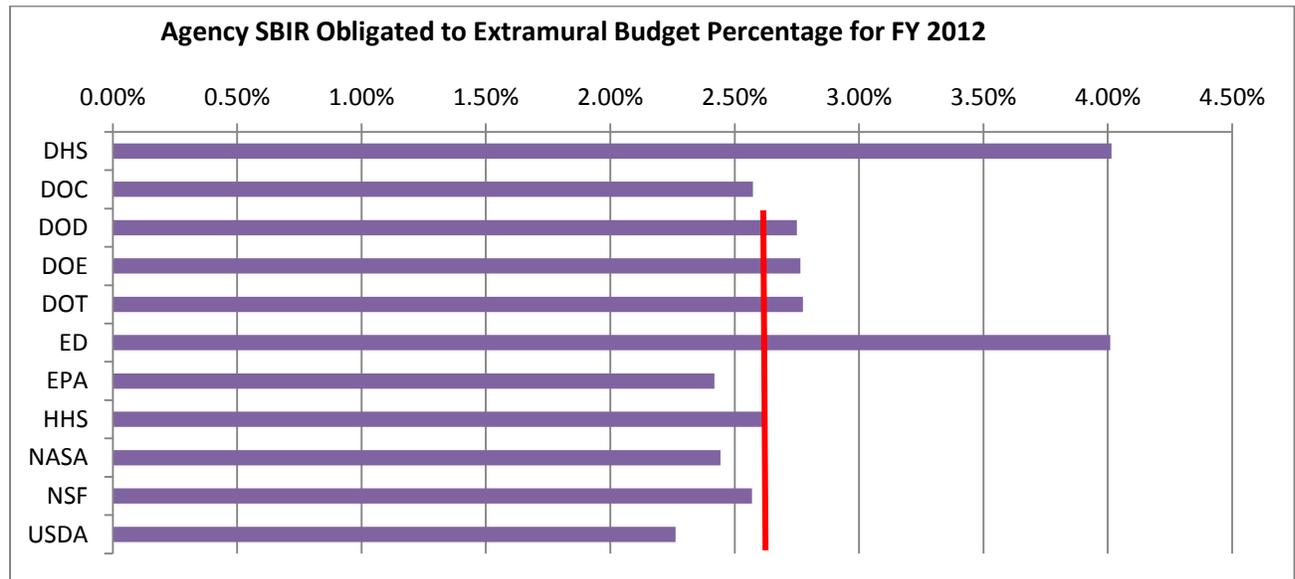
<b>Agency</b>	<b>2012</b>
DHS	4.01%
ED	4.01%
DOT	2.77%
DOD	2.76%
DOE	2.76%
DOC	2.57%
NSF	2.57%
NASA	2.43%
EPA	2.42%
USDA	2.26%
Overall	2.789%

**Legend**

Above or Equal to 2.6% Set-Aside
Within .05 of 2.6% Set-Aside
Below .05 of 2.6% Set-Aside

The following chart summarizes Agency compliance with the minimum requirement that 2.6% of their extramural R/R&D budget be spent on SBIR awards:

- 6 Agencies met or exceeded the minimum required percentage: DHS, ED, DOT, DOD, DOE, and HHS
- 2 Agencies came close, but fell short of meeting the requirement, both with 2.57%: DOC and NSF
- 3 Agencies fell short of the minimum percentage: NASA, EPA, and USDA



Note that SBA is currently reviewing the approaches the participating agencies have taken to calculate their extramural R&D budgets for the purpose of SBIR program funding. SBA has identified considerable differences in the approaches taken across agencies and has established a more consistent measure of program funding compliance for the FY 2014 reporting period.

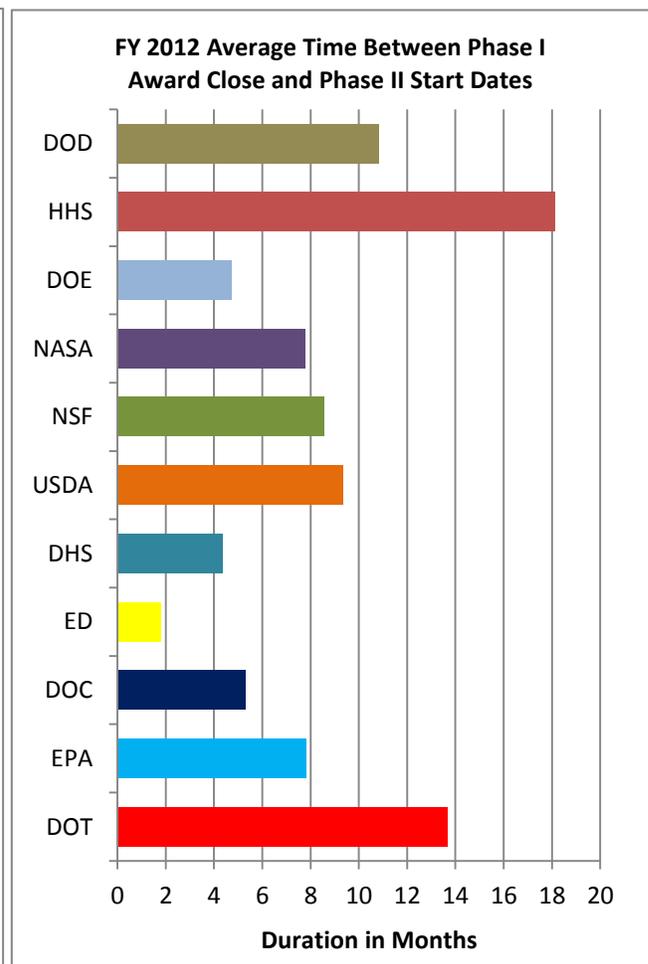
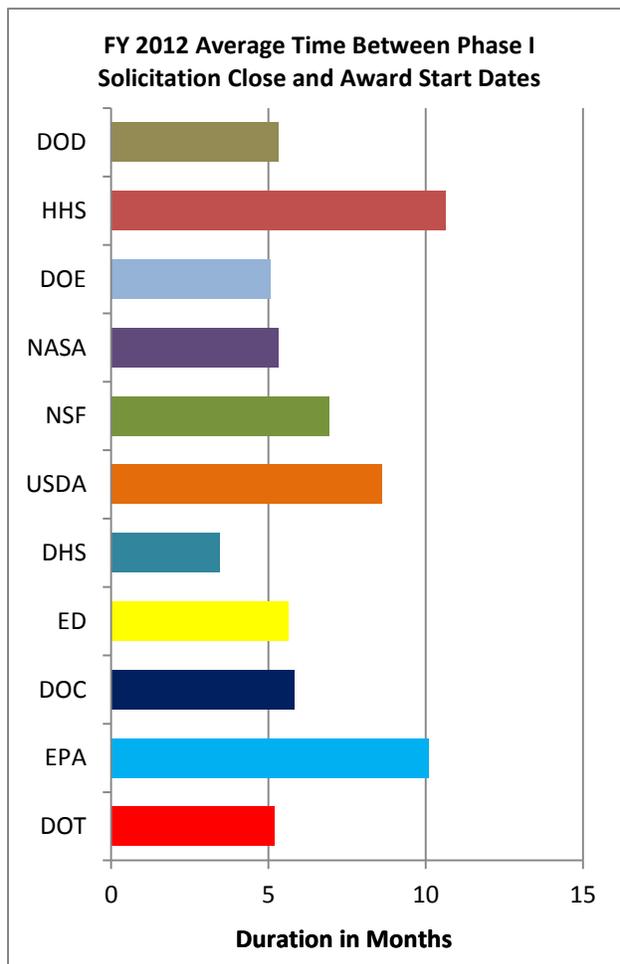
**SBIR Award Timelines.** With regards to the time taken from the Phase I proposal due date to the start of the award, most of the Agencies were within the congressionally prescribed maximum timeline (1 year for NIH and NSF and 6 months for the other agencies). USDA and EPA showed timelines exceeding 6 months. A comparison of this data with similar data for FY 2011 shows that seven agencies reduced this time: DoD, DOE, NASA, USDA, DHS, DOC, and DOT. SBA encourages all agencies to reduce award timelines and is working with the agencies to refine the timeline metrics reported and will monitor future agency progress in reducing these times.

## Award Timelines of SBIR Agencies

\*Agencies are permitted 12 months before issuing awards

	DOD	HHS*	DOE	NASA	NSF*	USDA	DHS	ED	DOC	EPA	DOT
Average number of months between Phase I proposal deadline and start of award	5.3	10.6	5.0	5.3	6.9	8.6	3.4	5.6	5.8	10.1	5.2
Percentage of Phase I awards dispersed in less than 6 months from proposal deadline	69%	8%	100%	99%	0%	0%	100%	100%	75%	0%	76%
Average number of months between Phase I award end and Phase II award start	10.8	18.1	4.7	7.7	8.5	9.3	4.3	1.8	5.3	7.8	13.6
Average number of months between Phase II selection and Phase II award start	0	0	1.5	7.5	2.3	2.8	3.5	5.2	1	1	4.2
Percentage of Phase II awards dispersed in less than 3 months	100%	0%	100%	0%	41%	0%	83%	100%	100%	100%	18%

Below is a graphical representation of average timeline data provided for FY 2012:



**h. SBIR Reporting Scorecard For Fy 2012**

SBIR Agencies are required by law to annually report certain SBIR information regarding solicitations, awards, obligations of extramural budgets, participation by underserved communities (e.g. socially and economically disadvantaged, women-owned, and HUBZone certified businesses), industry-specific activities (e.g. manufacturing and energy), and compliance with meeting timelines between solicitations, proposal evaluations, and dispersals of award funding. Timely and transparent reporting to SBA is important for measuring program performance and ensuring program operations are consistent with the statute. Timely reporting also helps prospective SBIR program applicants, awardees, and other stakeholders to better assess the fit and scope of the program.

Agencies must submit their final annual reports to SBA by March 15 of each year, covering the period ending September 30 of the prior fiscal year. For FY 2012 the Agencies' reports were due to be submitted to SBA by March 15, 2013, which is also the milestone date by which SBA scores the Agencies on timeliness. Overall, the SBIR Agencies greatly improved timeliness in reporting for FY 2012, as compared to previous fiscal years, and SBA anticipates further improvement as changes to TechNet and SBIR.gov become operational.

- 6 Agencies submitted program data within 60 days of the FY 2012 annual reporting deadline: DOC, NSF, DOT, EPA, DHS, and ED.
- 3 Agencies submitted program data within 120 days of the FY 2012 annual reporting deadline: NASA, DOE, and USDA.
- Due to technical issues HHS & DOD were the only agencies to submit greater than 120 days after the FY 2012 deadline.

<b>FY 2012 SBIR Reporting Agency Scorecard</b>	
<b>Agency</b>	<b>Report Submission Deadline 03/15/2013</b>
<b>DOD</b>	Original 04/24/2013 Resubmission 04/23/2014 CLEAR
<b>HHS</b>	07/29/2013 CLEAR
<b>DOE</b>	06/26/2013 YELLOW
<b>NASA</b>	06/11/2013 YELLOW
<b>NSF</b>	04/1/2013 GREEN
<b>USDA</b>	06/26/2013 YELLOW
<b>DHS</b>	03/15/2013 GREEN
<b>ED</b>	04/15/2013 GREEN
<b>DOC</b>	04/01/2013 GREEN
<b>EPA</b>	03/14/2013 GREEN
<b>DOT</b>	03/19/2013 GREEN
	GREEN < 60 days (3/15 – 5/15)
	YELLOW < 120 days (5/16 – 7/15)
	CLEAR > 120 days (beyond 7/16)

## 4. STTR Program Performance

### a. Overview

The purpose of the STTR program is to stimulate a partnership of ideas and technologies between innovative small businesses and Research Institutions, as defined by the Small Business Act, through federally-funded R&D. Through a competitive awards-based program, STTR enables the cooperative R&D efforts of small businesses and Research Institutions to explore their technological potential and gain pathways to profit by commercializing innovative technologies. The primary goals of the STTR program are to:

- Stimulate small business technological innovation;
- Foster technology transfer through cooperative R&D between small businesses and Research Institutions; and,
- Increase private sector commercialization of innovations derived from federal R&D funding.

The Small Business Technology Transfer (STTR) program, modeled on the SBIR program, is a highly competitive program that also encourages domestic small businesses to engage in federally funded R&D projects that may also have the potential for private sector commercialization and public benefit.

The STTR program differs from the SBIR program in that STTR awards are made to small businesses that pursue technological innovation through cooperative research and development with federal laboratories and non-profit scientific and educational institutions. STTR's most important role is to bridge the gap between the performance of basic science and the commercialization of the resulting innovations as a way of stimulating technological innovation and building a strong national economy.

Federal agencies with extramural R/R&D budgets exceeding \$1 billion are required to set aside a percentage of their extramural R/R&D budgets for the STTR program, specifically to fund STTR Awards to qualified small businesses that work in cooperation with federal laboratories and non-profit scientific and educational institutions. This percentage was 0.3% in FYs 2004-2011. The Reauthorization Act increased this minimum to 0.35% for FYs 2012 and 2013, with continued increases through 2016. SBA serves as the coordinating agency for the program and directs the Agencies in their implementation of STTR, reviews their progress, and reports annually to Congress on program results. To date, over \$2.5 billion has been awarded to small businesses through the STTR program.

For FY 2012, the following 5 Agencies were required to set aside 0.35% of their extramural R/R&D budgets for the STTR program:

- Department of Defense (DOD)
- Department of Health & Human Services (HHS)
- Department of Energy (DOE)
- National Aeronautics & Space Administration (NASA)
- National Science Foundation (NSF)

### b. STTR Award Structure

Similar to the SBIR program, the STTR Program is structured to target award funding into the early phases of the development of new technologies:

**Phase I** | **Feasibility/Proof of Concept.** The objective of Phase I is to establish the technical merit, feasibility, and commercial potential of the proposed R&D efforts and to determine the quality of performance of the small businesses prior to providing any additional funding in Phase II. STTR Phase I awards typically do not exceed \$150,000 for a 1 year period.

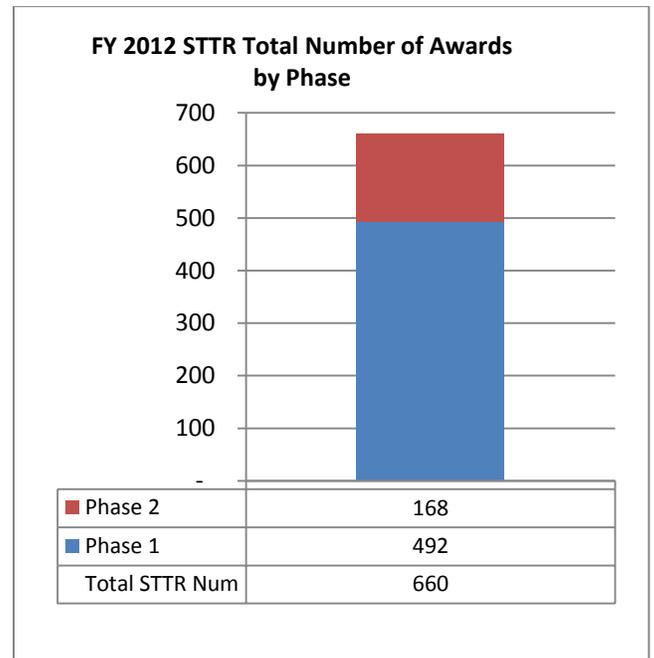
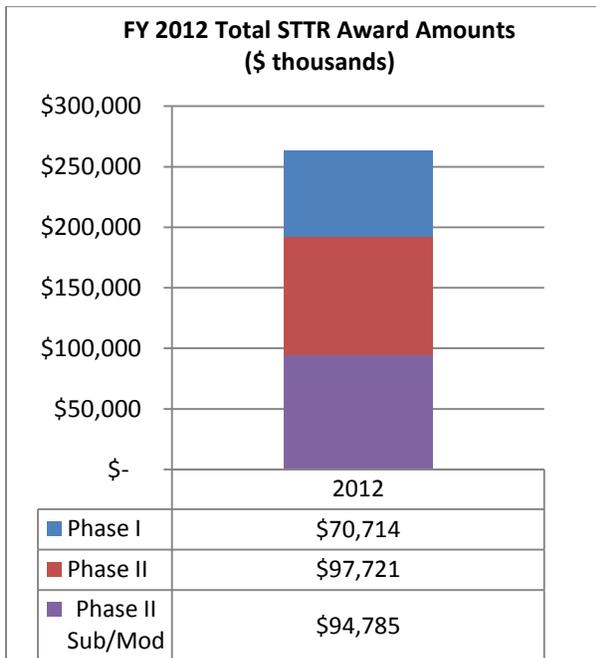
**Phase II** | **Full Research and Development.** The objective of Phase II is to continue the R&D efforts initiated by a small business receiving Phase I funding. Phase II funding is based on the results achieved in Phase I and the scientific and technical merit and commercial potential of the project proposed in Phase II. Only Phase I awardees are eligible for Phase II awards. STTR Phase II awards typically do not exceed \$1,000,000 for a 2 year period.

**Phase III** | **Commercialization.** The objective of Phase III is for the small business to pursue commercialization objectives of R&D activities as a result of Phase I and Phase II funding. The STTR program does not fund Phase III. Whenever appropriate, Agencies, may provide follow-on, non-STTR funding for R&D and/or contracts for products, processes, or services intended for use by the U.S. Government.

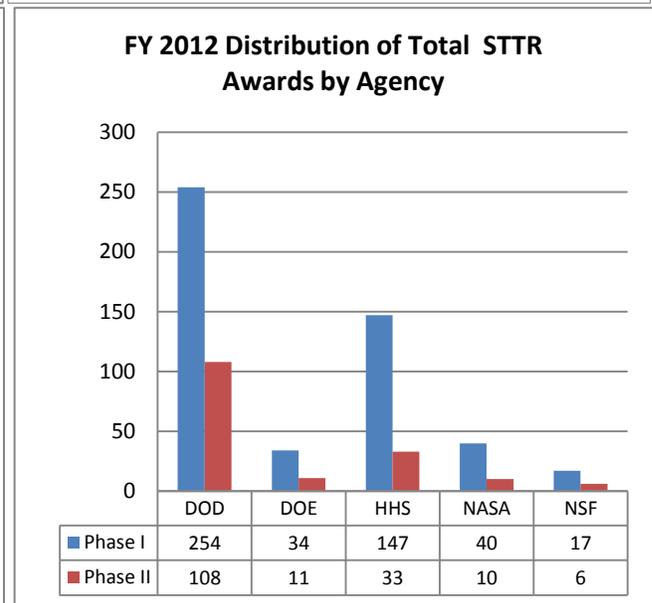
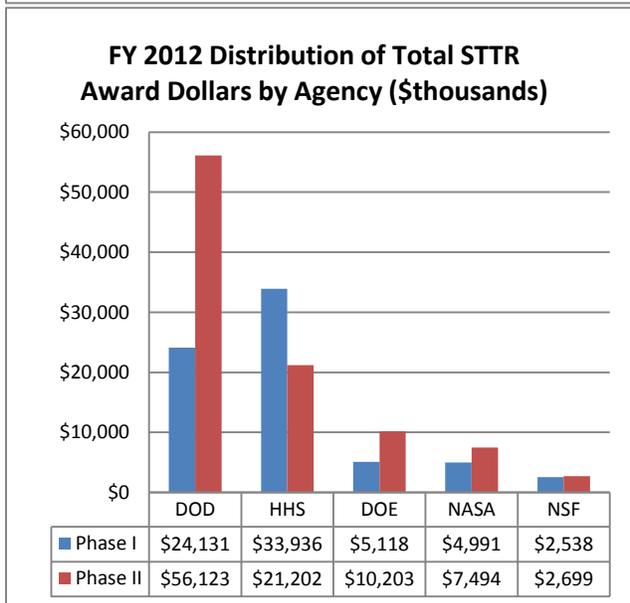
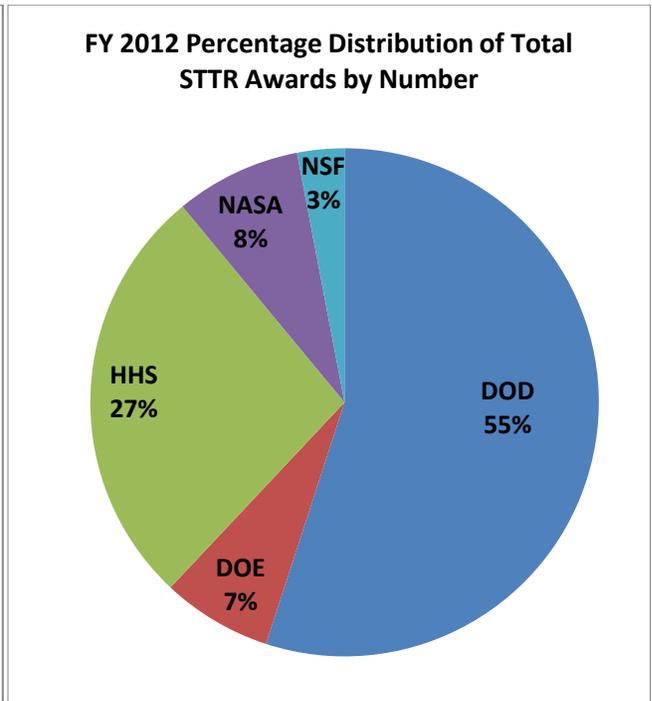
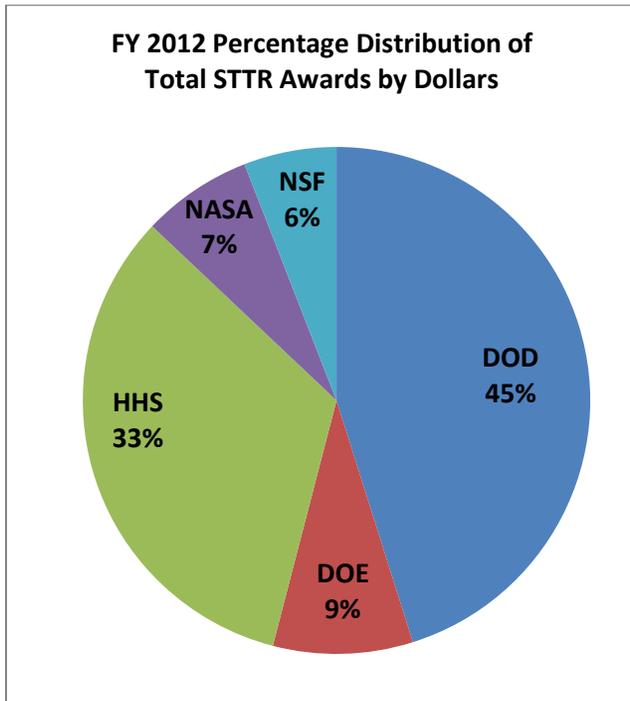
**c. STTR Program Data**

**Award Dollars.** STTR awards totaled \$263.2 million in FY 2012 with approximately 42% obligated to Phase I projects and 58% obligated to new Phase II projects.

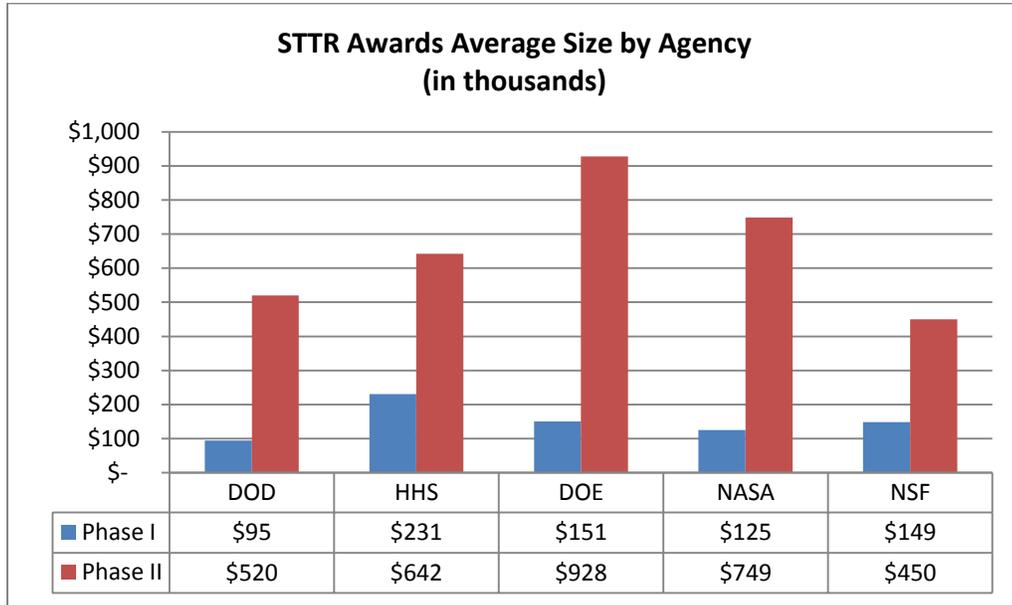
**Award Numbers.** Agencies made 660 STTR Awards in FY 2012 (492 for Phase I and 168 for Phase II).



**Agency Distribution.** A little over 78% of the total STTR dollars were awarded by DOD and HHS, with DOE, NASA, and NSF obligating 22%.

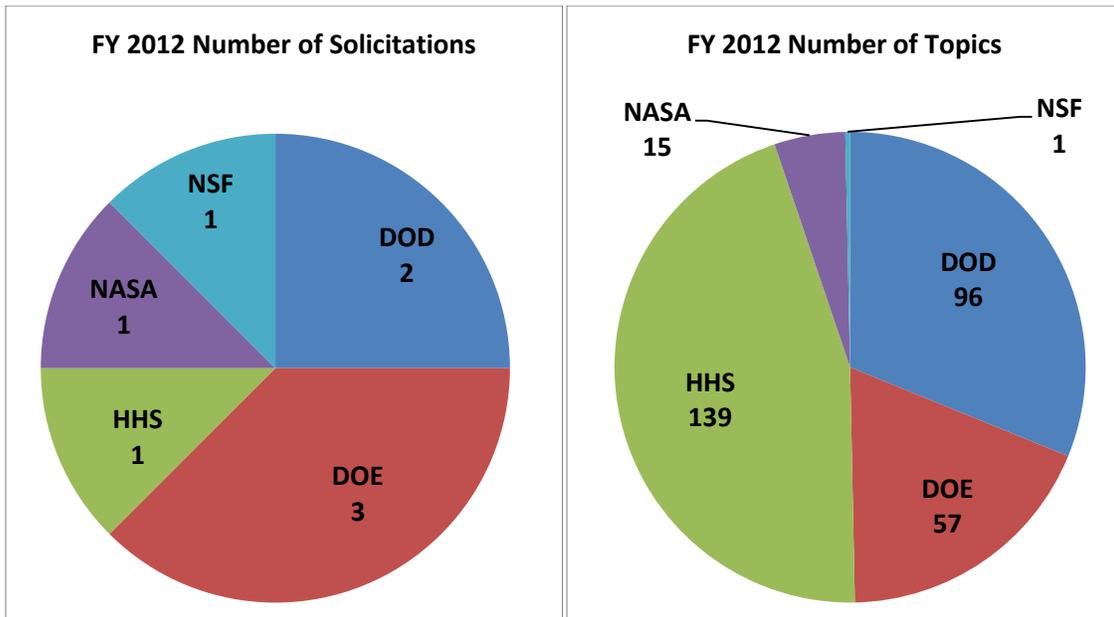


**Average STTR Award Size.** For FY 2012, the average size for Phase I awards was approximately \$144,000, and the average size for Phase II awards was \$582,000. The average award size tends to vary by agency.

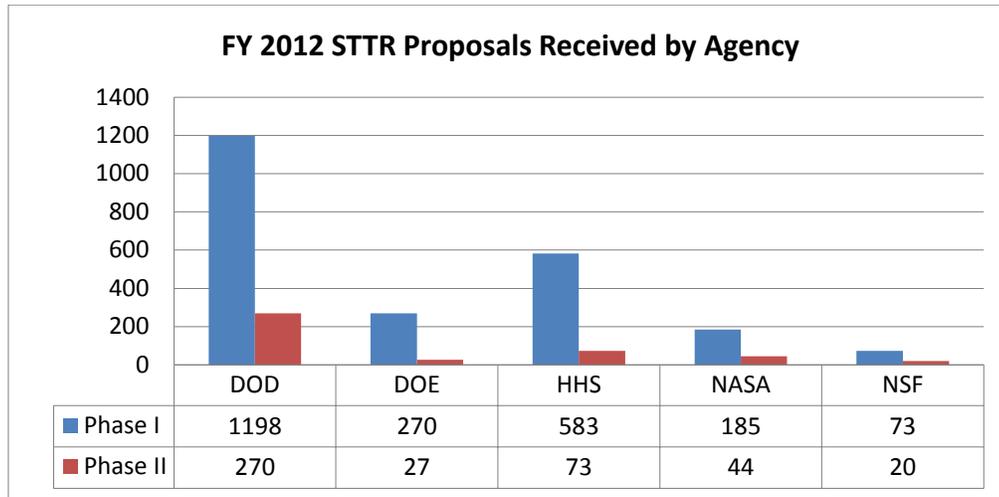


**d. Solicitations and Proposal Acceptance Rates**

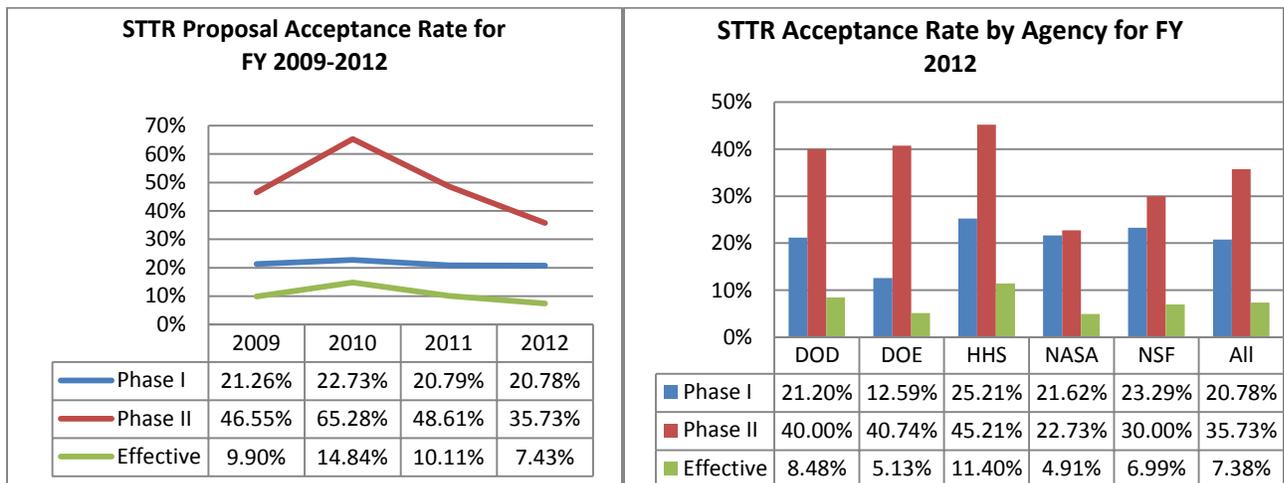
**Agency Solicitations.** In FY 2012, a total of 8 solicitations were issued with 308 topics. Agencies on average issue over 6 solicitations each year with an average of 300 topics. In FY 2012 DOE released 3 solicitations, DOD released 2, and HHS, NASA, and NSF each released one. The average number of topics has increased from 45 per agency in 2011 to 62 per agency in 2012.



**Proposals Received.** Applicants submitted a total of 2,743 proposals with almost 54% submitted to DOD. The total number of Phase I proposals received was 2,309, and the total number of Phase II proposals received was 434. The number of proposals submitted has stayed relatively consistent on a yearly basis.



**Acceptance Rate.** Based on the number of awards, the proposal acceptance rates (Number of Awards/Number of Proposals) averaged approximately 22% for Phase I applicants and 49% for Phase II applicants. To determine the likelihood that a new proposal would receive a Phase II Award, we multiplied the proposal acceptance rates in Phase I by the rates for Phase II. Based on data from 2009 to 2012, the average effective proposal acceptance rate for STTR was 10.57% which means that a Phase I awardee had on average a 10.57% chance of receiving a Phase II award.

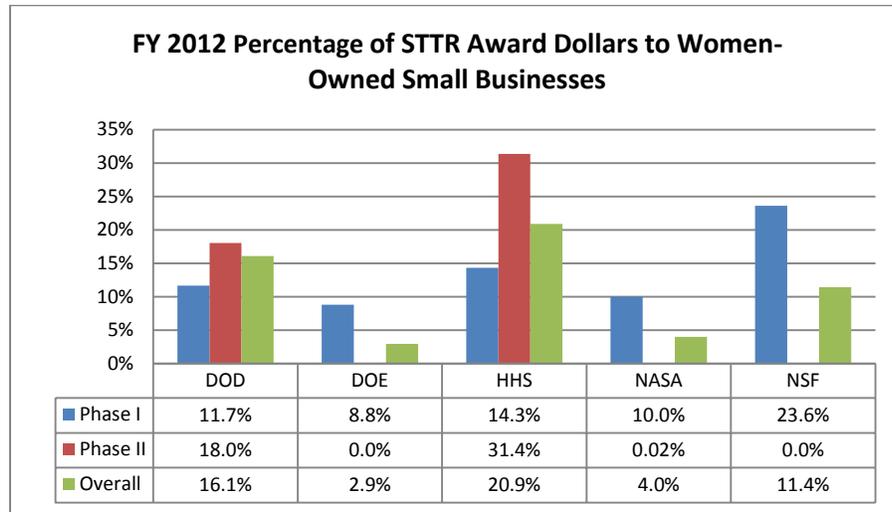


\*Acceptance Rate = Awards/Proposals Received

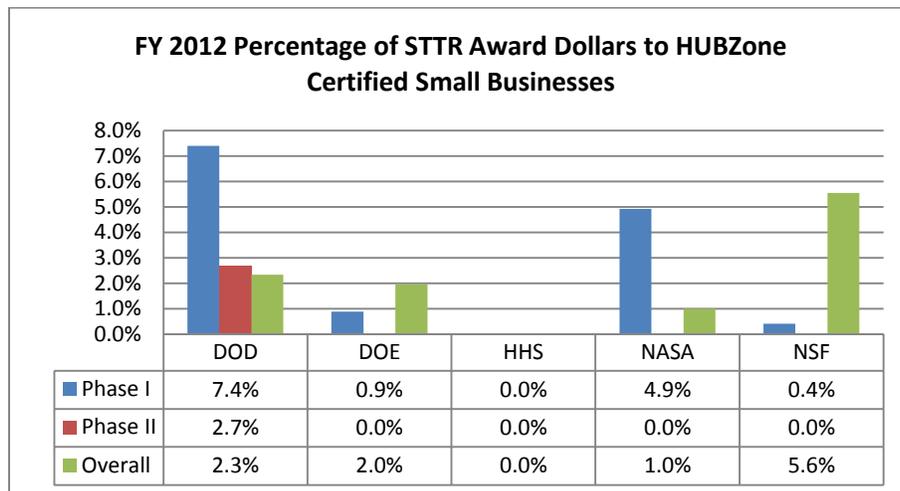
**e. Impact**

In considering the impact of the STTR program, SBA measures the distribution of total awards by participation of socially and economically disadvantaged small businesses. SBA determines the percentages of total award distribution to small businesses that are owned by socially and economically disadvantaged individuals, women-owned, and/or HUB Zone certified.

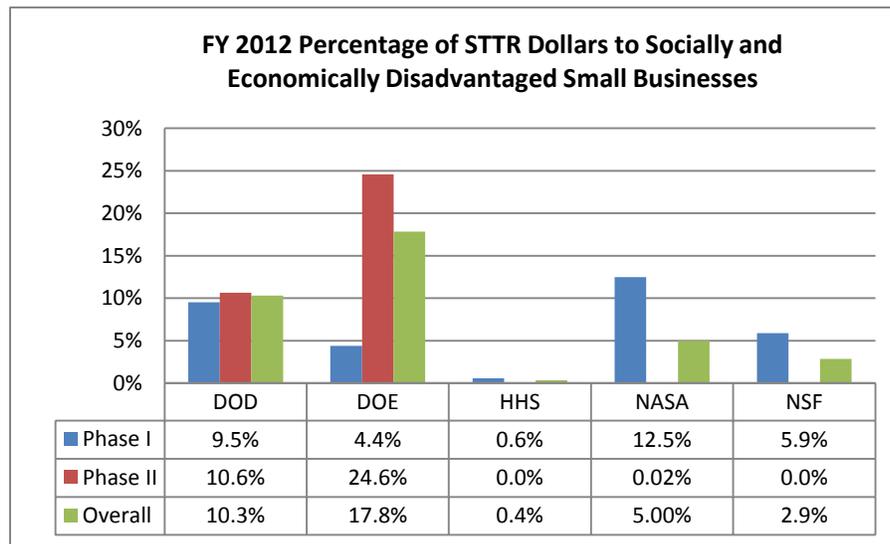
**Women-Owned Businesses.** In 2012, Agencies started collecting data regarding STTR Awards to women-owned businesses. NSF awarded women-owned businesses the the highest percentage of Phase I awards (23.6%) while HHS awarded women-owned businesses the highest percentage of Phase II awards (31.4%). Overall, 15.4% of all STTR awards were distributed to women-owned businesses.



**HUBZones.** In FY 2012, the STTR program awarded over \$2.58 million dollars to HUBZone certified companies.



**Socially and Economically Disadvantaged Small Business Concerns.** For FY 2012, the STTR program awarded a total of \$11.98 million (\$3.49 million in Phase 1 and \$8.48 million in Phase 2, (see Appendix E) to socially and economically disadvantaged businesses. Every agency awarded money to a socially and economically disadvantaged business, with DOE awarding the largest percentage of its STTR Awards of 17.8%.



**f. Industry Related Focus**

**Energy Efficiency/Renewable Energy.** Pursuant to the Energy Independence and Security Act of 2007 (P. L. 110-140) and guidelines issued by SBA on September 3, 2008, SBIR/STTR Agencies are to give high priority within the SBIR and STTR programs to small business concerns that participate in or conduct energy efficiency or renewable energy system R&D. The law requires SBA to assist the Agencies in meeting energy-related priority requirements, consult with the heads of the Agencies to determine whether such priority has been given, and report to Congress on whether or not such priority is being carried out.

Agencies have found ways to give priority to energy related R&D projects beyond adding energy efficiency and renewable energy topics in the STTR solicitations. Other mechanisms have been used, including providing instructions in solicitations that proposals should address energy related aspects of their technology development and that such information could have a “tie-breaker” advantage in the award process. Agencies have also begun stressing energy efficiency and renewable energy during outreach presentations to the small business community, teaching small businesses about energy-saving and sustainability practices, and educating students about underlying concepts related to energy efficiency and renewable energy. Some Agencies report success stories in their outreach materials and on their websites showing the impacts of the STTR program on energy efficiency and renewable energy system technology research.

SBA and the Agencies continue to work together on ways to quantify energy-related award projects by both number and dollar. Below are 39 examples of priorities given to energy-related projects from FY 2012:

Ultra Energy-Efficient Microprocessors	High Efficiency Organic or Sensitized Photovoltaic Cells
High Performance Cooling Devices through Wafer Scale Manufacturing	Advanced Materials for High Energy Density Electrochemical Capacitors, and Next Generation Ultra-Low Power Microprocessor Design
Solar Thermal Stirling Engine Combined Heat and Power System	Development of Hydrogen/Halogen Fuel Cell Technology Renewable Based-Energy Storage

Development of Low-Cost, Biodegradable Substitutes for Disposable Plastics	CO2 Harvesting and Mobile Production of Liquid Fuel (CHAMP-Fuel)
Green Engineering Magnet Advanced Exploration	Hydrogen Home Fueling System
Biomass Densification	Advanced Hydropower Systems
Optimized Nano-Porous Surfaces for Boiling Heat Transfer	Self-Assembled Rare Earth Doped Nanostructured Metal Aluminate Phosphors
Advanced Electrodes and Electrolytes for Improved Energy Density and Safety Lithium-Ion Batteries	Novel High Performance Permeation Barrier for Long Lifetime Flexible OLED Lighting
Bright White Tandem OLED with Carbon Nanotube Hole Injecting Interlayer	Technologies for Hidden Geothermal Resources (GEM) Project
Rapid Hydrogen and Methane Sensors for Wireless Leak Detection	Lightweight IMM Multi-Junction Photovoltaic Flexible Blanket Assembly
Oxidation Resistant Carbon Supports For Fuel Cells	Real Time Optical Control System for Thin Film Solar Cell Manufacturing
Innovative Technologies for Electricity Generation from Geothermal Heat and Fluid Resources	High Intensity Discharge Lamps
Thermo-Electric Power Generation	Advanced Epitaxial Lift-Off Quantum Dot Photovoltaic Devices
Mooring Technology for Floating Offshore Wind	Hydrogen-Based Energy Conservation System
Advanced Electrical Grid Interface for Marine Devices	Advanced Processing of Rare Earth Elements
Next Generation Processes for Carbonate Electrolytes for Battery Applications	Technologies Related to Hybrid Electric Power-train Systems
Reliable, Low-Cost, Self-Powered Wireless Sensors for Commercial Buildings	Module and System Manufacturing Metrology, Diagnostics, and Process Control
Process Intensification of Biochemical and Thermochemical Conversion Pathways for Fuels and Chemicals	Alternative Green Technology for Power Generation Using Waste-Heat Energy And Advanced Thermoelectric Materials

**g. Agency Compliance**

Overall, Agencies were within 0.01% of meeting the required minimum of setting aside 0.35% of their extramural R/R&D budgets for STTR Awards. Individual agency performance varies (Please see breakout information below for further details).

SBA measures agency compliance based on the ratio of STTR award obligations to the agency's Extramural R&D Budget and agency response times. Agencies have self-reported the data below for the charts related to award obligations, extramural budget calculations, and agency response times.

**STTR Obligations To Extramural R&D Ratio.** Agencies with extramural research, research and development (R/R&D) budgets that exceed \$1 billion are required to obligate at least 0.35% of their extramural R/R&D budget for STTR awards for FY 2012. Only two agencies reached the required 0.35% (DOE and HHS) while two more were within 0.05% (DOD and NASA). NSF was the only agency to be lower than the required minimum percentage. Note that SBA is currently reviewing the approaches the participating agencies have taken to calculating their extramural R/R&D for the purpose of STTR program funding. SBA has identified considerable differences in the approaches taken across agencies and with the 2014 Annual Report, SBA has established a more consistent measure of program funding compliance.

<b>Agency STTR Obligated to Extramural Budget Percentage</b>	
<b>Agency</b>	<b>2012</b>
DOE	0.38%
HHS*	0.36%
DOD	0.33%
NASA	0.32%
NSF	0.30%
Overall	0.34%

**Legend**

Green- Above or Equal to 0.35% Set Aside
Yellow- Above 0.32% - Below 0.35%
Clear- Below 0.32%

\*HHS and SBA used different sets of extramural calculations; however, both calculations show that HHS is in compliance with the 0.35% budget obligation.

**h. STTR Data Collection Score Card for FY 2012**

STTR Agencies are required by law to annually report certain STTR information regarding solicitations, awards, extramural budget obligations, participation by underserved communities (e.g. socially and economically disadvantaged businesses, women-owned, and HUBZone certified businesses), industry-specific activities (e.g. energy efficiency/renewable energy), and compliance with meeting timelines between solicitations, proposal evaluations, and dispersals of award funding. Timely and transparent reporting to SBA is important for measuring program performance and ensuring program operations are consistent with the statute. Timely reporting also helps prospective STTR program applicants, awardees, and other stakeholders to better assess the fit and scope of the program.

Agencies must submit their final annual reports to SBA by March 15 of each year, covering the period ending September 30 of the prior fiscal year. For FY 2012 the Agencies' reports were due to SBA by March 15, 2013, which was also the milestone date by which SBA scores the Agencies on timeliness. Overall, the STTR Agencies greatly improved timeliness in reporting for FY 2012, as compared to previous fiscal years, and SBA anticipates further improvement as changes to TechNet and SBIR.gov become operational.

- 2 Agencies submitted program data within 60 days of the FY 2012 annual reporting deadline: DOE, and NASA.
- 2 Agencies submitted program data within 120 days of the FY 2012 annual reporting deadline: HHS and NSF.
- Due to technical issues, DOD, took more than 120 days to submit their data.

<b>FY 2012 STTR Reporting Agency Scorecard</b>	
<b>Agency</b>	<b>Report Submission Deadline 03/15/2013</b>
<b>DOE</b>	03/29/2013 GREEN
<b>NASA</b>	04/3/2013 GREEN
<b>NSF</b>	06/17/2013 YELLOW
<b>HHS</b>	07/8/2013 YELLOW
<b>DOD</b>	Original 04/24/2013 Resubmission 04/23/2014 CLEAR
GREEN	< 60 days (3/15 – 5/15)
YELLOW	< 120 days (5/16 – 7/15)
CLEAR	> 120 days (beyond 7/16)

Appendix A – 2012 Geographic Data by State

**SBIR Phase I & II Awards**

State	Award #'s	Amount
CA	1182	\$426,907,060
MA	684	\$249,314,272
VA	339	\$105,609,881
NY	265	\$103,606,592
MD	274	\$98,172,927
OH	241	\$92,519,522
CO	227	\$85,739,880
TX	246	\$85,143,877
PA	212	\$83,806,764
FL	166	\$54,367,552
NC	109	\$51,617,211
NJ	136	\$46,225,359
WA	118	\$45,332,656
OR	95	\$44,358,618
IL	124	\$43,970,330
AL	113	\$40,105,189
MI	112	\$38,356,039
AZ	87	\$35,067,081
NH	79	\$32,067,844
WI	63	\$31,015,093
MN	79	\$30,899,068
GA	70	\$30,601,076
NM	71	\$25,468,744
CT	72	\$24,937,185
TN	28	\$18,108,827
UT	39	\$16,314,424
MO	34	\$14,971,202
IN	42	\$14,100,532
KY	32	\$11,847,094
AR	29	\$11,707,087
RI	19	\$10,958,894
OK	18	\$10,836,542
HI	30	\$8,750,303
VT	17	\$8,554,958
MT	20	\$8,195,739
NE	11	\$7,111,434
DE	23	\$6,874,334
KS	20	\$6,865,398
SC	18	\$5,966,250
ID	14	\$5,672,388
IA	13	\$5,504,808
ME	14	\$5,151,549
NV	12	\$4,394,799
LA	11	\$3,270,637
ND	6	\$2,177,893
WV	5	\$2,044,766
WY	6	\$1,864,242
SD	5	\$877,079
AK	4	\$743,177
DC	4	\$695,415
MS	4	\$524,512

**STTR Phase I & II Awards**

State	Award #'s	Amount
CA	109	\$33,541,900
MA	69	\$20,372,719
VA	45	\$12,168,226
MD	31	\$11,135,729
CO	31	\$10,697,895
AL	20	\$10,455,246
NY	28	\$9,328,588
IL	21	\$8,484,132
PA	18	\$7,537,450
OH	22	\$6,587,955
OR	14	\$6,384,491
TX	31	\$6,272,419
TN	7	\$5,865,386
GA	11	\$5,860,954
NC	17	\$5,792,977
WI	10	\$5,735,499
MI	15	\$4,875,010
AZ	11	\$4,495,795
FL	17	\$3,966,850
NM	10	\$3,911,653
NJ	13	\$3,562,502
WA	10	\$3,423,402
CT	7	\$3,251,060
KY	9	\$3,039,374
MO	4	\$2,499,187
AR	2	\$2,222,160
KS	4	\$2,164,188
OK	3	\$2,099,998
NH	7	\$2,085,480
DE	3	\$1,599,834
SC	2	\$1,294,442
IN	4	\$1,204,596
MN	5	\$1,191,023
HI	2	\$1,040,516
IA	2	\$623,632
RI	2	\$599,058
NE	4	\$596,406
UT	4	\$475,360
WV	3	\$279,650
ME	2	\$249,999
DC	1	\$211,009
VT	1	\$165,804
MT	1	\$150,000
ND	1	\$149,497
MS	1	\$124,992
WY	1	\$99,793
ID	1	\$79,929

## Appendix B – Extramural Budget Calculation for FY2012

Each year SBA asks the participating SBIR and STTR Agencies to describe the methodologies they use when calculating the small business set aside amounts from their extramural R/R&D budgets. Although the SBIR and STTR percentage goals are statutorily clear, the ways in which individual Agencies calculate their extramural R/R&D budgets are not. This may explain in part the varying degrees in which the Agencies' explain their small business set aside calculations. Those responses are provided below, taken directly from reports submitted by the Agencies to SBA.

SBA worked with the Agencies to gain greater clarity on the individual and seemingly inconsistent methodologies arising from the responses. Two key issues came to light that are not necessarily included in the information below but are worth noting: 1) some Agencies must contend with individual and specific budgetary exclusions that may affect the agency's extramural R/R&D budget before the small business set aside amounts can be calculated; and, 2) an erratic FY 2012 budget cycle with continuing resolutions at FY 2011 levels complicated Agencies' calculations and therefore compliance. SBA and the Agencies continue working together to develop a clear and consistent framework for calculating SBIR and STTR set asides that can be used by all Agencies while allowing for individual agency budget complexities.

### *Department of Defense (DoD).*

Calculation for the the Department of Defense's Extramural budget is calculated as follows: Total Component RDT&E budget appropriation, less Congressional Reductions, less OSD Reductions, less Programs exempted by statute (15 USC 638 (e)(2)), less Intramural RDT&E (15 USC 638 (e)(1)), equals Total Extramural RDT&E budget base for SBIR and STTR assessment.

### *Department of Health and Human Services (HHS).*

**NIH** – The calculation for the extramural research and development base used to determine the set-aside for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs includes Research Grants, R&D contracts, the extramural portion of the Cancer Control program (prior to FY 2008), and extramural grants in the National Library of Medicine (NLM). Medical Library Assistance Awards (MLAA) grants are not included; these are support grants; NLM extramural contracts are not included, as these are service and support contracts. A proration is made for certain minority programs (MBRS/BRS) and the Fogarty International Center, whose grant portfolio does not lend itself to small business awards. MBRS/BRS awards are made to institutions to strengthen, balance, and stabilize their programs. The program provides flexible funds on a formula basis. The amounts are provided to the Institutes and Centers (ICs). This calculation establishes the minimum that each IC must set aside for SBIR/STTR awards. ICs have the option of spending more.

**CDC** – CDC participates in the National Science Foundation's (NSF) annual Federal Funds survey\*. This survey is the primary source of information about Federal funding for R&D in the United States. Federal Funds data, as collected, span 3 government fiscal years: the fiscal year just completed, the current fiscal year, and the next fiscal year. Actual data are collected for the year just completed; estimates are obtained for the current and next fiscal year. CDC uses the data generated by the survey (i.e., estimated R&D for current fiscal year) to calculate our annual extramural R/R&D from which the SBIR set-aside is derived.

\*The results of NSF's Federal Funds survey are used to calculate CDC's extramural R/R&D data and to drive CDC's SBIR set-aside. The responses to the NSF survey questions are self-reported by each designated program office within CDC. Extramural activities are defined as those whose primary objective is to build capacity external to CDC by carrying our message throughout the world and improving the effectiveness of

management processes or procedures for outside activities: Management and support services for Research & Development activities; Engineering and technical support services to state and local health surveillance systems; Personnel as direct assistance to state and local health departments; Grants or contracts to facilitate state-based education or surveillance; Vaccines for the immunization of children.

In general, we define program support costs as any costs related to the ability of CDC to implement its programs. These are costs that fund people such as project officers for cooperative agreements, grants, and contracts, or other activities and/or functions that are necessary to assure programs in the field are executed to achieve the greatest health impact and the most efficient use of resources. In addition, program support activities include some aspects of CDC's work in surveillance, evaluation, epidemiology, and intramural research. While the majority of these costs are not external to the Agency (i.e. CDC onsite staff or contractors provide the support), they are important to the execution and evaluation of programs in the field. These activities have a primary objective to build capacity external to CDC by improving the effectiveness of management processes or procedures for outside activities. These activities are an essential part of the Agency's core mission; our work would not be possible without these costs.

**FDA** – The calculation for the extramural research and development base used to determine the set-aside for the Small Business Innovation Research (SBIR) Programs include Research Grants, R&D contracts. FDA took the extramural research budget for FY 2011 and calculated 2.6% (Percentage based on SBIR/STTR reauthorization Act of 2012).

**ACF** – ACF took the research budget for FY 2012 and calculated 2.6%.

#### ***Department of Energy (DOE).***

- The total R&D budget for DOE for FY 2012 was \$9,942,000,000. This total includes programs that exempted by statute from participating in the DOE SBIR and STTR programs. Source: Analytical Perspectives, FY 2013.
- The total intramural R&D budget for participating programs at DOE for FY 2012 was \$22,624,000.
- The total extramural R&D budget for participating programs at DOE for FY 2012 was \$6,143,402,000.

Each year, DOE collects and reports data on its R&D funding. Two major categories are used to report this data: "Conduct of R&D" that includes basic and applied research and development; and "Facilities" that includes all capital projects. Only "Conduct of R&D" obligations are assessed for SBIR.

A very substantial portion of the DOE "Conduct of R&D" budget is related to the DOE's defense mission. Most defense-related funding is exempted from SBIR assessments by language in the Small Business Research and Development Act of 1992 (P.L. 102-564) that states "...for the Department of Energy it shall not include amounts obligated for atomic energy defense programs solely for weapons activities or for naval reactor programs." The above data adjusts for that portion of total FY 2012 DOE R&D that is exempted per the Public Law.

Most of the non-exempted R&D is extramural R&D, which is performed in DOE contractor-operated laboratories, or by universities and other contractors. DOE intramural R&D is that which is performed in DOE's government-owned and government-operated laboratories.

#### ***National Aeronautics and Space Administration (NASA).***

NASA does not specifically budget for Research and Development (R&D), be it an intramural or extramural activity. Therefore, the agency must assess each of its budget lines to determine if it contains activity that is applicable to the requirements of the SBIR/STTR program.

Research and Development is defined as any activity that is: a systematic, intensive study directed toward greater knowledge or understanding of the subject studied; a systematic study directed specifically toward applying new knowledge to meet a recognized need; or a systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

Extramural R&D is defined as total Agency R&D minus the amounts for R&D activities performed by employees of a Federal agency in or through Government-owned, Government-operated facilities.

After identifying budget lines that contain R&D, NASA separates from those lines activities that should be excluded from the calculation of the SBIR/STTR budgets. Specifically, items that are excluded from the SBIR/STTR calculation include operational programs or projects, as well as intramural-led R&D. Examples of operational exclusions include education, institutional expenses such as civil service workforce, institutional Construction and Environmental Compliance & Restoration, the budget for the Inspector General, program and management support, and mission and ground operations.

Considering these exclusions, NASA analyzes what remaining R&D activity will be “extramural”, as defined above. This extramural R&D is used during budget formulation to determine the SBIR/STTR budget.

#### ***National Science Foundation.***

At NSF, all costs classified as “conduct of research and development” under OMB Circular A-11’s character classification schedule, with the exception of the costs of the Federally Funded Research and Development Centers (FFRDCs), form the basis for calculating the SBIR and STTR budgets.

The Small Business Innovation Development Act of 1982 defines an agency’s extramural research budget to include, “...total obligations minus amounts obligated for agency activities in or through Government owned and Government-operated facilities...”

- In FY 2012, the actual NSF obligations for R&D funded by NSF came to a total of \$5.170 billion.
- From this total, the Foundation excludes approximately \$179.27 million budgeted for four FFRDCs, National Center for Atmospheric Research, Science and Technology Policy Institute, National Optical Astronomy Observatory and National Radio Astronomy Observatory.
- This results in a total extramural research and development budget of \$4.991 billion. The target established by NSF for FY 2012 (based on estimates at the start of the fiscal year in NSF's FY 2012 Current Plan) was \$152.76 million. When this target is adjusted for the actual obligations that occurred in FY 2012 the resulting amount is \$149.22 million.

In FY 2012 the actual program obligations were \$146.86 million (SBIR \$131.30 and STTR \$15.56 million). A total of \$5.90 million was carried forward into FY 2013 of which \$2.5 million has been obligated to date.

Please see Extramural Letter from NSF for further details.

#### ***Department of Agriculture.***

Every fiscal year, USDA agency budget officers estimate the amount of funds available for R&D, including how much will be available for extramural R&D. These estimates are reported to the USDA budget office and forwarded to the National Institute of Food and Agriculture, which manages the SBIR Program for USDA.

#### ***Department of Homeland Security.***

The R&D accounts that fund the SBIR programs within the Department of Homeland Security (DHS) are located in two distinct organizations within DHS: the Science and Technology (S&T) Directorate and the Domestic Nuclear Detection Office (DNDO).

In FY12, each of these organizations issued separate solicitations. Collectively, for purposes of the annual report to the SBA, the S&T SBIR Program and the DNDO SBIR Program comprise the DHS SBIR Program. The methodologies used to calculate each SBIR program budget are as follows:

### **Science and Technology (S&T) Directorate**

Per the Science and Technology (S&T) Directorate CFO, in FY12, the S&T Directorate received \$533M in its RDA&O appropriation. Of that amount, \$176.5M was for the operations, maintenance and construction of DHS labs, \$8.1M for Standards, \$5.2M for Test and Evaluation oversight, \$8.9M for Safety Act, \$7.4M for Technology Transition Support, and \$6.6M for Scholars and Fellows and Minority Serving Institutions. The remainder is \$320.2M for R&D funding of which \$64.9M goes to intramural R&D and \$255.3M goes to extramural R&D. The 2.6% SBIR assessment of this amount should have been \$6,638,308. However, the S&T Directorate provided \$8,168,937 for the S&T SBIR Program, exceeding the 2.6% statutory amount.

- The total Research, Development, Acquisition and Operations (RDA&O) budget for the S&T Directorate for FY2012: \$533M
- The total of that budget obligated for intramural R/R&D: \$64.9M
- The total of that budget obligated for extramural R/R&D: \$255.3M
- The FY2012 SBIR budget: \$8.2M

### **Domestic Nuclear Detection Office (DNDO)**

Per the Domestic Nuclear Detection Office (DNDO) Budget and Finance Manager, in FY12, DNDO received \$215M in its RD&O appropriation. Of that amount, approximately \$75.95M was classified under object class 25.5 "Research and Development of Contracts". The 2.6% assessment of this amount should have been \$1.97M. However, in FY12, DNDO subsequently provided \$4.47M for the DNDO SBIR Program within its FY2012 Spend Plan, exceeding the 2.6% statutory amount.

- The total planned Research, Development and Operations (RD&O) budget for DNDO for FY2012: \$215,000,000
- The total of that budget obligated for intramural R/R&D: \$1,348,000
- The total of that budget obligated for extramural R/R&D: \$66,157,000
- The FY2012 SBIR budget: \$4,471,999

### ***Department of Education (ED).***

To ensure compliance with Federal requirements for the Small Business Innovation Research (SBIR) program, the Department of Education (ED) uses its most recent actual obligations for research and development, as reported to the National Science Foundation for the Survey of Federal Funds for Research and Development. These obligations are calculated by the Budget Service with the assistance of program analysts who have detailed knowledge of program budgets, plans, and operations.

Because ED supports extramural research and development through a variety of programs with different purposes, structures, and authorizations, different approaches are more appropriate or efficient when used with particular programs. Most research and development activities supported by ED are administered by one of its two research agencies, the Institute of Education Sciences (IES) and the National Institute on Disability and Rehabilitation Research (NIDRR). Through their primary programs of research, these agencies also support extensive dissemination and knowledge utilization activities, as well as training and fellowship programs to expand the capacity of their respective fields to conduct rigorous research and development. To determine the overall share of program resources that support extramural research and

development, ED periodically reviews grants and contracts awarded under each competition, topic, or program of research (e.g., research on reading and writing education or model systems for rehabilitation of burn injuries). For each competition, topic, or program of research, analysts determine the average share of each award that supports basic or applied research and development.

ED also supports research and development through smaller programs or set-asides under larger programs. For some of these programs, such as the Technology and Media Program in the Special Education account and the National Activities programs within the Career, Technical and Adult Education accounts, there are a small number of awards that analysts review each year to determine the share of each award that supports research and development. For other programs, such as International Research and Studies grants within the International Education and Foreign Language Studies program or the Demonstration Projects to Ensure Quality Higher Education for Students with Disabilities, both in the Higher Education account, the activities authorized under the program result in fairly uniform percentages of research and development supported by each project so a program average is applied to calculate extramural research and development obligations. Based on the most recent actual extramural research and development obligations reported for all programs in the Department, we calculate the amount that must be devoted to the SBIR competitions administered through IES and NIDRR for the coming fiscal year.

#### ***Department of Commerce (DOC).***

NIST uses data contained in its' financial accounting system to determine the total amount of Research and Development funds obligated during the fiscal year. Specific National Science Foundation codes denote that the funds are being used for Research and Development work and unique object classes identify the work as extramural or intramural.

NOAA uses the National Science Foundation definitions of extramural research and development (R&D), defined as R&D performed by organizations outside the Federal sector with Federal funds under grant, contract, or cooperative agreement. The NOAA Line Offices estimate the amount of their extramural R&D by using data on grants, contracts, and cooperative agreements. A number of Cooperative institutes with which NOAA's Office Oceanic and Atmospheric Research has long standing agreements are included in the extramural estimates. For FY 2012, NOAA contributed 2.6% of its Extramural R&D Obligations to the SBIR program.

#### ***Environmental Protection Agency (EPA).***

EPA's research and development resources primarily reside in the Office of Research and Development's (ORD) Science and Technology appropriation, with a lesser amount residing in ORD's Superfund appropriation. During the development of the Agency's operating plan (and prior to congressional earmarks), payroll, travel, facility, and operating expenses, and other costs required to support in-house research are excluded from these appropriations. The Agency directs 2.6% of the remaining extramural resources to its SBIR program. In addition, upon determination that ORD will monitor a congressional earmark, ORD directs 2.6% of those resources to the SBIR program. To facilitate comparison between years, EPA uses enacted budgets in the calculation of SBIR funding because EPA has two year authority to obligate funds.

Total RR&D or RDT&E budget FY 2012: \$560,275

Total budget obligated for intramural RR&D or RDT&E: \$385,876

Total budget obligated for extramural RR&D or RDT&E: \$174,399

***Department of Transportation (DOT).***

Each fiscal year the DOT SBIR Program Office receives a spreadsheet from the Office of the Secretary of Transportation (OST). The name of the file is Intramural & Extramural R&D– Budget Authority & Obligation Limitations FY2011-FY2013. Each operating administration within DOT is sent an assessment requesting the SBIR funds based on the figures in the OST spreadsheet. The following list provides the U.S. DOT Research or Research and Development (R/R&D) budget for FY 2012:

- Total R/R&D budget for DOT for FY2012 (enacted) is \$944,750,000
- Total R/R&D budget authority for Intramural R/R&D is \$218,552,000
- Total R/R&D budget authority for Extramural R/R&D is \$726,198,000
- Total Extramural budget authority subject to the SBIR assessment is \$329,712,000

The SBIR assessment is calculated by subtracting the FAA Extramural budget authority of \$242,694,000 and the FHWA State Planning and Research Program budget authority of \$153,792,000 from the Extramural R/R&D budget authority figure.

SBIR Summary Table FY2012

Fiscal Year 2012 SBIR Agency Obligations Summary (dollars in thousands)

	DOD	HHS	DOE	NASA	NSF	USDA	DHS	ED	DOC	EPA	DOT	TOTAL
Agency Extramural R&D Budget (\$)	38,816,200	24,762,500	6,143,402	5,727,600	5,110,530	746,435	321,460	326,743	174,756	174,399	329,712	82,633,737
Agency SBIR Budget (\$)	1,015,739	643,600	126,649	148,200	132,870	19,407	12,600	8,169	3,641	4,534	8,573	2,123,981
Dollars Obligated (\$)*	1,070,758	656,480	169,797	139,184	131,305	16,891	12,906	13,102	4,496	4,218	9,148	2,228,285
Agency's \$\$ Obligation (7c)	1,070,758	648,544	167,797	139,950	131,305	16,891	12,905	13,102	4,496	4,218	9,148	2,219,113
SBIR Share of Extramural R&D Budget	2.76%	2.65%	2.76%	2.43%	2.57%	2.26%	4.01%	4.01%	2.57%	2.42%	2.77%	2.70%
Deficit/Surplus (\$)	55,019	12,880	43,148	(9,016)	(1,565)	(2,516)	306	4,934	855	(316)	575	104,304

Fiscal Year 2012 SBIR Agency Award Profile (dollars in thousands)

	DOD	HHS	DOE	NASA	NSF	USDA	DHS	ED	DOC	EPA	DOT	TOTAL
Total Phase I Awards	1,720	919	223	258	223	63	36	24	16	25	21	3,528
Total Phase I Dollars Awarded (\$)	204,645	212,269	32,996	31,761	32,873	6,234	4,390	2,623	1,466	1,978	3,006	534,242
Minority-Owned / Disadvantaged Phase I Awards	96	39	10	23	19	3	5	0	1	3	4	203
Minority-Owned / Disadvantaged Phase I Dollars (\$)	11,561	9,085	1,375	2,778	2,830	293	650	0	90	240	551	29,453
HUBZone Phase I Awards	35	0	15	9	16	7	2	0	1	2	2	89
HUBZone Phase I Dollars (\$)	4,145	0	2,231	1,122	2,393	681	200	0	95	150	300	11,316
Women-Owned Phase I Awards	248	105	11	25	27	11	7	5	3	3	9	454
Women-Owned Phase I Dollars (\$)	29,917	23,740	1,595	3,080	4,018	1,096	849	675	275	240	1,350	66,834
Manufacturing Phase I Awards	682	166	36	57	16	32	4	0	5	8	8	1,014
Manufacturing Phase I Dollars (\$)	83,135	35,778	5,103	7,025	2,390	3,170	498	0	450	559	1,058	139,166
Total Phase II Awards	1,278	309	99	88	130	25	18	9	9	7	10	1,982
Total Phase II Dollars Awarded (\$) (Obligations)	499,141	231,616	93,653	63,901	62,687	10,657	7,836	9,345	3,030	2,100	6,141	990,106
Total Subsequent Phase II Dollars Awarded (\$)	134,279	208,632	43,148	43,522	0	0	503	1,135	0	0	0	431,219
Minority-Owned / Disadvantaged Phase II Awards	51	14	3	6	12	0	1	0	0	0	3	90
Minority-Owned / Disadvantaged Phase II Dollars (\$)	28,629	28,885	2,926	4,499	5,590	0	750	0	0	0	1,998	73,277
HUBZone Phase II Awards	20	0	6	1	6	2	0	0	0	0	0	35
HUBZone Phase II Dollars (\$)	10,118	0	4,986	750	2,974	900	0	0	0	0	0	19,728
Women-Owned Phase II Awards	136	89	1	9	15	6	3	5	1	0	3	268
Women-Owned Phase II Dollars (\$)	78,926	58,372	997	6,749	7,342	2,691	1,558	3,199	300	0	1,574	161,707
Manufacturing Phase II Awards	326	155	13	25	11	13	3	0	1	1	0	548
Manufacturing Phase II Dollars (\$)	178,434	102,413	10,971	18,295	5,108	5,580	1,409	0	300	300	0	322,812
Average Amount for Phase I Awards (\$)	119	231	148	123	147	99	122	109	92	79	143	151
Average Amount for Phase II Awards (\$)	391	750	946	726	482	426	435	1,038	337	300	614	500
Net Dollar Amount Modifications (\$)**	232,693	3,963	0	0	35,745	0	177	0	0	140	0	272,718

Fiscal Year 2012 SBIR Agency Solicitation Profile

	DOD	HHS	DOE	NASA	NSF	USDA	DHS	ED	DOC	EPA	DOT	TOTAL
Number of Solicitations Released	3	2	3	2	2	1	3	5	2	1	2	26
Number of Research Topics in Solicitations	575	182	57	23	8	10	18	4	6	7	17	907
Number of Phase I Proposals Received	9167	5175	1785	1707	2072	453	191	235	183	374	234	21,576
Number of Phase II Proposals Received	1636	638	234	429	298	50	25	21	21	23	10	3,385

\*Obligations may include multiyear appropriated funds

\*\*May include modifications to previous year's awards

## STTR Summary Table FY2012

### Fiscal Year 2012 STTR Agency Obligations Summary (dollars in thousands)

	DOD	HHS	DOE	NASA	NSF	TOTAL
Agency Extramural R&D Budget (\$)	36,145,900*	24,762,500	6,143,402	5,727,600	5,110,530	77,889,932
Agency STTR Budget (\$)	127,400	85,300	21,700	19,900	17,900	236,451
Added up Dollars Obligated**	118,840	86,933	23,464	18,531	15,452	263,220
Agency Dollars Obligated (\$)	118,840	86,933	23,464	18,530	15,562	228,207
STTR Share of Extramural R&D Budget	0.33%	0.35%	0.38%	0.32%	0.30%	0.34%
Deficit/Surplus (\$)	(8,560)	1,633	1,764	(1,369)	(2,448)	26,769

### Fiscal Year 2012 STTR Agency Award Profile (dollars in thousands)

	DOD	HHS	DOE	NASA	NSF	TOTAL
Total Phase I Awards	254	147	34	40	17	492
Total Phase I Dollars Awarded (\$)	24,131	33,936	5,118	4,991	2,538	70,714
Women-Owned Phase I Awards	29	21	3	4	4	61
Women-Owned Phase I Dollars (\$)	2,817	4,865	450	499	599	9,230
Minority-Owned / Disadvantaged Phase I Awards	24	1	1	5	1	32
Minority-Owned / Disadvantaged Phase I Dollars (\$)	2,298	199	225	623	149	3,494
HUBZone Phase I Awards	4	0	2	1	2	9
HUBZone Phase I Dollars (\$)	379	0	300	125	291	1,095
Total Number of Phase II Awards	108	33	11	10	6	168
Total Phase II Dollars Awarded (\$) (Obligations)	56,123	21,202	10,203	7,494	2,699	97,721
Total Subsequent Phase II Dollars Awarded (\$) Modifications**	13,827	31,795	8,143	6,046	0	59,811
Women-Owned Phase II Awards	14	10	0	2	0	26
Women-Owned Phase II Dollars (\$)	10,112	6,654	0	1,500	0	18,266
Minority-Owned / Disadvantaged Phase II Awards	7	0	2	2	0	11
Minority-Owned / Disadvantaged Phase II Dollars (\$)	5,975	0	2,509	1,500	0	9,984
HUBZone Phase II Awards	2	0	0	0	0	2
HUBZone Phase II Dollars (\$)	1,494	0	0	0	0	1,494
Average Amount for Phase I Awards (\$)	95	231	151	125	149	144
Average Amount for Phase II Awards (\$)	520	642	928	749	450	582
Net Dollar Amount Modifications for FY (\$)***	24,759	0	0	0	10,215	34,974
<b>Total Phase I &amp; II Awarded</b>	<b>118,840</b>	<b>86,933</b>	<b>23,464</b>	<b>18,531</b>	<b>15,452</b>	<b>263,220</b>

\* Difference in extramural R&D budget amounts due to lack of inclusion of smaller DoD agencies not participating in STTR

\*\* Obligations may include multiyear appropriated funds

\*\*\*May include modifications to previous year's awards

**Fiscal Year 2012 STTR Agency Solicitation Profile**

	DOD	HHS	DOE	NASA	NSF	TOTAL
Number of Solicitations Released	2	1	3	1	1	8
Number of Research Topics in Solicitations	96	139	57	15	1	308
Number of Phase I Proposals Received	1,198	583	270	185	73	2,309
Number of Phase II Proposals Received	270	73	27	44	20	434

**Fiscal Year 2012 STTR Agency Research Institution Profile**

	DOD	HHS	DOE	NASA	NSF	TOTAL
Number of FFRDCS	25	0	17	3	0	45
Number of Universities	388	154	30	65	5	642
Number of Other Non-Profits	23	35	1	4	4	67

**Fiscal Year 2012 STTR Agency Cooperative Research Profile (dollars in thousands)**

	DOD	HHS	DOE	NASA	NSF	TOTAL
Total Dollars of Awards	134,858	160,283	22,649	20,507	3,088	341,385
Dollars to Small Business	61,671	47,806	14,078	11,670	10,618	145,843
Dollars to Research Institution	36,438	37,589	8,571	6,884	2,024	91,506
Number of Awards to Universities	388	197	30	65	5	685
Dollars to Universities	31,707	72,992	5,610	6,993	566	117,868
Number of Awards to FFRDCS	25	2	17	3	0	47
Dollars to FFRDCS	2,342	358	1,681	250	0	4,630
Number of Awards to Other Non-Profits	23	37	1	4	4	69
Dollars to Other Non-Profits	2,700	1,538	815	0	2,921	7,974
Phase I and II Dollars to Other Non-Profits	1,670	13,583	85	125	0	15,463

**PHASE I**

Number of Awards to FFRDCS	12	2	10	0	0	24
Number of Awards to Universities	229	123	23	38	17	430
Number of Awards to Other Non-Profits	13	22	1	1	0	37
Total Dollars of Awards	32,807	33,936	4,832	4,990	2,538	79,103
Dollars to Small Business	14,343	18,032	2,894	3,054	1,530	39,853
Dollars to Research Institution	9,232	15,833	1,938	1,936	1,008	29,947
Dollars to Universities	8,355	28,699	1,324	1,836	1,008	41,222
Dollars to FFRDCS	395	358	529	0	0	1,282
Dollars to Other Non-Profits	482	4,879	85	125	0	5,571

**PHASE II**

Number of Awards to FFRDCS	6	0	5	0	0	11
Number of Awards to Universities	97	74	6	10	6	193
Number of Awards to Other Non-Profits	5	15	0	0	0	20
Total Dollars of Awards	74,534	51,530	13,309	7,494	2,699	149,566
Dollars to Small Business	47,328	29,774	9,861	4,811	1,683	93,457
Dollars to Research Institution	27,206	21,756	3,448	2,683	1,016	56,109
Dollars to Universities	24,383	44,293	1,832	2,683	1,016	74,207
Dollars to FFRDCS	1,644	0	1,616	0	0	3,260
Dollars to Other Non-Profits	1,188	8,704	0	0	0	9,892