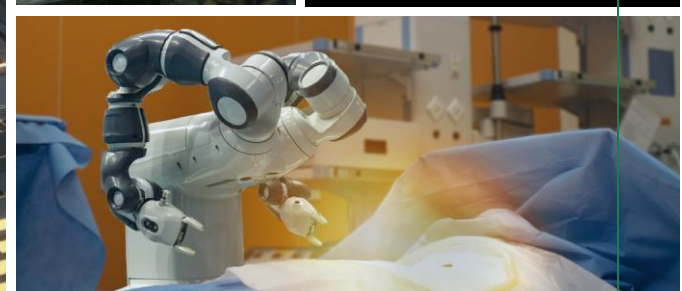
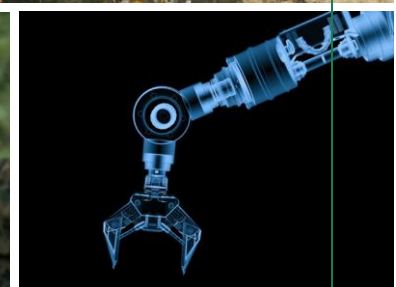
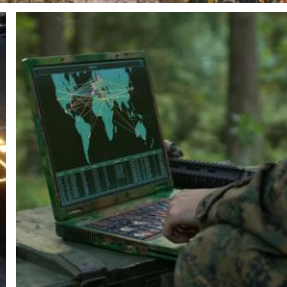
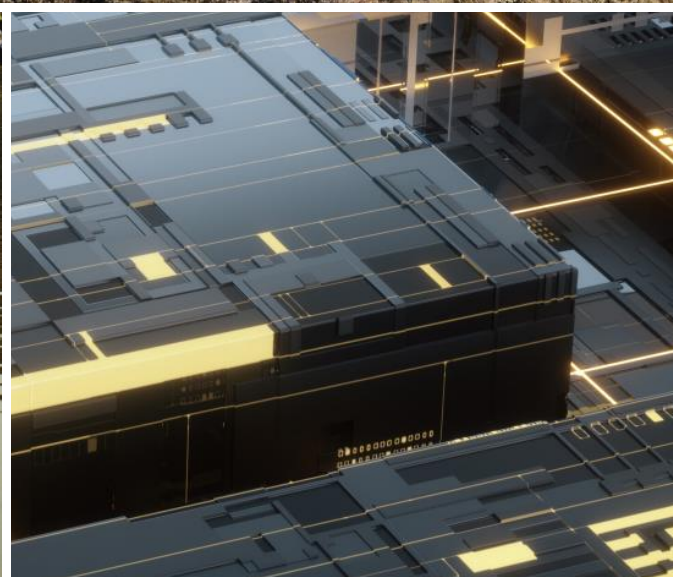


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U.S. Small Business
Administration

i | Message from the Associate Administrator



It is my honor as the Associate Administrator of the Office of Investment and Innovation at the U.S. Small Business Administration (SBA) to present this Fiscal Year 2017 Annual Report on the Small Business Innovation Research (SBIR) program and the Small Business Technology Transfer (STTR) program. SBA remains committed in its role to provide effective and efficient oversight of the SBIR and STTR programs.

This report provides analysis on all aspects of the SBIR and STTR programs and highlights the achievements of the programs, as well as the funding provided by each of the eleven participating agencies. The innovation and support made possible by the SBIR and STTR programs continues to address the mission-critical needs of the Federal Government. In Fiscal Year 2017, the SBIR and STTR programs' eleven participating agencies obligated more than \$3.04 billion through Phase I and II awards. Total obligations increased 15% from Fiscal Year 2016, translating into an additional \$400 million of funding for small businesses. The funding and assistance provided through these programs enabled thousands of small businesses to compete for non-dilutive funding to develop and commercialize new technologies.

As the SBA implements President Trump's pro-business policies, America's small businesses benefit from the strong economic environment to invest in the overall growth of their businesses by hiring more people and increasing wages and benefits. These opportunities are an investment in our nation's future prosperity and assist in setting America apart as the leader in innovation on the world stage.

It is a privilege for me to play a part in SBA's role of assisting entrepreneurs with obtaining access to the capital they need to succeed while upholding SBA's responsibility of delivering value to the taxpayers of America.

Sincerely,

A handwritten signature in blue ink that reads "Joe Shepard". The signature is fluid and cursive.

A. Joseph Shepard
Associate Administrator
U.S. Small Business Administration



ii | Executive Summary

This report provides a detailed breakdown of how participating agencies obligated \$2.67 billion of SBIR and \$369 million of STTR funding in Fiscal Year 2017 (FY17). SBA analyzed data across the 11 participating agencies, states, program phases, firm types, and other categories as directed by the Small Business Act (SBAAct).

One of SBA's primary responsibilities is determining whether an agency meets the minimum spending requirements for the SBIR and STTR programs, which are established in sections 9(f) and (n) of the SBAAct. SBA's analysis of agency compliance with the minimum spending requirement is found in Section 9. In this section of the report, SBA analyzed data from the 10 Civilian Agencies and 11 DoD Components (Components). Separating the data provides increased visibility into the DoD's SBIR and STTR (SBIR/STTR) programs, which is important as they represent over 40% of the funds obligated by all participating agencies. However, SBA did not receive the required Methodology Report from two of the Components. Furthermore, SBA found several Civilian Agencies and DoD Components not in compliance with the minimum spending requirement based on the exemptions and extramural budget calculation. Section 9 details SBA's analysis of the minimum spending requirement compliance for each Participating Agency and Component.

Over the last two years, SBA focused on solutions to ensure agencies could upload and verify data in an accurate and cost-effective manner. This focus enabled several breakthroughs, and the data integrity captured by the FY17 report is a testament to those improvements. SBA will continue working closely with the 11 participating agencies on data submissions, as well as to coordinate outreach, provide training, share best practices, and increase program awareness.

This report measures a multitude of factors, as well as the variance between agencies. Some of the variance is the product of differences at the agency enterprise level and others originate from approaches on running the program. SBA is committed to evaluating these differences and encouraging agencies to adopt the best practices. Data from this report is crucial to assessments such as the time to award or time between Phase I and II. The National Defense Authorization Act for Fiscal Year 2019 (FY19) directed GAO to study proposal selection and award timelines. The Department of Energy, National Science Foundation, and Air Force all implemented process changes which became best practices. Air Force enacted one of the more dramatic changes in FY19, moving to a pitch day competition process for some Phase I awards which culminated in a one-page Phase I contract. This has not only greatly reduced the timelines to award, but also increased participation by companies which had not previously worked with the federal government due to concerns over the proposal submission, contract award, and payment processes.

The SBIR/STTR program continues to evolve and remain the primary source of early funding to thousands of highly successful small businesses. Many of these awardees leverage opportunities in the program to gradually become large businesses and some have become industry leaders. The recent economic impact studies on the Air Force, Navy, and National Cancer Institute demonstrate that the program generates one of the highest returns on research and development (R&D) dollars for the federal government. These studies and much more can be found on [SBIR.gov](https://www.sbir.gov).

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1 | SBIR and STTR Data

SBA provides oversight for the SBIR/STTR programs, serving as the coordinating agency for all Federal agencies with extramural budgets for research or research and development (R/R&D) in excess of the expenditures established in the SBA Act (Participating Agencies). This includes providing policy guidance, monitoring agency performance, analyzing program data, and reporting on the program to Congress. SBA administers the program with maximum flexibility, allowing the Participating Agencies to tailor SBIR/STTR activities to best address unique agency missions, cultures, and needs.

SBIR/STTR Business Intelligence Platform – Housed at www.SBIR.gov

SBIR.gov serves as the central portal for accessing all award and performance information on the SBIR/STTR programs. SBIR.gov houses SBA's SBIR/STTR database and serves as a platform for users to assess program information. Participating Agencies are required to provide the following through SBIR.gov:

- **Solicitations.** Agencies are responsible for posting SBIR and STTR solicitations to SBIR.gov within 5 business days of the solicitation open date. Not all agencies provide this information in accordance with the requirement. SBA is working with the agencies on addressing this issue.
- **Applications.** All SBIR and STTR proposals received during the reporting cycle must be uploaded through SBIR.gov. SBA continues to work with the agencies to collect unawarded proposal coversheet data.
- **Awards.** Information required by statute on all awards obligated during the reporting cycle must be uploaded through SBIR.gov. Not all agencies provide this information in a timely manner. SBA is working with the agencies on addressing this issue.
- **Annual Report.** By March 15th, agencies are required to upload to SBIR.gov all SBIR and STTR activities for the previous fiscal year.
- **Commercialization.** Company-specific and proprietary information collected from all SBIR and STTR awardees and agencies on all award commercialization efforts is uploaded through SBIR.gov.

Table 1: SBIR and STTR Annual Report Submission History by Agency Size

Agency	First Submission Date*	Days (Early / Late†)	Final Submission Date	Days (Early / Late†)
DoD**	4/25/2018	+41	12/19/2018	+279
HHS	3/21/2018	+6	3/21/2018	+6
DOE	3/15/2018	0	3/15/2018	0
NSF	3/15/2018	0	3/15/2018	0
NASA	3/15/2018	0	3/15/2018	0
DHS	3/14/2018	-1	3/14/2018	-1
ED	3/12/2018	-3	3/12/2018	-3
USDA	3/15/2018	0	3/15/2018	0
DOT	3/15/2018	0	3/15/2018	0
EPA	3/15/2018	0	3/15/2018	0
DOC	3/15/2018	0	3/15/2018	0

* The First Submission Date is the point when the data was communicated to have been complete and accurate. For DoD their submission was found to be missing a large amount of data. DoD then emailed their entire awards submission multiple times, though still not a complete version. DoD sent an acceptable dataset on 12/19/2018. Please see Section 9 for additional information

† (-) early submission; (0) on time submission; (+) late submission

2 | Small Business Innovation Research (SBIR) Program Overview

The SBIR Program is a highly competitive program that encourages U.S. small businesses to engage in Federal Research/Research and Development (R/R&D) that has the potential for commercialization. Through a competitive awards-based program, SBIR enables small businesses to explore their technological potential and provides the incentive to profit from the commercialization. By including qualified small businesses in the Federal R/R&D arena, high-tech innovation is stimulated and the U.S. gains entrepreneurial spirit by encouraging participation by women and socially and economically disadvantaged persons as it meets its specific R/R&D needs. This Fiscal Year 2017 (FY17) Annual Report provides comprehensive summary data and performance results for the SBIR and STTR Programs, aggregating information as reported to the SBA from the 11 federal agencies participating in the SBIR and the 5 federal agencies participating in the Small Business Technology Transfer (STTR) Programs (Participating Agencies).

SBIR Mission and Program Goals

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 goals of the SBIR Program are to:

- Stimulate technological innovation;
- Meet Federal Government R/R&D needs;
- Foster and encourage participation in innovation and entrepreneurship by women and socially and economically disadvantaged persons; and
- Increase private-sector commercialization of innovations derived from federal R/R&D funding.

Participating Agencies

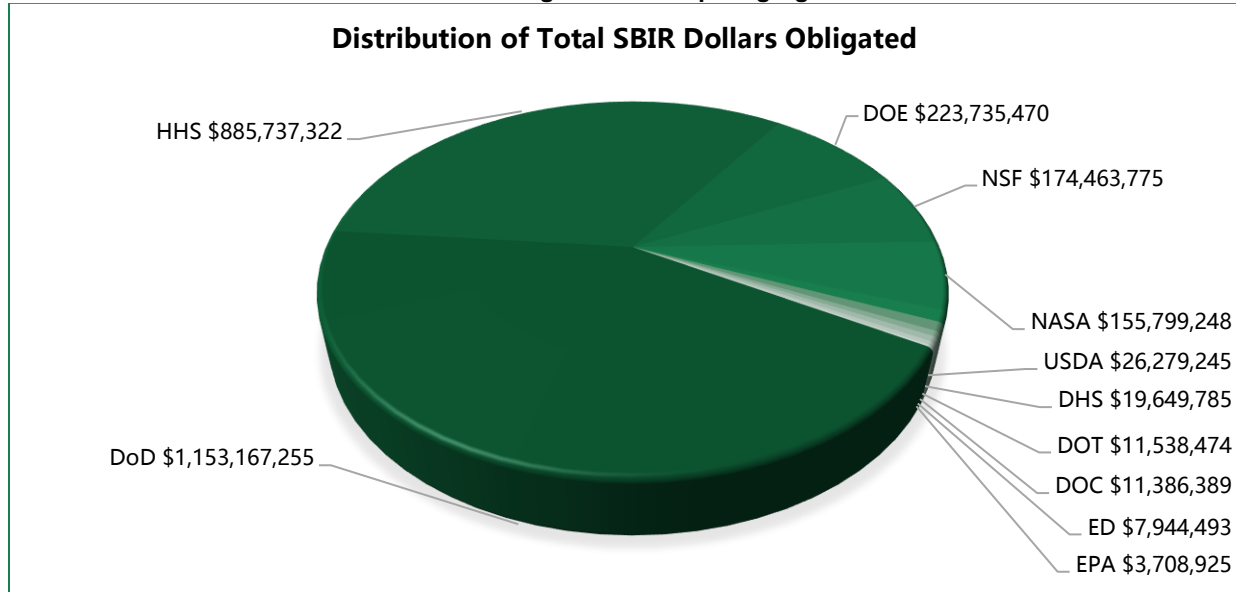
The SBAct requires the SBIR Participating Agencies to allocate a certain percentage of its extramural R/R&D budget to fund small business R/R&D activities through the SBIR Program. For FY17, federal agencies with extramural R/R&D budgets exceeding \$100 million were required to obligate a minimum of 3.2% of its FY17 extramural R/R&D budgets for SBIR awards to small businesses. Each agency administers its own individual program within guidelines established by Congress and the Policy Directives established by SBA. These agencies designate R/R&D topics in the solicitations and accept proposals from eligible small businesses. SBIR Phase I and Phase II awards are made on a competitive basis after proposal evaluation. Section 9(e)(1) of the SBAct defines extramural budget as “the sum of the total obligations minus amounts obligated for such activities by employees of the agency in or through government-owned, government-operated facilities, except that 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, and except that for the Agency for International Development it shall not include amounts obligated solely for general institutional support of international research centers or for grants to foreign countries.” The following 11 federal agencies participate in the SBIR Program (Participating Agencies):

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

FY17 SBIR Program Summary

In FY17, Participating Agencies' total SBIR obligations amounted to \$2,673,410,381, of which \$2,038,904,577 (76%) were attributed to DoD and HHS. The chart below shows the distribution of these funds by agency.

Chart 1: Distribution of Total SBIR Dollars Obligated - Participating Agencies



3 | Small Business Technology Transfer (STTR) Program Overview

The STTR Program expands funding opportunities in the federal innovation R/R&D arena. The unique feature of the STTR Program is the requirement for a small business to formally partner with a research institution in Phase I and Phase II.

STTR Mission and Program Goals

The mission of the STTR 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 goals of the STTR Program are to:

- Stimulate technological innovation;
- Foster technology transfer through cooperative R/R&D between small businesses and research institutions;
- Foster and encourage participation in innovation and entrepreneurship by women and socially and economically disadvantaged persons; and
- Increase private-sector commercialization of innovations derived from federal R/R&D.

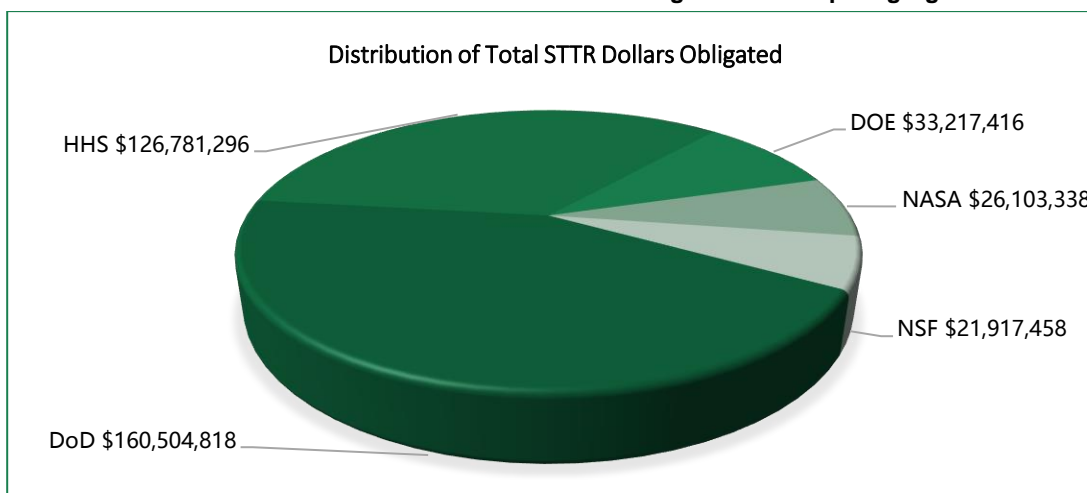
Participating Agencies

The SBAct requires STTR Participating Agencies with extramural R/R&D budgets exceeding \$1 billion to obligate a minimum of 0.45% of its extramural R/R&D budget to fund small business R/R&D activities through the STTR Program. In FY17, the DoD, DOE, HHS, NASA and NSF met this criterion. Each agency administers its own individual program within guidelines established by Congress and the SBA Policy Directive. These agencies designate R/R&D topics and accept proposals from small businesses working in cooperation with allowable federally funded research and development centers and non-profit research institutions.

FY17 STTR Program Summary

In FY17, Participating Agencies' total STTR obligations amounted to \$368,524,326, of which \$287,286,114 (78%) were attributed to DoD and HHS. The chart below shows the distribution of these funds by agency.

Chart 2: Distribution of Total STTR Award Dollars Obligated - Participating Agencies



4 | SBIR/STTR Programs are Structured in Three Phases

Phase I: Feasibility-Related Experimental Study or Theoretical Research/Research and Development

The objective of Phase I is to determine the scientific and technical merit, feasibility, and commercial potential of the proposed R/R&D efforts and to determine the quality of performance of the small business awardee prior to providing further federal support in Phase II. SBIR/STTR Phase I awards generally range from \$100,000 to \$225,000 for a 6 to 12-month period of performance.

Phase II: Continued Research/Research and Development Effort

The objective of Phase II is to continue the R&D efforts initiated in Phase I. 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. SBIR/STTR Phase II awards generally range from \$750,000 to \$1,500,000 for a two-year period of performance. Agencies are authorized to fund a company with a Phase II technology in total for up to 6 years and more than \$2,250,000 in awards if that company is selected for a Phase II, Sequential Phase II (15 U.S.C § 638 ff), and an award under the Commercialization Assistance Pilot Program (15 U.S.C § 638 uu).

Phase III: Commercialization Effort

Phase III refers to work that derives from, extends, or completes an effort made through SBIR/STTR-funded Phase I or II R/R&D but is funded by sources other than the SBIR/STTR Programs. To the greatest extent practicable, federal entities, including government prime contractors pursuing R/R&D or production developed under the SBIR/STTR Programs shall issue Phase III awards to the SBIR/STTR awardee that developed the technology. The competition for SBIR/STTR Phase I and Phase II awards satisfies competition requirements for the Armed Services Procurement Act, the Federal Property and Administrative Services Act, and the Competition in Contracting Act, allowing federal agencies to issue direct or sole-source awards to SBIR/STTR awardees for Phase III efforts.

5 | SBIR Program – Civilian Agency Summary Data

The FY17 Annual Report is the second time the SBIR Program Agency Summary Data is reported in separate sections for Civilian Agencies and the Department of Defense. Moreover, DoD data is separated by DoD Service Agencies and Components. Tables 2 and 3 provide proposal and award summary data from each of the 10 Civilian Agencies. This data was submitted by the agencies through the SBA Annual Report submission site and further analyzed to develop percent ratios for many of the reported fields. The agencies' validated the data, however, SBA identified data verification challenges and continues to work with agencies on improving the accuracy of all reported data. Details on the SBA analysis are provided in Section 9 of this report.

Table 2: SBIR Program – Civilian Agency Summary Data – HHS, DOE, NASA, NSF, and USDA

Phase	Report Field	HHS	DOE	NASA	NSF	USDA
Phase I	Solicitations Released (#)	24	6	1	2	1
	Proposals Received (#) / Selection Rate (%) [*]	5,163 / 14%	1,360 / 21%	1,461 / 23%	2,201 / 11%	525 / 17%
	New Phase I Awards (#)	738	292	338	239	88
	Obligations for New Phase I Awards (\$)	\$186,926,143	\$48,565,697	\$41,818,050	\$53,622,846	\$8,703,225
	Obligations on Prior-Year Phase I Awards (\$)	\$25,756,115	\$0	\$0	\$164,958	\$0
Phase II	Proposals Received (#) / Selection Rate (%)	687 / 62%	360 / 47%	326 / 40%	246 / 43%	57 / 46%
	New Phase II Awards (Initial + Second) (#)	427	170	132	107	26
	"Second Phase II" Awards (subset) (#)	26	43	0	0	0
	Obligations for New Phase II Awards (\$)	\$346,868,066	\$171,561,207	\$98,756,276	\$76,411,778	\$15,482,865
	Obligations for "Second Phase II" Awards (subset) (\$)	\$25,338,078	\$34,244,895	\$0	\$0	\$0
	Obligations on Prior-Year Phase II Awards (\$)	\$283,842,278	\$0	\$5,026,485	\$33,937,679	\$0
	Total Phase II Awards (\$) †	\$0	\$2,026,522	\$8,939,201	\$0	\$0
Admin	Total Obligations for Discretionary Technical Assistance (DTA) (\$)	\$2,045,551	\$3,535,000	\$130,000	\$5,372,298	\$729,537
	Agency Provided DTA (subset) (\$)	\$1,990,551	\$2,690,000	\$0	\$4,862,572	\$729,537
	Small Business funded DTA (subset) (\$) ‡	\$55,000	\$845,000	\$130,000	\$509,726	\$0
	Administrative Funding Pilot (AFPP) (3%) (\$)	\$13,175,531	\$918,566	\$4,976,000	\$5,463,942	\$1,363,618
	Civilian CRP Pilot (\$)	\$27,178,638	\$0	\$5,222,437	\$0	\$0
Totals§	Total SBIR Obligations (\$)	\$885,737,322	\$223,735,470	\$155,799,248	\$174,463,775	\$26,279,245
	Amount of Extramural R/R&D reported to SBA minus Exemptions (\$)	\$27,455,557,340	\$6,903,792,000	\$3,590,595,217	\$5,440,330,000	\$854,345,150
	Percent of SBIR Obligations as determined using Agency-provided data (%)	3.23%	3.24%	4.34%	3.21%	3.08%

^{*} The selection rate is an estimate. For FY17 awards, the proposals received were from both FY16 and FY17. Similarly, some FY18 awards will be from FY17 proposals.

† Agencies cannot use SBIR/STTR funding for Phase III awards and these dollars are not part of Total SBIR Obligations. This table includes Phase III dollars under the SBIR and STTR programs.

‡ These are DTA funds provided by the agency directly to the awardee through grant or contract and thus already included in PI/PII obligation award amounts.

§ Section 9 further describes SBA's validation process for extramural dollars and obligations as reported to SBA and NSF NCSES.

Table 3: SBIR Program – Civilian Agency Summary Data - DHS, DOC, DOT, ED, and EPA

Phase	Report Field	DHS	DOC	DOT	ED	EPA	SBIR TOTAL All Civilian Agencies
Phase I	Solicitations Released (#)	1	2	1	1	1	40
	Proposals Received (#) / Selection Rate (%)	56 / 29%	195 / 16%	106 / 13%	237 / 5%	61 / 26%	11,365 / 16%
	New Phase I Awards (#)	16	31	14	11	16	1,783
	Obligations for New Phase I Awards (\$)	\$1,747,405	\$3,456,705	\$1,854,509	\$1,647,674	\$1,599,468	\$349,941,722
	Obligations on Prior-Year Phase I Awards (\$)	\$0	\$0	\$0	\$0	\$0	\$25,921,073
Phase II	Proposals Received (#) / Selection Rate (%)	38 / 58%	37 / 57%	* 15 / 100%	9 / 78%	9 / 67%	1,784 / 52%
	New Phase II Awards (Initial + Second) (#)	22	21	15	7	6	933
	"Second Phase II" Awards (subset) (#)	3	0	2	0	0	74
	Obligations for New Phase II Awards (\$)	\$14,959,768	\$7,495,729	\$9,059,274	\$6,296,819	\$1,799,937	\$748,691,719
	Obligations for "Second Phase II" Awards (\$)	\$2,249,859	\$0	\$999,768	\$0	\$0	\$62,832,600
	Obligations on Prior-Year Phase II Awards (\$)	\$2,295,950	\$0	\$375,000	\$0	\$199,520	\$325,676,912
Phase III	Total Phase III Awards (\$) †	\$20,383,261	\$396,766	\$499,958	\$0	\$198,197	\$32,443,905
Admin	Total Obligations for Discretionary Technical Assistance (DTA) (\$)	\$253,431	\$193,800	\$135,000	\$0	\$110,000	\$12,504,617
	Agency Provided DTA (subset) (\$)	\$253,431	\$193,800	\$130,000	\$0	\$110,000	\$10,959,891
	Small Business funded DTA (subset) (\$) ‡	\$0	\$0	\$5,000	\$0	\$0	\$1,544,726
	Administrative Funding Pilot (AFPP) (3%) (\$)	\$0	\$240,155	\$114,691	\$0	\$0	\$26,252,503
	Civilian CRP Pilot (\$)	\$393,231	\$0	\$0	\$0	\$0	\$32,794,306
Totals§	Total SBIR Obligations (\$)	\$19,649,785	\$11,386,389	\$11,538,474	\$7,944,493	\$3,708,925	\$1,520,243,126
	Amount of Extramural R/R&D reported to SBA minus Exemptions (\$)	\$401,793,643	\$434,093,000	\$253,519,000	\$246,082,497	\$111,349,800	\$45,691,457,647
	Percent of SBIR Obligations as determined using Agency-provided data (%)	4.89%	2.62%	4.55%	3.23%	3.33%	3.33%

* For the DOT FY17 awards, the proposals received were from both FY16 and FY17. DOT only received 5 Phase II proposals in FY17. However, since a selection rate cannot exceed 100%, the DOT proposal number was set equal to the number of awards.

† Agencies cannot use SBIR/STTR funding for Phase III awards and these dollars are not part of Total SBIR Obligations. This table includes Phase III dollars under the SBIR and STTR programs.

‡ These are DTA funds provided by the agency directly to the awardee through grant or contract and thus already included in PI/PII obligation award amounts, except for DOT DTA, which is not already included in PI/PII obligation award amounts.

§ Section 9 further describes SBA's validation process for extramural dollars and obligations as reported to SBA and NSF NCSES.

SBIR Program Award Distribution - Civilian Agencies

In FY17, the ten participating Civilian Agencies' total SBIR obligations amounted to \$1,520,243,126 of which 58% were attributed to HHS. Over 37% of total dollars were attributed to DOE, NASA, and NSF, with the remaining 5% of total FY17 SBIR award dollars obligated by USDA, DHS, DOT, DOC, ED, and EPA. The chart below shows the distribution of these funds by agency.

Chart 3: Distribution of Total SBIR Dollars Obligated - Civilian Agencies

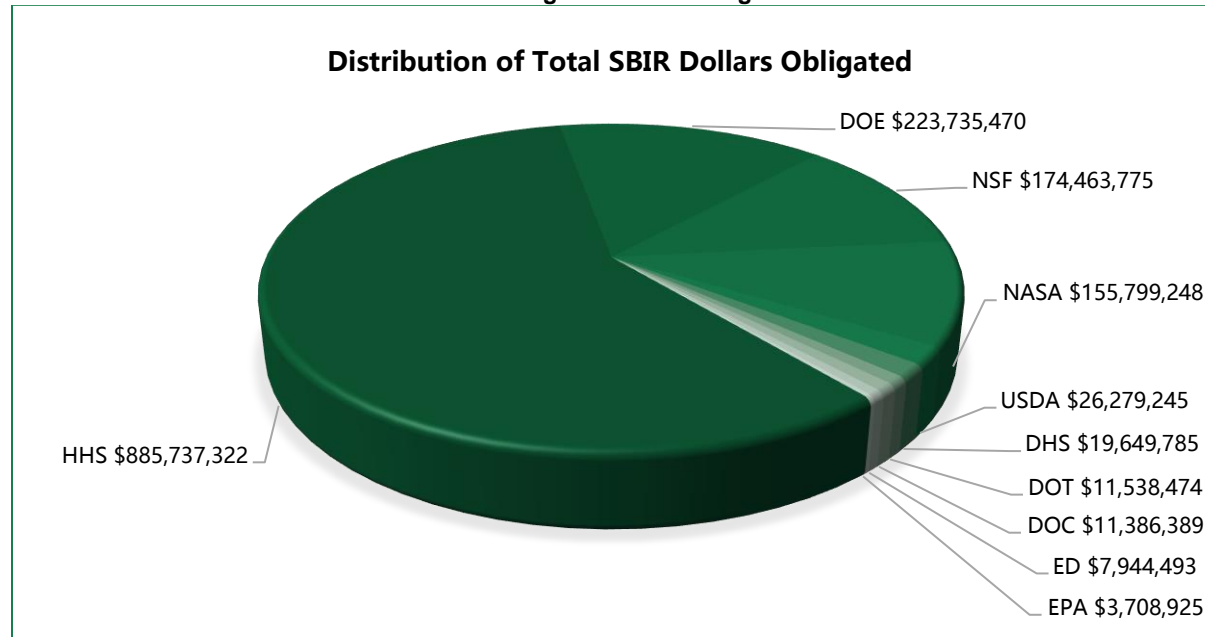


Table 4: SBIR Program Performance Snapshot - Civilian Agencies

SBIR Summary Statistics	Civilian Agencies
<ul style="list-style-type: none"> \$1,098,633,441 in 2,716 new Phase I and Phase II awards \$349,941,722 in 1,783 new Phase I awards \$25,921,073 in prior-year Phase I awards \$748,691,719 in 933 new Phase II awards \$325,676,912 in prior-year Phase II awards 16% of Phase I proposals received awards 52% of Phase II proposals received awards \$133,459,863 (12%) of new SBIR obligations, went to Women-owned Small Businesses \$51,716,595 (5%) of new SBIR obligations, went to Socially and Economically Disadvantaged Small Businesses \$33,429,414 (3%) of new SBIR obligations, went to HUBZone-Certified Small Businesses 	

Congress directs the SBIR Program to foster and encourage participation in innovation and entrepreneurship by women and socially and economically disadvantaged persons. The following tables and charts summarize SBIR participation across Participating Agencies by women-owned small businesses (WOSB); socially and economically disadvantaged small businesses (SDB); and small businesses located in Historically Underutilized Business Zones (HUBZone). For definitions of WOSB see the Policy Directive § 3(ss), for SDB see § 3(ll) and for HUBZone see 15 USC § 632(p)(3).

Table 5: SBIR Program - Civilian Agency Summary Data by Socioeconomic Group - HHS, DOE, NASA, NSF, and USDA

Socio Group	Phase	Report Field	HHS		DOE		NASA		NSF		USDA	
			Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
WOSB	Phase I	New Proposals	735	14%	179	13%	150	10%	383	17%	81	15%
		New Awards	94	13%	28	10%	31	9%	35	15%	11	13%
		New Obligations	\$21,442,016	11%	\$5,282,812	11%	\$3,790,562	9%	\$7,912,927	15%	\$1,064,409	12%
	Phase II	New Proposals	101	15%	31	9%	33	10%	47	19%	6	11%
		New Awards	54	13%	16	9%	14	11%	18	17%	3	12%
		New Obligations	\$42,348,844	12%	\$15,963,650	9%	\$10,516,820	11%	\$12,474,965	16%	\$1,779,368	11%
SDB	Phase I	New Proposals	388	8%	131	10%	172	12%	398	18%	37	7%
		New Awards	35	5%	18	6%	28	8%	28	12%	3	3%
		New Obligations	\$9,680,074	5%	\$2,838,123	6%	\$3,449,076	8%	\$6,297,322	12%	\$269,067	3%
	Phase II	New Proposals	29	4%	10	3%	34	10%	27	11%	2	4%
		New Awards	7	2%	5	3%	9	7%	8	7%	0	0%
		New Obligations	\$5,735,375	2%	\$5,499,388	3%	\$6,726,367	7%	\$5,708,373	7%	\$0	0%
HUB Zone	Phase I	New Proposals	2	0%	90	7%	41	3%	151	7%	50	10%
		New Awards	2	0%	22	8%	8	2%	13	5%	7	8%
		New Obligations	\$450,000	0%	\$3,491,480	7%	\$988,258	2%	\$2,924,745	5%	\$699,532	8%
	Phase II	New Proposals	2	0%	25	7%	2	1%	28	11%	5	9%
		New Awards	2	0%	10	6%	2	2%	12	11%	3	12%
		New Obligations	\$1,749,484	0%	\$10,506,667	6%	\$1,499,956	2%	\$8,121,647	11%	\$1,800,000	12%

Table 6: Civilian Agency Summary Data by Socioeconomic Group – DHS, DOC, DOT, ED, and EPA

Socio Group	Phase	Report Field*	DHS		DOC		DOT		ED		EPA		SBIR Civilian Total	
			Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
WOSB	Phase I	New Proposals	16	29%	32	16%	23	22%	80	34%	8	13%	1,687	15%
		New Awards	2	13%	4	13%	3	21%	5	45%	2	13%	215	12%
		New Obligations	\$199,713	11%	\$438,166	13%	\$399,998	22%	\$749,969	46%	\$200,000	13%	\$41,480,572	12%
	Phase II	New Proposals	6	16%	4	11%	2	40%	3	33%	2	22%	235	13%
		New Awards	3	14%	4	19%	4	27%	2	29%	2	33%	120	13%
		New Obligations	\$2,249,181	15%	\$1,498,018	20%	\$2,749,221	30%	\$1,799,224	29%	\$600,000	33%	\$91,979,291	12%
SDB	Phase I	New Proposals	5	9%	35	18%	26	25%	34	14%	7	11%	1,233	11%
		New Awards	1	6%	3	10%	3	21%	0	0%	2	13%	121	7%
		New Obligations	\$99,983	6%	\$298,177	9%	\$449,987	24%	\$0	0%	\$199,671	12%	\$23,581,480	7%
	Phase II	New Proposals	4	11%	4	11%	2	40%	0	0%	0	0%	112	6%
		New Awards	1	5%	3	14%	6	40%	0	0%	0	0%	39	4%
		New Obligations	\$746,756	5%	\$998,193	13%	\$2,720,663	30%	\$0	0%	\$0	0%	\$28,135,115	4%
HUB Zone	Phase I	New Proposals	1	2%	3	2%	2	2%	17	7%	3	5%	360	3%
		New Awards	0	0%	2	6%	0	0%	0	0%	0	0%	54	3%
		New Obligations	\$0	0%	\$197,677	6%	\$0	0%	\$0	0%	\$0	0%	\$8,751,692	3%
	Phase II	New Proposals	0	0%	4	11%	0	0%	0	0%	0	0%	66	4%
		New Awards	0	0%	3	14%	0	0%	0	0%	0	0%	32	3%
		New Obligations	\$0	0%	\$999,968	13%	\$0	0%	\$0	0%	\$0	0%	\$24,677,722	3%

* The number of awards may be larger than the number of proposals, as some FY17 awards were made to proposals received in FY16 but only FY17 proposals received are reported here.

Chart 4: Percent of Phase I SBIR Dollars to Socioeconomic Groups - Civilian Agencies

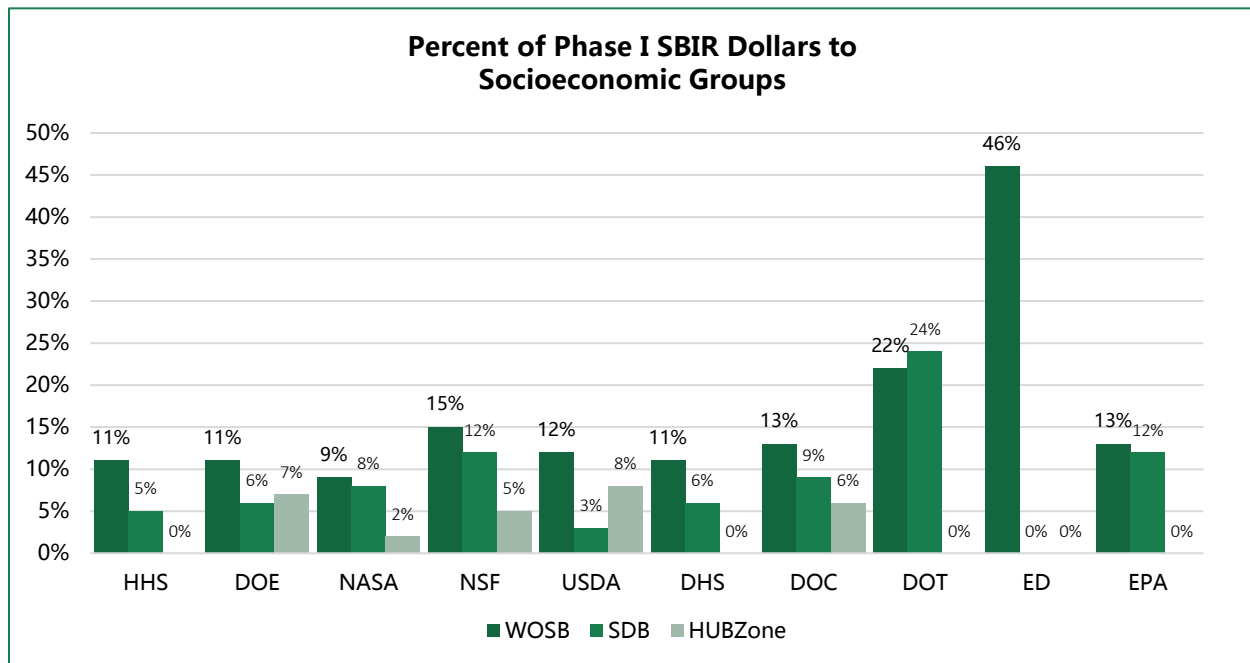
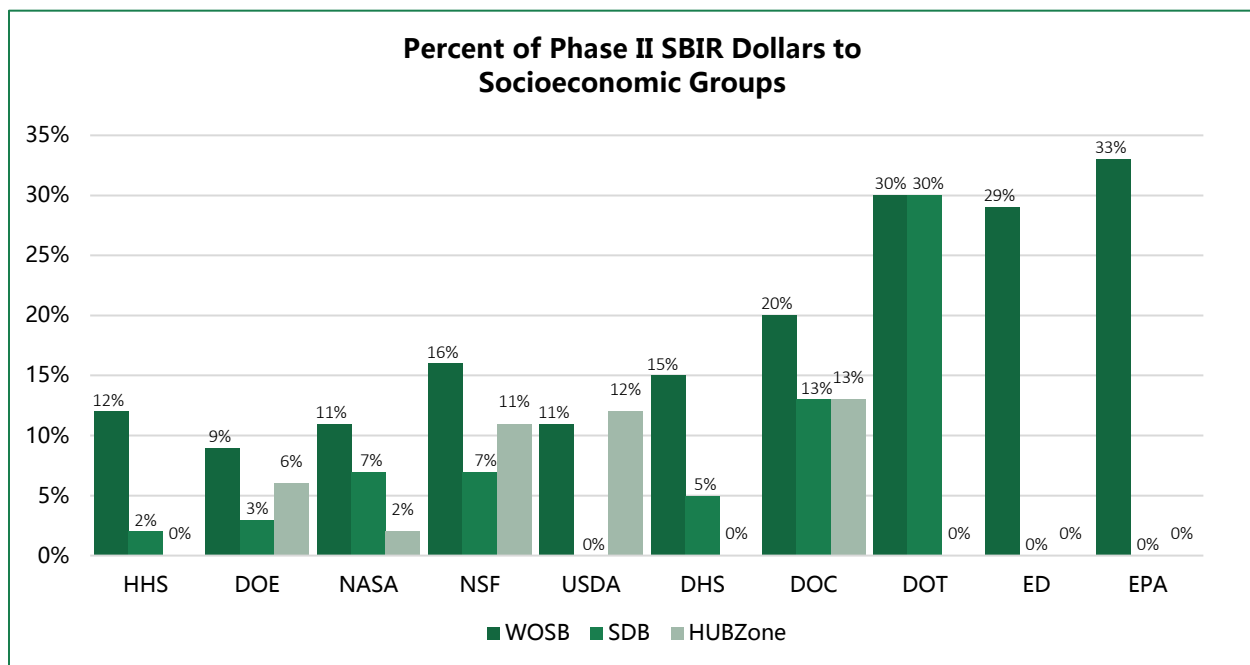


Chart 5: Percent of Phase II SBIR Dollars to Socioeconomic Groups - Civilian Agencies



6 | SBIR Program – DoD Summary Data

To facilitate the review of the FY17 data collected on the DoD SBIR Program and present a more comprehensive reflection of individual DoD Component program performance, the DoD data is organized in Table 7 by DoD Service Agencies (Navy, Air Force, and Army) and the Fourth Estate (DARPA, MDA, DHA, CBD, SOCOM, DTRA, DLA, DMEA, and OSD). This data was submitted by the DoD through the SBA Annual Report submission site. SBA requires the data included in this report be a summation of individual awards uploaded to SBA by the DoD, and that this data match what is available on SBIR.gov. SBA, the DoD, and the Components identified errors which are discussed in detail in Section 9.

Table 7: SBIR Program - DoD Summary Data – Service Agencies and Fourth Estate

Phase	Report Field	Navy	Air Force	Army	Fourth Estate	DoD Total Reported
Phase I	Solicitations Released (#)	3	3	3	3	3*
	Proposals Received (#) / Selection Rate (%)	1,654 / 27%	1,567 / 19%	2,306 / 14%	2,124 / 17%	7,653 / 19%
	New Phase I Awards (#)	442	305	331	362	1,440
	Obligations for New Phase I Awards (\$)	\$52,059,535	\$45,557,541	\$32,283,523	\$45,461,682	\$175,362,281
	Obligations on Prior-Year Phase I Awards (\$)	\$8,790,056	\$0	\$5,880,754	\$2,101,314	\$16,772,124
Phase II	Proposals Received (#) / Selection Rate (%)	250 / 99%**	356 / 57%	304 / 74%	451 / 58%	1,361 / 69%
	New Phase II Awards (Initial + Second) (#)	247	204	224	263	938
	"Second Phase II" Awards (subset) (#)	49	32	34	34	149
	Obligations for New Phase II Awards (\$)	\$131,375,324	\$173,406,536	\$127,148,528	\$218,808,717	\$650,739,105
	Obligations for "Second Phase II" Awards (subset) (\$)	\$41,649,142	\$53,120,543	\$19,635,598	\$36,092,639	\$150,497,922
	Obligations on Prior-Year Phase II Awards (\$)	\$98,499,291	\$59,362,387	\$51,231,482	\$69,431,967	\$278,525,127
Phase III	Total Phase III Awards (For both SBIR and STTR) (\$) †	\$404,391,806	\$255,778,209	\$8,891,448	\$26,677,564	\$695,739,027
Admin	Total Obligations for Discretionary Technical Assistance (DTA) (\$)	\$49,908	\$0	\$144,908	\$359,889	\$554,705
	Agency Provided DTA (subset) (\$)	\$0	\$0	\$144,908	\$359,889	\$504,797
	Small Business funded DTA (subset) (\$) ‡	\$49,908	\$0	\$0	\$0	\$49,908
	Administrative Funding Pilot (AFPP) (3%) (\$)	\$6,962,305	\$10,021,460	\$1,500,000	\$3,921,546	\$22,405,311
	DoD 1% CRP (\$)	\$1,487,416	\$29,423	\$6,609,823	\$731,848	\$8,858,510
Totals§	Total SBIR Obligations (\$)	\$299,173,927	\$288,377,347	\$224,799,018	\$340,816,963	\$1,153,167,255
	Amount of Extramural R/R&D reported to SBA minus Exemptions (\$)	\$9,250,397,000	\$11,181,185,350	\$6,320,322,000	N/P	N/P
	Percent of SBIR Obligations as determined using DoD-provided data (%)	3.23%	2.58%	3.56%	N/P	N/P

N/P – denotes data was "not provided" to SBA; N/R – denotes data was "not required to be reported."

* This row is not a total. The DoD has three solicitations for which each branch / component can elect to participate.

** The Navy has two proposal stages. This number is for proposals that made it to the second stage.

† Agencies cannot use SBIR/STTR funding for Phase III awards and these dollars are not part of Total SBIR Obligations. Phase III dollars listed includes both SBIR and STTR programs.

‡ This is DTA funds that were provided by the agency directly to the awardee through grant or contract and thus already included in PI/PII obligation award amounts.

§ Section 9 further describes SBA's validation process for extramural dollars and obligations as reported to SBA and NSF NCSES.

SBIR Program Award Distribution - DoD Service Agencies and Fourth Estate

In FY17, DoD Service Agencies' and Fourth Estate's total SBIR obligations amounted to \$1,153,167,255 of which approximately 51% were attributed to Navy and Air Force. The chart below shows the distribution of these funds by the DoD Service Agencies and Fourth Estate.

Chart 6: Distribution of Total SBIR Dollars Obligated - DoD Service Agencies and Fourth Estate

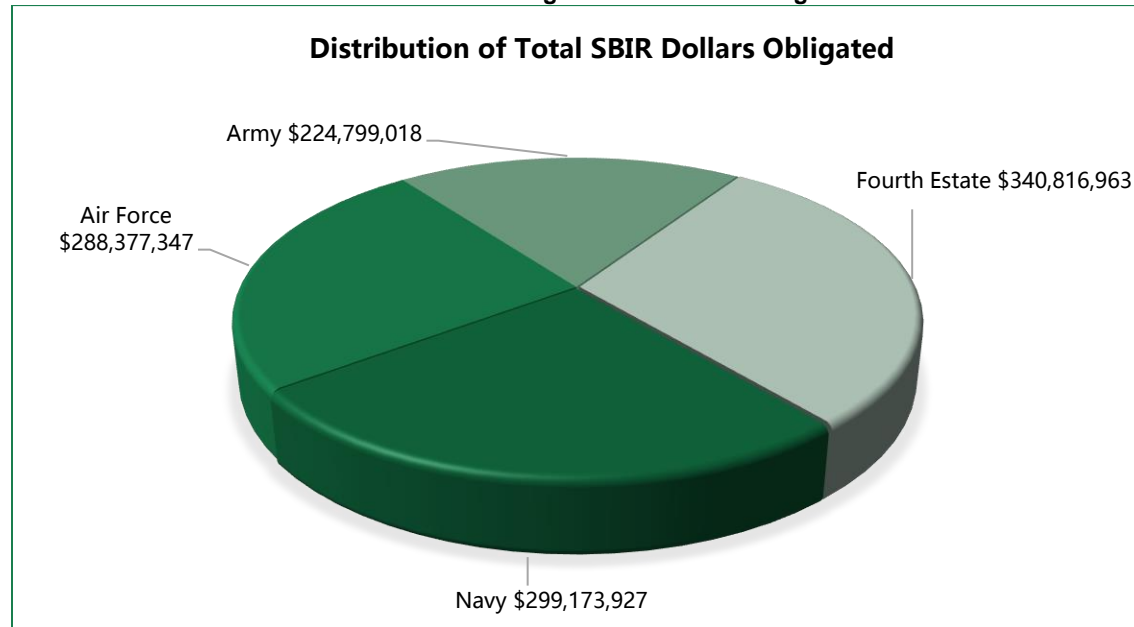


Table 8: SBIR Program Performance Snapshot - DoD Components

SBIR Summary Statistics	
•	\$826,101,386 in 2,378 new Phase I and Phase II awards
•	\$175,362,281 in 1,440 new Phase I awards
•	\$16,772,124 in prior-year Phase I awards
•	\$650,739,105 in 938 new Phase II awards
•	\$278,525,127 in prior-year Phase II awards
•	19% of Phase I proposals received awards
•	69% of Phase II proposals received awards
•	\$111,857,610 (~14%) of new SBIR obligations, went to Women-owned Small Businesses
•	\$46,699,190 (~6%) of new SBIR obligations, went to Socially and Economically Disadvantaged Small Businesses
•	\$12,425,756 (~2%) of new SBIR obligations went to HUBZone-Certified Small Businesses

Congress directs the SBIR Program to foster and encourage participation in innovation and entrepreneurship by women and socially and economically disadvantaged persons. The following tables and charts summarize SBIR participation across Participating Agencies by women-owned small businesses (WOSB); socially and economically disadvantaged small businesses (SDB); and small businesses located in Historically Underutilized Business Zones (HUBZone). For definitions of WOSB see the Policy Directive § 3(ss), for SDB see § 3(ll) and for HUBZone see 15 USC § 632(p)(3).

Table 9: SBIR Program - DoD Summary Data by Socioeconomic Group – Service Agencies and Fourth Estate

Socio Group	Phase	Report Field	Navy		Air Force		Army		Fourth Estate		DoD Total Reported	
			Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
WOSB	Phase I	New Proposals	268	16%	259	17%	348	15%	397	19%	1,272	17%
		New Awards	64	14%	57	19%	62	19%	58	16%	241	17%
		New Obligations	\$7,444,187	14%	\$8,520,478	19%	\$5,987,211	19%	\$7,396,714	16%	\$29,348,590	17%
	Phase II	New Proposals	23	9%	52	15%	54	18%	68	15%	197	14%
		New Awards	23	9%	19	9%	42	19%	35	13%	119	13%
		New Obligations	\$13,262,730	10%	\$13,483,970	8%	\$23,885,550	9%	\$31,876,770	15%	\$82,509,020	13%
SDB	Phase I	New Proposals	148	9%	186	12%	242	10%	318	15%	894	12%
		New Awards	25	6%	20	7%	29	9%	20	6%	94	7%
		New Obligations	\$3,066,078	6%	\$2,994,625	7%	\$2,982,742	9%	\$2,518,374	6%	\$11,561,820	7%
	Phase II	New Proposals	12*	5%	17	5%	26	9%	29	6%	84	6%
		New Awards	16	6%	11	5%	8	4%	15	6%	50	5%
		New Obligations	\$8,809,724	7%	\$8,282,126	5%	\$6,081,142	5%	\$11,964,380	5%	\$35,137,370	5%
HUB Zone	Phase I	New Proposals	24	1%	21	1%	43	2%	48	2%	136	2%
		New Awards	7	2%	4	1%	5	2%	6	2%	22	2%
		New Obligations	\$693,811	1%	\$598,566	1%	\$498,963	2%	\$698,048	2%	\$2,489,388	1%
	Phase II	New Proposals	2	1%	6	2%	4*	1%	9	2%	21	2%
		New Awards	0	0%	2	1%	5	2%	6	2%	13	1%
		New Obligations	\$0	0%	\$1,294,287	1%	\$3,213,977	3%	\$5,428,104	2%	\$9,936,368	2%

* The number of awards may be larger than the number of proposals, as some FY17 awards were made to proposals received in FY16 but only FY17 proposals received are reported here.

Chart 7: Percent of Phase I SBIR Dollars to Socioeconomic Groups - DoD Service Agencies and Fourth Estate

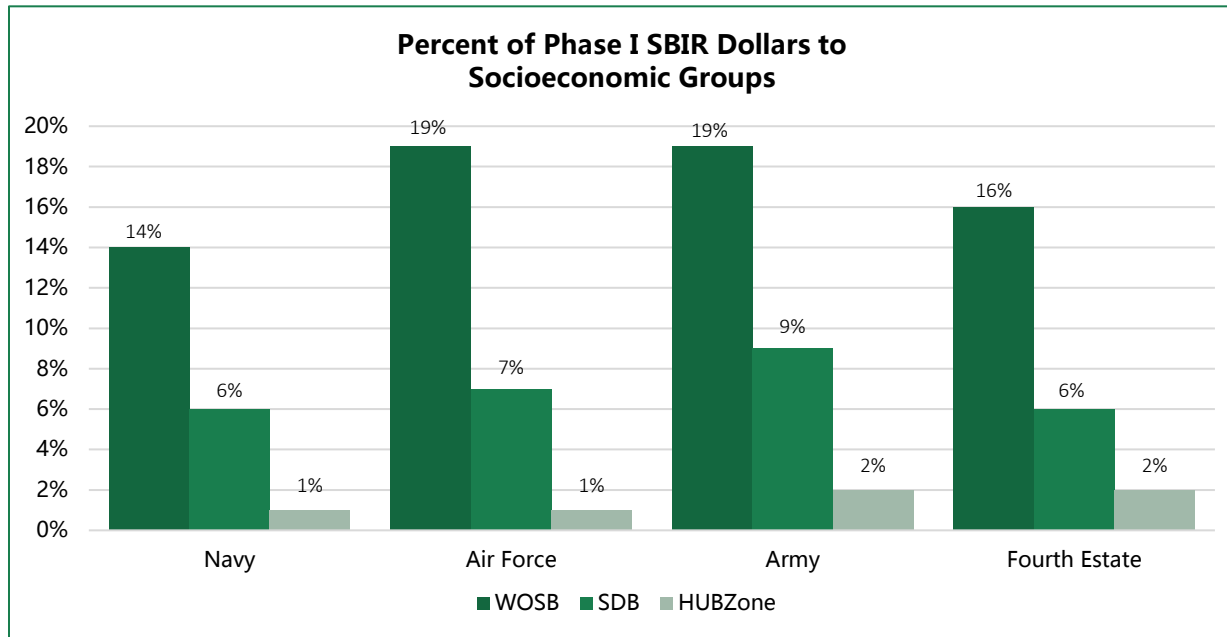
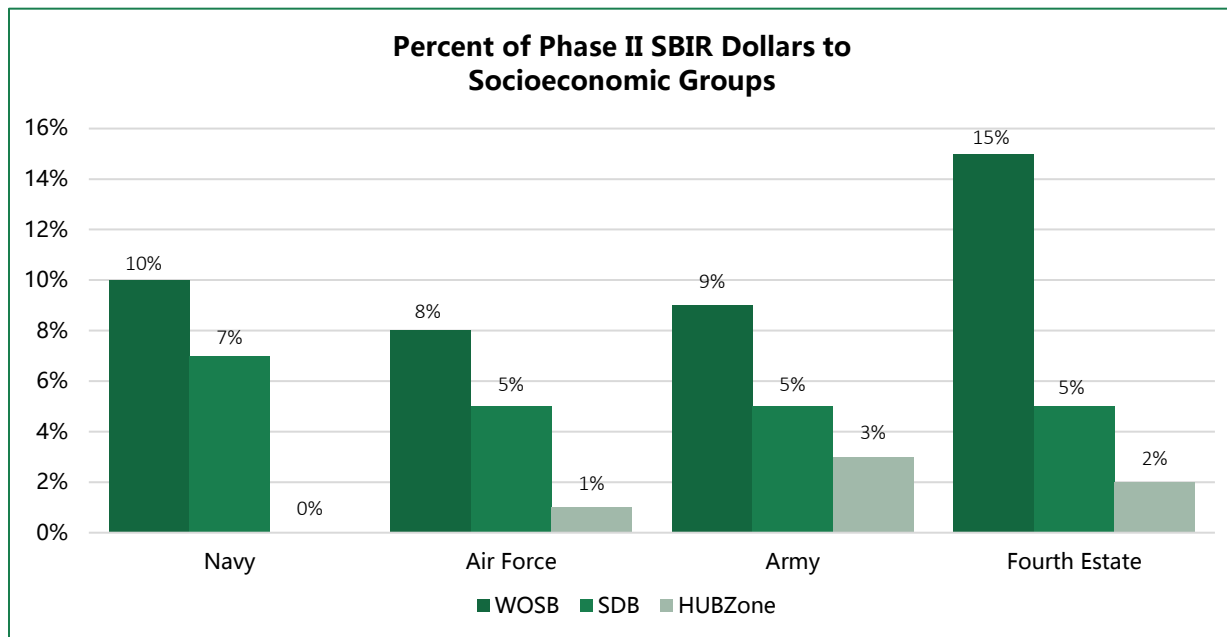


Chart 8: Percent of Phase II SBIR Dollars to Socioeconomic Groups - DoD Service Agencies and Fourth Estate



7 | STTR Program – Civilian Agency Summary Data

Table 10 provides proposal and award summary data from the four Civilian Agencies with extramural R/R&D obligations exceeding \$1 billion, thereby mandating participation in the STTR program. STTR program proposal and award summary data for the DoD is provided in Table 13. This data was submitted by the Agencies through the SBA annual report submission site, verified by SBA, and further analyzed to develop percent ratios for many of the reported fields. The agencies validated the data, however, SBA identified data verification challenges and continues to work with the agencies to improve the accuracy of all reported data. Details on the SBA analysis are provided in Section 9.

Table 10: STTR Program - Civilian Agency Summary Data - HHS, DOE, NASA, and NSF

PHASE	REPORT FIELD	HHS	DOE	NASA	NSF	STTR TOTAL All Civilian Agencies
Phase I	Solicitations Released (#)	14	4	1	2	21
	Proposals Received (#) / Proposal Selection Rate (%)	1,156 / 16%	239 / 21%	160 / 38%	448 / 12%	2,003 / 17%
	New Phase I Awards (#)	184	50	60	53	347
	Obligations for New Phase I Awards (\$)	\$45,923,159	\$8,528,689	\$7,414,125	\$11,918,917	\$73,784,890
	Obligations on Prior-Year Phase I Awards (\$)	\$4,808,507	\$0	\$0	\$466,827	\$5,275,334
	Total Obligations for Research Institutions / % of New + Prior Obligations	\$21,088,525 / 43%	\$3,112,882 / 36%	\$2,715,935 / 37%	\$4,814,181 / 39%	\$31,731,523 / 41%
Phase II	Proposals Received (#) / Proposal Selection Rate (%)	92 / 51%	37 / 68%	56 / 41%	29 / 45%	214 / 50%
	New Phase II Awards (Initial + Second) (#)	47	25	23	13	108
	"Second Phase II" Awards (subset) (#)	0	8	0	0	8
	Obligations for New Phase II Awards (\$)	\$35,876,311	\$23,466,152	\$17,271,681	\$8,593,539	\$85,207,683
	Obligations for "Second Phase II" Awards (subset) (\$)	\$0	\$6,809,969	\$0	\$0	\$6,809,969
	Obligations on Prior-Year Phase II Awards (\$)	\$37,194,847	\$962,575	\$1,417,532	\$938,175	\$40,513,129
Admin	Total Obligations for Research Institutions / % of New + Prior Obligations	\$32,946,646 / 46%	\$6,967,461 / 29%	\$5,543,644 / 30%	\$3,349,134 / 35%	\$48,806,885 / 39%
	Obligations for Discretionary Technical Assistance (DTA) (\$)	\$15,000	\$380,000	\$14,969	\$15,000	\$424,969
	Agency Provided DTA (subset) (\$)	\$0	\$260,000	\$0	\$0	\$260,000
	Small Business funded DTA (subset) *	\$15,000	\$120,000	\$14,969	\$15,000	\$164,969
Totals**	Obligations for "Phase 0" Programs (NIH only) (\$)	\$2,978,472	N/R	N/R	N/R	\$2,978,472
	Total STTR Obligations (\$)	\$126,781,296	\$33,217,416	\$26,103,338	\$21,917,458	\$208,019,508
	Amount of Extramural R/R&D reported to SBA minus Exemptions (\$)	\$27,455,557,340	\$6,903,792,000	\$3,590,595,217	\$5,440,330,000	\$43,390,274,557
	Percent of STTR Obligations as determined using Agency-provided data (%)	0.46%	0.48%	0.73%	0.40%	0.48%

* These amounts are already included in PI/PII obligation award amounts.

** Section 9 further describes SBA's validation process for extramural dollars and obligations as reported to SBA and NSF NCSES.

N/R – Not Required as only NIH has this authority

STTR Program Award Distribution - Civilian Agencies

In FY17, the Participating Civilian Agencies' total STTR obligations amounted to \$208,019,508 of which nearly 61% were attributed to HHS.

Chart 9: Distribution of Total STTR Dollars Obligated - Civilian Agencies

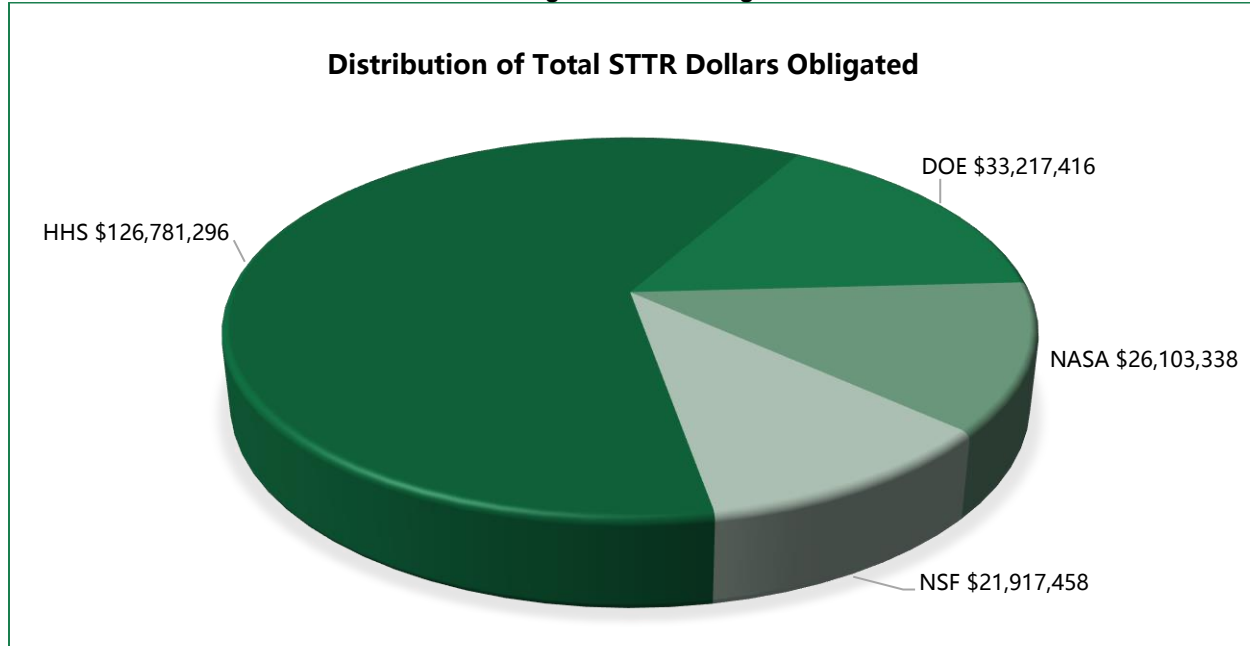


Table 11: STTR Program Performance Snapshot - Civilian Agencies

STTR Summary Statistics	
•	\$158,992,573 in 455 new Phase I and Phase II awards
•	\$73,784,890 in 347 new Phase I awards
•	\$5,275,334 in prior-year Phase I awards
•	\$85,207,683 in 108 new Phase II awards
•	\$40,513,129 in prior-year Phase II awards
•	17% of Phase I proposals received awards
•	50% of Phase II proposals received awards
•	\$80,538,408 (51%) of Total Obligations for Research Institutions
•	\$18,752,903 (12%) of new STTR obligations went to Women-Owned Small Businesses
•	\$6,892,688 (4%) of total STTR obligations, went to Socially and Economically Disadvantaged Small Businesses
•	\$10,153,412 (6%) of new STTR obligations, went to HUBZone-Certified Small Businesses

Congress directs the STTR Program to foster and encourage participation in innovation and entrepreneurship by women and socially and economically disadvantaged persons. The following tables and charts summarize STTR participation across Participating Agencies by women-owned small businesses (WOSB); socially and economically disadvantaged small businesses (SDB); and small businesses located in Historically Underutilized Business Zones (HUBZone). For definitions of WOSB see the Policy Directive § 3(ss), for SDB see § 3(ll) and for HUBZone see 15 USC § 632(p)(3).

Table 12: STTR Program - Civilian Agency Summary Data by Socioeconomic Group - HHS, DOE, NASA, and NSF

Socio Group	Phase	REPORT FIELD	HHS		DOE		NASA		NSF		Total	
			Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
WOSB	Phase I	New Proposals	158	14%	30	13%	16	10%	51	11%	255	13%
		New Awards	25	14%	8	16%	3	5%	9	17%	45	13%
		New Obligations	\$6,869,768	15%	\$1,419,427	17%	\$341,179	5%	\$2,024,739	17%	\$10,655,113	15%
	Phase II	New Proposals	11	12%	5	14%	7	13%	2	7%	25	12%
		New Awards	8	17%	1	4%	1	4%	1	8%	11	10%
		New Obligations	\$5,863,377	16%	\$984,424	4%	\$749,989	4%	\$500,000	6%	\$8,097,790	10%
SDB	Phase I	New Proposals	34	3%	39	16%	22	14%	64	14%	159	8%
		New Awards	5	3%	3	6%	8	13%	8	15%	24	7%
		New Obligations	\$1,093,275	2%	\$529,713	6%	\$964,892	13%	\$1,799,999	15%	\$4,387,879	6%
	Phase II	New Proposals	6	7%	3	8%	8	14%	1	3%	18	8%
		New Awards	0	0%	1	4%	2	9%	0	0%	3	3%
		New Obligations	\$0	0%	\$1,000,000	4%	\$1,504,809	9%	\$0	0%	\$2,504,809	3%
HUB Zone	Phase I	New Proposals	2	0%	21	9%	4	3%	37	8%	64	3%
		New Awards	2	1%	6	12%	0	0%	8	15%	16	5%
		New Obligations	\$520,560	1%	\$1,063,201	12%	\$0	0%	\$1,799,651	15%	\$3,383,412	5%
	Phase II	New Proposals	0	0%	9	24%	2	4%	2	7%	13	6%
		New Awards	0	0%	6	24%	0	0%	1	8%	7	6%
		New Obligations	\$0	0%	\$6,020,000	26%	\$0	0%	\$750,000	9%	\$6,770,000	8%

Chart 10: Percent of Phase I STTR Dollars to Socioeconomic Groups - Civilian Agencies

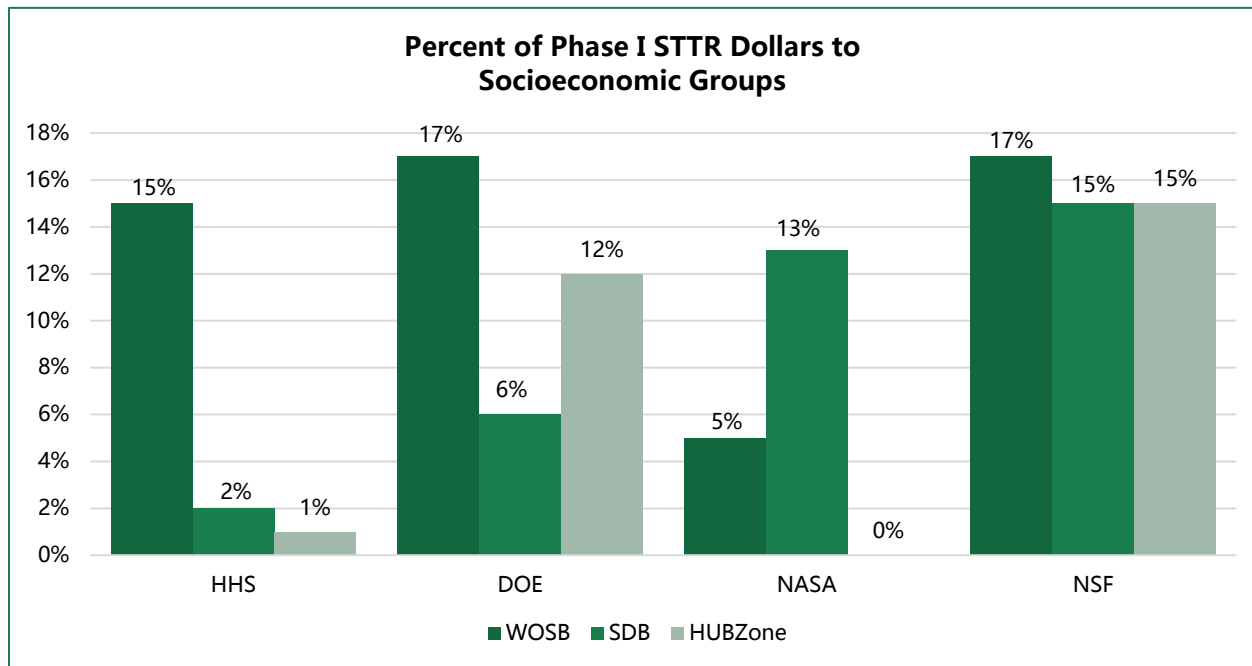
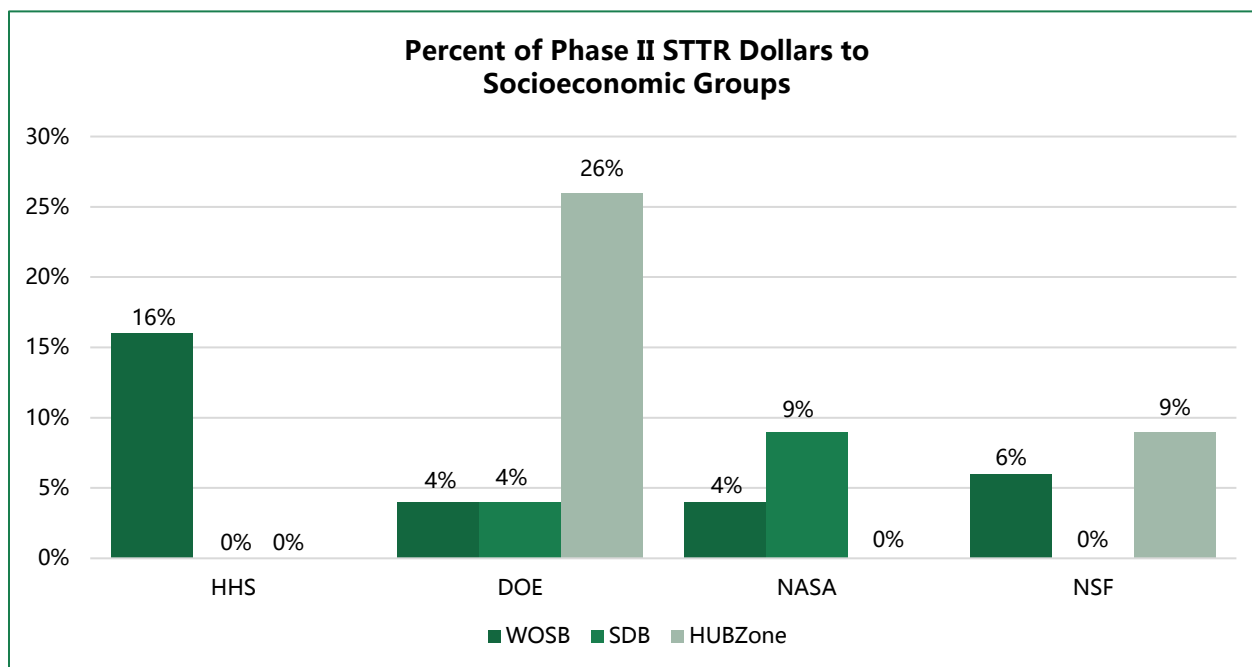


Chart 11: Percent of Phase II STTR Dollars to Socioeconomic Groups - Civilian Agencies



8 | STTR Program – DoD Summary Data

To facilitate the review of the FY17 data collected on the DoD STTR Program and present a more comprehensive reflection of individual DoD Component program performance, the DoD data is organized by DoD Service Agencies (Navy, Air Force, and Army) and the Fourth Estate (DARPA, MDA, DHA, CBD, SOCOM, DTRA, DLA, DMEA, and OSD). This data was submitted by the DoD through the SBA Annual Report submission site. SBA requires the data included in this report be a summation of individual awards uploaded to SBA by the DoD, and that this data match what is available on SBIR.gov. SBA, the DoD, and the Components identified errors which are discussed in detail in Section 9.

Table 13: STTR Program - DoD Summary Data – Service Agencies and Fourth Estate

Phase	Report Field	Navy	Air Force	Army	Fourth Estate	DoD Total
Phase I	Solicitations Released (#)	2	2	1	3	3*
	Proposals Received (#) / Proposal Selection Rate (%)	220 / 41%	225 / 28%	142 / 30%	230 / 30%	817 / 33%
	New Phase I Awards (#)	91	64	43	68	266
	Obligations for New Phase I Awards (\$)	\$11,261,420	\$9,588,779	\$6,433,426	\$8,824,900	\$36,108,525
	Obligations on Prior-Year Phase I Awards (\$)	\$2,231,042	\$0	\$0	\$224,772	\$2,455,814
	Total Obligations for Research Institutions / % of New + Prior Obligations	\$5,779,761 / 43%	\$4,058,063 / 42%	\$2,701,310 / 42%	\$3,791,419 / 42%	\$16,330,553 / 42%
Phase II	Proposals Received (#) / Proposal Selection Rate (%)	39 / 82%**	63 / 52%	44 / 70%	54 / 56%	200 / 63%
	New Phase II Awards (Initial + Second) (#)	32	33	31	30	126
	"Second Phase II" Awards (subset) (#)	4	0	0	0	4
	Obligations for New Phase II Awards (\$)	\$20,975,343	\$21,247,493	\$15,931,272	\$29,562,455	\$87,716,563
	Obligations for "Second Phase II" Awards (subset) (\$)	\$2,543,726	0	0	0	\$2,543,726
	Obligations on Prior-Year Phase II Awards (\$)	\$12,306,627	\$12,116,402	\$4,217,964	\$5,582,923	\$34,223,916
Admin	Total Obligations for Research Institutions / % of New + Prior Obligations	\$15,989,963 / 48%	\$12,793,169 / 38%	\$10,800,688 / 54%	\$14,812,599 / 42%	\$54,396,419 / 45%
	Obligations for Discretionary Technical Assistance (DTA) (\$)	\$0	\$0	\$0	\$0	\$0
	Agency Provided DTA (subset) (\$)	\$0	\$0	\$0	\$0	\$0
Totals§	Small Business funded DTA (subset)*	\$0	\$0	\$0	\$0	\$0
	Total STTR Obligations (\$)	\$46,774,432	\$42,952,674	\$26,582,662	\$44,195,050	\$160,504,818
	Amount of Extramural R/R&D reported to SBA minus Exemptions (\$)	\$9,250,397,000	\$11,181,185,350	\$6,320,322,000	N/P	N/P
Totals§	Percent of STTR Obligations as determined using DoD-provided data (%)	0.51%	0.38%	0.42%	N/P	N/P

N/P - Not Provided

* This row is not a total. The DoD has three solicitations for which each branch / component can elect to participate.

** The Navy has two proposal stages. This number is for proposals that made it to the second stage.

§ Section 9 further describes SBA's validation process for extramural dollars and obligations as reported to SBA and NSF NCSES.

STTR Award Distribution - DoD Service Agencies and Fourth Estate

DoD Service Agencies' and Fourth Estate' STTR obligations totaled \$160,504,818 in FY17, of which 29% were attributed to the Navy, 27% to the Air Force, 17% to the Army, and 27% to the Fourth Estate as shown below.

Chart 12: Distribution of Total STTR Dollars Obligated - DoD Service Agencies and Fourth Estate

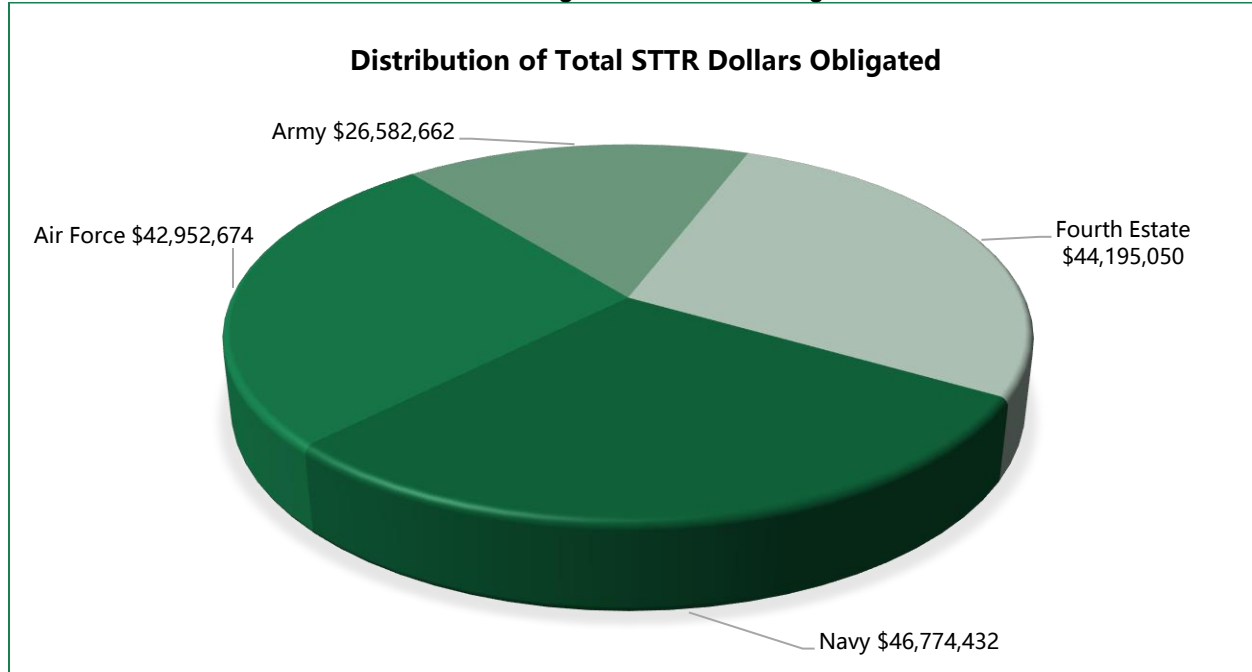


Table 14: STTR Program Performance Snapshot – DoD Components

STTR Summary Statistics	
•	\$123,825,088 in 392 new Phase I and Phase II awards
•	\$36,108,525 in 266 new Phase I awards
•	\$2,455,814 in prior-year Phase I awards
•	\$87,716,563 in 126 new Phase II awards
•	\$34,223,916 in prior-year Phase II awards
•	33% of Phase I proposals received awards
•	63% of Phase II proposals received awards
•	\$70,726,972 (57%) of Total Obligations for Research Institutions
•	\$16,181,243 (13%) of new STTR obligations, went to Women-owned Small Businesses
•	\$13,186,500 (11%) of new STTR obligations, went to Socially and Economically Disadvantaged Small Businesses
•	\$1,049,952 (1%) of new STTR obligations, went to HUBZone-Certified Small Businesses

Congress directs the STTR Program to foster and encourage participation in innovation and entrepreneurship by women and socially and economically disadvantaged persons. The following tables and charts summarize STTR participation across Participating Agencies by women-owned small businesses (WOSB); socially and economically disadvantaged small businesses (SDB); and small businesses located in Historically Underutilized Business Zones (HUBZone). For definitions of WOSB see the Policy Directive § 3(ss), for SDB see § 3(ll) and for HUBZone see 15 USC § 632(p)(3).

Table 15: STTR Program - DoD Agency Summary Data by Socioeconomic Group – Service Agencies and Fourth Estate

Socio Group	Phase	Report Field	Navy		Air Force		Army		Fourth Estate		DoD Total Reported	
			Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.	Number	Pct.
WOSB	Phase I	New Proposals	27	12%	33	15%	24	17%	39	17%	123	15%
		New Awards	4	4%	6	9%	8	19%	11	16%	29	11%
		New Obligations	\$499,871	4%	\$899,786	9%	\$1,194,722	19%	\$1,427,274	16%	\$4,021,653	11%
	Phase II	New Proposals	4	10%	6	10%	5*	11%	7	13%	22	11%
		New Awards	4	13%	3	9%	7	23%	4	13%	18	14%
		New Obligations	\$2,249,982	11%	\$2,758,196	13%	\$3,163,739	20%	\$3,987,675	13%	\$12,159,590	14%
SDB	Phase I	New Proposals	27	12%	35	16%	16	11%	22	10%	100	12%
		New Awards	8	9%	11	17%	4	9%	2	3%	25	9%
		New Obligations	\$1,004,514	9%	\$1,648,717	17%	\$595,436	9%	\$249,843	3%	\$3,498,510	10%
	Phase II	New Proposals	5	13%	10	16%	2	5%	3	6%	20	10%
		New Awards	3	9%	7	21%	2	6%	3	10%	15	12%
		New Obligations	\$1,623,326	8%	\$4,960,489	23%	\$663,800	4%	\$2,440,375	8%	\$9,687,990	11%
HUB Zone	Phase I	New Proposals	3	1%	5	2%	3	2%	6	3%	17	2%
		New Awards	0	0%	2	3%	0	0%	0	0%	2	1%
		New Obligations	\$0	0%	\$299,952	3%	\$0	0%	\$0	0%	\$299,952	1%
	Phase II	New Proposals	0*	0%	1	2%	0	0%	0	0%	1	1%
		New Awards	1	3%	0	0%	0	0%	0	0%	1	1%
		New Obligations	\$750,000	4%	\$0	0%	\$0	0%	\$0	0%	\$750,000	1%

* The number of awards may be larger than the number of proposals, as some FY17 awards were made to proposals received in FY16 but only FY17 proposals received are reported here.

Chart 13: Percent of Phase I STTR Dollars to Socioeconomic Groups - DoD Service Agencies and Fourth Estate

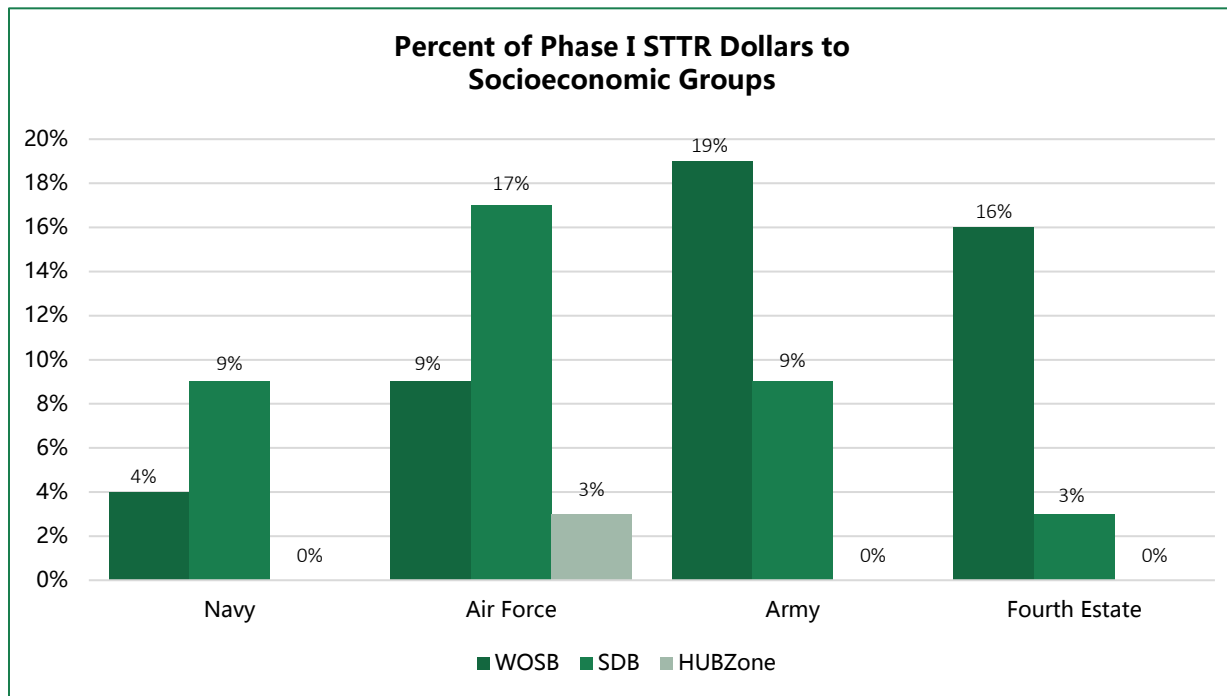
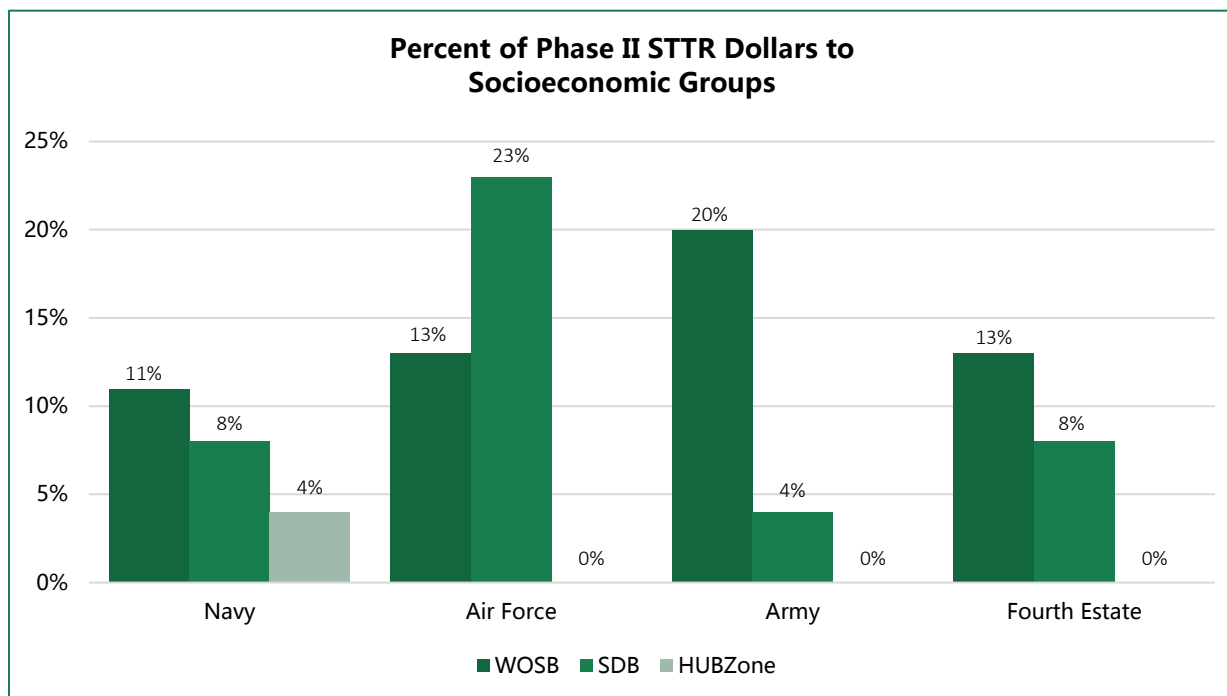


Chart 14: Percent of Phase II STTR Dollars to Socioeconomic Groups - DoD Service Agencies and Fourth Estate



9 | Minimum Spending Requirements and Understanding the Variance Between Extramural R/R&D Reported to SBA and NSF NCSES

The SBAAct, at 15 U.S.C. § 638(f)(1) and (n)(1), establishes the minimum spending requirement for each year. For FY17, the minimum spending requirement was 3.2% for the SBIR program and 0.45% for the STTR Program. Agencies are required to meet or exceed these minimum percentages. SBA determined whether the Participating Agencies met this minimum spending requirement by calculating the percentage of an agency's extramural R/R&D obligations which funded SBIR/STTR awards and activities, as compared to an agency's total extramural R/R&D obligations for the fiscal year. Therefore, the size of the SBIR/STTR Programs in any given year is dependent on the size of the extramural R/R&D budgets of the Participating Agencies for that year.

Participating Agency Compliance with Meeting Minimum Spending Requirements

The SBAAct, at 15 U.S.C. § 638(i)(2)(A), requires Participating Agencies to report to SBA the methodology used to calculate its extramural R/R&D budget not later than four months after the date of the enactment of the agency's appropriations. As part of the Annual Report submission due to SBA by March 15th following the end of the prior Fiscal Year, each Participating Agency also reports the total extramural R/R&D funds obligated that year. This enables SBA's evaluation of agency compliance with minimum spending requirements.

The ten Civilian Agencies provided the respective methodology reports in a timely manner. However, the DoD has not provided SBA with the total R/R&D extramural funds obligated after the end of the fiscal year. Moreover, the Office of Secretary of Defense (OSD) and the Defense Health Agency (DHA) did not provide the statutorily required methodology report data, which provides details on the estimated extramural R/R&D budget as well as planned exemptions from the budget calculation. SBA cannot assess compliance with the minimum spending requirement for these organizations without this information. SBA worked with the central DoD SBIR/STTR program office to collect this FY17 data, but they have yet to provide it as of May 2019.

There are challenges when it comes to reporting and meeting these minimum spending requirements as raised in the May 2017 GAO report, *Small Business Research Programs: Most Agencies Met Spending Requirements, but DoD and EPA Need to Improve Data Reporting* (<https://www.gao.gov/products/GAO-17-453>). The challenges are summarized below:

- The first challenge is identifying a common and transparent accounting of agency extramural R/R&D obligations for the year. The original Congressional intent in using extramural R/R&D as the basis for the SBIR/STTR funding requirement is clear: this is the portion of an agency's total R/R&D budget performed by non-federal employees and may therefore be performed by small businesses through grants and contracts. Section (e)(1) of 15 U.S.C. § 638 defines the term "extramural budget" as:

[T]he sum of the total obligations [for R/R&D] minus amounts obligated for such activities by employees of the agency in or through Government-owned, Government-operated facilities, except that 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, and except that for the Agency for International Development it shall not include amounts obligated solely for general institutional support of international research centers or for grants to foreign countries.

As prescribed in Section 10(h)(4)(i) of the February 2014 SBIR/STTR Policy Directives, Participating Agencies must report the total fiscal year extramural R/R&D obligations as reported to the National Science Foundation

(NSF)¹ pursuant to the Annual Budget of the United States Government, commonly known as the NSF National Center for Science and Engineering Statistics (NCSES) Survey of Federal Funds for Research and Development (NCSES Survey). Currently the extramural R/R&D obligations reported by Participating Agencies to the NCSES Survey may differ from the amounts reported to the SBA. Therefore, SBA requested Participating Agencies provide a rationale for any variance between the amounts reported to SBA for the Annual Report and amounts reported to NSF for the NCSES Survey. When provided, Participating Agency explanations are included in this report. Currently NCSES does not report individual DoD Components other than MDA and DARPA in their public reports, nor do these components provide that information to SBA or the DoD SBIR office.

- The second challenge stems from the statutory definition of extramural budget, which looks to the amount that a Participating Agency “obligated” during the Fiscal Year. While most Participating Agencies report amounts of extramural R/R&D funding obligations, two agencies, the DoD and EPA, continue to report extramural R/R&D budget appropriations rather than the actual amount of funding obligated during the fiscal year. In this case, SBA cannot validate whether these Participating Agencies met the SBIR/STTR minimum spending requirements because the total extramural R/R&D obligations is unknown and the budget authority may be different.
- The third challenge is Participating Agencies never know the full obligations for SBIR/STTR awards or extramural R/R&D spending until the fiscal year is over. Agencies must estimate these amounts and make minor adjustments when possible during the year.
- The fourth challenge involves delays in the contracting process, especially for agencies with multi-year budget authority. Even when a Participating Agency plans to obligate funds during the fiscal year to meet the minimum spending requirement, delays in the contracting process may prevent those awards from being issued in that fiscal year and cause the agency to miss the minimum spending requirement.
- The fifth challenge is that several agencies have no-year or two-year funding, which allows the agency to obligate those funds in future years. The DoD has two-year funding and much of their funding is obligated in the second year. Their SBIR allocation may increase from the prior year, but SBA measures what was obligated in the current year regardless of the year the funds were set aside.
- The final challenge is that Participating Agencies that receive appropriations later in the fiscal year may encounter challenges in obligating the minimum spending requirement in the remainder of that particular fiscal year if they do not make awards under a Continuing Resolution. For example, DoD does not release its SBIR/STTR allocation under a Continuing Resolution.

SBA analyzes the minimum spending of Civilian and Defense agencies separately. This approach enables a more detailed review and discussion on the DoD components. The total extramural R/R&D amounts each participating Civilian Agency reported to SBA and used to determine the SBIR/STTR minimum spending requirement for FY17 is shown in Table 16. Through a separate process, the NCSES Survey of Federal Funds for Research and Development administers an annual census completed by the federal agencies conducting R&D programs. As one of 13 federal statistical agencies, NCSES is mandated to collect, interpret, analyze, and disseminate objective data on the science and engineering enterprise. Beginning with the FY13 annual report, SBA compared extramural R/R&D budgets reported through the NCSES Survey and the Annual Report submission to SBA. This comparison is a useful tool to identify compliance with the minimum spending requirements.

¹NSF’s National Center for Science and Engineering Statistics (NCSES) at <https://www.nsf.gov/statistics/srvyfedfunds/#sd> indicates that there are some measurement problems known to exist in the data that is collected by the Survey of Federal Funds for Research and Development.

SBIR/STTR Program Funding as Share of Agency Reported Extramural R/R&D – Civilian Agencies

Table 16: SBIR/STTR Program Funding as Share of Agency Reported Extramural R/R&D - Civilian Agencies

Agency *	SBIR					STTR					
	Calculation using Extramural Levels Reported by Participating Agency to SBA					Calculation using Extramural Levels Reported on NCSES Survey			SBA		NCSES
	Amount Obligated for SBIR Awards as Reported to SBA (\$)	Amount of Program Exemptions Reported to SBA (\$) †	Extramural R/R&D Reported to SBA by Participating Agency minus Exemptions‡	% Measured by SBIR obligations divided by Agency reported Extramural R/R&D (3.2% Min)	Total Extramural R/R&D Obligations Reported to SBA (\$)	Total Extramural R/R&D Obligations Reported to NCSES² (\$)	Extramural R/R&D Amount Reported to NCSES minus Exemptions Reported by Participating Agency to SBA (\$)	% Measured using NCSES Extramural R/R&D Obligations (3.2% Min)	Amount Obligated for STTR Awards as Reported to SBA (\$)	% Measured by Extramural R/R&D Obligations to SBA (0.45% Min)	% Measured by Extramural R/R&D Obligations Reported to NCSES (0.45% Min)
HHS	\$885,737,322	N/A	\$27,455,557,340	3.23%	\$27,455,557,340	\$26,691,400,000	\$26,691,400,000	3.32%	\$126,781,296	0.46%	0.47%
DOE³	\$223,735,470	\$5,286,716,000	\$6,903,792,000	3.24%	\$12,190,508,000	\$10,671,100,000	\$5,384,384,000	4.16%	\$33,217,416	0.48%	0.62%
NSF	\$174,463,775	N/A	\$5,440,330,000	3.21%	\$5,440,330,000	\$5,505,100,000	\$5,505,100,000	3.17%	\$21,917,458	0.40%	0.40%
NASA	\$155,799,248	N/A	\$3,590,595,217	4.34%	\$3,590,595,217	\$10,810,000,000	\$10,810,000,000	1.44%	\$26,103,338	0.73%	0.24%
USDA⁴	\$26,279,245	\$55,940,421	\$854,345,150	3.08%	\$910,285,571	\$890,000,000	\$834,059,579	3.15%			
DHS	\$19,649,785	N/A	\$401,793,643	4.89%	\$401,793,643	\$486,300,000	486,300,000	4.04%			
DOT⁵	\$11,538,474	\$582,803,000	\$253,519,000	4.55%	\$836,322,000	\$736,800,000	\$153,997,000	7.49%			
DOC	\$11,386,389	N/A	\$434,093,000	2.62%	\$434,093,000	\$438,100,000	\$438,100,000	2.60%			
ED	\$7,944,493	N/A	\$246,082,497	3.23%	\$246,082,497	\$251,200,000	\$251,200,000	3.16%			
EPA	\$3,708,925	N/A	\$111,349,800	3.33%	\$111,349,800	\$230,300,000	\$230,300,000	1.61%			
TOTAL	\$1,520,243,126	\$5,925,459,421	\$45,691,457,647	3.33%	\$51,616,917,068	\$56,710,300,000	\$50,784,840,579	2.68%	\$208,019,508	0.48%	0.41%

* Agencies are listed in descending order of Amount Obligated for SBIR Awards as Reported to SBA

† N/A-Not Applicable; Many agencies do not have authority under 15 U.S.C § 638 to exempt Extramural R/R&D dollars from the budget calculation

‡ Some Participating Agencies reported this figure in terms of dollars obligated, while others reported this figure in terms of amounts budgeted for the Fiscal Year. See Table 17.

² NSF's National Center for Science and Engineering Statistics (NCSES) at <https://ncesdata.nsf.gov/fedfunds/2017/html/ffs17-dt-tab007.html>.

³ DOE exemptions include Weapons Activities and Naval Reactors.

⁴ USDA exemptions include the Agriculture Research Service (ARS) and Forest Service.

⁵ DOT exemptions include the Federal Aviation Administration (FAA) and the Federal Highway Administration (FHWA) State Planning and Research Program.

The following subsections summarize SBA’s assessment of whether each participating Civilian Agency complied with SBIR/STTR minimum spending requirement, variance between extramural R/R&D reported to SBA and NCSES, and the Agency explanation to SBA regarding variance between these two reported amounts. SBA analyzed compliance through two measures: 1) by determining the percentage of funding obligated for SBIR/STTR activities divided by total extramural R/R&D obligation minus program exemptions reported to SBA, and 2) by determining the percentage of funding obligated for SBIR/STTR activities based on the total extramural R/R&D obligations reported by the Agency for the NCSES Survey minus the amount of program exemptions reported to SBA.

An Agency is considered to have “complied” with the minimum spending requirements for FY17 if, as per the SBIR and STTR Policy Directives, the Agency obligated not less than 3.2% of its total extramural R/R&D obligations for SBIR activities, and not less than 0.45% of its total extramural R/R&D obligations for STTR activities, based on the extramural R/R&D amount reported to SBA. Furthermore, in an effort to help reconcile differences in the extramural R/R&D obligations reported to SBA and NCSES, SBA considers an agency compliant if it meets the criteria above and the extramural R/R&D obligations are within 10% of the amount uploaded to SBA. Overages of the minimum spending requirement indicates the Agency “exceeded” the requirement.

There are two primary reasons SBA was “unable to determine” compliance with minimum spending requirements: 1) greater than a 10% difference in extramural R/R&D obligations reported to SBA compared to amounts reported for the NCSES Survey, and/or 2) inability to validate program exemptions. SBA determined a Participating Agency “did not comply” with minimum spending requirements when either the statutorily required data was not provided, the data reported to both sources fell below minimum levels, and/or SBA determined the agency’s justification regarding the minimum spending requirement did not align with the guidelines in the statute. A detailed analysis of each Agency’s compliance with the minimum spending requirement can be found below.

Table 17: Compliance with the Minimum Spending Requirement – Civilian Agencies

Agency	Whether Extramural R/R&D is Reported to SBA as Obligations (O) or Appropriations (A)	Timeframe to Obligate Allocated Funding	SBA Analysis of Compliance with SBIR/STTR Minimum Spending Requirements
HHS	O	1-year	Exceeded
DOE	O	No-year	Exceeded
NSF	O	2-year	Exceeded for SBIR / Did Not Comply for STTR
NASA	O	2-year	Did Not Comply
USDA	O	1-year and No-year	Did Not Comply
DHS	O	3-year	Exceeded
DOT	O	No year	Exceeded
DOC	O	2-year	Did Not Comply
ED	O	1-year	Exceeded
EPA	A	2-year	Did Not Comply

HHS. Based on SBA's analysis of compliance, HHS exceeded the SBIR and STTR minimum spending requirements. This analysis included evaluating the data HHS provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data HHS reported to NCSES. Based on the extramural R/R&D reported to SBA, HHS exceeded the minimum spending requirements with 3.23% obligated for SBIR activities and 0.46% obligated for STTR activities. Based on the extramural R/R&D reported for the NCSES Survey, HHS exceeded the minimum spending requirements with 3.32% obligated for SBIR activities and 0.47% obligated for STTR activities. HHS reports no exemptions.

The total extramural R/R&D obligations HHS reported to SBA were \$27,455,557,340, which is \$764,157,340 more than the amount reported for the NCSES Survey.

HHS explained:

The total Agency Extramural R/R&D obligation for FY 2017 is the sum of all discretionary and mandatory obligations for Research Grants and R&D contracts from Institutes and Centers. The total NIH Discretionary Obligations, excluding the National Library of Medicine (NLM) Medical Library Assistance Awards grants and NLM extramural contracts, is \$26,833,626,000. The total Mandatory Obligations was \$139,650,000.

Medical Library Assistance Awards grants are not included; these are support grants. In addition, NLM extramural contracts are not included, as these are service and support contracts. The total exclusion amount is \$13.1 million.

DOE. Based on SBA's analysis of compliance, DOE exceeded the SBIR and STTR minimum spending requirements. This analysis included evaluating the data DOE provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data DOE reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, DOE exceeded the minimum spending requirements with 3.24% obligated for SBIR activities and 0.48% obligated for STTR activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, DOE exceeded the minimum spending requirements with 4.16% obligated for SBIR activities and 0.62% obligated for STTR activities.

DOE reported \$5,286,716,000 in exemptions. The total extramural R/R&D obligations DOE reported to SBA were \$12,190,508,000, which is \$1,519,408,000 more than the amount reported for the NCSES Survey. DOE did not provide any additional information regarding the variance.

NSF. Based on SBA's analysis of compliance, NSF exceeded the SBIR minimum spending requirement but did not comply with the STTR minimum spending requirement. This analysis included evaluating the data NSF provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data NSF reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, NSF exceeded the minimum spending requirement with 3.21% obligated to SBIR activities, but did not comply with the STTR requirement with 0.40% obligated for activities. NSF was within 10% of the NCSES obligations for SBIR (3.17%), but below this threshold for STTR (0.40%). NSF reports no exemptions.

The total extramural R/R&D obligations NSF reported to SBA were \$5,440,330,000, which is \$64,770,000 less than the amount reported for the NCSES Survey.

NSF explained:

NSF's baseline expenditures for STTR were \$21,917,458 which is 0.40% of the extramural R/R&D amount for FY17. However, NSF also spent approximately \$2,564,027 on activities directly benefitting the SBIR/STTR awardees, which, when added to the baseline expenditures, brings the total expenditures to \$24,481,485, for a total of .45% spending for the STTR program. NSF exceeded the minimum spending requirement for SBIR, including nine STTR Phase I projects that converted to SBIR Phase II projects. NSF spent the additional \$2,564,027 on activities related to the SBIR/STTR programs that directly benefitted the STTR program and the STTR awardees, including additional technical assistance support to STTR awardees. In addition, and consistent with NSF policy and practice across the agency, some of the funds listed in this line were spent on the costs

of conducting our external merit review process (including reviewer travel and contract support). If the additional amount of funding for these activities is included in the total obligations, the total would be \$24,481,485 for a total of .45% spending for the STTR program. NSF did not use any of its STTR budget for costs associated with salaries and expenses.

NASA. Based on SBA's analysis of compliance, NASA did not comply with the SBIR and STTR minimum spending requirements. This analysis included evaluating the data NASA provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data NASA reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, NASA exceeded the minimum spending requirement with 4.34% obligated for SBIR activities and 0.73% obligated for STTR activities. However, based on the extramural R/R&D reported to NCSES minus exemptions reported to SBA, NASA did not comply with the minimum spending requirements with 1.44% for SBIR activities and 0.24% obligated for STTR activities. NASA reports no exemptions.

The total extramural R/R&D obligations NASA reported to SBA were \$3,590,595,217, which is \$7,219,404,783 less than the amount reported to NCSES. This difference is well beyond a 10% difference, measuring over three times larger than those reported to SBA, and therefore SBA determined NASA did not comply with the minimum spending requirements.

NASA explained:

NASA's variance between the extramural R/R&D obligations reported to SBA and the NSF Survey is "the data reported to NSF for R&D obligations includes all NASA R&D. The only exclusions included in the data set for intramural R&D are administrative costs for R&D performance such as personnel and travel. For the SBIR/STTR calculations, NASA follows the definition of extramural budget as defined in the statute and in the Small Business Administration Policy Directive. The definition states that "extramural budget" is: "The sum of the total obligations for R/R&D minus amounts obligated for R/R&D activities by employees of a Federal agency in or through Government-owned, Government operated facilities." Based on this definition, NASA identifies the exclusions that are considered intramural R&D. In addition to the exclusions in the NSF survey for FY17, NASA also excluded the following categories from total R/R&D obligations reported to SBA:

1. Support contractors performing NASA Center on- or near-site science, engineering, technical or management services; (~\$1.0 billion)
2. Launch vehicle procurements (as these are transportation costs); (~\$2.26 billion) and
3. Procurements and administrative expenses associated with NASA "in-house" performed R&D projects and activities (~\$4.1 billion).

During FY 2017, the Space Launch System (SLS) and Orion programs passed their critical design review. For the most part, they are no longer conducting research or developing new technologies – they are producing the first and second production units of what is considered a transportation/launch vehicle. As such, a significant portion of the budget is excluded from the extramural R&D calculation (~\$2B). The work that is still going toward research and development of new technologies in these programs is included in NASA's calculation. The template for the NCSES survey does not exclude launch vehicle procurements and so it did not incorporate this change which accounts for a significant percentage of the variance.

USDA. Based on SBA's analysis of compliance, USDA did not comply with the SBIR minimum spending requirement. This analysis included evaluating the data USDA provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR activities, and data USDA reported to NCSES. Based on the extramural R/R&D reported to SBA, USDA did not comply with the minimum spending requirement with 3.08% obligated for SBIR activities. Based on the extramural R/R&D reported for the NCSES Survey, USDA did not meet the minimum spending requirement with 3.15% obligated for SBIR activities.

USDA reported \$55,940,421 in exemptions. The total extramural R/R&D obligations USDA reported to SBA were \$910,285,571, which is \$20,285,571 more than the amount reported for the NCSES Survey.

USDA explained:

The current SBIR expenditure calculation methodology uses the total FY17 extramural R/R&D obligations for an agency and compares the total agency obligations to the required appropriated set-aside percentage of 3.2% to be obligated on SBIR projects. In order to fund a SBIR Program, each agency must set up its SBIR budget by setting aside 3.2% of its extramural R/R&D budget authority appropriated funds for the same year. This is typically done at the beginning of the fiscal year. It is impossible to set up the budget for an SBIR Program using end of year obligations as this data is not available until after the fiscal year is completed. USDA met the requirement of setting up its SBIR budget at the beginning of FY17 by taxing the FY17 extramural R/R&D appropriations at 3.2% and obligated these taxed set-aside funds over the FY17 fiscal year on USDA SBIR projects. USDA continues to report and indicate that non-SBIR USDA Programs obligate no-year funds from prior years that are included in the fiscal year extramural R/R&D obligations calculation reported to SBA. These no-year obligations artificially increase the total amount of extramural R/R&D funding upon which the SBIR minimum spending requirement is to be based. These non-SBIR programs have the legal authority by statute to reserve and obligate appropriated funds in future years. Under the budget authority appropriations process, the USDA SBIR Program already received the taxed set-aside no-year funds in the same year as those funds were appropriated and the SBIR program obligated those funds the same fiscal year.

As an example, the accounting procedure used to determine the Total Extramural R/R&D Obligations amount reported by the National Institute of Food and Agriculture (NIFA) is described below for FY17. NIFA takes the appropriation amount minus the intramural research (federal admin) to obtain the extramural research portion. Once the extramural portion is determined, NIFA decides what percentage of the extramural is research and/or research and development. Most of the programs at NIFA are calculated at 100%, however, there are some programs with a different percentage, for example Sustainable Agriculture is calculated at 75%, Higher Education-1890 Capacity Building and Organic Agricultural Research and Extension Initiative and Integrated programs is calculated at 33% and Specialty Crop Initiative and Emergency Citrus is calculated at 50%. While these are planned obligations the actual obligations may be different because of the no-year spending authority. Additionally, any no-year funds obligated in 2016 or prior years have already been taxed for the required SBIR set-aside percentage in the year the funds were appropriated. Pursuant to the process described above, the SBIR set-aside occurs when funds are first appropriated rather than obligated. The SBIR statute does not allow any additional taxes to be set-aside for the SBIR program if USDA NIFA chooses to use its no-year spending authority. Therefore, no additional funds are set-aside based on program obligations of no-year funding. The prior year non-SBIR program obligations by fiscal year include Agriculture and Food Research Initiative (AFRI): FY 2009 \$37,145; FY 2010 \$362,929; FY 2011 \$386,035; FY 2012 \$1,488,354; FY 2013 \$1,159,678; FY 2014 \$1,322,665; FY 2015 \$13,919,794; FY 2016 \$291,230,724; National Research Initiative (NRI): FY 1997 \$17,222; FY 1998 \$185,020; FY 1999 \$339,756; FY 2004 \$119,630; FY 2005 \$25,317; FY 2008 \$17,043; Emergency Citrus Research/Extension Program: FY 2016 \$15,922,006; 1890 Capacity Building: FY 2016 \$17,298,621; 1994 Research Program: FY 2004 \$137,625; FY 2005 \$63,027; FY 2007 \$148,281; FY 2008 \$67,798; FY 2009 \$46,783; FY 2013 \$195,217; FY 2014 \$424,266; Biomass Research and Development Initiative: FY 2009 \$316,076.

As indicated above, there are many extramural R/R&D programs that utilize no-year funding authorities and use funding that dates back more than several years. When these amounts are included in the total obligations calculation, the calculation is artificially overinflated and automatically places USDA out of compliance.

The USDA cannot re-tax the prior year funds on non-SBIR programs that obligated funding in FY17 as those programs already contributed to the SBIR program during the year the funds were initially appropriated. The USDA would be in violation of the Anti-deficiency Act (ADA) if the SBIR program obligated funds that did not exist under the current year appropriation authority in order to make up the difference from an artificially overinflated end of year methodology calculation. The ADA, Pub.L. 97-258, 96 Stat. 923, was enacted to prevent a federal agency from incurring obligations or making expenditures (outlays) in excess of amounts available under its fiscal year budget authority appropriations. At this time the USDA does not have any plans to fix the situation other than to continue to report to SBA and others that the SBIR calculation methodology simply does not work for agencies that obligate no-year funding on non-SBIR programs and will continue to remind SBA that these programs are allowed and can choose to obligate these funds under statute authorities.

DHS. Based on SBA's analysis of compliance, DHS exceeded the SBIR minimum spending requirement. This analysis included evaluating the data DHS provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR activities, and data DHS reported to NCSES. Based on the extramural R/R&D reported to SBA, DHS exceeded the minimum spending requirements with 4.89% obligated for SBIR activities. Based on the extramural R/R&D reported for the NCSES Survey, DHS exceeded the minimum spending requirement with 4.04% obligated for SBIR activities. DHS reports no exemptions.

The total extramural R/R&D obligation amount DHS reported to SBA were \$401,793,643 which is \$84,506,357 less than the amount reported for the NCSES Survey.

DHS explained:

The figures provided come directly from the DHS S&T and DNDO budget offices.

DOT. Based on SBA's analysis of compliance, DOT exceeded the SBIR minimum spending requirement. This analysis included evaluating the data DOT provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR activities, and data DOT reported to NCSES. Based on the extramural R/R&D reported to SBA, DOT exceeded the minimum spending requirement with 4.55% obligated for SBIR activities. Based on the extramural R/R&D reported for the NCSES Survey, DOT exceeded the minimum spending requirement with 7.49% obligated for SBIR activities.

DOT reported \$582,803,000 in exemptions for the following programs:

(1) Federal Aviation Administration is exempt from the Competition in Contracting Act (CICA) and is excluded from the SBIR assessment per the DOT and Related Agencies Appropriations Act of 1996, P.L. 104-50 (approved 15 Nov 1995). This 1996 DOT Appropriations Act includes exemptions for FAA from many Federal procurement laws, including SBIR, Competition in Contracting Act (CICA), and the Federal Acquisition Regulation (FAR). The FY17 FAA extramural research budget is \$331,682,000. [Note: This budget estimate amount was subsequently updated with the actual obligations amount of \$432,882,000.]

(2) Federal Highway Administration's State Planning and Research Program is excluded per 23 USC 505(b)(3). Their FY17 funding \$149,921,000.

The Federal Aviation Administration (FAA), which accounts for about half of the DOT R/R&D allocation, received an exemption from SBIR under the DOT and Related Agencies Appropriation Act of 1996, PL 104-50. DOT also claims that due to a requirement of cost matching, the Federal Highway Administration (FHWA) per 23 USC 505(b)(3) is exempt.

SBA believes the FHWA extramural R/R&D funding should be included in the SBIR assessment. The total extramural R/R&D obligations DOT reported to SBA were \$836,332,000, which is \$99,522,000 more than the amount reported for the NCSES Survey.

DOT explained:

The process for informing the NCSES Survey is conducted independently by each DOT Operating Administration. Often, these numbers can vary from what is reported and collected by the Office of the Secretary's Budget Office (OST-B) to inform the FY budget breakdown, and SBIR set-aside. The SBIR Program Office is not involved with the NCSES reporting, nor the creation of the FY budget breakdown. Any questions on this process, and any discrepancies, should be directed to OST-B.

DOC. Based on SBA's analysis of compliance, DOC did not comply with the SBIR minimum spending requirement. This analysis included evaluating the data DOC provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR activities, and data DOC reported to NCSES. Based on the extramural R/R&D reported to SBA, DOC did not comply with the minimum spending requirement with 2.62% obligated for SBIR activities. Based on the extramural R/R&D reported for the NCSES Survey, DOC did not meet the minimum spending requirement with 2.60% obligated for SBIR activities. DOC reports no exemptions.

The total extramural R/R&D obligations DOC reported to SBA were \$434,093,000, which is \$4,007,000 less than the amount reported for the NCSES Survey.

DOC explained:

DOC/NIST: NIST uses actual extramural research and development (R&D) obligations from the prior fiscal year to provide funds for the SBIR Program in the following fiscal year (e.g. SBIR funds made available to award in FY 2017 were based on actual FY 2016 extramural R&D obligations). However, to ensure that we comply with SBA's SBIR minimum requirements in terms of award levels we use a higher SBIR rate (3.4%) than the minimum rate (3.2%) allowed. In addition, we use historical data along with increases in funding received in our annual appropriation to project the current fiscal year's extramural R&D budget. This enables us to compare what we have collected for SBIR awards based on prior year activity, with the minimum level needed to comply based on current year activity.

However, despite our best efforts, actual extramural R&D obligations, in FY 2017, were much higher than originally anticipated. Extramural R&D obligations were higher than expected largely due to the timing of one program's obligations that resulted in an under-collection of \$680K. For FY 2018, NIST's assessment for this program will be based on their estimated obligations for the current fiscal year as opposed to prior year actuals.

DOC/NOAA: Similar to NIST, NOAA also uses actual extramural research and development (R&D) obligations from the prior fiscal year to provide funds for the SBIR Program in the following fiscal year (e.g. SBIR funds made available to award in FY 2017 were based on actual FY 2016 extramural R&D obligations). NOAA also uses a higher SBIR rate (3.6%) than the minimum allowed ensuring compliance.

However, despite our best efforts and using the higher rate to anticipate any potential budget increase, NOAA's actual extramural R&D obligations in FY 2017 were much higher than originally anticipated. This is primarily due to an agency level budget initiative to more accurately document, track and capture all R&D expenditures. For FY 2018, and since the new R&D tracking is now in place, NOAA should be able to more accurately plan the SBIR funding. We will still utilize previous year's actual Extramural R&D obligations as well as a higher SBIR rate to accommodate any increases of the current year.

ED. Based on SBA's analysis of compliance, ED exceeded the SBIR minimum spending requirement. This analysis included evaluating the data ED provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR activities, and data ED reported to NCSES. Based on the extramural R/R&D reported to SBA, ED exceeded the minimum spending requirement with 3.23% obligated for SBIR activities. Based on the extramural R/R&D reported for the NCSES Survey, ED did not meet the minimum spending requirement with 3.16% obligated for SBIR activities. However, ED was within 10% of the NCSES obligations for SBIR, and therefore SBA determined they met the minimum spending requirement. ED reports no exemptions.

The total extramural R/R&D obligations ED reported to SBA were \$246,082,497 which is \$5,117,503 less than the amount reported for the NCSES Survey. ED did not provide any additional information regarding the variance.

EPA. Based on SBA's analysis of compliance, EPA did not comply with the SBIR minimum spending requirement. This analysis included evaluating the data EPA provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR activities, and data EPA reported to NCSES. Based on the extramural R/R&D reported to SBA, EPA exceeded the minimum spending requirement with 3.33% obligated for SBIR activities. However, based on the extramural R/R&D reported for the NCSES Survey, EPA did not meet the minimum spending requirement with 1.61% obligated for SBIR activities. EPA reports no exemptions.

The total extramural R/R&D obligations EPA reported to SBA were \$111,349,800 which is \$118,950,200 less than the amount reported to NCSES. This difference is well beyond a 10% difference, measuring over two times larger than those reported to SBA, and therefore SBA determined EPA did not comply with the minimum spending requirements. The difference in extramural R/R&D obligations would represent more than a 50% increase in the amount of SBIR dollars required to obligate on SBIR activities.

EPA explained:

[T]hese reports are at the request of two different entities. Because these reports are addressing separate issues they use different methodologies. The NSF Funds Survey data reflects our FY17 enacted budget levels and not obligations, which is consistent with our reporting to SBA. Because of the complexity of the data we report in the NSF survey, we use a simplified approach to calculating "intramural" (payroll and travel only) versus "extramural" (research and research support) for those purposes. Based on SBA definitions, and a lower level of complexity of the data we develop for this effort, in-house research support costs are classified as intramural, in addition to payroll and travel resources.

SBA does not agree with EPA's explanation for using different methodologies for gathering the extramural R/R&D amount as reported to SBA and NCSES.

SBIR/STTR Program Funding as Share of Agency Reported Extramural R/R&D – DoD Components

Table 18: SBIR/STTR Program Funding as Share of Agency Reported Extramural R/R&D - DoD Components

SBIR						STTR					
Calculation using Extramural Levels Reported to SBA						Calculation using Extramural Levels Reported on NCSES Survey			SBA		NCSES
Service Component†	Amount Obligated for SBIR Awards as Reported to SBA (\$)	Amount of Program Exemptions Reported to SBA (\$)	Extramural R/R&D Reported to SBA by Participating Agency minus Exemptions	% Measured by SBIR obligations divided by Agency reported Extramural R/R&D (3.2% Min)	Total Extramural R/R&D Obligations Reported to SBA (\$)	Total Extramural R/R&D Obligations Reported to NCSES (\$)	Extramural R/R&D Amount Reported to NCSES minus Exemptions Reported by Participating Agency to SBA (\$)	% Measured using NCSES Extramural R/R&D Obligations (3.2% Min)	Amount Obligated for STTR Awards as Reported to SBA (\$)	% Measured by Extramural R/R&D Obligations Reported to SBA (0.45% Min)	% Measured by Extramural R/R&D Obligations Reported to NCSES (0.45% Min)
4th Estate	\$340,816,963	N/P	N/P	N/P	N/P	N/P	N/P	N/P	\$44,195,050	N/P	N/P
Navy	\$299,173,927	\$3,155,967,000	\$9,250,397,000	3.23%	\$12,406,364,000	\$11,264,800,000	\$8,108,833,000	3.69%	\$46,774,432	0.51%	0.58%
Air Force	\$288,377,347	\$22,512,000	\$11,181,185,350	2.58%	\$11,203,697,350	\$23,634,700,000	\$23,612,188,000	1.22%	\$42,952,674	0.38%	0.18%
Army	\$224,799,018	\$452,007,000	\$6,320,322,000	3.56%	\$6,772,329,000	\$4,974,800,000	\$4,522,793,000	4.97%	\$26,582,662	0.42%	0.59%
DoD Total	\$1,153,167,255	N/P	N/P	N/P	N/P	N/P	N/P	N/P	\$160,504,818	N/P	N/P
Fourth Estate Break Out											
DARPA	\$112,740,998	\$0	\$2,675,732,000	4.21%	\$2,675,732,000	\$2,636,000,000	\$2,636,000,000	4.28%	\$9,965,303	0.37%	0.38%
MDA	\$101,454,881	\$2,160,640,000	\$2,422,351,000	4.19%	\$4,582,991,000	\$3,739,600,000	\$1,578,960,000	6.43%	\$12,183,598	0.50%	0.77%
DHA	\$52,228,293	N/P	N/P	N/P	N/P	N/P	N/P	N/P	\$9,538,610	N/P	N/P
SOCOM	\$29,407,110	\$51,165,000	\$445,287,000	6.60%	\$496,452,000	\$439,300,000	\$388,135,000	7.58%	\$6,484,003	1.46%	1.67%
CBD	\$12,992,477	\$0	\$479,715,191	2.71%	\$479,715,191	\$409,700,000	\$409,700,000	3.17%	\$0	0.00%	0.00%
DLA	\$12,254,350	\$0	\$88,049,000	13.92%	\$88,049,000	\$160,700,000	\$160,700,000	9.15%	\$1,439,143	1.63%	1.08%
DTRA	\$11,527,181	\$0	\$286,466,397	4.02%	\$286,466,397	\$288,600,000	\$288,600,000	3.99%	\$4,284,454	1.50%	1.48%
DMEA	\$2,449,769	\$0	\$69,089,000	3.55%	\$69,089,000	Part of DLA	Part of DLA	Part of DLA	\$299,939	0.43%	Part of DLA
OSD	\$748,622	N/P	N/P	N/P	N/P	\$1,754,800,000	N/P	N/P	\$0	N/P	N/P

* Service Components are listed in descending order of Amount Obligated for SBIR Awards as Reported to SBA

† N/P - Not Provided; this is the first time any agency has not provided the methodology report data required by legislation and critical for SBA to assess minimum spending requirements

The SBA cannot determine or validate whether the OSD and DHA met the minimum spending requirements for the SBIR/STTR program as they did not provide SBA with the statutorily required methodology report data. The Methodology Report provides details on the estimated extramural R/R&D budget and planned exemptions. These reports typically come from the DoD central SBIR/STTR office and are due to SBA within 4 months of the President signing the DoD's appropriation bill. SBA has asked the DoD SBIR/STTR office and each of the listed Components for this FY17 data but has not received this information as of May 2019.

The John S. McCain National Defense Authorization Act for Fiscal Year 2019 (P.L. 115-232) included a provision requiring SBA to submit the FY17 Annual Report by March 30, 2019. As described in previous reports, SBA has been working with DoD to resolve the issues with timely and accurate uploads of DoD data. SBA received the DoD's last FY17 Annual Report data upload on December 19, 2018, which is over nine months late. As such, this limited the amount of time available to analyze and validate the DoD data. It should be noted, the other 10 Participating Agencies submitted the Annual Report information (including the methodology report) to SBA in a timely fashion (please see Table 1 for additional information).

SBA is reporting the DoD and Civilian agencies compliance with the minimum spending requirements separately, as well as delineating the DoD data by individual Service Agencies and the Fourth Estate. Analyzing the data this way is especially important for FY17, as several of the components did not provide the data needed to address compliance. SBA was able to evaluate compliance for Components that provided extramural R/R&D obligations and exemptions. Delineating the data also provides a more transparent account of individual Component performance. In FY17, the DoD Office of Small Business Programs (OSBP) was responsible for collecting the Component data and uploading it to the SBA Annual Report submission site. To ensure the report data matches what is available on SBIR.gov, SBA requires the data used for this annual report to be a summation of the individual awards uploaded to SBA. SBA used the data provided by DoD OSBP for the individual Components. SBA continues to work closely with each of these organizations to provide the most accurate data available and allow them an opportunity to provide comment into this report.

Upon review of the DoD's first FY17 data submission (April 25, 2018), SBA identified missing and incomplete data. This began the process of working with the DoD to reconcile those issues. SBA continued to identify missing and incomplete data, which resulted in multiple rounds of data uploads throughout the remainder of the calendar year. SBA will continue working with the DoD SBIR/STTR office and the individual Components to improve the quality and timeliness of the DoD data required for this report. SBA believes obtaining data directly from the individual Components is the best method to reduce the errors and lower the costs of correcting and validating the report data for DoD and SBA.

The DoD also does not provide year-end total extramural R/R&D obligations, and SBA cannot properly validate the dollars considered by the DoD to be exempt. DoD only has the total extramural R/R&D budget estimates through the Methodology Report based on budget appropriation (for those Components that provided it) rather than final obligations, as directed by law, something all other agencies except EPA provide.

For the Components that provided SBA with a Methodology Report, SBA used that data to generate the exemptions and extramural R/R&D listed in column 3 and 4 of Table 18. Obtaining final year-end obligation amounts from each DoD Component would enable a more accurate assessment of compliance with the minimum spending requirement. SBA would also like to receive that data by the funding appropriation year and the funding obligation year, as this would enable SBA to address the challenge DoD has in obligating SBIR funding in the year it was obligated and at the same pace as its non-SBIR funding. SBA believes delineating the DoD's obligations and award data between individual Service Agencies and individual Fourth Estate Components will provide Congress as well as the public with a more a transparent representation of the DoD SBIR/STTR Program.

The following subsections summarize SBA's assessment of whether each of the DoD Service Agencies and Components of the Fourth Estate complied with the SBIR/STTR minimum spending requirement, variance between extramural R/R&D reported to SBA and NCSSES, and the Component's response to SBA regarding variance between these two reported amounts. SBA analyzed compliance through two measures: 1) by determining the percentage of funding obligated for SBIR/STTR activities based on the extramural R/R&D amount minus the amount of program exemptions reported to SBA by the Component, and 2) by determining the percentage of funding obligated for

SBIR/STTR activities based on the total extramural R/R&D reported by the Component for the NCSES Survey minus the amount of program exemptions reported to SBA.

A Component is considered to have “complied” with the minimum spending requirements for FY17 if, as per the SBIR and STTR Policy Directives, the Component obligated not less than 3.2% of its total extramural R/R&D obligations for SBIR activities, and not less than 0.45% of its total extramural R/R&D obligations for STTR activities, based on the extramural R/R&D amount reported to SBA. Furthermore, in an effort to help reconcile differences in the extramural R/R&D obligations reported to SBA and NCSES, SBA considers a Component compliant if they meet the criteria above and the extramural R/R&D obligations are within 10% of the amount uploaded to SBA. Overages of the minimum spending requirement indicates the Agency “exceeded” the requirement.

There are two primary reasons SBA was “unable to determine” compliance with minimum spending requirements: 1) greater than a 10% difference in extramural R/R&D obligations reported to SBA compared to amounts reported for the NCSES Survey, and/or 2) inability to validate program exemptions. SBA determined a Component “did not comply” with the minimum spending requirements when either the statutorily required data was not provided, the data reported to both sources fell below minimum levels, and/or SBA determined the justification regarding minimum spending requirement did not align with the guidelines in the statute. A detailed analysis of each Component’s compliance with the minimum spending requirement can be found below.

The DoD has two-year funding, meaning it can obligate the annually appropriated dollars over a two-year period. To provide a more comprehensive account of the DoD’s compliance with meeting the minimum spending requirements, SBA would like the DoD to report SBIR and STTR obligations by the year the funding was appropriated and the year that funding was obligated. The DoD will also need to provide the total extramural R/R&D obligations (the non SBIR/STTR funds used as the denominator in determining the minimum percent) in the same way. Having a two-year account of this information will enable SBA to validate DoD’s compliance with the minimum spending requirements. SBA requested the Service Agencies and Fourth Estate Components provide the two-year funding data for this report.

Table 19: Compliance with the Minimum Spending Requirement - DoD Components

Agency*	Whether Extramural R/R&D is Reported to SBA as Obligations (O) or Appropriations (A)†	Timeframe to Obligate Allocated Funding	SBA Analysis of Compliance with SBIR/STTR Minimum Spending Requirements
Navy	A	2-year	Unable to Determine
Air Force	A	2-year	Did Not Comply
Army	A	2-year	Unable to Determine
DARPA	A	2-year	Exceeded for SBIR / Did Not Comply for STTR
MDA	A	2-year	Unable to Determine
DHA	A	2-year	Did Not Comply
CBD	A	2-year	Did Not Comply
SOCOM	A	2-year	Unable to Determine
DTRA	A	2-year	Exceeded
DLA/DMEA	A	2-year	Exceeded

* SBA recognizes the Components of the DoD Fourth Estate often transfer all or portions of its STTR funding to another Component to obligate.

The FY17 SBIR and STTR Annual Report represents the first time STTR obligations are represented by individual Components.

† Agencies report the extramural R/R&D budget to SBA as either obligations or appropriations. DoD reports its extramural R/R&D budget as appropriations.

Navy. Based on SBA's analysis of compliance, SBA is unable to determine if Navy complied with the SBIR and STTR minimum spending requirements because SBA cannot validate the exempted programs. This analysis included evaluating the Navy data provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data Navy reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, Navy exceeded the minimum spending requirements with 3.23% obligated for SBIR activities and 0.51% obligated for STTR activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, Navy exceeded the minimum spending requirements with 3.69% obligated for SBIR activities and 0.58% obligated for STTR activities.

Navy reported \$3,155,967,000 in exemptions. However, SBA is unable to determine the spending requirement calculation for Navy because SBA does not have access to examine and validate the lines of funding which are being excluded. Furthermore, Navy has two-year funding, meaning it can obligate the annually appropriated dollars over a two-year period; however, Navy did not provide year end extramural obligation amounts to SBA which also limits the ability to make a determination. This requirement derives from Section 10(h)(4)(i) of the SBIR/STTR Policy Directives.

As mentioned earlier in this section, per Section 10(h)(4)(i) of the February 2014 SBIR/STTR Policy Directives, Participating Agencies must report the total fiscal year extramural R/R&D obligations as reported to the National Science Foundation (NSF). The total extramural R/R&D appropriations Navy reported to SBA were \$12,406,364,000, which is \$1,141,564,000 more than the amount reported for the NCSES Survey. Navy did not provide any additional information regarding the variance.

Air Force. Based on SBA's analysis of compliance, Air Force did not comply with the SBIR and STTR minimum spending requirements. This analysis included evaluating the Air Force data provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data Air Force reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, Air Force did not comply with the minimum spending requirements with 2.58% obligated for SBIR activities and 0.38% obligated for STTR activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, Air Force did not comply with the minimum spending requirements with 1.22% obligated for SBIR activities and 0.18% obligated for STTR activities.

Air Force reported \$22,512,000 in exemptions, which is substantially lower than the other DoD Agencies. However, SBA is unable to determine the spending requirement calculation for Air Force because SBA does not have access to examine and validate the lines of funding which are being excluded. Furthermore, Air Force has two-year funding, meaning it can obligate its annually appropriated dollars over a two-year period; however, they did not provide year end extramural obligation amounts to SBA which also limits the ability to make a determination.

The total extramural R/R&D appropriations Air Force reported to SBA were \$11,203,697,350 which is \$12,431,002,650 less than the amount reported for the NCSES Survey. Air Force did not provide any additional information regarding the variance.

Army. Based on SBA's analysis of compliance, SBA is unable to determine if Army complied with the SBIR or STTR minimum spending requirements because SBA cannot validate the exempted programs. This analysis included evaluating the Army data provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data Army reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, Army exceeded the minimum spending requirements with 3.56% obligated for SBIR activities but did not comply with STTR requirement with 0.42% obligated for activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, Army exceeded the minimum spending requirements with 4.97% obligated for SBIR activities and 0.59% obligated for STTR activities.

Army reported \$452,007,000 in exemptions. However, SBA is unable to determine the spending requirement calculation for Army because SBA does not have access to examine and validate the lines of funding which are being excluded. Furthermore, Army has two-year funding, meaning it can obligate its annually appropriated dollars over a two-year period; however, they did not provide year end extramural obligation amounts to SBA which also limits the ability to make a determination.

The total extramural R/R&D obligations Army reported to SBA were \$6,772,329,000, which was \$1,797,529,000 more than the amount reported for the NCSES Survey. Army did not provide any additional information regarding the variance.

DARPA. Based on SBA's analysis of compliance, DARPA exceeded the SBIR minimum spending requirement but did not comply with the STTR minimum spending requirement. This analysis included evaluating the DARPA data provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data DARPA reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, DARPA exceeded the minimum spending requirement with 4.21% obligated for SBIR activities but did not comply with the STTR minimum spending requirement with 0.37% obligated for activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, DARPA exceeded the minimum spending requirements with 4.28% obligated for SBIR activities but did not comply with the STTR minimum spending requirement with 0.38% obligated for activities. DARPA reports no exemptions.

The total extramural R/R&D obligations DARPA reported to SBA were \$2,675,732,000, which is \$39,732,000 less than the amount reported for the NCSES Survey.

DARPA explained:

DARPA's obligations for FY17 funding were spread across FY17 and FY18 due to the SBIR/STTR programs being RDTE funding, which is available to obligate for two years. To offset the typical Continuing Resolution, DARPA reserves enough SBIR/STTR funding to cover new awards and increments/options for efforts that are due in the first quarter of the new fiscal year. Although this practice results in delayed obligations, it is necessary to avoid funding gaps for the small business concerns that may otherwise experience a financial hardship if the agency is unable to provide funding on time. In addition, this practice also mitigates delays in research for the ongoing SBIR/STTR projects, which could negatively impact the company's ability to transition innovative technologies to the Warfighter, or to commercialize technologies beneficial to the private sector. Delaying obligations of all FY funding creates a funding buffer to get DARPA SBIR/STTR efforts through the CRs expected every year that can last from 1-6 months depending on the decisions of Congress.

MDA. Based on SBA's analysis of compliance, SBA is unable to determine if MDA complied with the SBIR and STTR minimum spending requirements because SBA cannot validate the exempted programs. This analysis included evaluating the MDA data provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data MDA reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, MDA exceeded the minimum spending requirements with 4.19% obligated for SBIR activities and 0.50% obligated for STTR activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, MDA exceeded the minimum spending requirements with 6.43% obligated for SBIR activities and 0.77% obligated for STTR activities.

MDA reported \$2,422,351,000 in exemptions. However, SBA is unable to determine the spending requirement calculation for MDA because SBA does not have access to examine and validate the lines of funding which are being excluded. With over 47% of MDA's reported extramural R/R&D obligations falling into this category, it presents a considerable challenge for both MDA and SBA. Furthermore, MDA has two-year funding, meaning it can obligate the annually appropriated dollars over a two-year period; however, they did not provide year end extramural obligation amounts to SBA which also limits the ability to make a determination.

The total extramural R/R&D obligations MDA reported to SBA were \$4,582,991,000, which is \$843,391,000 more than the amount reported for the NCSES Survey. MDA did not provide any additional information regarding the variance.

DHA. Based on SBA's analysis of compliance, DHA did not comply with the SBIR or STTR minimum spending requirements because DHA did not provide SBA the statutorily required information needed to make the determination. SBA cannot compare the extramural R/R&D obligations submitted to SBA and NCSES or validate the reported exemptions without this information.

The total obligations DHA reported to SBA were \$52,228,293 for SBIR activities and \$9,538,610 for STTR activities. However, SBA is unable to calculate the percent of dollars obligated for SBIR or STTR activities without the methodology report data. DHA did not provide any additional information on why it did not provide the required methodology report.

CBD. Based on SBA's analysis of compliance, CBD did not comply with the SBIR and STTR minimum spending requirements. This analysis included evaluating the CBD data provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data CBD reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, CBD did not comply with the minimum spending requirements with 2.71% obligated for SBIR activities and 0.00% obligated for STTR activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, CBD did not comply with the minimum spending requirements with 3.17% obligated for SBIR activities and 0.00% obligated for STTR activities. CBD reported no exemptions.

The total extramural R/R&D obligations CBD reported to SBA were \$479,715,191, which is \$70,015,191 more than the amount reported for the NCSES Survey. CBD did not provide any additional information regarding the variance.

SOCOM. Based on SBA's analysis of compliance, SBA is unable to determine if SOCOM complied with the SBIR and STTR minimum spending requirements because SBA cannot validate the exempted programs. This analysis included evaluating the SOCOM data provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data SOCOM reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, SOCOM exceeded the minimum spending requirements with 6.60% obligated for SBIR activities and 1.46% obligated for STTR activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, SOCOM exceeded the minimum spending requirements with 7.58% obligated for SBIR activities and 1.67% obligated for STTR activities.

SOCOM reported \$51,165,000 in exemptions. However, SBA is unable to determine the spending requirement calculation for SOCOM because SBA does not have access to examine and validate the lines of funding which are being excluded. Furthermore, SOCOM has two-year funding, meaning it can obligate the annually appropriated dollars over a two-year period; however, they did not provide year end extramural obligation amounts to SBA which also limits the ability to make a determination.

The total extramural R/R&D obligations SOCOM reported to SBA were \$496,452,000, which is \$57,152,000 more than the amount reported for the NCSES Survey. SOCOM did not provide any additional information regarding the variance.

DTRA. Based on SBA's analysis of compliance, DTRA exceeded the SBIR and STTR minimum spending requirements. This analysis included evaluating the DTRA data provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data DTRA reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, DTRA exceeded the minimum spending requirements with 4.02% obligated for SBIR activities and 1.50% obligated for STTR activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, DTRA exceeded the minimum spending requirements with 3.99% obligated for SBIR activities and 1.48% obligated for STTR activities. DTRA reported no exemptions and provided the following showing FY17 obligations over the two-year period:

DTRA FY2017 SBIR and STTR Funds

Program	FY17 Budget (M)	FY17 Obligations (M)	FY18 Obligations (M)
SBIR	\$9.168	\$4.742	\$5.736
STTR	\$1.290	\$0	\$2.465
<p>Note 1. DTRA FY2017 Total Extramural RDT&E Obligation: \$282,502,787.00. This is the final obligations amount versus the appropriations value of \$286,466,397 that the main DoD office officially reported to the SBA. As explained in earlier sections, SBA had at the reporting deadline only received appropriated dollars across all DoD components; therefore, these numbers were used for calculating set asides.</p> <p>Note 2. DTRA STTR normally participates in an –even-year cycle due to its relatively small annual STTR budget.</p> <p>Note 3. Contract award amounts are above our initial budget as DTRA requested and received additional funds from OSD for high quality SBC proposals.</p>			

The total extramural R/R&D obligations DTRA reported to SBA were \$286,466,397 which is \$2,133,603 less than the amount reported for the NCSES Survey. DTRA did not provide any additional information regarding the variance.

DLA/DMEA. Based on SBA’s analysis of compliance, DLA exceeded the SBIR and STTR minimum spending requirements. This analysis included evaluating the DLA data provided to SBA, mainly the total extramural R/R&D obligations, the total funds obligated for SBIR and STTR activities, and data DLA reported to NCSES. Based on the extramural R/R&D reported to SBA minus exemptions reported to SBA, DLA exceeded the minimum spending requirements with 13.92% obligated for SBIR activities and 1.63% obligated for STTR activities. Based on the extramural R/R&D reported for the NCSES Survey minus exemptions reported to SBA, DLA exceeded the minimum spending requirements with 9.15% obligated for SBIR activities (includes DMEA SBIR obligations) and 1.08% obligated for STTR activities (includes DMEA STTR obligations). DLA reports no exemptions.

The total extramural R/R&D obligations DLA reported to SBA were \$157,138,000, which is \$3,562,000 less than the amount reported for the NCSES Survey. DLA did not provide any additional information regarding the variance.

OSD. Based on SBA’s analysis of compliance, OSD did not comply with the SBIR or STTR minimum spending requirements because OSD did not provide SBA the statutorily required information needed to make the determination. SBA cannot compare the extramural R/R&D obligations submitted to SBA and NCSES or validate the reported exemptions without this information.

The total obligations OSD reported to SBA were \$748,622 for SBIR activities and \$0 for STTR activities. However, SBA is unable to calculate the percent of dollars obligated for SBIR or STTR activities without the methodology report data. OSD did not provide any additional information on why it did not provide the required methodology report.

10 | Extramural Trend Data – 2013 to 2017

The following provides the Extramural and SBIR obligation trends for the “Big 5” agencies (DoD, HHS, DOE, NASA, and NSF) for years 2013 to 2017. Note that exemptions are allowed only under 15 USC § 638 for DoD and DOE. However, other agencies have been known to identify exceptions and/or exemptions based on other legislation or the agency’s interpretation of what constitutes an exception/exemption.

Table 20: Extramural Trend Analysis - DoD, HHS, DOE, NASA, and NSF

DoD							
FY	Total Extramural R/R&D Reported to NSF NCSES	Total Extramural R/R&D Including Exemptions Reported to SBA (\$)	\$ Program Exemptions	\$ Extramural R/R&D to Determine Set Aside	\$ Obligated for SBIR Awards	% Obligated / Extramural	Min Spending REQ %
2013	\$43,314,800,000	N/P	N/P	\$33,879,164,718	\$977,669,046	2.89%	2.70%
2014	\$43,865,600,000	N/P	N/P	\$31,556,545,718	\$1,056,795,663	3.35%	2.80%
2015	\$41,333,700,000	\$40,387,481,759	\$6,676,078,000	\$33,711,403,759	\$956,913,114	2.84%	2.90%
2016	\$46,970,400,000	\$42,370,743,093	\$5,668,210,000	\$36,702,533,093	\$981,839,347	2.68%	3.00%
2017	N/P	N/P	N/P	N/P	\$1,153,167,255	N/P	3.20%

HHS							
FY	Total Extramural R/R&D Reported to NSF NCSES	Total Extramural R/R&D Including Exemptions Reported to SBA (\$)	\$ Program Exemptions	\$ Extramural R/R&D to Determine Set Aside	\$ Obligated for SBIR Awards	% Obligated / Extramural	Min Spending REQ %
2013	\$23,296,300,000	\$23,321,614,455	\$0	\$23,321,614,455	\$630,108,449	2.70%	2.70%
2014	\$24,100,600,000	\$24,096,641,379	\$0	\$24,096,641,379	\$680,729,893	2.82%	2.80%
2015	\$23,627,900,000	\$24,244,452,788	\$0	\$24,244,452,788	\$714,379,162	2.95%	2.90%
2016	\$25,093,200,000	\$25,859,796,811	\$0	\$25,859,796,811	\$773,384,238	2.99%	3.00%
2017	\$26,691,400,000	\$27,455,557,340	\$0	\$27,455,557,340	\$885,737,322	3.23%	3.20%

N/P – Not Provided

DOE							
FY	Total Extramural R/R&D Reported to NSF NCSES	Total Extramural R/R&D Including Exemptions Reported to SBA (\$)	\$ Program Exemptions	\$ Extramural R/R&D to Determine Set Aside	\$ Obligated for SBIR Awards	% Obligated / Extramural	Min Spending REQ %
2013	\$9,302,600,000	N/P	N/P	\$5,899,125,005	\$158,637,390	2.69%	2.70%
2014	\$10,021,100,000	\$9,976,752,234	\$3,921,500,000	\$6,055,252,234	\$182,758,991	3.02%	2.80%
2015	\$10,319,300,000	\$11,699,955,601	\$5,645,250,000	\$6,054,705,601	\$193,555,724	3.20%	2.90%
2016	\$10,661,200,000	\$11,982,292,000	\$5,454,273,000	\$6,528,019,000	\$199,642,873	3.06%	3.00%
2017	\$10,671,100,000	\$12,190,508,000	\$5,286,716,000	\$6,903,792,000	\$223,735,470	3.24%	3.20%

NASA							
FY	Total Extramural R/R&D Reported to NSF NCSES	Total Extramural R/R&D Including Exemptions Reported to SBA (\$)	\$ Program Exemptions	\$ Extramural R/R&D to Determine Set Aside	\$ Obligated for SBIR Awards	% Obligated / Extramural	Min Spending REQ %
2013	\$8,792,500,000	\$5,217,000,000	\$0	\$5,217,000,000	\$133,221,539	2.55%	2.70%
2014	\$9,214,900,000	\$4,742,000,000	\$0	\$4,742,000,000	\$144,553,504	3.05%	2.80%
2015	\$9,542,400,000	\$4,960,320,000	\$0	\$4,960,320,000	\$158,335,561	3.19%	2.90%
2016	\$10,618,700,000	\$6,036,000,000	\$0	\$6,036,000,000	\$163,327,061	2.71%	3.00%
2017	\$10,810,000,000	\$3,590,595,217	\$0	\$3,590,595,217	\$155,799,248	4.34%	3.20%

NSF							
FY	Total Extramural R/R&D Reported to NSF NCSES	Total Extramural R/R&D Including Exemptions Reported to SBA (\$)	\$ Program Exemptions	\$ Extramural R/R&D to Determine Set Aside	\$ Obligated for SBIR Awards	% Obligated / Extramural	Min Spending REQ %
2013	\$4,938,400,000	\$4,877,000,000	\$0	\$4,877,000,000	\$142,882,120	2.93%	2.70%
2014	\$5,316,800,000	\$4,688,000,000	\$0	\$4,688,000,000	\$140,066,833	2.99%	2.80%
2015	\$5,579,900,000	\$5,367,000,000	\$0	\$5,367,000,000	\$147,733,251	2.75%	2.90%
2016	\$5,490,000,000	\$5,444,000,000	\$0	\$5,444,000,000	\$161,577,024	2.97%	3.00%
2017	\$5,505,100,000	\$5,440,330,000	\$0	\$5,440,330,000	\$174,463,775	3.21%	3.20%

N/P – Not Provided

11 | Awards Exceeding Guideline Amounts

The SBAct currently sets guideline award amounts for Phase I awards at \$150,000 and Phase II awards at \$1 million. Participating Agencies with smaller budgets have traditionally chosen to solicit for award sizes at or less than the guideline amounts, with the rationale that it allows them to issue a larger number of awards to reach a wider range of viable solutions to R&D needs. Agencies with larger budgets tend to make more awards that exceed the guideline amounts with the rationale that in some cases larger award sizes are needed when dealing with capital intensive research projects, while the larger SBIR/STTR budgets still allow the agency to fund a sufficiently wide range of proposals under the guideline thresholds. Agencies may, at its discretion, exceed the guideline amounts by up to 50%, making the effective maximum award amounts \$225,000 for a Phase I award and \$1.5 million for Phase II awards. Information about individual awards is available on SBIR.gov.

Table 21: Awards Exceeding Guideline Amounts by More Than 50%

Awards Exceeding Guideline Amounts by More Than 50% (FY17)			
Program	Phase	DoD	HHS
SBIR	Phase I	1,440	738
	Phase I Exceeding	2 / 0%	279 / 38%
	Phase II	938	427
	Phase II Exceeding	22 / 2%	16 / 4%
STTR	Phase I	266	184
	Phase I Exceeding	0 / 0%	75 / 41%
	Phase II	126	47
	Phase II Exceeding	2 / 2%	0 / 0%
(\$225,000 for Phase I, \$1,500,000 for Phase II) *includes FY17 obligations on prior year awards			

The SBAct permits Participating Agencies to request a waiver from the SBA for certain awards to exceed the cap. The SBA established in Section 7(i)(4) of the SBIR/STTR Policy Directives that an agency making such a request must provide the SBA with: 1) evidence that the limitations on award size interfere with the ability of the agency to fulfill its R&D mission; 2) evidence that the agency will minimize, to the maximum extent practicable, the number of awards that exceed the cap for the topic area; and, 3) evidence that research costs for the topic area differ significantly from those in other areas to warrant going over the cap. The latter becomes an important distinction for agencies, such as HHS (including the National Institutes of Health (NIH)), and DoD, when costs to mature technology to a level in which it can be transitioned, or commercialized to the next level may exceed the cap. For any Participating Agency waiver request approved, that agency must report to SBA any such awards made, to include the identity and location of each recipient.

For FY17, NIH requested and the SBA approved, waivers granting NIH authority to solicit and make awards over the cap for specific topics, particularly for life science- and biomedical-related research topics involving clinical trials conducted within rigorous regulatory environments at substantially higher costs and any life science area with higher costs. The SBA approved NIH's waiver request under the condition that NIH would monitor and report to the SBA any awards exceeding a Phase I or Phase II cap. DoD requested, and the SBA approved, waivers for awards exceeding the cap on a case-by-case/project-by-project basis.

HHS. HHS' justification for awards exceeding guideline amounts is based on the fact that the length of time and cost of research involving development and evaluation of certain technologies exceeds that of the routinely awarded for SBIR/STTR awards.

HHS explained:

Such technologies include, but are not limited to, nanotechnologies; genetically engineered proteins; inducible gene expression; combinatorial chemistry approaches; biosilicon devices; toxicology models; drug discovery/drug evaluation approaches; mammalian and non-mammalian models of disease; biocompatible biomaterials; acousto-optics and opto-electronics; diagnostic imaging technologies; biomarkers; biomedical computbiosensors; and NMR spectroscopy instrumentation. NIH is the steward of medical and behavioral research for the Nation. Its mission is science in pursuit of fundamental knowledge about the nature and

behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce the burdens of illness and disability.

NIH is the steward of medical and behavioral research. Its mission is science in pursuit of fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce the burdens of illness and disability.

The goals of the agency are:

- To foster fundamental creative discoveries, innovative research strategies, and their applications as a basis for ultimately protecting and improving health;
- To develop, maintain, and renew scientific human and physical resources that will assure the Nation's capability to prevent disease;
- To expand the knowledge base in medical and associated sciences in order to enhance the Nation's economic well-being and ensure a continued high return on the public investment in research; and
- To exemplify and promote the highest level of scientific integrity, public accountability, and social responsibility in the conduct of science.

In realizing these goals, the NIH provides leadership and direction to programs designed to improve the health of the Nation by conducting and supporting research:

- in the causes, diagnosis, prevention, and cure of human diseases;
- in the processes of human growth and development;
- in the biological effects of environmental contaminants;
- in the understanding of mental, addictive and physical disorders; and
- in directing programs for the collection, dissemination, and exchange of information in medicine and health, including the development and support of medical libraries and the training of medical librarians and other health information specialists.

According to NIH, in order to accomplish this mission with its SBIR/STTR Programs, its projects must be funded at a level which is typically over the statutory guidelines:

- The cost of research in the biomedical and behavioral arenas is in many cases above the statutory guidelines and higher than most research and development research areas.
- To a level where the project will attract third party funding and partnerships after the SBIR/STTR project period to move products along the commercialization path. This can ultimately take years and possibly tens/hundreds of millions of dollars after the SBIR/STTR Phase.
- To move products far enough along for regulatory filings, testing, and approval. Lack of sustained funding for a Phase I, II, or IIB SBIR/STTR project could cause projects to fail and not reach the market due to any one or more of the above. As a consequence, NIH would not be able to fulfill its mission and could not bring life-saving and life-changing technologies to the market.

DoD. For awards that exceeded guidelines by more than 50%, the DoD stated that “the contract cost is reasonable and necessary to ensure the performance of a quality investigation of the proposed idea”.

12 | SBIR/STTR Proposal Selection Rates

Proposal selection rates are the number of awards made divided by the total number of proposals received. The SBA monitors the selection rates for Phase I Awards and Phase II Awards.

SBIR Program

In FY17, small businesses submitted a total of 11,365 proposals across the ten participating Civilian Agencies. Those agencies made 1,783 new Phase I awards, resulting in an average Phase I proposal selection rate of 16%. The ten Civilian Agencies received 1,784 Phase II proposals. Agencies selected 932 new Phase II awards, resulting in an average Phase II selection rate of 52%.

DOE (5), DHS (1), and DOC (4) made Phase I awards for a topic that received only one proposal.

Small businesses submitted a total 7,653 SBIR Phase I proposals across the DoD Service Agencies and Fourth Estate. The DoD selected 1,440 Phase I contracts, resulting in an average Phase I proposal selection rate of 19%. The DoD received 1,361 Phase II proposals. The DoD selected 938 new Phase II awards, resulting in an average selection rate of 69%.

The DoD did not make any awards to a topic that received only one proposal.

Chart 15: SBIR Phase I Proposal Selection Rates

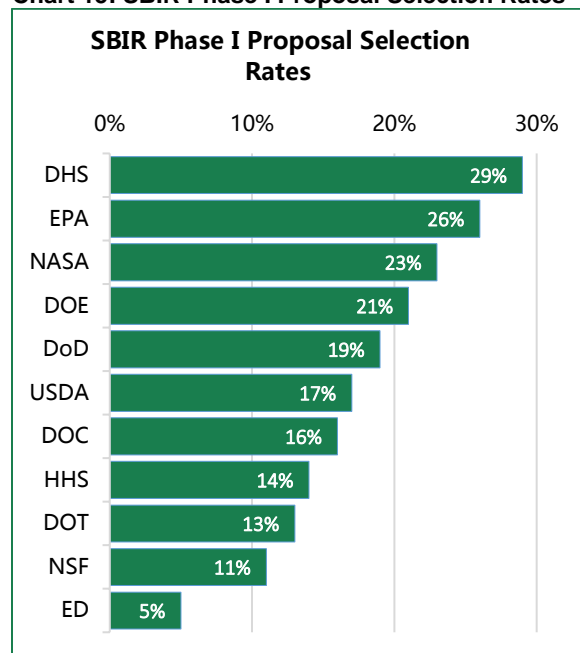
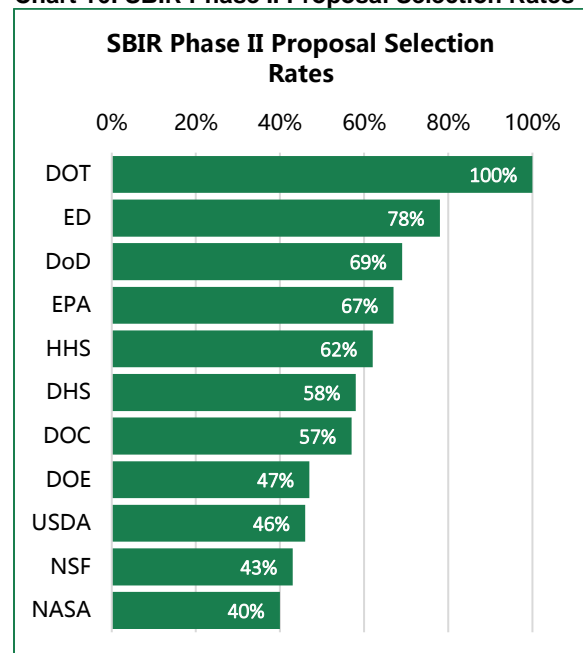


Chart 16: SBIR Phase II Proposal Selection Rates



In the preceding five fiscal years (FY12 - FY16), the 11 participating agencies selected 3,748 companies to receive a Phase II award. 2,324 (62%) of those companies received only one Phase II award, which represented 27% of the overall Phase II awards. Moreover, 3,482 companies (93%) received no more than five Phase II awards, which represented 62% of the overall Phase II awards. However, the most prolific companies in the program often work across several of the participating agencies. 46 companies received more than 15 Phase II awards during the period. While these 46 companies represent a small percentage (1%) of the unique firms that received a Phase II, they represent 1,394 (16%) of the 8,751 overall Phase II awards. Of the 46 companies, 45 (98%) had at least one award with the DoD. While only 3% of the companies DoD selected for a Phase II had more than 15 Phase IIs during the period, those 45 companies represented 23% of the DoD's total Phase II awards. The DoD also represents 1,041 of the 1,394 (75%) Phase IIs made to companies with greater than 15 Phase IIs during the period.

Aside from the NSF, every participating agency made at least one Phase II during the five-year period to a company with greater than 15 Phase IIs. Among the five largest SBIR programs, DoD selected for award the highest number of companies with greater than 15 Phase II awards by number (45), while NASA selected the highest number by percentage (8%). The companies selected by NASA represent 17% of its total Phase II awards. The companies selected by DOE represent 15% of its total Phase II awards.

In FY17, 76% of companies selected for a Phase I received only one Phase I award. These 1,774 companies represented 46% of the overall Phase I awards. 97% of companies received no more than five awards, which represented 78% of the total Phase I awards. However, 22 companies represented 12% of the overall Phase I awards. Of those 22 companies, 21 had more than 15 Phase II awards in the preceding five fiscal years. Every agency except NSF and ED made at least one new Phase I award to a company that received more than 15 Phase II awards in the preceding five years. 8% of the companies funded in Phase I for NASA and DOE respectively received more than 15 Phase II awards over the period. Furthermore, while companies with greater than 15 Phase II awards represented 5% of the Phase II companies funded by DoD, they represented 460 FY17 Phase I awards (27% of DoD's total Phase I awards). The companies selected by NASA and DOE represented 16% of the respective total Phase I awards for the agency. While companies which received more than 15 Phase IIs in the preceding five fiscal years represented only 2% of the total number of companies selected for a Phase I award in FY17, they accounted for 617 Phase I awards (16% of the total Phase I awards).

Additional information is available in the Table 22.

Table 22: Phase IIs Made to Small Business Concerns Which Received More Than 15 Phase IIs During the Preceding 5 Fiscal Years – Participating Agencies

FY12 FY16 Phase II Awards Companies												
	DoD	HHS	NSF	NASA	DOE	USDA	DHS	DOC	ED	DOT	EPA	Total
Number of Companies with a Phase II Award	1,596	1,211	553	363	387	126	70	62	34	38	39	3,748
At Least One Phase II to Companies with >15 Phase IIs (FY12-16)	45	14	0	30	18	6	13	6	1	4	4	46
Percent of Phase IIs to Companies with >15 Phase IIs (FY12-16)	3%	1%	0%	8%	5%	5%	19%	10%	3%	11%	10%	1%

FY12 FY16 Phase II Awards Awards												
	DoD	HHS	NSF	NASA	DOE	USDA	DHS	DOC	ED	DOT	EPA	Total
Total Phase II Awards	4,436	1,935	577	643	714	141	97	69	43	56	40	8,751
Phase II Awards to Companies with >15 Phase IIs (FY12-16)	1,041	75	0	108	109	7	24	10	4	11	5	1,394
Percent of Phase II to Companies with >15 Phase IIs	23%	4%	0%	17%	15%	5%	25%	15%	9%	20%	13%	16%

FY17 Phase I Awards Companies												
	DoD	HHS	NSF	NASA	DOE	USDA	DHS	DOC	ED	DOT	EPA	Total
Number of Companies with a Phase I Award	829	759	293	276	234	84	15	28	11	13	15	2,333
At Least One Phase I to Companies with >15 Phase IIs (FY12-16)	44	10	0	23	19	4	4	2	0	4	3	46
Percent of Phase I Awards to Companies with >15 Phase IIs (FY12-16)	5%	1%	0%	8%	8%	5%	27%	7%	0%	31%	20%	16%

FY17 Phase I Awards Awards												
	DoD	HHS	NSF	NASA	DOE	USDA	DHS	DOC	ED	DOT	EPA	Total
Total Phase I Awards	1,706	910	293	398	342	88	16	31	11	14	16	3,825
Phase I Awards to Companies with >15 Phase IIs (FY12-16)	460	17	0	63	56	4	4	5	0	5	3	617
Percent of Phase I Awards to Companies with >15 Phase IIs (FY12-16)	27%	2%	0%	16%	16%	5%	25%	16%	0%	36%	19%	16%

STTR Program

In FY17, small businesses partnering with non-profit research institutions submitted a total of 2,003 STTR Phase I proposals across the four participating Civilian Agencies. Those agencies selected 346 new Phase I awards, resulting in an average Phase I proposal selection rate of 17%. The Civilian Agencies received 214 Phase II proposals. Agencies selected 108 new Phase II awards, resulting in an average Phase II proposal selection rate of 50%. DOE and NASA each made a Phase I award for a topic that received a single proposal.

NASA made one award for a topic that received only one proposal.

Small businesses submitted a total of 817 Phase I proposals across the DoD Service Agencies and Fourth Estate. The DoD awarded 266 Phase I contracts, resulting in an average Phase I proposal selection rate of 33%. The DoD received 200 Phase II proposals. The DoD selected 126 new Phase II awards, resulting in an average selection rate of 63%.

The DoD did not make any awards to a topic that received only one proposal.

Chart 17: STTR Phase I Proposal Selection Rates

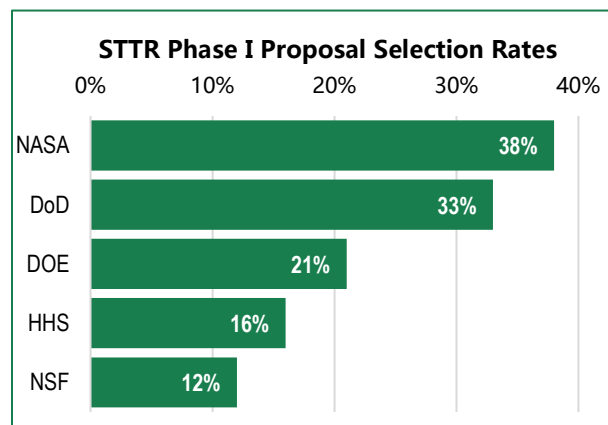
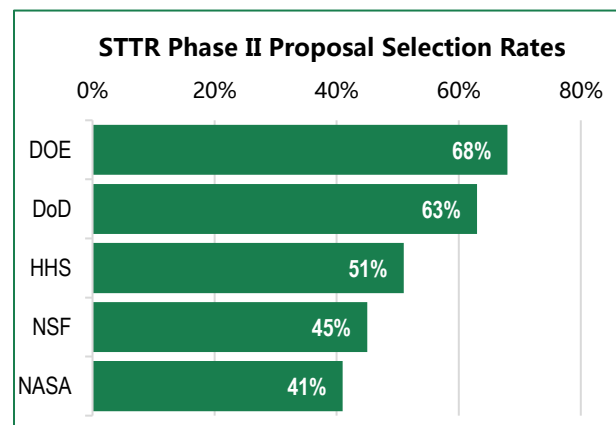


Chart 18: STTR Phase II Proposal Selection Rates



13 | SBIR/STTR Awards by U.S. State & Territory

The following table shows the total dollar amount and number of SBIR and STTR Phase I and Phase II awards across the U.S. This data is also publicly available on a searchable database at www.SBIR.gov and remains current to include subsequent funding of ongoing projects.

The SBA has noted that more SBIR/STTR funding goes to states with the largest populations and those that have a record of receiving substantial R&D funding from Federal programs outside of the SBIR and STTR Programs. For SBIR and STTR funding specifically in order of magnitude:

- Approximately 66% of total FY17 SBIR award dollars were concentrated in California, Massachusetts, Maryland, New York, Virginia, Texas, Colorado, Pennsylvania, North Carolina, and Ohio.
- Approximately 63% of total FY17 STTR award dollars were concentrated in California, Massachusetts, Texas, North Carolina, Maryland, New York, Pennsylvania, Virginia, Ohio, and Florida.

States with a high concentration of both FY17 SBIR and STTR award dollars include California, Massachusetts, Maryland, Texas, New York, Virginia, and Pennsylvania.

The SBA and Participating Agencies have worked to coordinate outreach efforts and tap into the innovation pipelines within the 26 most underrepresented regions of Alaska, Arkansas, Delaware, Hawaii, Idaho, Iowa, Kansas, Kentucky, Louisiana, Maine, Mississippi, Missouri, Montana, Nebraska, Nevada, North Dakota, Oklahoma, Puerto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, West Virginia, and Wyoming. Key outreach contacts have been identified within these states (and all states and territories) to include economic development agencies, universities, accelerators, and state or local small business service providers, to foster cross-collaboration, increase small business awareness, and encourage future participation in the SBIR/STTR Programs.

Additionally, the FY17 SBA Road Tour visited Idaho, Utah, Nevada, Arizona, Minnesota, Wisconsin, Michigan, Ohio, Kentucky, California, and Hawaii to increase program participation in underrepresented states and among underrepresented populations.

Table 23: SBIR/STTR Awards by U.S. State and Territory

State	SBIR Phase I		STTR Phase I		SBIR Phase II		STTR Phase II		SBIR Total Awards		STTR Total Awards		SBIR/STTR Total Awards	
	(#)	(\$)	(#)	(\$)	(#)	(\$)	(#)	(\$)	(#)	(\$)	(#)	(\$)	(#)	(\$)
AK	0	\$0	1	\$298,871	1	\$7,597	2	\$985,138	1	\$7,597	3	\$1,284,009	4	\$1,291,606
AL	64	\$9,174,721	15	\$2,068,887	50	\$51,424,569	9	\$9,058,172	114	\$60,599,290	24	\$11,127,059	138	\$71,726,348
AR	6	\$1,998,754	7	\$1,282,982	5	\$4,397,208	2	\$2,488,439	11	\$6,395,962	9	\$3,771,421	20	\$10,167,383
AZ	58	\$8,982,149	11	\$1,893,950	31	\$31,746,147	4	\$3,766,207	89	\$40,728,296	15	\$5,660,157	104	\$46,388,453
CA	700	\$122,815,131	101	\$19,084,526	400	\$441,661,260	37	\$39,689,015	1100	\$564,476,391	138	\$58,773,541	1238	\$623,249,932
CO	154	\$22,597,448	28	\$5,017,695	81	\$83,203,642	7	\$6,248,162	235	\$105,801,090	35	\$11,265,857	270	\$117,066,947
CT	33	\$8,202,356	6	\$1,654,601	16	\$22,707,703	1	\$1,737,374	49	\$30,910,059	7	\$3,391,975	56	\$34,302,034
DC	11	\$1,801,962	3	\$536,216	5	\$6,395,314	0	\$0	16	\$8,197,276	3	\$536,216	19	\$8,733,492
DE	21	\$3,056,581	8	\$1,536,291	15	\$16,856,706	3	\$1,557,434	36	\$19,913,288	11	\$3,093,725	47	\$23,007,013
FL	96	\$14,683,047	18	\$3,037,110	49	\$48,999,202	10	\$8,362,263	145	\$63,682,249	28	\$11,399,374	173	\$75,081,623
GA	35	\$6,815,743	13	\$2,668,840	20	\$29,628,261	3	\$2,688,366	55	\$36,444,004	16	\$5,357,206	71	\$41,801,210
HI	23	\$3,451,302	2	\$444,998	18	\$13,215,579	0	\$0	41	\$16,666,882	2	\$444,998	43	\$17,111,880
IA	11	\$1,725,812	1	\$349,860	9	\$10,265,360	0	\$837,082	20	\$11,991,172	1	\$1,186,942	21	\$13,178,114
ID	0	\$39,702	0	\$0	3	\$3,422,212	0	\$248,844	3	\$3,461,914	0	\$248,844	3	\$3,710,758
IL	69	\$11,429,489	17	\$3,949,861	39	\$37,364,097	7	\$6,687,711	108	\$48,793,586	24	\$10,637,572	132	\$59,431,158
IN	30	\$4,734,227	7	\$1,651,951	16	\$16,916,614	1	\$2,240,073	46	\$21,650,841	8	\$3,892,024	54	\$25,542,865
KS	9	\$1,815,857	0	\$0	3	\$2,985,169	2	\$1,748,543	12	\$4,801,026	2	\$1,748,543	14	\$6,549,569
KY	19	\$4,156,735	4	\$842,743	12	\$13,221,485	2	\$1,900,453	31	\$17,378,220	6	\$2,743,196	37	\$20,121,416
LA	9	\$1,703,434	1	\$125,000	4	\$4,581,101	1	\$963,541	13	\$6,284,535	2	\$1,088,541	15	\$7,373,076
MA	353	\$63,360,109	55	\$10,950,241	213	\$230,094,636	25	\$25,376,020	566	\$293,454,744	80	\$36,326,261	646	\$329,781,005
MD	163	\$29,919,775	32	\$4,985,675	82	\$90,499,019	15	\$14,849,803	245	\$120,418,794	47	\$19,835,478	292	\$140,254,271
ME	4	\$572,217	0	\$0	2	\$3,429,155	0	\$0	6	\$4,001,372	0	\$0	6	\$4,001,372
MI	60	\$9,508,330	20	\$3,778,483	43	\$43,509,905	3	\$3,030,938	103	\$53,018,235	23	\$6,809,421	126	\$59,827,657
MN	62	\$11,874,875	6	\$1,311,113	27	\$32,205,280	4	\$4,900,050	89	\$44,080,155	10	\$6,211,163	99	\$50,291,318
MO	22	\$4,878,868	9	\$2,214,224	13	\$16,701,398	0	\$0	35	\$21,580,266	9	\$2,214,224	44	\$23,794,490
MS	6	\$672,596	1	\$216,429	5	\$4,206,567	0	\$0	11	\$4,879,163	1	\$216,429	12	\$5,095,592
MT	15	\$2,223,132	4	\$738,325	9	\$7,846,655	2	\$1,494,626	24	\$10,069,787	6	\$2,232,951	30	\$12,302,738

NC	79	\$16,717,134	22	\$4,786,509	47	\$57,875,659	9	\$13,840,335	126	\$74,592,793	31	\$18,626,844	157	\$93,219,637
ND	1	\$100,000	1	\$154,590	1	\$310,000	0	\$0	2	\$410,000	1	\$154,590	3	\$564,590
NE	6	\$942,592	0	\$0	7	\$4,338,028	1	\$1,716,431	13	\$5,280,620	1	\$1,716,431	14	\$6,997,051
NH	39	\$5,620,106	10	\$1,775,794	27	\$28,887,556	1	\$2,579,971	66	\$34,507,662	11	\$4,355,765	77	\$38,863,427
NJ	60	\$10,446,666	16	\$3,192,623	38	\$42,995,980	4	\$4,041,220	98	\$53,442,647	20	\$7,233,843	118	\$60,676,490
NM	46	\$6,524,894	5	\$749,981	20	\$22,725,630	5	\$6,043,830	66	\$29,250,524	10	\$6,793,811	76	\$36,044,335
NV	6	\$1,064,772	3	\$471,817	2	\$3,008,786	1	\$1,249,800	8	\$4,073,559	4	\$1,721,617	12	\$5,795,176
NY	136	\$27,297,316	20	\$3,981,387	82	\$87,605,007	12	\$12,739,200	218	\$114,902,323	32	\$16,720,587	250	\$131,622,910
OH	120	\$18,187,332	27	\$4,250,451	70	\$69,611,395	14	\$11,548,593	190	\$87,798,727	41	\$15,799,044	231	\$103,597,771
OK	8	\$1,316,649	1	\$144,537	7	\$9,786,551	1	\$749,994	15	\$11,103,200	2	\$894,531	17	\$11,997,731
OR	48	\$10,262,723	3	\$735,749	23	\$25,033,030	2	\$2,394,714	71	\$35,295,753	5	\$3,130,463	76	\$38,426,217
PA	116	\$20,084,376	30	\$5,422,189	79	\$84,419,135	3	\$6,078,768	195	\$104,503,510	33	\$11,500,957	228	\$116,004,467
PR	7	\$1,436,653	1	\$149,507	5	\$3,921,080	1	\$499,020	12	\$5,357,733	2	\$648,527	14	\$6,006,260
RI	5	\$821,630	0	\$0	1	\$1,505,136	0	\$0	6	\$2,326,766	0	\$0	6	\$2,326,766
SC	13	\$2,027,125	4	\$2,155,410	10	\$10,392,922	0	\$0	23	\$12,420,047	4	\$2,155,410	27	\$14,575,457
SD	6	\$824,589	1	\$225,000	1	\$1,470,311	0	\$0	7	\$2,294,900	1	\$225,000	8	\$2,519,900
TN	16	\$2,446,078	5	\$1,149,485	16	\$13,218,544	5	\$3,614,548	32	\$15,664,622	10	\$4,764,033	42	\$20,428,655
TX	141	\$22,406,629	36	\$6,554,601	66	\$70,688,799	19	\$19,732,174	207	\$93,095,428	55	\$26,286,775	262	\$119,382,203
UT	42	\$7,806,101	12	\$2,263,989	30	\$32,762,488	3	\$5,297,296	72	\$40,568,589	15	\$7,561,285	87	\$48,129,874
VA	192	\$28,786,228	29	\$4,667,792	110	\$115,153,056	7	\$9,473,082	302	\$143,939,284	36	\$14,140,874	338	\$158,080,158
VT	11	\$1,444,448	3	\$524,918	4	\$6,726,654	0	\$0	15	\$8,171,102	3	\$524,918	18	\$8,696,020
WA	62	\$12,653,427	7	\$1,468,412	39	\$44,447,372	1	\$2,049,918	101	\$57,100,799	8	\$3,518,330	109	\$60,619,128
WI	23	\$5,330,559	7	\$1,284,733	11	\$13,500,005	3	\$3,141,502	34	\$18,830,565	10	\$4,426,235	44	\$23,256,800
WV	7	\$892,962	0	\$0	4	\$3,730,965	0	\$0	11	\$4,623,927	0	\$0	11	\$4,623,927
WY	3	\$736,383	1	\$224,740	4	\$5,231,447	0	\$0	7	\$5,967,830	1	\$224,740	8	\$6,192,570

The number of awards are only for new awards during FY17. The dollars obligated includes funding for both new and prior year awards. Agencies have the ability to update the number and dollar amounts for awards so this may be updated on SBIR.gov. The data represented in this table reflects a snapshot of data pulled on 2019-03-15.

14 | SBIR/STTR Award Timelines

The SBIR/STTR provisions in the SBIR/STTR Reauthorization Act of 2011 focused on reducing the gaps in the time between the close of the solicitation, the notification of award, and the performance start date. The Policy Directive prescribed the duration between the closing date of the solicitation and the notification of recommendation of award to be not more than one year for NIH or NSF; and not more than 90 calendar days for all other agencies. The Policy Directive also prescribed the duration between the closing date of the solicitation and the first date of the period of performance on the funding agreement as not more than 15 months for NIH and NSF; and not more than 180 calendar days for all other agencies. The data in this section originates from the proposal notification and award timeline data the participating agencies uploaded to SBA. Though the agencies validated the data, SBA identified some agencies provided incomplete timeline information and others provided timeline data which included errors. SBA will continue working closely with the 11 participating agencies on improving the accuracy of all reported data

Civilian Participating Agencies SBIR Timelines

NASA, NSF, DHS, ED, DOC, and DOT reported 100% of Phase I SBIR awards were issued within the required timeline, while NASA, NSF, ED, and DOC reported 100% of Phase II SBIR awards were issued within the required timeline.

Table 24: SBIR Award Timelines - Civilian Agencies

SBIR TIMELINES	HHS	DOE	NASA	NSF	USDA	DHS	ED	DOC	DOT	EPA
Average time between Phase I Solicitation Close and Award Notification (days)	204	109	89	189	155	75	89	87	89	182
Average time between Phase I Notification and First Day of Period of Performance (days)	54	17	51	3	132	50	27	47	71	134
Percentage of Phase I Awards where the time between Solicitation Close and Notification was less than or equal to 90 days (1 year for HHS and NSF only)	99%	49%	100%	100%	0%	100%	100%	100%	100%	0%
Percentage of Phase I Awards where time between Solicitation Close and First Day of Performance was less than or equal to 180 days (15 months for HHS and NSF only)	97%	100%	100%	100%	0%	81%	100%	100%	100%	0%
Average time between Phase I Award Final Day of Period of Performance and Phase II Award's First Day of Period of Performance (days)	204	147	142	246	274	173	182	188	289	277
Average time between Phase II Solicitation Close Date, or Proposal Receipt Date, and Award Notification Date (days)	214	121	87	205	88	59	87	81	62	102
Average time between Phase II Notification Date and First Day of Period of Performance (days)	53	*	53	1	91	92	11	47	179	101
Percentage of Phase II Awards where time between Solicitation Close, or Proposal Receipt, and Notification Date was less than or equal to 90 days (<=1 year for HHS and NSF only)	97%	49%	100%	100%	0%	100%	100%	100%	86%	0%
Percentage of Phase II Awards where time between Solicitation Close, or Proposal Receipt, and First Day of Performance was less than or equal to 180 days (<=15 months for HHS and NSF only)	95%	100%	98%	100%	0%	68%	100%	100%	13%	0%

* DOE had unexpected delays in notifying award recipients. For several awards, the delay continued past the contractual "First Day of Period of Performance". The delay affected Phase II more so than Phase I awards.

For FY17, DOE had an unexpected delay for award Notification. As a result, its timeline to notify awardees exceeded 3 months on average. It also resulted in about 50% of the awards having the award notification date occurring after the first day of period of performance. Regarding these results, DOE explained that:

During FY 2017, a new review process was added for DOE awards that increased the time required to issue SBIR/STTR awards. This impacted two DOE SBIR/STTR solicitations (Phase II Release 1 and Phase I Release 2) and resulted in DOE being unable to meet the statutory requirement to issue award decisions within 90 days. DOE requested and received waivers from SBA to extend the award notification dates. For these two groups of awards, the award notification date was later than the planned start date of the project. DOE elected not to change the planned start date of the projects to allow grantees the ability to recover costs associated with starting the project on the planned dates if they had chosen to do so [at their own risk].

USDA and EPA also showed timelines exceeding 6 months on average to issue awards.

USDA explained:

(USDA) uses an external scientific peer review process similar to NSF and NIH and cannot meet the 90-day maximum timeline from the Phase I proposal due date to award selection notification requirement. USDA has noted that the agency could meet the 1-year timeline as congressionally prescribed for NIH and NSF.

EPA did not provide any additional information regarding the longer than prescribed timelines

HHS and DOE Phase II timelines also include Fast-Track projects that use the Phase I Solicitation Close Date when the Fast-Track proposal was submitted, which can increase the average Phase II timelines.

Chart 19: SBIR Average Time Between Phase I Solicitation Close and Award Notification - Civilian

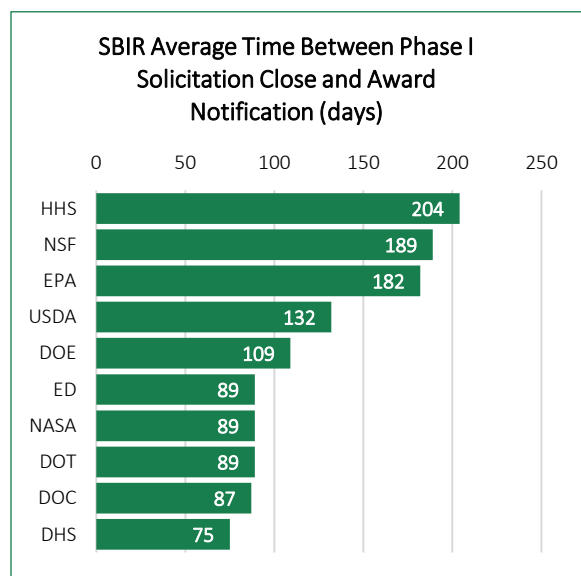


Chart 20: SBIR Average Time Between Phase II Solicitation Close and Award Notification - Civilian

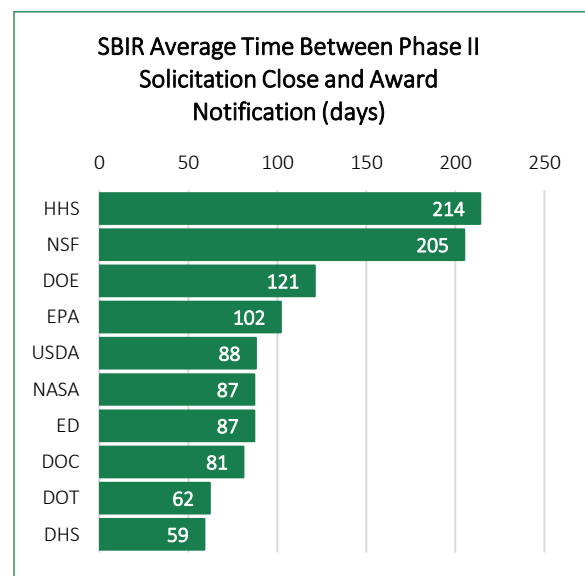
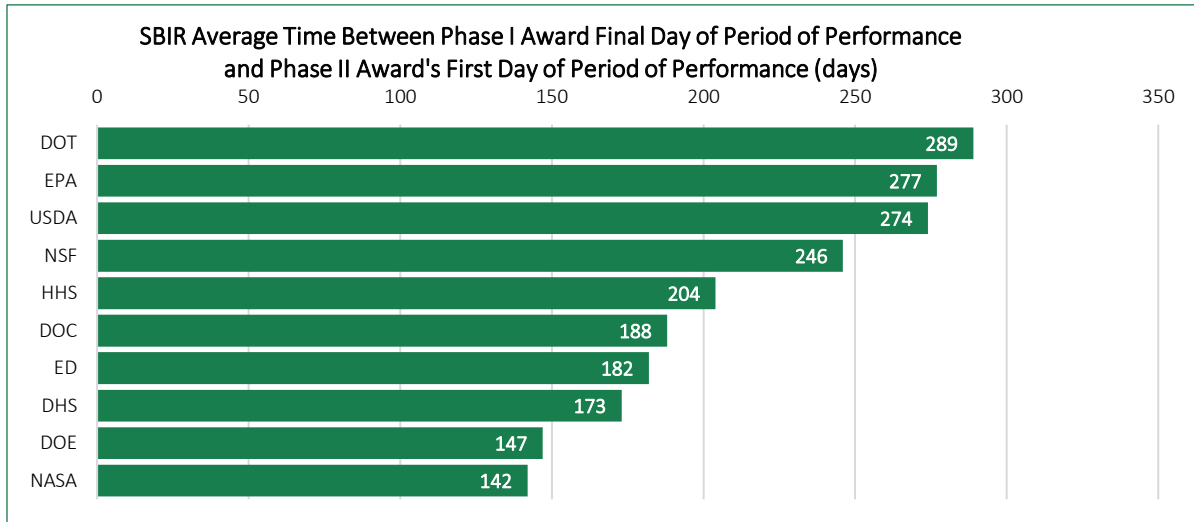


Chart 21: SBIR Average Time Between Phase I Award Final Day of Period of Performance and Phase II Award's First Day of Period of Performance – Civilian Agencies



DoD Service Agencies and Fourth Estate SBIR Timelines

Table 25 below shows how DoD Service Agencies and Fourth Estate performed on the SBIR program during FY17. Navy, Air Force, and Fourth Estate reported Phase I SBIR awards were issued within the required timeline. The Policy Directive prescribes the duration between the closing date of the solicitation and the notification of recommendation of award of no more than 90 calendar days.

Table 25: SBIR Award Timelines - DoD Service Agencies and Fourth Estate

SBIR TIMELINES	Navy	Air Force	Army	4 th Estate	DoD Total
Average time between Phase I Solicitation Close and Award Notification (days)	72	106	90	66	82
Average time between Phase I Notification and First Day of Period of Performance (days)	75	83	173	111	108
Percentage of Phase I Awards where the time between Solicitation Close and Notification was less than or equal to 90 days	86%	22%	25%	93%	60%
Percentage of Phase I Awards where time between Solicitation Close and First Day of Performance was less than or equal to 180 days	71%	44%	29%	66%	54%
Average time between Phase I Award Final Day of Period of Performance and Phase II Award's First Day of Period of Performance (days)	203	191	410	242	261
Average time between Phase II Solicitation Close Date, or Proposal Receipt Date, and Award Notification Date (days)	73	111	58	64	75
Average time between Phase II Notification Date and First Day of Period of Performance (days)	156	147	249	182	184
Percentage of Phase II Awards where time between Solicitation Close, or Proposal Receipt, and Notification Date was less than or equal to 90 days	69%	67%	99%	89%	81%
Percentage of Phase II Awards where time between Solicitation Close, or Proposal Receipt, and First Day of Performance was less than or equal to 180 days	38%	40%	23%	26%	31%

The Policy Directive prescribed the duration between the closing date of the solicitation and the notification of recommendation of award to be no more than 90 calendar days. For Phase I notifications, the Navy met this timeline requirement for 86% of its awards, the Fourth Estate 93%, the Army 25%, and the Air Force 22%.

The most important data point for small businesses was the time without funding between the end of the Phase I period of performance and the start of the Phase II award (Table 25 fifth row). The timeframes for the DoD were higher than the 180-day goal as well as compared to most of the Civilian agencies. This timeframe has trended up from FY16 for the Navy, Air Force, and Army but down for the 4th Estate. Finding solutions to address this issue needs to be a focus area for the DoD, especially if they want to attract new firms to its program. The quality of the award and notification dates has been a problem for the DoD and many of the agencies. SBA has a lower confidence level in the accuracy of this data than the funding and total award numbers and continues to work with the agencies to improve the quality of this reporting. The FY19 NDAA tasked GAO to perform a study on award timeframes and the challenges with making Phase I and II awards. SBA strongly supports this effort which should help to address areas the agencies can work on to make improvements.

The following FY17 charts are organized by DoD Service Agencies and Fourth Estate and contrast the performance on Phase I and Phase II SBIR proposals. Specific average SBIR times for each of the DoD Services and Fourth Estate are as follows:

Chart 22: Average Time Between Phase I Solicitation Close and Award Notification – DoD Service Agencies and Fourth Estate

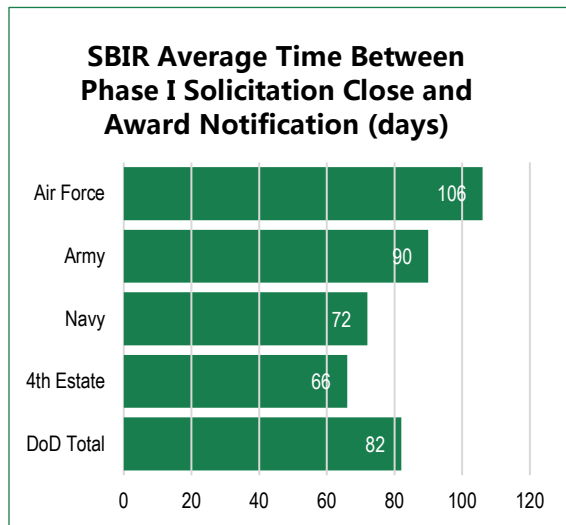


Chart 23: Average Time Between Phase II Solicitation Close and Award Notification – DoD Service Agencies and Fourth Estate

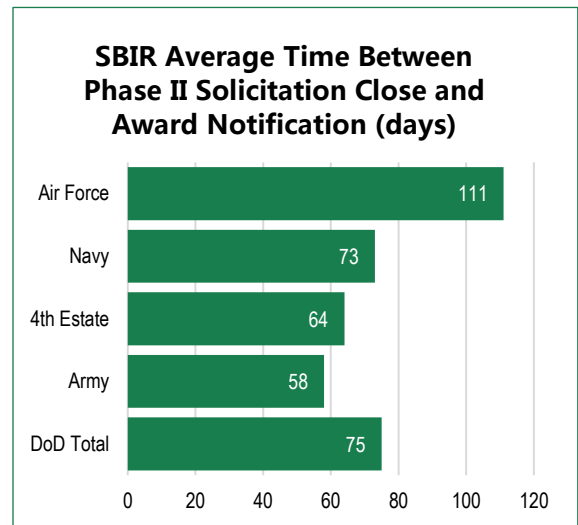
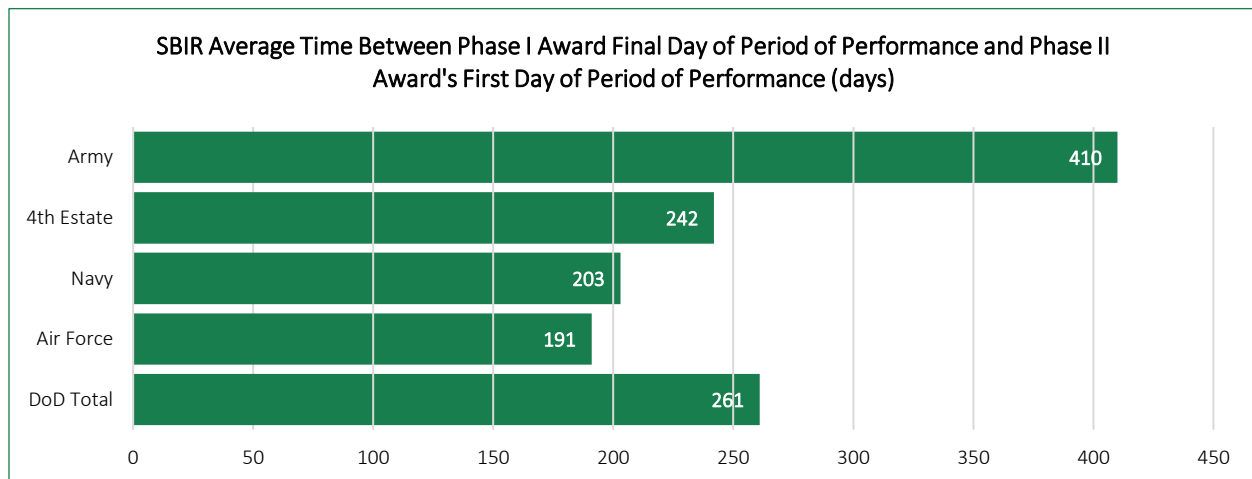


Chart 24: SBIR Average Time Between Phase I Award Final Day of Period of Performance and Phase II Award's First Day of Period of Performance – DoD Service Agencies and Fourth Estate



Civilian Participating Agencies STTR Timelines

NASA and NSF reported 100% of Phase I STTR and Phase II STTR awards were issued within the required timeline. HHS reported 95% of Phase I and 100% Phase II STTR awards were issued within the required timeline.

For FY17, DOE had an unexpected delay for “Award Notification”. Since the DOE has a contractually, fixed “First Day of Period of Performance”, the “Award Notification” delay resulted in about 50% of awards having the notification occurring after the “First Day of Period of Performance”. This delay affected Phase II awards more than Phase I.

Table 26: STTR Award Timelines - Civilian Agencies

STTR Award Timelines	HHS	DOE	NASA	NSF
Average time between Phase I Solicitation Close and Award Notification (days)	226	109	89	191
Av Average time between Phase I Notification and First Day of Period of Performance (days)	56	17	51	7
Percentage of Phase I Awards where the time between Solicitation Close and Notification was less than or equal to 90 days (1 year for HHS and NSF only)	95%	48%	100%	100%
Percentage of Phase I Awards where time between Solicitation Close and First Day of Performance was less than or equal to 180 days (15 months for HHS and NSF only)	95%	100%	100%	100%
Average time between Phase I Award Final Day of Period of Performance and Phase II Award's First Day of Period of Performance (days)	203	141	111	259
Average time between Phase II Solicitation Close Date, or Proposal Receipt Date, and Award Notification Date (days)	223	131	56	202
Average time between Phase II Notification Date and First Day of Period of Performance (days)	46	*	55	1
Percentage of Phase II Awards where time between Solicitation Close or Proposal Receipt and Notification Date was less than or equal to 90 days (1 year for HHS and NSF only)	100%	45%	100%	100%
Percentage of Phase II Awards where time between Solicitation Close or Proposal Receipt and First Day of Performance was less than or equal to 180 days (450 days or 15 months for HHS and NSF only)	91%	100%	100%	100%

Chart 25: STTR Average Time Between Phase I Solicitation Close to Award Notification – Civilian Agencies

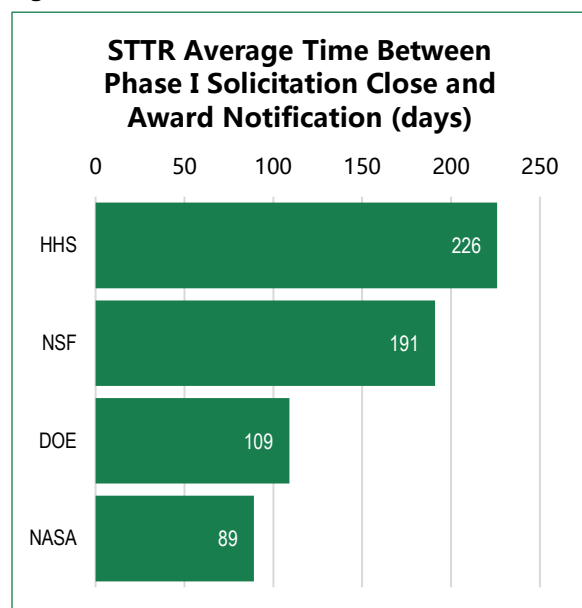


Chart 26: STTR Average Time Between Phase II Solicitation Close to Award Notification – Civilian Agencies

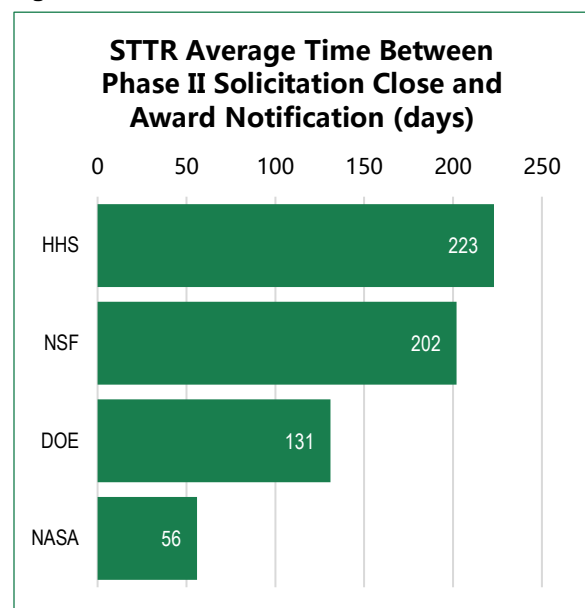
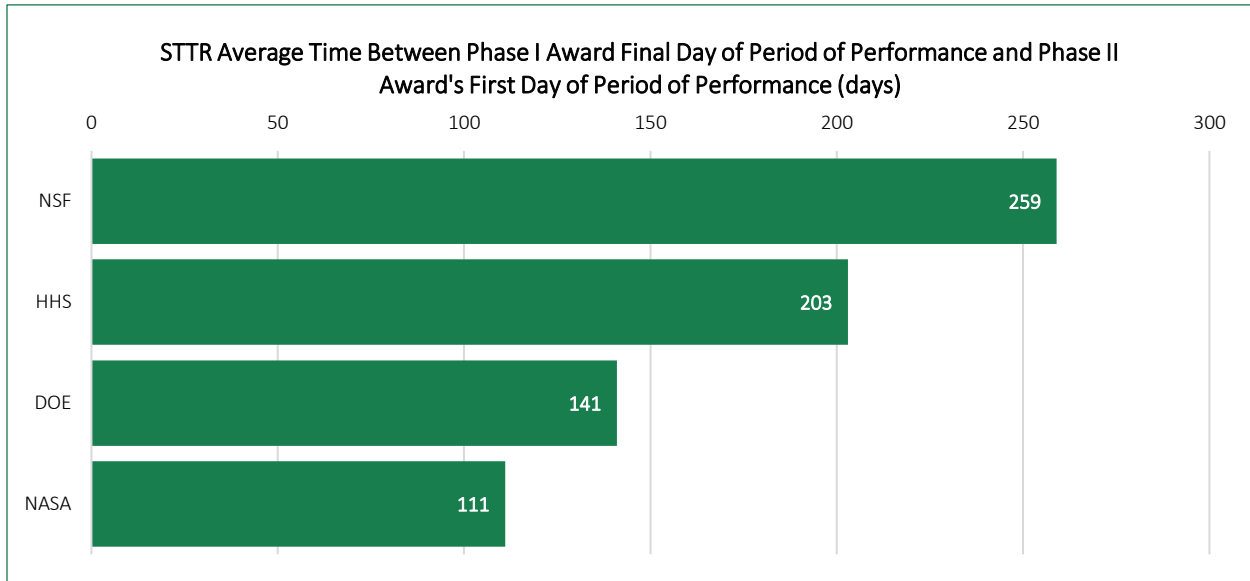


Chart 27: STTR Average Time Between Phase I Award Final Day of Period of Performance and Phase II Award's First Day of Period of Performance – Civilian Agencies



DoD Service Agencies and Fourth Estate STTR Timelines

Table 27 below shows how DoD Service Agencies and Fourth Estate performed during FY17 in the STTR program. The Policy Directive prescribes the duration between the closing date of the solicitation and the notification of recommendation of award of no more than 90 calendar days.

Table 27: STTR Award Timelines – DoD Service Agencies and Fourth Estate

STTR Award Timelines	Navy	Air Force	Army	4 th Estate	DoD Total
Average time between Phase I Solicitation Close and Award Notification (days)	59	100	91	83	80
Average time between Phase I Notification and First Day of Period of Performance (days)	66	98	88	137	95
Percentage of Phase I Awards where the time between Solicitation Close and Notification was less than or equal to 90 days	96%	33%	0%	91%	64%
Percentage of Phase I Awards where time between Solicitation Close and First Day of Performance was less than or equal to 180 days	97%	42%	53%	49%	64%
Average time between Phase I Award Final Day of Period of Performance and Phase II Award's First Day of Period of Performance (days)	121	211	497	295	275
Average time between Phase II Solicitation Close Date, or Proposal Receipt Date, and Award Notification Date (days)	85	104	81	55	82
Average time between Phase II Notification Date and First Day of Period of Performance (days)	184	144	255	174	189
Percentage of Phase II Awards where time between Solicitation Close or Proposal Receipt and Notification Date was less than or equal to 90 days	56%	52%	87%	80%	68%
Percentage of Phase II Awards where time between Solicitation Close or Proposal Receipt and First Day of Performance was less than or equal to 180 days	19%	33%	10%	30%	23%

The Policy Directive prescribed the duration between the closing date of the solicitation and the notification of recommendation of award to be no more than 90 calendar days. Navy, Air Force, Army, and Fourth Estate reported 64% of Phase I STTR awards and 68% of Phase II STTR awards were issued within the required timeline.

The following FY17 charts are organized by DoD Service Agencies and Fourth Estate and contrast the performance on Phase I and Phase II STTR proposals. Specific average STTR times for each of the DoD Services and Fourth Estate were as follows:

Chart 28: STTR Average Time Between Phase I Solicitation Close and Award Notification – DoD Service Agencies and Fourth Estate

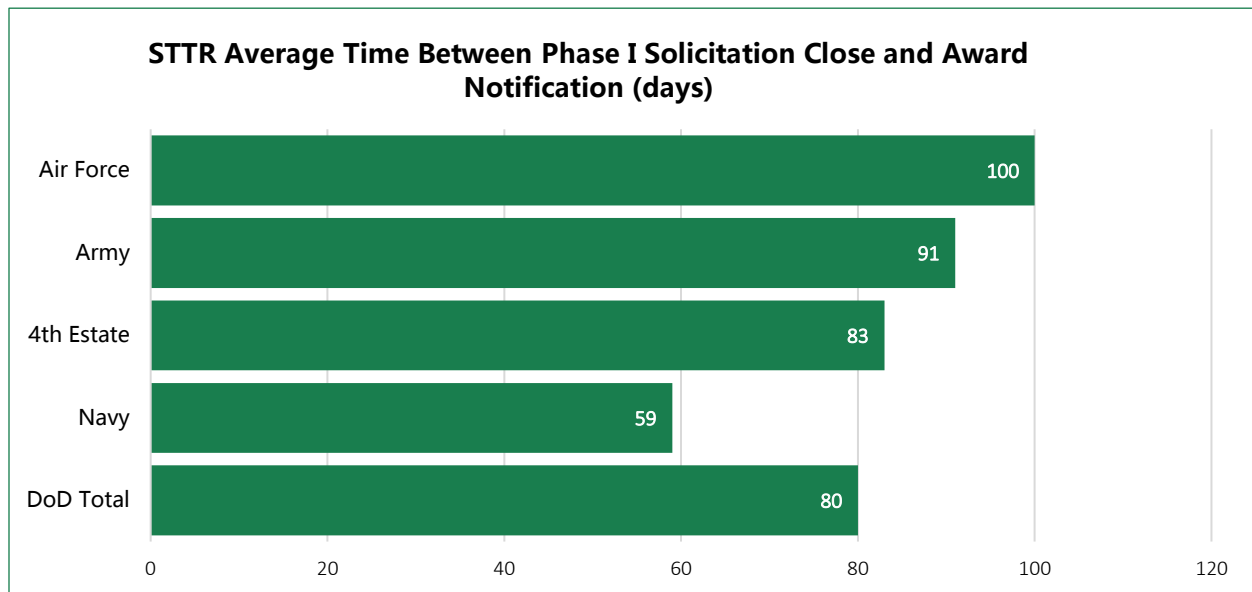


Chart 29: Average Time Between Phase II Solicitation Close and Award Notification – DoD Service Agencies and Fourth Estate

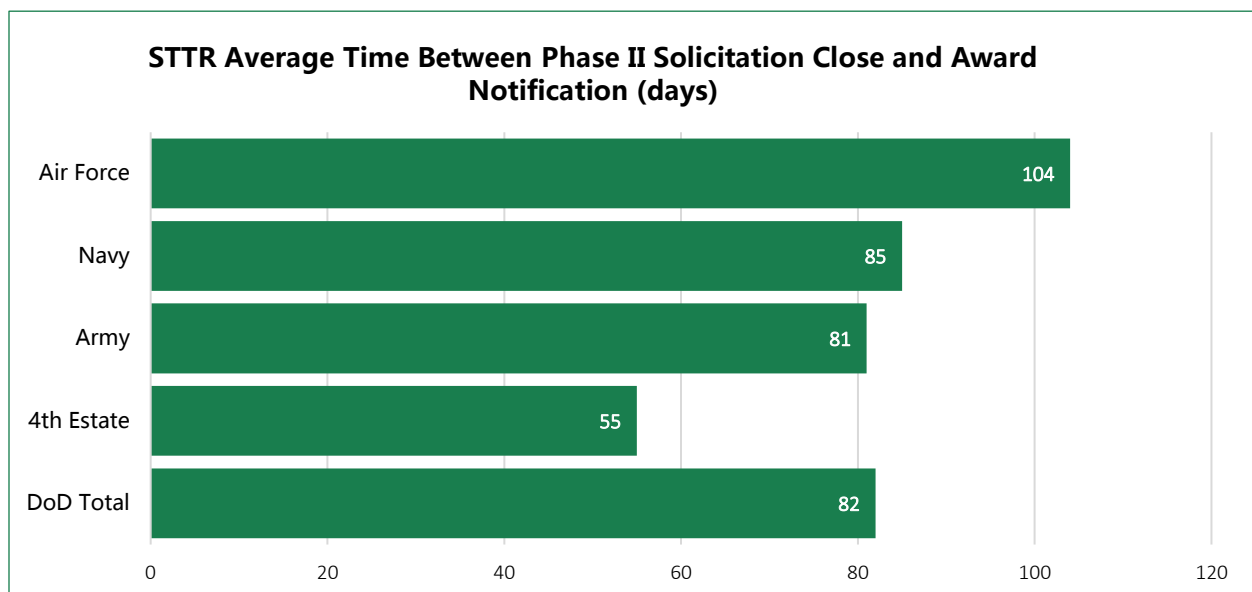
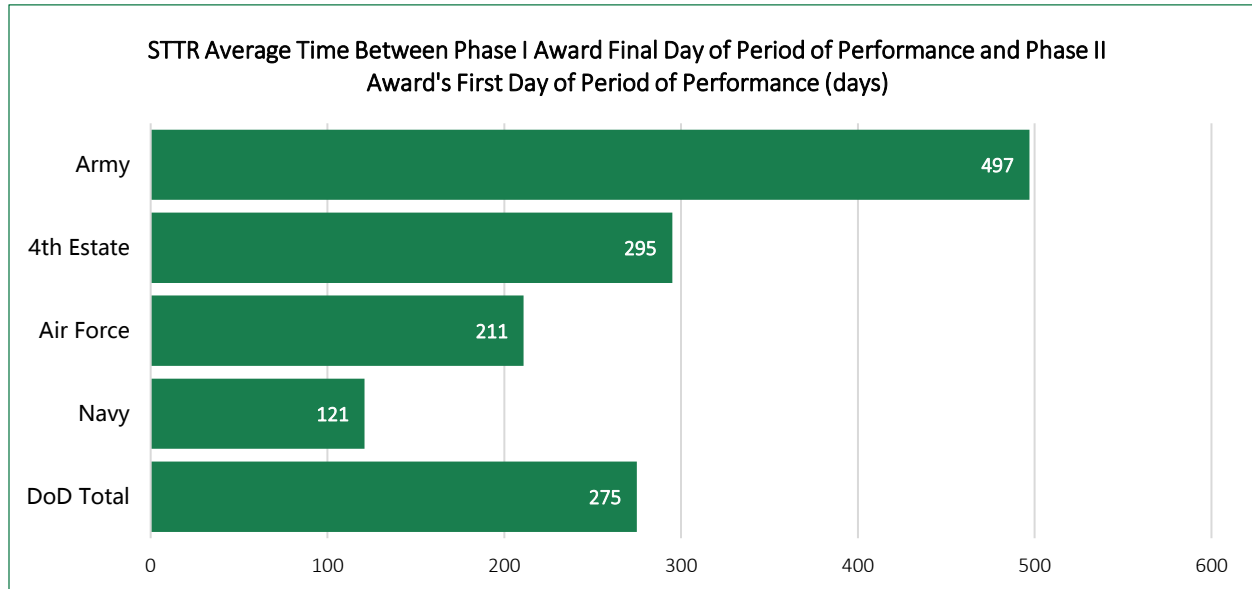


Chart 30: STTR Average Time Between Phase I Award Final Day of Period of Performance and Phase II Award's First Day of Period of Performance – DoD Service Agencies and Fourth Estate



15 | SBIR/STTR Administrative Funding Pilot Program (AFPP) and Outreach to SDBs/WOSBs

The SBIR/STTR Reauthorization Act of 2011 authorized a pilot program permitting Participating Agencies to request up to 3% of its SBIR funding to support Assistance for Administrative, Oversight, and Contract Processing Costs. Agencies are required to submit a work plan for SBA approval to use the authority. The work plan must include the specific activities to be supported, the estimated costs for the activities, milestones, and the expected results. The activities are required to improve program performance in areas such as streamlining award processes, enhancing reporting, and expanding outreach efforts to underrepresented individuals. As part of the Annual Report submission, SBA requires agencies to report AFPP obligations and performance criteria outcomes organized into the following areas: 1) Outreach; 2) Commercialization; 3) Streamlining and Simplification; 4) Prevention and Detection of Fraud, Waste, and Abuse; 5) Reporting; and 6) Administration and Implementation of Reauthorization. Agency AFPP “approved” budgets and actual obligations are shown below.

Table 28: Administrative Funding Pilot Program

AFPP Maximum Allowable and Obligated Amount per Agency			
Agency	Max Allowable*	Funding Approved	Obligated†
Navy	\$9,000,000	Not Approved	\$6,962,305
Air Force	\$9,000,000	Not Approved	\$10,021,460‡
Army	\$6,570,000	Not Approved	\$1,501,000
DoD Fourth Estate	\$7,911,292	Not Approved	\$4,263,222
HHS	\$26,320,413	\$26,320,413	\$13,175,531
DOE (Program Office)	\$6,627,640	\$2,538,500	\$1,918,566
NSF	\$5,957,000	\$5,605,000	\$5,463,942
NASA	\$6,030,000	\$6,030,000	\$4,976,000
USDA	\$1,529,282§	\$1,363,618	\$1,363,618
DHS	Not Participating	Not Participating	Not Participating
DOT	\$265,444	\$176,963	\$114,691
NOAA (DOC)	\$218,160	\$218,160	\$210,218
NIST (DOC)	\$105,000	\$81,000	\$29,937
ED	\$237,000	\$317	\$317
EPA	Not Participating	Not Participating	Not Participating
Totals	\$79,771,231	\$42,333,971	\$50,000,807

* Maximum Allowable obligations as reported to SBA in the work plan

† Dollars Obligated as reported to SBA in the Annual Report Submission

‡ Air Force FY16 funding was split between both FY16 (\$370,893) and FY17 (\$8,400,717). The FY17 AFPP funding for FY17 was \$1,620,743. Combining the FY16 and FY17 spend resulted in a total of \$10,021,460 dollars obligated for FY17

§ USDA obligates multi-year funds from prior years, which increases the maximum allowable amount

In FY17, nine participating agencies obligated \$50,000,807 for AFPP activities, which was \$3,399,683 less than FY16 AFPP obligations. However, SBA only approved FY17 work plans from eight agencies for a total request of \$42,333,971. The eight agencies with approved AFPP plans obligated \$27,252,820 (64%) of the total approved funding. The difference between the approved plan and the amount obligated was primarily attributed to the constraints surrounding the timing of the following factors: 1) the length of agency appropriations; 2) the program office receipt of SBIR funding; and, 3) the amount of time available to make obligations. Agencies obligated any unused AFPP funds to make SBIR awards.

The eight agencies with approved FY17 AFPP work plans were: HHS, DOE, NSF, NASA, USDA, DOT, DOC (NIST and NOAA), and ED. EPA and DHS did not participate in the AFPP program during the fiscal year. The amount of AFPP funds requested and obligated by the agencies varied significantly. Only HHS, NASA, and NOAA requested the maximum allowable funding amount of Administrative Funding authority based on the work plan projections. Moreover, all eight agencies obligated within the approved funding limit and the maximum allowable funding amount based on the actuals.

DoD did not obtain SBA approval in FY17 for use of AFPP funding. SBA received DoD's FY17 AFPP work plan on November 30, 2018, which was after the year of the funding expired. In FY17, the DoD SBIR/STTR office was responsible for submitting the work plan to SBA. Even though DoD did not obtain approval, they reported \$22,405,311 in FY17 AFPP obligations. Furthermore, Air Force reported AFPP obligations \$1,370,140 above the maximum allowable funding amount (\$8,651,320) based on actuals. Navy, Army, and the Fourth Estate reported AFPP obligations less than the maximum allowable funding amount based on actuals. SBA's receipt, evaluation, and approval of agency work plans is essential to ensuring the proposed activities improve the SBIR program, include measurable outcomes, and comply with the statute. In FY18, SBA began reviewing Component requests individually. SBA expects DoD to submit and await approval before obligating AFPP funding, as well as to provide notification of any substantial changes in the planned activities. Moreover, SBA expects DoD's AFPP obligations to remain within the SBA-approved funding amount and maximum allowable funding amount based on actuals.

15 U.S.C. § 638 (mm)(2)(B) permits SBIR Participating Agencies to request a waiver for the requirement to use a portion of the AFPP funds to increase participation by small businesses who are socially and economically disadvantaged, majority-owned and controlled by women, and those in historically underrepresented states in the SBIR. None of the participating agencies requested a waiver in FY17.

The AFPP is an essential tool for the agencies, as it generates dedicated resources toward support initiatives to improve the program and the experience for small businesses participating in the program. Specifically, agencies used the funds to: update and/or upgrade information technology systems to accommodate new reporting requirements; modify program application, review, and selection processes and procedures to shorten award timelines; develop targeted marketing and commercialization plans; assess prior awardee commercialization efforts; and, extensive outreach to increase Small Business Concern participation, especially from underrepresented communities. Additional examples of agency efforts under the AFPP pilot program are provided below.

Navy. DoD did not obtain SBA approval in FY17 for use of AFPP funding. SBA received DoD's FY17 AFPP work plan on November 30, 2018, which was after the year of the funding expired. Navy requested \$9,000,000 for AFPP activities, which matched the estimated maximum allowable funding amount. In the Annual Report submission, DoD reported Navy obligations of \$6,962,215, which were \$2,013,003 less than the maximum allowable funding amount based on actuals. Navy's reported outcomes included:

- Continued topic outreach pilot to webcast topic-specific information.
- Development/implementation of new outreach materials.
- Program Commercialization Outreach: DoD Beyond Phase II, SBIR/STTR Transition (STP)/Forum on SBIR/STTR Transition (FST), DON Primes Initiative, and PEO Industry Day events.
- Expanded commercialization training efforts at Warfare Centers and Program Executive Offices (PEO).
- Expanded and continued Contracting COE to include over 200 contract actions. Time to award Phase I contracts has improved from 5.2 months to 3.6 months.
- Implemented the move to Contracting COE NAVAIR Lakehurst for both SBIR/STTR contract awards, which subsequently achieved reduction in time to award Phase II STTR contracts by 9 months.

- Navy reviewed over 150 active awards for FWA indicators, meeting program eligibility requirements, and submission of terms of funding agreements; supported additional reporting requirements. Reviewed and adjudicated over 1,800 proposal packages from DOD for red flags identified on Cover Sheets to ensure compliance with BAA requirements and minimize potential of FWA.
- Implemented methodology to track and capture Phase III data in greater detail; an additional \$20M in Phase III funding was identified as a result of this effort.

Air Force. DoD did not obtain SBA approval in FY17 for use of AFPP funding. SBA received DoD's FY17 AFPP work plan on November 30, 2018, which was after the year of the funding expired. Air Force requested \$9,000,000 for AFPP activities, which matched the estimated maximum allowable funding amount. In the Annual Report submission, DoD reported Air Force obligations of \$10,021,460. However, Air Force's AFPP obligations exceeded the unapproved work plan request as well as the maximum allowable funding amount based on actuals (\$8,651,320). Air Force did not provide any additional information regarding why they exceeded the maximum allowable AFPP obligations. Air Force's reported outcomes included:

- Participated in conferences, road shows, industry days, networking, and other events designed to educate technology based firms about the opportunities the SBIR/STTR can bring as well as connect firms with the appropriate government agencies that can help many of them advance their technologies, grow their business, and help achieve warfighter success.
- Produced news releases, booklets, posters, newsletters, handouts/flyers, display booths, yearly information, success stories, videos, and other products designed to publicize the SBIR/STTR program.
- SBIR Technology Acceleration Program (TAP) Pilot for SBIR Phase I recipients.
- Support for the development of a comprehensive set of leading and lagging indicators (metrics and measures) for Return on Investment (ROI).
- Support for the development, implementation, and tracking of efficient and effective training of TPOCs and SPOCs to include SBA/DOD SBIR/STTR policy directives, AF instructions and policies, AF specific practices/processes, and lessons learned.

Army. DoD did not obtain SBA approval in FY17 for use of AFPP funding. SBA received DoD's FY17 AFPP work plan on November 30, 2018, which was after the year of the funding expired. Army requested for \$6,570,000 for AFPP activities, which matched the estimated maximum allowable funding amount. In the Annual Report submission, DoD reported Army obligations of \$1,501,000, which were \$5,242,971 less than the maximum allowable funding amount based on actuals. Army's reported outcomes included:

- Implementation and execution of numerous Webinars and events to provide assistance and support to underserved states. As a result, Army increased participation of targeted groups ten (11) percent.
- The Army SBIR Program staff attended 22 events, where they assisted 925 small businesses, 661 of which were from under-served and under-represented states.

Fourth Estate. DoD did not obtain SBA approval in FY17 for use of AFPP funding. SBA received DoD's FY17 AFPP work plan on November 30, 2018, which was after the year of the funding expired. DoD's Fourth Estate requested for \$7,911,292 for AFPP activities, which matched the estimated maximum allowable funding amount. In the Annual Report submission, DoD reported Fourth Estate obligations of \$4,263,222, which were \$5,961,287 less than the maximum allowable funding amount based on actuals. DoD's reported outcomes included:

- DARPA engaged with Phase 1 awardees to raise awareness of various subjects in preparation for continued transition and commercialization planning, and a more detailed understanding of services provided during Phase 2. DARPA also engaged with Phase 2 awardees to discuss, refine and implement their transition and commercialization plans, e.g., brainstorm on strategy and timeline for transition and commercialization activities; identify and facilitate connections to potential funding sources, collaborators and partners; enhance visibility at events with large government end-user representation; and recommend networking opportunities.
- DOD OSBP began its development of SBIR One which consisted of enhancements to the DOD Company Commercialization Report (CCR). This effort analyzed all CCR entries to create valid links

to DOD SBIR/STTR Award records. This allows for a more in depth analysis of current DOD Commercialization. SBIR One also included the streamlining and simplification of DOD SBIR/STTR processes to include Topic Development, Source Selection, Reporting, Outreach, and General Website Enhancements.

- MDA SBIR/STTR PMO implemented the No Cost Extension tool. This new tool provided a solution for tracking and completion of all NCE requests. This process allows the SBIR/STTR Program Office and MDA Contracting specialists to more effectively communicate and expedite the NCE process. The automation of this tool improved processing time from a backlog of requests with a 30 day delay to a current average of 10 days from request date to approval date.
- MDA established a “Contracting Actions” tool to establish more effective communication with our Contracting Officers. The implementation of the Contracting Actions tool provided internal users access to contract data that provides updates to contracts in process, contract awards, and the Contracting Officer assignment. This tool has been beneficial in making our contracting process more efficient.
- MDA automated the distribution of select/non-select emails. Automation of this process prevents user errors associated with manually creating and distributing select/non-select emails. This new process eliminates the possibility for user error as well as decreases the administrative burden on the MDA SBIR/STTR PMO. MDA distributed all 234 Select/Non-Select letters for SBIR 17.2 Phase I proposals in under 10 minutes, cutting the time after automation by 97%.
- MDA began using DocSim, a Phase III effort that is a result of a SBIR investment, to scan and analyze SBIR and STTR Phase I and Phase II proposals that are selected for award. The abstracts and statements of work included in proposals that are selected for award will be compared to abstracts of awarded proposals against other SBIR and STTR awards across the federal government to identify potential duplication of effort. MDA SBIR/STTR PMO reviewed 73 abstracts utilizing the DocSim software. Five topics were identified as similar efforts. These topics were researched further to insure there was no duplication of effort, and upon further review, no duplicative proposals were identified.
- MDA implemented an internal review process, which reviews every SBIR and STTR Reach-Back, 2nd Phase II and Phase II Enhancement, to ensure the new proposal is a logical follow on to the original topic awarded.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. DoD reported:

DoD SBIR routinely participates in Outreach events targeting SDBs and WOSBs. Examples of these efforts are the SBA SBIR/STTR Road Tours, as well as the Spring and Fall National Conferences.

HHS. SBA approved HHS’ FY17 AFPP request for \$26,320,413, which matched the estimated maximum allowable funding amount. In the Annual Report submission, HHS reported \$13,175,531 in obligations, which were \$13,175,531 less than the AFPP funding approved and the maximum allowable funding amount based on actuals. HHS’ reported outcomes included:

- Staffing and services for communications, information technology (IT), marketing, and other outreach and program support for the SBIR/STTR programs, including social media communications (listserv, twitter, etc.), Minority and Women-Owned small business (WOSB) outreach, program analysts, GoToWebinar support services, OIT VM Hosting & Web Server charges for SBIR web sites, and SBIR IT system development, operations, and maintenance, including DCO web support.
- Workshops to enhance the pool of small business applications as part of the STTR Phase 0 POC program.
- Developed educational flyers and other materials to inform both federal staff and the small business community of technical assistance programs available to increase private sector commercialization of innovations developed through the SBIR/STTR programs.
- Staffing and services for supporting program, development of training curriculum for SBIR topic development, and drug development contractor for providing additional constructive consultation/feedback to applicants.
- Supported SBIR awardees/companies to attend/present SBIR/STTR-funded work at company showcase events (e.g., Angel Capital Association Summit, AdvaMed, Redefining Early Stage Investments (RESI), Life Sciences Summit (LSS), Neurotech Investing and Partnering Conference, BIO International Convention).

- Hired Investor-In-Residence and Entrepreneurs-In-Residence to advise applicants and awardees on all aspects of commercialization, to support transfer of NIH intramural technology to the private sector using the SBIR/STTR mechanisms, and to support activities related to implementation of STTR Phase 0 POC program.
- Provided Entrepreneurial Finance Training and provided Entrepreneurial Education and Commercialization Assistance (C3i Program) which resulted in 1 FDA 510(k) cleared product on the market; >\$35M raised in private capital.
- Hiring staff (e.g., grants management support) which assists in prevention and detection of fraud, waste, and abuse.
- Development and maintenance of evaluation framework and tools to improve collection, storage, and analysis of outcomes data related to commercialization and the NIH mission; includes evaluation of the STTR Phase 0 POC program.
- SBIR Applicant Assistance Program Pilot.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. HHS reported:

HHS's SBIR/STTR outreach activities during FY 2017 were directed at increasing awareness of the SBIR/STTR programs, and identifying new SBIR/STTR applicants, with a special emphasis on women-owned businesses (WOSB), socially and economically disadvantaged businesses (SDB) and under-represented states, known as Institutional Development Award (IDeA) states. HHS's SBIR/STTR outreach strategy is implemented by NIH, including the 24 Institutes and Centers with SBIR/STTR programs, and CDC, FDA, and ACL.

Outreach activities included in FY 17 included:

- Participated in 4 SBIR Road Tours covering 10 states, including 4 IDeA States and reaching 2,564 attendees
- Dedicated a session at our HHS SBIR/STTR Conference to the topic of encouraging women and minority SBIR/STTR applicants to participate
- Fostered relationships with professional societies that work closely with women and minorities, including Women in BIO (WIB), Association of Women in Science (AWIS), and the National Society of Black Engineers (NSBE)
- Organized the BIO Innovation Zone for 60 SBIR/STTR funded companies, in partnership with the National Science Foundation and the Biotechnology Industry Organization (BIO)
- Updated the central HHS SBIR/STTR website regularly with news, guides, and additional resources for small businesses
- Participated in SBA's SBIR Outreach Workgroup to determine upcoming SBIR outreach priorities
- Leveraged our NIH SBIR/STTR listserv with 20,000+ subscribers
- Presented during national and local conferences to reach new biomedical entrepreneurs
- Held informational webinars on SBIR/STTR, including topics such as the SBIR Grant Omnibus Solicitation, SBIR Contract Solicitation, and I-Corps at NIH
- Participated in local/state SBIR events/conferences by providing virtual One-on-One meetings with attendees
- Expanded Twitter following to 5,000 through strategic, engaging, informative messaging and campaigns to reach WOSDB and highlight diversity in science and entrepreneurship
- Launched social media campaigns highlighting Black History and Women's History Months to promote and support diversity in science innovation
- Collaborated with the NIH IDeA program to promote the SBIR/STTR programs in underrepresented states, participating in conferences and events in 10 IDeA states
- Partnered with SBA and other SBIR/STTR governmental agencies, state-based economic development centers, and universities to conduct outreach to WOSB and SDB

Summary of our outcomes for FY 17:

- 167 events (in person and virtual) hosted in 39 states, plus the District of Columbia (DC) that collectively reached over 10,008 attendees
- Reached over 2,500 attendees and 10 states, including Hawaii, during the SBIR Road Tour
- 322 SDB reached
- 769 WOSB reached
- The 19th Annual HHS SBIR/STTR conference was hosted in Milwaukee, WI on November 7 – 9, 2017. The conference reached 498 attendees from 37 states plus Puerto Rico, Australia, and Japan, and 202 businesses. This event included a workshop designed for WOSB/SDB.

DOE. SBA approved DOE's FY17 AFPP request for \$2,538,500, which was \$3,988,232 less than the estimated maximum allowable funding amount (\$6,526,732). In the Annual Report submission, DOE reported \$1,918,566 in obligations, which were \$619,934 less than the AFPP funding approved and \$4,709,074 less than the maximum allowable funding amount based on actuals (\$6,627,640). DOE's reported outcomes included:

- DOE provided Phase 0 services to 138 eligible small businesses intending to apply to the DOE FY 2017 Phase I Funding Opportunity Announcements. Of this number, 102 (74%) submitted Phase I applications, and 13 (13%) received a Phase I award.
- Travel funding for SBIR/STTR Programs staff to attend the SBIR Road Tour and SBIR/STTR Regional conferences.
- ReadyTalk Webinars were conducted for both DOE SBIR/STTR Phase I Funding Opportunity Announcements in FY 2017 with 768 attendees and 1458 playbacks.
- Using an external cloud based email platform allowed the SBIR/STTR Programs Office to grow our mailing list from 11,099 in July 2016 to 15,441 by June 2017 (39% growth over 12 months).
- Phase I Principal Investigator Meetings: Initiated SBIR/STTR Phase I Principal Investigator Meetings in FY 2017. These two-day meetings provide: (1) opportunities for Principal Investigators to have face to face meetings with DOE program managers and commercialization assistance providers; (2) networking opportunities with other small businesses; (3) presentations from DOE offices regarding proper administration of their grants and intellectual property, preparing for Phase II and other topics of interest (success stories, investors, partners). The SBIR/STTR Programs Office held two Principal Investigator Meetings.
- National Academies Assessment: As part of the 2011 Reauthorization, the five largest agencies were required to work with the National Academies to conduct assessments of the SBIR and STTR programs every four years. DOE initiated the second study in this series in 2017 for completion by the December 31, 2019 deadline.
- Portfolio Analysis and Management Systems (PAMS): PAMS has been essential in improving the efficiency of the DOE SBIR/STTR application review process and to comply with Congressionally mandated timeliness for awards. In FY 2017, multiple system upgrades were implemented that addressed the change requests. One example of a system improvement was providing feedback on letters of intent. Previously, applicants that had non-responsive letters of intent received the same generic letter indicating that the technical abstract in their letter of intent was non-responsive to the topic. The system was upgraded to allow DOE program managers to specifically address the reason the abstract was non-responsive, so those applicants that still wished to apply could correct the issue. The support staff headcount (FTE) required to process applications is down approximately 30% since PAMS was implemented.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. DOE reported:

Through Phase 0, DOE provides application support and assistance services to potential DOE Phase I applicants. These Phase 0 services, provided at no cost to eligible small businesses include: Letter of Intent support, proposal preparation and review assistance, budget formulation, IP consultation, and registration assistance with mandatory federal systems. In FY17, DOE provided Phase 0 services to 138 eligible small businesses intending to apply to the DOE FY 2017 Phase I Funding Opportunity Announcements. Of this number, 87 (63%) submitted Phase I SBIR applications, and of this number 9 (10%) received a Phase I SBIR award. In an effort to broaden its outreach to underrepresented groups, in FY17 the DOE SBIR/STTR Programs office contacted the following

women- and minority-based associations to discuss and establish working partnerships: National Action Council for Minorities in Engineering, Information Technology Senior Management Forum, American Association of Blacks in Energy, Anita Borg Institute-Women in Computing, Computing Research-Women, and the Association for Computing Machinery-Women.

NSF. SBA approved NSF's FY17 AFPP request for \$5,605,000, which was \$352,000 less than the estimated maximum allowable funding amount (\$5,957,000). In the Annual Report submission, NSF reported \$5,463,942 in obligations, which were \$141,058 less than the AFPP funding approved and equal to the maximum allowable funding amount based on actuals. NSF's reported outcomes included:

- Phase 0 Tutorial: Funded supplemental awards to six of NSF's existing I-Corps nodes to initiate the Phase Zero program. Teams are now being selected and placed into I-Corps cohorts, after which they will receive the new dedicated curriculum.
- Trade Show Sponsorships: NSF provided sponsorships to a number of key partner organizations, for the purpose of attracting more high-potential applicants to the program. Some of the organizations we sponsored in 2017 were Eureka Park at CES, AIChE Bio Conference, Venture Summit – New England, Mountain View & NY, BIO World Congress, SynBioBeta, SXSW, and the Angel Capital Association (ACA).
- Web Site Discovery and Redesign: Completely redesigned the NSF SBIR/STTR web presence from the ground up and launched in summer 2017 at seedfund.nsf.gov. Added pages featuring the existing NSF SBIR portfolio, an events page, and a web-based form to request feedback from program staff.
- Marketing: Engaged a marketing firm to do a complete overhaul of our existing communications. Refreshed the program brand under the new tagline "America's Seed Fund, Powered by NSF". Created entirely new marketing materials (digital and in print) and guidelines
- NSF AWARE Program: Funded two additional AWARE projects, which will catalyze the development of new ecosystems to support underrepresented entrepreneurs and innovators.
- Phase I Beat-The-Odds Bootcamp: Supported the participation of over 250 Phase I awardees in the program, giving them valuable training on customer discovery and business models and allowing them to collectively conduct 7000+ customer and stakeholder interviews.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. NSF reported:

- NSF funded and awarded two awards (1639609 and 1641744) in FY 2017 through the Accelerating Women and Underrepresented Entrepreneurs (AWARE) initiative. These projects seek to specifically engage underserved communities in an attempt to spur entrepreneurship and greater participation in the SBIR and STTR program by these groups.
- NSF staff hosted a dozen pre-solicitation webinars and attended over 70 separate outreach events in over two dozen states.
- NSF staff organized webinars and events targeted at EPSCoR states and at underserved populations, including the SBIR Road Tours.
- NSF funded and attended a "Commercialization and Entrepreneurship Summit for Female and Minority Researchers" in Indianapolis, IN in October 2017.
- NSF's SBIR/STTR Program also provides additional funding opportunities that support participation of underserved groups in the innovation process, such as the Phase IIA, which is an opportunity that provides Phase II grantees up to \$150,000 to partner with minority-serving institutions as part of their ongoing R&D effort.
- Digital Tools for Post-Phase II Commercialization Reporting: Purchased a license to CB Insights, a tool that collects and analyzes news and financial data of private companies. Through CB Insights, tracked 1400 current and former NSF portfolio companies. Tracked 200+ investments, acquisitions, and other news items related to grantee firms through the platform. Identified \$1B in follow-on investment and \$1B in exit transactions in FY2017.
- Impact Research and Analysis: We funded a pilot assessment effort, through an interagency agreement with SBA and in conjunction with Census, to use IRS data to evaluate key outcomes of prior investments.

NASA. SBA approved NASA's FY17 AFPP request for \$6,030,000, which matched the estimated maximum allowable funding amount. In the Annual Report submission, NASA reported \$4,976,000 in obligations, which were \$1,054,000 less than the AFPP funding approved and equal to the maximum allowable funding amount based on actuals. NASA's reported outcomes included:

- Program Request for Information (RFI) to solicit feedback from small businesses and industry on FY17 technical subtopics, programs, and front-end solicitation, and solicit new subtopics: 294 RFI proposed New Subtopics; over 100 pieces of feedback on existing subtopics; 150 responses on programmatic feedback; 8 New Subtopics resulting from RFI Inputs; 29 Existing Subtopic with RFI Inputs Incorporated.
- 3-day Industry Day event to provide in-depth information about the SBIR/STTR processes and multiple opportunities to interact directly with SBIR/STTR program experts, NASA technologists, and fellow industry partners.
- Modernized communications through multiple communication channels, and through collaboration with SBA and internally at NASA (PAO, STMD, OSBP, RED).
- Expanded outreach support to enable support of over 80 outreach events with targeted outreach to underrepresented segments. Increased program participation from first time participants and under-represented groups and States
- Enhancements to Salesforce Travel and Event Management Tool: Reduced the amount of overhead activities required of NASA Center Technology Transition Leads; Created a data based way to assess outreach and communications effectiveness in the future as data is collected.
- Implemented Pilot I-Corps Program in collaboration with NSF that enables small businesses to increase the odds of accelerating development of their SBIR/STTR technologies into a repeatable and scalable business model. 29 I-Corps proposals received; 11 training grants awarded. Encouraged the innovation and entrepreneurship of small businesses and helped enable those businesses to commercialize their innovations.
- Electronic Handbook (EHB) Modernization: In FY17, completed user and technical discovery and successfully deployed Tableau for Data Analytics and Visualizations, Shared Services Platform to provide the foundation on which the business modules are built, and Transitions Module for post award reporting. Also began development of modernized Submissions module for 2018 Solicitation. Scope also includes change management, training, and user adoption activities to support EHB modernization for internal and external users.
- Customer Service Blueprint and Firm Journey Mapping: Worked with the 18F group from the General Services Administration (GSA) to develop a Customer Service Blueprint.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. NASA reported:

In FY17, NASA SBIR/STTR Program executed goals against its FY17 Outreach Strategy which focused on outreach efforts on underrepresented groups by attending targeted industry days and conferences.

- In 2017, NASA participated in Service-Disabled Veteran-Owned Small Business (SDVOSB) Industry Day, NASA HUB Zone Industry Day, and visited underrepresented states via the SBIR Road Tour. The program also ensured that the Center Technology Transition Lead, formerly referred to as Technology Infusion Managers, conduct outreach being equipped in branded program collateral and business card scanning capability that make networking and interface with the firms more prominent and trackable. They are also quipped in an event feedback mechanism that helps the program with strategic planning.
- The program continued to partner with the Office of Small Business Programs (OSBP) and the Small Business Administration (SBA) on outreach activities specifically targeting disadvantaged-, veteran-, and women-owned businesses. Example of these outreach efforts include: continued participation in the SBIR Road Tour, HBCU/MSI Road Tour, Industry Day, Small Business Meetings, and visits to local universities.
- In 2017, the program conducted the NASA SBIR/STTR Industry Day held on June 25-27th at NASA Ames Research Center/virtually. This successful three-day event provided in-depth information about the SBIR/STTR processes and opportunities to, and interacted directly with SBIR/STTR program experts, NASA technologists, and fellow industry partners and allowed for

information sharing and exchange of ideas. FY17 Industry Day was preceded by a Request for Information that program launched in January 2017 to solicit feedback on the Program and the 2017 SBIR/STTR Solicitation from the small business and research communities. It also sought ideas on potential new subtopics for consideration in the development of 2018 and future Solicitations.

- The SBIR/STTR program participated in other events in 2017 beyond those mentioned above such as: SBIR/STTR National Conference in Washington, DC and SBIR/STTR Innovation Summit held in Tampa, Florida outreaching to the entire SBIR/STTR community.
- SpaceVision 2017, the annual national conference of Students for the Exploration and Development of Space Event targeting passionate young professionals and students.

USDA. SBA approved USDA's FY17 AFPP request for \$1,363,618, which was \$165,664 less than estimated maximum allowable funding amount available from USDA's multi-year funding. In the Annual Report submission, USDA reported \$1,363,618 in obligations, which were \$165,664 less than the maximum allowable funding amount available from USDA's multi-year funding. USDA's reported outcomes included:

- USDA SBIR staff attended all three SBIR/STTR Road Tours, six Regional Events, two National SBIR Conferences and three Ag focused investor conferences. In addition to these events, USDA SBIR staff conducted outreach in Puerto Rico in coordination with Puerto Rico SBA regional representatives.
- Train the Trainer program for a team of extension professionals from the Regional Rural Development Centers. Participants were given goals of setting up a regional workshop in each state to promote the SBIR program and to help small businesses in their area navigate the process to submit an application for SBIR.
- In FY2017 USDA SBIR under the SBA SBIR/STTR outreach program and its own meetings conducted outreach in the following states AZ, CA, DC, HI, IL, KS, KY, LA, MA, MI, MN, MO, NV, OH, OK, PA, PR, TX, UT and WI. In FY2018, USDA SBIR staff reviewed Phase I proposal submissions from each of these states to see if there were any increases in submissions from the states where outreach activities were conducted in FY2017. The data showed that 10 of the 19 states showed an increase in Phase I applications from 2017 to 2018.
- Innovations in Food, Agriculture, Science and Technology (I-FAST) program: I-FAST helps scientists and engineers broaden the impact of their USDA NIFA-funded research by encouraging collaboration between academia and industry to translate fundamental agricultural innovations into the marketplace.
- Providing a waste, fraud and abuse training for Phase II grantees at the Phase II commercialization workshop.
- Conducted Phase I grantee webinars that described the issues of violating the grant requirements and using grant funds for unallowable expenses. Ensured that in Phase I and II all grantees submit an interim technical report and a final technical report for USDA SBIR staff to review and identify any potential fraud or abuse issues. Additionally, the Phase II interim report is tied to funding and requires that grantee to submit this report and have it approved by USDA SBIR staff before additional funds are released.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. USDA reported:

In FY 2017, the USDA SBIR program participated in all the SBA lead road tours and regional events. Each of these events were focused on providing outreach to SDBs and WOSBs. Additionally, in FY 2017 the USDA SBIR program started a train the trainer program to train USDA extension staff on the USDA SBIR program. This program has a goal to ensure that USDA extension staff is versed in the SBIR program and are able to assist small businesses in the development of applications to the SBIR program.

DHS. In FY17, DHS did not participate in the AFPP.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. DHS reported:

DHS participates in as many outreach events as possible including SBA organized Road Tours. The California Road Tour in 2017 was targeted toward WOSBs in particular. DHS has also started a Facebook Live series "Deconstructing SBIR" geared toward educating small businesses with an

emphasis on targeting WOSBs and promoting women in the SBIR Program. DHS used their own funding for outreach efforts to SDBs and WOSBs, and not SBIR or AFPP funds.

DOT. SBA approved DOT's FY17 AFPP request for \$176,963, which was \$88,481 less than the estimated maximum allowable funding amount. In the Annual Report submission, DOT reported \$114,691 in obligations, which were \$62,272 less than the AFPP funding approved and the maximum allowable funding amount based on actuals. DOT's reported outcomes included:

- Improve communication via the DOT SBIR program website: Updated resources and FAQ sections on the DOT SBIR program website, as well as added a new section providing DOT Operating Administration descriptions. The DOT SBIR program website had 63,931 pageviews (10.2% increase from FY16) and 48,867 unique pageviews (12.42% increase from FY16) in FY17.
- Outreach activities continued to focus on increasing the overall percentage of applicants from underrepresented groups and areas, using the data above to target specific areas through our outreach and participation in SBA events.
- Website improvements and articles to communicate DOT SBIR success stories.
- Developed new handouts and flyers to support outreach at both internal meetings and external outreach events.
- The program office continued to share information to organizations via email when DOT SBIR announcements were made. The program had 4,630 GovDelivery subscriptions in FY17. The USDOT SBIR program granted five Phase I contracts and eight Phase II contracts to disadvantaged, women-owned, and HUBZone businesses.
- SBIR-related tweets had an average of 11,391 impressions and 46 engagements per tweet. The top SBIR tweet was the second most popular tweet by impressions (41,534) at the Volpe Center in FY17.
- A major accomplishment in FY17 was the delivery of the first DOT SBIR Commercialization Workshop, held in May 2017. The workshop was provided to all active SBIR awardees and provided sessions featuring DOT leadership as well as training. The workshop was attended by 45 DOT CORs, Phase II/IIB awardees, and other DOT staff.
- DOT continued to provide CAP services for Phase I and Phase II awardees who opted to receive this service and started to track the benefits this assistance brings.
- DOT successfully implemented an electronic Phase II proposal submission site similar to the Phase I submission site. The new sites are designed to make the evaluator experience more streamlined and user-friendly and provide easy access to the necessary data used by the Program Office and Contracting Officers.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. DOT reported:

U.S. DOT Program representatives met with 48 small businesses during the Midwest Road Tour in July, and 20 small businesses during the Defense Innovation Convention in Tampa, FL in October. Program representatives also served on SBIR panels and gave brief presentations at the events. US DOT participated in a webinar with Arkansas Small Business and Technology Development Centers in September 2017.

NOAA. SBA approved NOAA's FY17 AFPP request for \$218,160, which matched the estimated maximum allowable funding amount. In the Annual Report submission, NOAA reported \$210,218 in obligations, which were \$7,942 less than the AFPP funding approved and \$52,495 less than the maximum allowable funding amount based on actuals. NOAA's reported outcomes included:

- NOAA's outreach activities included providing information and technical assistance to minority-owned Small Businesses.
- NOAA participated in outreach events with SBA, such as a webinar, SBIR Road Tour, and SBIR Conferences. Phase I proposals from Women Owned SBCs increased from 11.5% in FY16 to 14.3% in FY 17. Phase I proposals from Minority Owned SBCs increased from 7.7% in FY16 to 11.2% in FY17.

- In FY 2017, NOAA continued to use the use Administrative Pilot Program to continue funding contract support services to maintain and manage the daily activities of the NOAA Commercialization Assistance Program (NOAA-CAP). Nine companies of the eleven NOAA Phase II awardees participated in the NOAA-CAP, which achieved the goal of greater than 80% participation from Phase II awardees who are also NOAA-CAP recipients.
- Streamlined the post-award SBIR process, including developing a fully digital online process for all SBIR invoice and reports

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. DOC reported:

Both NIST and NOAA used available Administrative Funding to increase outreach to SDBs and WOSBs. Funds were used to participate in various conferences and SBIR Road Tours. Additionally, NIST worked with the Minority Business Development Agency to broaden outreach to minorities.

NIST. SBA approved NIST's FY17 AFPP request for \$81,000, which was \$24,000 less than the estimated maximum allowable funding amount (\$105,000). In the Annual Report submission, NIST reported \$29,937 in obligations, which were \$51,063 less than the AFPP funding approved and \$117,327 less than the maximum allowable funding amount based on actuals. NIST's reported outcomes included:

- Participated in 2 SBIR Road Tours, the annual conference, and an event at MIT. Phase I proposals from underserved states increased from 14% in FY16 to 16% in FY 17.
- Work with Minority Business Development Agency (MBDA) on determination of the best methods of outreach to women, minorities and underserved states and implement their recommendations. Phase I proposals from women-owned SBCs increased from 12% in FY 16 to 19% in FY17. Phase I proposals from minority-owned SBCs increased from 18% in FY16 to 25% in FY17.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. DOC reported:

Both NIST and NOAA used available Administrative Funding to increase outreach to SDBs and WOSBs. Funds were used to participate in various conferences and SBIR Road Tours. Additionally, NIST worked with the Minority Business Development Agency to broaden outreach to minorities.

ED. SBA approved ED's FY17 AFPP request for \$317, which was \$236,683 less than the estimated maximum allowable funding amount (\$237,000). In the Annual Report submission, ED reported \$317 in obligations associated with participation at the New England Regional Summit at MIT. ED's obligations were equal to the AFPP funding approved and \$238,018 less than the maximum allowable funding amount based on actuals.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. ED reported:

For years, ED SBIR has conducted outreach and technical assistance to small businesses around the country through participation at the SBIR national and DC-based conferences, participation at a number of industry and developer focused conferences, forums, and meetings, and through a variety of web-based outreach strategies including blogging, emailing, and webinars. In FY 2017, ED SBIR conducted outreach directly to underrepresented groups, including to socially and economically disadvantaged-owned small businesses (SDBs) and women-owned small businesses (WOSBs). Specific actions included conducting outreach to national and regional organizations that serve SDBs and WOSBs. In FY 2017, ED SBIR continued many other outreach procedures, including: attending the National SBIR Conference and leading an agency presentation, and a 1-on-1 meetings with 30 small business entities, several of whom were WOSBs and SDBs; attending and presenting to dozens of firms at industry conferences, many of whom were WOSBs and SDBs; posting program announcements and numerous blogs published on websites such as ED.gov; IES.ED.gov, FBO.gov, SBIR.gov, SBA.gov, through Tweets on SBA.gov, through new stories on leading e-newsletters and

publications such as EdSurge; and through direct outreach to its network of hundreds of small businesses. It is possible many WOSBs and SDBs were reached through these modes of outreach.

EPA. In FY17, EPA did not participate in the AFPP.

Each Participating Agency is required to report its efforts to increase outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals. EPA reported:

EPA has a modest SBIR budget and therefore receives more quality proposals than it can afford to fund. EPA continues to do outreach to all small businesses including SDBs and WOSBs through many venues including the SBIR National Conference(s) (where EPA presented, had a booth and did one-on-ones), state meetings via the SBIR Road Tour, and webinars including one presented jointly with NIEHS and NSF and one hosted by EPA prior to the release of the Phase I solicitation for all potential applicants. EPA used their own funding for outreach efforts to SDBs and WOSBs, and not SBIR or AFPP funds.

16 | Government Phase III Funding

Phase III funding is measured as the revenue a business receives through the funding of additional R&D, licensing, investment and/or sales for work that can be tied back to SBIR/STTR funded technology. Phase II is by definition, work that derives from, extends or completes Phase I or II work and is not supported by SBIR or STTR dollars.

In the FY15 Annual Report, SBA began collecting agency awarded Phase III funding data from the Participating Agencies. SBA understands the challenges with obtaining and reporting this data. Agencies commonly provide Phase III funding to a business for work based on earlier SBIR/STTR efforts but are not aware of the relationship. For example, the SBIR/STTR awardee may serve as a supplier or subcontractor beyond what is recorded on the award. Furthermore, some Phase III efforts are not documented because the acquisition programs don't report the award to the SBIR/STTR program offices. Similarly, small businesses are not required to notify the SBIR/STTR program of their Phase III funding. Those figures are only collected if the company applies for additional SBIR/STTR Phase I or II funding. Moreover, agencies have even less insight into Phase III funding for companies which no longer participate in the SBIR/STTR programs. SBA is working with the agencies to develop tools which will provide a more efficient way to obtain and validate data on private sector sales, licenses, equity investment and acquisition. Due to these challenges, Phase III reporting through the Annual Report will likely continue to represent a subset of the total Phase III funding. For participating agencies issuing SBIR/STTR grants, such as DOE and NIH, most of the Phase III funding typically comes from the private sector. However, several of the granting agencies more actively buy products and fund follow-on R&D. Agencies should work to increase the Phase III funding levels that the agency or FFRDC's make. SBA would like to recognize DHS' impressive commercialization success. Of the \$32 million reported Phase III funding for the Civilian agencies combined, DHS made up \$20.4 million with one of the smallest SBIR budgets of \$19.6 million.

The participating agencies issuing SBIR/STTR contracts, such as DoD and NASA, are often the customers or buyers of Phase III technology developed under previous SBIR/STTR awards. These agencies use later stage RDT&E and procurement funds to further develop or purchase the SBIR/STTR technology. Aligning the awards with agency customers encourages Phase III commercialization. A best practice for agencies is to identify and fund SBIR/STTR Phase I and II work with a transition path into a program or platform. This approach best positions the SBIR/STTR awardee to work with the integrator (government or prime) to ensure the project meets the specifications as they work towards and reach the desired Technology Readiness Level (TRL) for the effort.

Table 2, 3 and 7 provide the Phase III funding reported to SBA by each agency. The variance between agencies is substantial. Congress has continuously highlighted the importance of Phase III for both the Civilian and DoD agencies. DoD Phase III activity is shown in Table 7 with the Navy reporting \$404 million, Air Force reporting \$256 million, Army reporting \$9 million, and the Fourth Estate reporting \$27 million. SBA encourages the DoD to study the root cause of this difference and identify if best practices used by some DoD components could be shared with others to increase overall DoD Phase III awards. The DoD has still not addressed several requirements established in the 2012 NDAA and described in 15 USC § 638(y). This legislation authorized DoD to establish goals for the transition of Phase III technologies in subcontracting plans and require a prime contractor on such a contract to report the number and dollar amount of contracts entered into by that prime contractor for Phase III SBIR/STTR projects for efforts over \$100,000,000; set a goal to increase the number of Phase II SBIR and STTR contracts that lead to technology transition into programs of record or fielded systems; and use incentives to encourage agency program managers and prime contractors to meet these goals. SBA believes implementing these practices across the DoD would increase the Phase III awards made and the number of SBIR and STTR technologies that transition into acquisition platforms. A more detailed discussion on the requirements for the DoD in relation to the Commercialization Readiness Program (CRP) is described in Section 17.

Economic Impact Studies

SBA and the eleven participating agencies are committed to capturing the economic impact of SBIR/STTR awardees and using this knowledge to stimulate additional economic growth opportunities. Three organizations have funded major studies that looked at Phase II awards over a ten-year period. They measured a number of economic impacts to include additional R&D, sales, spin offs, jobs created, average salaries and total economic impact. These studies funded by and performed for the Air Force, Navy and National Institute of Cancer provide the most detailed data on the impact of the SBIR and STTR programs. They can be found at <https://www.sbir.gov/node/832335>.

17 | SBIR/STTR Commercialization Programs

DoD Commercialization Readiness Program (CRP)

The Commercialization Readiness Program (CRP) was originally authorized and created as part of the National Defense Authorization Act of Fiscal Year 2006 as the Commercialization Pilot Program (CPP) under the OSD and the Secretary of each Military Department. Congress permanently authorized the program through the SBIR/STTR Reauthorization Act of 2011. The purpose of the CRP is to pay for activities that accelerate the transition of DoD SBIR/STTR-funded technologies to Phase III, especially those providing significant benefit to the nation's warfighters in improved performance, new capabilities, increased reliability, and cost savings well exceeding investment. Phase III commercialization work derives from, extends, or completes efforts made under prior funding agreements under the SBIR/STTR Programs, and requires small businesses to obtain funding from the private sector and/or non-SBIR/STTR government sources. Under the CRP, up to 1% of the available SBIR funding may be used by DoD Service Agencies and Fourth Estate for payment of expenses incurred to support CRP activities. The CRP pays for activities that enhance the connectivity among SBIR/STTR firms, prime contractors, and DoD science & technology and acquisition communities.

According to Section 9 of the Act (15 USC § 638(y)), for any contract with a value of \$100,000,000 or greater, DoD is authorized to establish goals for the transition of Phase III technologies in subcontracting plans and require a prime contractor on such a contract to report the number and dollar amount of contracts entered into by that prime contractor for Phase III SBIR/STTR projects. In addition, DoD must set a goal to increase the number of Phase II SBIR and STTR contracts that lead to technology transition into programs of record or fielded systems; use incentives to encourage agency program managers and prime contractors to meet these goals; and submit to SBA the number and percentage of Phase II SBIR/STTR contracts that led to technology transition into programs of record or fielded systems; information on the status of each project that received funding through the CRP and efforts to transition those projects into programs of record or fielded systems; and a description of each incentive used and the effectiveness of that incentive in meeting the goal.

To date, the DoD has not provided SBA with the number and percentage of Phase IIs leading to technology transition; information on the status of each project receiving funding through CRP and efforts to transition those projects; as well as any details or evidence they set a goal to increase Phase IIs that lead to technology transition or a description of the incentives used to increase the effectiveness. The DoD does provide SBA with a CRP report which describes the activities and firms helped under CRP funding and authority. The full FY17 DoD CRP report will be posted on <https://www.sbir.gov/annual-reports-files>.

Commercialization Readiness Pilot Program for Civilian Agencies (CRPP)

The SBIR/STTR Reauthorization Act of 2011 created the Civilian Agency Commercialization Readiness Pilot Program (CRPP) that allows an agency to use up to 10% of its SBIR/STTR budget for additional awards to SBIR/STTR awardees. The size of these awards may be up to three times the Phase II guideline amount. The DoD CRP is structured in a completely different way in that all the funding goes to support the firms but not to the firms, much like the Administrative Pilot. Note, that once an agency submits and has its CRPP plan approved by SBA, it does not have to reapply year to year.

The following table provide further data on how HHS, NASA, and DHS used the CRPP authority in FY17.

Table 29: Commercialization Readiness Pilot Program for Civilian Agencies (CRPP) – HHS, NASA, DHS

Agency	Number of Awards	Amount Obligated
HHS	27	\$27,178,638
NASA	14	\$5,222,437
DHS	2	\$393,231

According to Section 9 of the Act, 15 USC §638(b)(7)(F), Participating Agencies must provide an accounting of funds, initiatives, and outcomes under the CRPP to SBA. The following subsections summarize FY17 CRPP activities.

HHS. HHS began planning the CRPP after securing SBA approval. In FY14 and FY15, NIH sought and received guidance from NIH OGC, Grants Policy, Peer Review and other necessary offices to develop CRPP solicitations. Draft CRPP solicitations were developed and circulated for internal input, refinement and clearances. This process took longer than expected due to the unique nature and requirements of the CRPP authority. HHS issued its CRPP solicitations on November 2, 2015 in FY16 and held an informational webinar. The first CRPP applications were received and awards made in FY16. HHS received 109 CRPP proposals in FY17, of which 27 were funded with \$27,178,638 in Total Dollars Obligated. HHS did not differentiate its CRPP program between follow-on to Phase II funding and Phase II commercialization funding.

NASA. NASA received 30 CRPP proposals in FY17, of which 14 were funded \$5,222,437 in Total Dollars Obligated.

DHS. DHS received 4 CRPP proposals in FY17, of which 2 were funded \$393,231 in Total Dollars Obligated.

18 | Other SBIR/STTR Reporting Requirements

Awards to Small Business Concerns (SBCs) Majority-Owned by Venture Capital Operating Companies

The SBIR/STTR Reauthorization Act of 2011 provided authority to SBIR Participating Agencies to use a portion of its program funds for awards to firms that are majority-owned by multiple venture capital operating companies (VCOCs), hedge funds (HFs) or private equity firms (PEFs). HHS's NIH and Centers for Disease Control and Prevention (CDC) and DOE's Advanced Research Projects Agency-Energy (ARPA-E) elected to begin using this authority in 2013. Hereafter, firms that are majority-owned by multiple VCOCs, HFs, or PEFs are referred to as portfolio companies.

HHS/NIH. In FY13, NIH submitted its written determination to SBA and Congress that NIH intended to exercise the authority to allow portfolio companies to apply to its SBIR Program. Every new NIH SBIR solicitation issued after January 28, 2013 has allowed portfolio companies to apply to the NIH SBIR Program.

HHS has controls in place to ensure that overall spending on NIH and CDC portfolio companies will not exceed 25% or 15% of its SBIR set-aside respectively.

HHS/CDC. On July 30, 2014, HHS/CDC submitted its written determination to SBA and Congress that CDC intended to exercise the authority to allow portfolio companies to apply to its SBIR Program. Every new HHS SBIR solicitation that CDC participates in issued after July 30, 2014, has allowed portfolio companies to apply to the CDC SBIR Program.

The total percent of SBIR funds HHS obligated in FY17 to SBCs majority-owned by multiple venture capital, hedge funds or private equity firms came to 1.9%, well below the thresholds.

Table 30: HHS SBIR Awards to SBC majority-owned by multiple VCOCs, hedge funds or private equity firms

HHS SBIR Awards to SBC majority owned by multiple VOCs, hedge funds or private equity firms	
Number of proposals received	33
Number of awards	27
Total dollar amount of awards	\$13,693,914
Number of Phase I proposals Received	18
Number of Phase I Awards	14
Total dollar amount of Phase I Awards	\$2,995,049
Number of Phase II proposals received	15
Number of Phase II Awards	13
Total dollar amount of Phase II Awards	\$10,698,865
Number of non-competing awards	5 (year 2 or 3 of a Phase II, funded one FY at a time)
Total dollar amount of non-competing Phase II Awards	\$3,090,561
Overall dollar amount of awards (competing and non-competing)	\$16,784,475

Phase III Appeals

Pursuant to Section 4(c)(8) of the SBIR/STTR Policy Directives, Participating Agencies are to notify the SBA before they pursue follow-on work on a technology developed under an SBIR/STTR Award with an entity other than the SBIR/STTR Awardee that developed the technology. The SBA did not receive such a notification from any funding agency during FY17. The SBA may also be contacted directly by SBIR/STTR awardees seeking assistance with perceived violations of the Phase III preference requirements or SBIR/STTR data rights. In such cases, the SBA works with the awardee and the relevant agency to resolve the issue and may, if warranted, appeal an agency decision or action to pursue Phase III work with another entity. None of the Participating Agencies or SBIR/STTR awardees reported Phase III appeals in FY17.

Outreach to Women- and Socially and Economically Disadvantaged-Owned Small Business Concerns (SBCs), and Underrepresented States

Pursuant to 15 USC §638(b)(7)(C), the SBA reports a description of the extent to which each federal agency is increasing outreach and awards to firms owned and controlled by women or by socially and economically disadvantaged individuals under each of the SBIR and STTR Programs. Proposal and award statistical information can be found in Sections 5 and 6 of this report. Detailed information on the individual agencies' activities can be found in Section 15.

Participating Agency Compliance with Executive Order 13329 - Encouraging Innovation in Manufacturing (E.O. 13329)

Section 9(ss) of the Act, 15 U.S.C. § 638(ss), requires that the Annual Report contain the following information about Executive Order (E.O.) 13329:

- a description of efforts undertaken by the head of the federal agency to enhance United States manufacturing activities;
- a comprehensive description of the actions undertaken each year by the head of the federal agency in carrying out the SBIR or STTR Program of the agency in support of Executive Order 13329 [note to this section] (69 Fed. Reg. 9181; relating to encouraging innovation in manufacturing);
- an assessment of the effectiveness of the actions described in paragraph (2) at enhancing the research and development of United States manufacturing technologies and processes;
- a description of efforts by vendors selected to provide discretionary technical assistance under subsection (q)(1) to help SBIR and STTR concerns manufacture in the United States; and
- recommendations that the program managers of the SBIR or STTR Program of the agency consider appropriate for additional actions to increase the effectiveness of enhancing manufacturing activities.

Pursuant to E.O. 13329, agencies must give priority to Small Business Concerns that participate in or conduct R/R&D "...relating to manufacturing processes, equipment and systems; or manufacturing workforce skills and protection." Each agency includes in its Annual Report to the SBA a synopsis of its implementation of these requirements. Agencies utilized a variety of approaches in addressing the E.O. 13329 directive. For most, these requirements are assessed within the scope of each agency's R/R&D needs with tangible numbers of solicitation topics, awards, and dollars. Mechanisms commonly used by agencies to give priority to manufacturing-related work include: adding manufacturing-related topics in solicitations; requesting in solicitations that proposals address any possible manufacturing-related elements of the small businesses' proposed work, technological approach, delivery or resulting technological applicability to manufacturing processes; and, noting in solicitations that including such elements in proposals may provide a competitive advantage in the award selection process. Additionally, cross-agency collaborations, targeted outreach efforts, and other agency-specific activities related to manufacturing contribute to addressing the objectives of E.O. 13329. A detailed report on the individual agencies' activities and initiatives is located at <https://www.sbir.gov/annual-reports-files>.

Participating Agency Compliance with the Energy Independence and Security Act of 2007 (EISA)

Section 9(z) of the Act, 15 U.S.C. §638(z) requires that the Annual Report include a determination of whether Participating Agencies give high priority to Small Business Concerns that participate in or conduct energy efficiency or renewable energy system research and development projects.

Pursuant to the Energy Independence and Security Act of 2007 (Pub. L. No. 110-140) and Policy Directives issued by the SBA, Participating Agencies must give high priority to Small Business Concerns that participate in or conduct energy efficiency or renewable energy system R/R&D projects. Agencies utilize a variety of approaches to comply with EISA and the Policy Directives. For some, such as DOE, these efforts are ingrained in the agency mission and therefore easy to assess in very tangible ways. Mechanisms commonly used by agencies – aside from specifically adding energy related topics in solicitations – include adding that solicitation proposals address any energy efficiency or renewable energy aspects related to the small businesses’ technological approach, delivery or technological applicability and often provide such proposals a competitive advantage in the award selection process. Cross-agency collaborations, outreach efforts, and other initiatives also become critical to assessing the collective achievements of the program rather than focusing on individual agency performance. Each Participating Agency’s Annual Report addresses EISA compliance by including: examples of SBIR/STTR projects related to energy efficiency or renewable energy; procedures and mechanisms used during the reporting fiscal year to give priority to energy efficiency and renewable energy projects in SBIR/STTR; and, specific actions taken to promote and support energy efficiency and renewable energy research projects. A detailed report on the individual agencies’ activities and initiatives is located at <https://www.sbir.gov/annual-reports-files>.

Interagency Policy Committee (IPC)

The Interagency Policy Committee (IPC), as created by the SBIR/STTR Reauthorization Act of 2011, is co-chaired by the SBA and the White House Office of Science and Technology Policy (OSTP). The IPC is comprised of representatives from all SBIR/STTR Participating Agencies with the collective purpose to review issue areas and make policy recommendations on ways to improve SBIR/STTR Program effectiveness and efficiency. Throughout FY17, the SBA, OSTP, and the agency representatives (Program Managers) collaborated through the IPC in bimonthly Program Managers’ meetings at the SBA to formulate policy recommendations to be submitted to Congress. The IPC also achieved significant accomplishments in the areas of government data and reporting mechanisms through continued build-out of the www.SBIR.gov portal for registered users, creating administrative and programmatic efficiencies for agency reporting officials and small businesses participating in the SBIR/STTR Programs.

Annual Report on SBIR/STTR Program Goals

Pursuant to Section 15 USC § 638(nn), added by the Reauthorization Act:

The head of each Federal agency required to participate in the SBIR Program or the STTR Program shall develop metrics to evaluate the effectiveness and the benefit to the people of the United States of the SBIR Program and the STTR Program of the Federal agency that are science-based and statistically driven; reflect the mission of the Federal agency; and include factors relating to the economic impact of the programs.

It further requires the agency to conduct an annual evaluation using these metrics and provide that report to the House and Senate Small Business Committees and House Committee on Science, Space and Technology, as well as the SBA Administrator. SBA followed up and verified with the Participating Agencies that no individual reports were submitted to Congress to address the reporting requirement pursuant to Section 15 USC § 638(nn). Agencies indicated that they feel the SBA Annual Report meets the spirit of this provision.

Direct to Phase II Awards

The SBIR/STTR Reauthorization Act of 2011 granted the authority to the National Institutes of Health, Department of Defense, and the Department of Education to make Phase II awards to small business concerns without regard to whether the company was provided a Phase I award. Prior to such an award, the heads of those agencies, or designees, must issue a written determination that the small business has demonstrated the scientific and technical merit and feasibility of the ideas that appear to have commercial potential. The determination must be submitted to SBA prior to issuing the Phase II award.

The National Defense Authorization Act for Fiscal Year 2019 reauthorized this authority through FY22. The bill also requested SBA provide an analysis and metrics on the program. In accordance with the requirement, SBA has provided metrics and analysis on agency use of the Direct to Phase II authority for FY17.

NIH. In FY17, the National Institutes of Health received 397 Direct to Phase II applications. NIH selected 109 new Direct to Phase II awards, resulting in a 27.5% success rate. These awards totaled \$94,532,103, representing approximately 33% of its 324 FY17 new Phase II awards. Furthermore, NIH's Direct to Phase II awards had a lower selection rate than Regular Phase IIs (37%) and Phase IIBs (39.6%). NIH uses the program to fund technologies in which the firm has already matured past the Phase I feasibility stage with their own resources and is ready for the Phase II demonstration stage. Direct to Phase II at NIH typically reduces the technology maturation time by two years, which brings critical medical technologies to the public faster.

DoD Fourth Estate. DARPA awarded 31 new Direct to Phase II awards in FY17. These awards totaled \$14,840,769. The program has been extremely beneficial to DARPA by allowing them to accelerate the transition of new technologies to the warfighter. This authority also enables DARPA Program Managers to explore vastly different approaches to meeting the needs of their portfolio by selecting Phase I and Direct to Phase II proposals for certain topics. The authority has been shown to reduce the time from identified need to Phase III by two to three years. In general, DoD uses this authorization in places where there is a critical need and identified Phase III funding and through the pilot has fielded several successes.

Air Force. Air Force awarded 7 new Direct to Phase II awards in FY17. These awards totaled \$10,419,855. The program has been extremely beneficial to the Air Force by allowing them to accelerate the transition of new technologies to the warfighter. It has been shown to reduce the time from identified need to Phase III by two to three years. Air Force uses this authorization in places where there is a critical need and identified Phase III funding and through the pilot has fielded several successes.

ED. The Department of Education has not used the authority since its inception due to the limitations of its budget size.

Table 31: Direct to Phase II Awards

Agency	Number of Awards	Total Obligations
HHS-NIH	109	\$94,532,103
DoD Fourth Estate (DARPA)	31	\$14,840,769
Air Force	7	\$10,419,855
ED	0	\$0
Total	147	\$119,792,727

NIH Phase 0 Proof of Concept Partnership Pilot Program

The SBIR/STTR Reauthorization Act of 2011 authorized the Director of the National Institutes of Health to use \$5,000,000 of the required expenditures for STTR for a Proof of Concept Partnership Pilot Program. The pilot was designed to accelerate the creation of small businesses and the commercialization of research innovations from qualifying institutions. The original authorization enabled the Director to make awards for up to \$1,000,000 per year for up to three years. This authorization included a report from Director of National Institutes of Health to Congress but did not specify a publication date.

The National Defense Authorization Act for Fiscal Year 2019 reauthorized this authority through FY22. The bill also requested SBA evaluate the report on the pilot program submitted by the Director of National Institutes of Health. On June 3 2019, NIH submitted to Congress and SBA the final report on its Phase 0 Proof of Concept Partnership Pilot Program. SBA intends to include a section in the FY18 Annual Report analyzing NIH's report on the pilot program.

19 | SBA SBIR/STTR Accomplishments

The Office of Investment and Innovation (OII) is the office at SBA responsible for the oversight and management of the SBIR and STTR Programs on behalf of the Administrator. SBA responsibilities identified in Section 9 of the Small Business Act (15 USC § 638(b)) include: assisting small businesses in participating in the SBIR/STTR Programs; coordinating and monitoring Federal agency operation of the SBIR/STTR Programs; managing databases and SBIR/STTR Program data; and reporting activities to Congress.

Advocacy for SBIR/STTR

In FY17, OII focused on building stronger relationships with the 11 Participating Agencies and improving assistance provided to potential applicants, especially those from underrepresented communities. These efforts were carried out through increased meetings and improved responsiveness to the Participating Agencies, the SBIR Road Tour, major upgrades to the SBIR.gov business intelligence database platform and working with the university startup community. SBA continued improving and expanding the training tools available on the SBIR.gov training portal. SBA also connected with hundreds of stakeholders across the innovation ecosystem, including entrepreneur support organizations that could promote these tools to enhance existing training. Additional activities are discussed below.

SBIR.gov Improvements

A major focus for 2017 was to address and correct data quality issues tied to agency submissions and the matching of annual reports and data that resides on SBIR.gov. SBA implemented solutions that improved SBIR.gov for both the public and agency users. This included a massive data cleanse which merged approximately 2,670 duplicative firms. More of the data fields that agencies submit to SBA were made to be mandatory and quality control checks that identifies false or false probable data was implemented. SBA also developed tools to help agencies better identify missing data during the upload process as well as tools to improve topic solicitation data directly to the SBIR portal. These updates incorporated additional questions, text changes, and templates to improve data collection and reporting. Furthermore, SBA continued working with agencies to collect unawarded proposal coversheet data. Unawarded proposal data is an important piece to understanding overall data trends and areas for improvement.

FAST and Growth Accelerator Fund Competition (GAFC)

The Federal and State Technology Partnership program (FAST) is a major effort for SBA's Office of Innovation and Technology, described in detail in section 21 of this report. Collecting award data, monitoring agencies, and reporting SBIR/STTR activity is one role for the office, but outreach and training is critical as it helps the entrepreneur become aware of and learn how to apply to these programs. FAST and GAFC are two of the tools SBA uses to fund organizations that have direct daily contact with science-based entrepreneurs. It is used to increase awareness and provide training to groups with low participation in the programs. In 2017, SBA announced the selection of the 2018 Cohort, which included 16 FAST grants for up to \$125,000 each, and five FAST grants for up to \$200,000 to state and local economic development agencies, business development centers, and colleges and universities to support innovative, technology-driven small businesses. The GAFC is used by SBA to support the development of accelerators and their support of startups in parts of the country where there are fewer conventional sources of access to capital (i.e., venture capital and other investors). In 2017 the funding was to \$1 million in 2017 and 20 prize competition awards were made. More information on the GAFC can be found on SBA.gov.

Road Tour and Conferences

The SBIR Road Tour is a national outreach effort to increase program access and awareness. The SBIR Road Tour brought Program Managers from the 11 Participating Agencies directly to potential applicants. The FY17 SBIR Road Tour continued its efforts to reach historically underrepresented states and individuals (including women-owned as well as socially and economically disadvantaged small businesses). Furthermore, these stops offered opportunities to engage local innovation support organizations and the R&D community. The third year of the SBIR Road Tour included 15 stops (Mountain West, Midwest, and California). These events averaged 179 attendees per stop, which doubled the average from FY16. In total, these tours provided over 2,600 attendees with a local opportunity to hear directly from Program Managers and facilitated over 3,000 one-on-one meetings. SBA and the participating agencies participated in the 2016 SBIR/STTR Innovation Summit (Austin, TX) and the 2017 National SBIR/STTR Conference (Washington, DC).

Training

SBA continued improving the training tools available on SBIR.gov while reaching out to hundreds of stakeholders across the innovation ecosystem, including entrepreneur support organizations which work directly with small businesses and could incorporate these tools to enhance their existing training. In FY17, SBA built on the success of the pilot cohort and launched its first cohorts with the resource partners. SBA also enhanced the Online Tutorial offerings by developing 30 additional training modules.

Annual Reports

In FY17, SBA published the FY14 Annual Report, which incorporated changes to address issues raised by the Government Accountability Office (GAO) and the individual Agencies.

SBIR/STTR Program Managers Meetings

SBA continued facilitating bi-monthly meetings with the SBIR/STTR Program Managers. In these meetings, SBA and the 11 participating agencies discussed issues including outreach strategies, best practices, challenges, improving data integration, and policy updates.

Fraud, Waste, and Abuse

Fraud, Waste, and Abuse (FWA) was a regular topic for discussion at the Bi-Monthly SBIR Program Managers meetings. SBA discussed the topic at every meeting and encouraged agencies to share FWA best practices. This included best practices on sharing information regarding duplicate proposals submitted by firms, having agency Inspector General contact information and successful FWA cases published on their websites, as well as the importance of making sure companies complete the FWA certifications.

The SBIR program office (Innovation and Technology) had ongoing discussions with the SBA Office of Inspector General (OIG) regarding FWA trends discussed by participating SBIR agencies at the SBIR OIG Working Group.

20 | Agency Summaries

Department of Health and Human Services (HHS)



The HHS SBIR/STTR Programs are administered by the National Institutes of Health (NIH) to invest in early-stage biomedical, health, and life science companies creating a wide range of innovative technologies aligning with NIH's mission to improve health and save lives. A key objective of this work is translating promising technologies with strong potential for commercialization to the private sector through strategic public and private partnerships, so that life-saving innovations reach consumer markets.

FY 2017 SBIR/STTR Highlights

- Awarding over 1,300 SBIR/STTR Phase I, Phase II, Phase IIB, and Fast Track applications to US small businesses
- HHS Technical Assistance (Niche Assessment, Commercialization Accelerator, I-Corps) Programs assisted ~300 Small Business Concerns.

FY 2017 Commercialization/Outreach Activities

- 167 events (in person and virtual) hosted in 39 states, plus the District of Columbia (DC) that reached over 10,008 attendees
- Reached over 2,500 attendees and 10 states, including Hawaii, during the SBIR Road Tour.
- 322 SDB reached; 769 WOSB reached.
- 19th Annual HHS SBIR/STTR conference was hosted in Milwaukee, WI on November 7 – 9, 2017, reaching 498 attendees from 37 states plus Puerto Rico, and 202 businesses. This event included a workshop designed for WOSB/SDB.
- Coordinated an HHS Women and Minority Outreach Small Business group to develop strategies to increase WOSB/SDB.
- Organized the BIO Innovation Zone for 60 HHS SBIR/STTR funded companies, in partnership with the NSF and BIO, and send companies to pitch at AdvaMed, RESI, and related investor conferences.
- Began development of NIH-wide Entrepreneur in Residence program to assist small businesses.

FY 2017 SBIR/STTR Success Stories

A small sample of highlighted companies include:

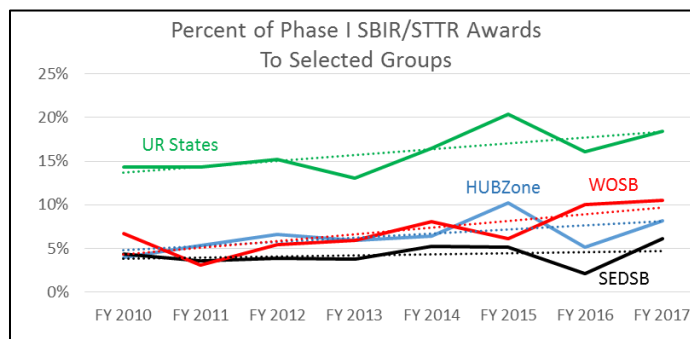
- **C4 Imaging** (TX - \$1.1M equity financing; raised \$3.4M Round A funding);
- **WinSanTor** (CA - exclusively licensed potential peripheral neuropathy treatments from UC San Diego Sch. of Med. and St. Boniface Hospital Albrechtsen Research Centre/U. of Manitoba);
- **Arrhythmotech** (IN – won Innovation of the Year at 18th Annual Mira Awards honoring the best of tech in IN); and
- **Platelet Biogenesis** (MA - raised \$10M Series A financing).

Department of Energy (DOE)



The DOE SBIR & STTR Programs provide research and development funding to advance the physical sciences and improving energy and national security. Small businesses participating in these programs often collaborate with the DOE National Laboratories to take advantage of their unique capabilities and expertise.

Broadening Participation: DOE has placed greater emphasis in recent years in attracting quality applications from under-represented small businesses. In FY 2015, a Phase 0 application assistance program was created to assist women-owned small businesses (WOSB), socially and economically disadvantaged small businesses (SEDSB), and small businesses from under represented states (UR States) in preparing high quality applications to the SBIR & STTR Programs. The chart below illustrates Phase I awards made to these groups as well HUBZone small businesses since FY 2010. Although the general trend for some of the groups is positive, the chart highlights that additional work needs to be done to improve participation by SEDSB.



Increasing Engagement: In FY 2017, DOE implemented its first SBIR/STTR Phase I Principal Investigator Meetings. This meeting, modeled after similar meetings at other federal agencies, serves several purposes: (1) face to face reviews of Phase I projects between principal investigators and DOE program managers; (2) preliminary assessments of small business needs by the DOE commercialization assistance vendor; (3) networking with fellow SBIR/STTR awardees; and (4) presentations by DOE (grant oversight and intellectual property responsibilities, transition to Phase II) and the private sector to discuss commercialization, investing and partnering. Overall feedback from the meetings from small business participants was strongly positive. Subject to continuation of the administrative funding pilot program, DOE plans to continue to hold these meetings.

Small Business Highlight

SFP Works, LLC | Washington, MI

Under SBIR funding, SFP Works, LLC has developed a novel heat treating process to create low-cost, very high-strength steel known as Flash Processing or Flash Bainite that uses a thermal cycle of less than 10 seconds to create a ductile and weldable steel well suited for the automotive industry. In their phase I/II project, SFP Works demonstrated commercial feasibility of room temperature forming/stamping of Flash Bainite and created complete process parameterization and weld schedules for multiple Flash alloys for full scale commercialization targeting weight/cost savings of 33-50% of the metal in a vehicle. These accomplishments were recognized with a Tibbets award in 2016 and led to a Phase III award from DOE in 2017.

Department of Homeland Security (DHS)



The DHS SBIR Program serves to increase small business access to DHS R&D opportunities while providing innovative solutions for DHS technology needs. The DHS SBIR Program is administered through the Science and Technology Directorate (S&T) and the Domestic Nuclear Detection Office (DNDO).

S&T SBIR focuses on near-term commercialization and delivery of operational prototypes to federal, state and local emergency responders and managers, as well as internal DHS operational units to support the DHS missions: Prevent Terrorism and Enhance Security, Secure and Manage Our Borders, Enforce and Administer Our Immigration Laws, Safeguard and Secure Cyberspace, and Strengthen National Preparedness and Resilience.

DNDO SBIR focuses on aggressive and expedited small business R&D developing break-through technologies to prevent nuclear and radiological terrorism; address gaps in the Global Nuclear Detection Architecture; improve the performance, cost, and operations of nuclear detections and forensics; and, possess near-term technological potential for successful transitioning to system development, acquisition, deployment, and/or commercialization.

DHS SBIR Addresses the R&D Needs of the 7 DHS Operational Units (as well as First Responders nationwide)

- U.S. Coast Guard, U.S. Transportation Security Administration, U.S. Customs and Border Protection, Federal Emergency Management Agency, U.S. Citizenship and Immigration Services, U.S. Immigration and Customs Enforcement, and U.S. Secret Service

Commercialization Readiness Pilot Program: In FY 2017, while continuing its Commercialization Assistance Program, the DHS SBIR Program initiated several efforts aimed at improving the chances of commercial success of SBIR technology efforts and the small businesses developing them. Key aspects of this approach include: mentoring of small businesses to improve business and marketing skills including end-user product knowledge, additional investment in promising Phase II technologies to improve technical readiness and inclusion of DHS SBIR firms in the NSF I-Corps program.

Department of Commerce (DOC)



The Department of Commerce's SBIR Programs are administered by the National Institute of Standards and Technology (NIST) and the National Oceanic and Atmospheric Administration (NOAA). Both programs fund small businesses to perform research and development in technology areas that align with the agencies' missions as described in annual solicitations. The technologies demonstrate significant potential for successful commercialization.

FY 2017 SBIR Highlights

- Both NIST and NOAA increased SBIR participation by women-owned and minority-owned small businesses. This achievement can be attributed to DOC's increase in outreach activities, such as SBIR public events or social media presence and engagement.
 - At NIST, Phase I proposals from women-owned SBCs increased from 12% in FY16 to 19% in FY17. Phase I proposals from minority-owned SBCs increased from 18% in FY16 to 25% in FY17.
 - At NOAA, Phase I proposals from women-owned SBCs increased from 11.5% in FY16 to 14.3% in FY 17. Phase I proposals from minority-owned SBCs increased from 7.7% in FY16 to 11.2% in FY17.

FY 2017 Commercialization/Outreach Activities

- Commercialization Assistance Program: Participating awardees are provided with individualized training, business mentorship and support which should improve their potential of commercialization success.
 - In FY17, NIST continued its Technology Commercialization Assistance Program (TCAP) for NIST Phase I and Phase II awardees.
 - In FY17, NOAA continued its Commercialization Assistance Program (NOAA-CAP) for NOAA Phase II awardees.
- Outreach: Increased outreach was made possible by the Administrative Funding. This allowed both NIST and NOAA to participate in SBA-sponsored Road Tours and several SBIR conferences. Notable ones include:
 - an SBIR event at MIT, where the theme was on women-owned small businesses, and
 - an SBIR Road Tour stop in Berkeley, CA, where the theme was diversity and inclusion in STEM and Small Businesses.

Department of Transportation (DOT)



DOT's SBIR program, managed for over 30 years by Volpe, the National Transportation Systems Center, seeks to contract with small businesses to pursue R&D on innovative solutions to our nation's transportation challenges across all modes. DOT seeks SBIR applicants who can help the Department anticipate and address emerging issues by advancing technical, operational, and institutional innovations through specific R&D topics of interest to DOT operating administrations: Federal Aviation Administration; Federal Highway Administration; Federal Motor Carrier Safety Administration; Federal Railroad Administration; Federal Transit Administration; National Highway Traffic Safety Administration; Pipeline and Hazardous Materials Safety Administration; and the Office of the Assistant Secretary for Research and Technology.

FY 2017 SBIR Highlights

The DOT SBIR program had a successful FY17. Here are some of the highlights:

- Following DOT's first full-year of the Commercialization Assistance Program (CAP) in FY16, the DOT held its first CAP Workshop in May 2017. All DOT Phase II and IIB awardees were invited to attend the CAP workshop, along with DOT staff and leadership. The Workshop featured sessions on DOT programs with senior DOT leaders and provided training sessions delivered by Dawnbreaker.
- This year DOT also developed three success stories to help feature DOT SBIR awardees. These are featured on our website at <https://www.volpe.dot.gov/work-with-us/small-business-innovation-research/sbir-success-stories>

Environmental Protection Agency (EPA)



and homeland security.

EPA's SBIR Program is a small program with the big mission – to develop and commercialize technologies that protect human health and the environment. EPA works to keep its annual solicitation responsive and relevant. Interaction and communication within the Agency is key to identifying the most important and current environmental needs in areas such as drinking water, air quality, manufacturing, green building



FY 2017 Commercialization/Outreach Activities

- Commercialization** - EPA works closely with its small businesses to help them commercialize their technologies. The proposal evaluation criteria place an increased emphasis on commercialization, including business expertise, partnerships and track record. Peer reviewers with commercialization experience make up a significant portion of each peer review panel. EPA also provides commercialization assistance to all its Phase I and Phase II companies. In addition, EPA has a commercialization option where Phase II companies can receive a funding supplement of up to \$100,000 from EPA for securing 3rd party investment. Many of EPA's companies continue to have significant commercial success while also protecting human health and the environment. Examples are highlighted below.
- Outreach** – EPA continues to do outreach to small businesses that may have innovative ideas that address EPA priority areas. One successful outreach event was the Regional SBIR workshop organized by EPA's Region 3 office at Villanova University's Innovation, Creativity and Entrepreneurship Institute on July 27th, 2017. Small businesses were invited to come hear from successful SBIR companies (PittMoss, Environmental Fuel Research and Green Heron Tools), state organizations (SBDC and IPart) and several SBIR agencies (EPA, USDA and DOE) about the SBIR Program and potential funding opportunities. Over 60 small businesses attended this one-day free event.



FY 2017 SBIR/STTR Success Stories



Lucid is an SBIR funded company out of Oakland, California known for developing interactive, engaging communication tools like Building Orbs that help motivate energy savings in commercial buildings. Lucid's software is used by more than 500 customers in 13,000 buildings in such metropolitan areas as Chicago and Washington, D.C. Lucid is backed by such partners as Cushman & Wakefield, Google, Autodesk, Energy Star, Berkeley Lab, and the National Wildlife Federation. Lucid has received several awards, including the Top Product of the Year in the first annual Energy

Manager Today Awards and an International Green Award, and it was named to the Global Cleantech 100 list.

Imaging Systems Technology, Inc. (IST) is a women-owned SBIR funded company out of Toledo, Ohio that is developing novel low-cost, lightweight and highly efficient water purification systems using ceramic shells. IST is currently scaling up their process and has several customers for its technologies in areas such as large or industrial systems that handle vast quantities of water; small portable systems for disaster relief, humanitarian or military purposes; and industrial wastewater purification (including removing contaminants produced during oil and gas recovery).

National Aeronautics and Space Administration (NASA)



The NASA SBIR and STTR programs fund the research, development, and demonstration of innovative technologies that fulfill NASA needs as described in the annual Solicitation and have significant potential for successful commercialization. Commercialization encompasses the transition of technology into products and services for NASA mission programs, other Government agencies and non-Government markets. NASA research and technology areas solicited in 2017 are aligned by the Agency's Mission Directorates. The Directorates identify high priority research and technology needs for their respective programs and projects. The needs are explicitly described in the topics and subtopics descriptions developed by technical experts at NASA's Centers.

FY 2017 Key SBIR/STTR Highlights

- In FY17, 251 new firms submitted a Phase I proposal to the SBIR program and 35 in STTR; 46 new firms received a Phase I award, 42 from SBIR and 5 from STTR.

FY 2017 Commercialization/Outreach Activities

- **Civilian Commercialization Readiness Pilot Program (CCRPP):** NASA piloted an updated CCRPP in PY17 to further advance innovative technology with high potential for commercialization and transition. This program was offered to small businesses that successfully completed Phase II awards under any federal agency's SBIR or STTR program. The CCRPP will pause in FY18 to review the results and input from stakeholders, and consider beneficial changes to the program before a planned reintroduction for the final approved pilot year in FY19. The CCRPP program awarded 16 contracts with \$8.6 million in SBIR funding and \$8.7 million in matching funding.
- **2017 Industry Day:** NASA held SBIR/STTR Industry Day. The purpose of this event was to build NASA's relationship with the small business community and increase communication between NASA and potential proposers. The event had 467 attendees, 6 booths, 40+ NASA technologists and leaders participate, over 145 one-on-one sessions and 200+ programmatic and technical questions and answers.
- **Request for Information (RFI):** After the close of Phase I submissions for FY17, the program sent a Request for Information (RFI) to solicit opinions from firms, research institutions, and individuals from other industry or federal agencies. A total of 429 respondents answered at least one question, with responses being collected on the PY17 Solicitation (existing subtopics and general feedback), new subtopic ideas, and programmatic recommendations for improvement. The input was used to refine the organization of the Solicitation front end, validate program practices, influence existing subtopics, and inspire new subtopics.
- **I-Corps Training Program:** In early FY17, NASA and National Science Program (NSF) executed a Memorandum of Understanding for a partnership in the NSF Innovation Corps program (I-Corps TM) (hereinafter I-Corps). NASA worked with NSF both to implement the pilot I-Corps programs in 2017 as part of the NASA SBIR/STTR Proposal Solicitation and to offer selected teams the opportunity for Phase I contractors to participate in the I-Corps program. I-Corps educates teams on how to translate technologies from the laboratory into the marketplace. The intended result of I-Corps is to provide firms with a better understanding of their customers' needs, to give firms a better understanding of their company's value proposition as it relates to those customer needs, and to provide firms with an outline of a business plan for moving forward. In FY17, 6 NASA SBIR Teams participated in the NSF I-Corps Bootcamp program and 4 NASA STTR Teams participated in the NSF I-Corps Cohort program.
 - **Phase II-E/X Options in active Phase II Contracts:** The objective of the Phase II-E Option is to further encourage the advancement of innovations developed under Phase II via an option to further R/R&D efforts underway on active Phase II contracts that are in good standing with NASA. Eligible firms shall secure a non-SBIR/STTR investor to contribute funding towards further enhancing the research to qualify for this option. The investor may be a non-SBIR/STTR NASA or NASA program; or may be an investor external to NASA, from another government agency or the private sector, depending on the strategy being pursued for enhancing the technology for further research, infusion, and/or commercialization. For FY17, 38 Phase II-E/X Options were granted with \$10 million in SBIR funding and \$6.1 million in investor funds.

FY 2017 SBIR Success Stories

The articles highlight Infusions, Phase IIIs, and Commercial Successes for SBIR/STTR technologies.

- [DNA Medicine Institute \(DMI\): Easy and Non-Intrusive Nanoscale Diagnostic Platform](#): Self-diagnosis for astronauts on long missions in outer space is possible using an innovative blood analysis system which can generate comprehensive medical test results within minutes using a single drop of blood. DMI was a \$525,000 Grand Prize winner of the Nokia XChallenge. They also have over several million dollars in funding from private investors, and multiple biotech and pharmaceutical partners.
- [Tethers Unlimited, Inc. \(TUI\): CubeSat Thrusters Powered by Green Propellant](#)
 - Tethers Unlimited, Inc. has pioneered a CubeSat thruster which uses a green propellant created from water electrolysis for NASA space research and commercial ventures. TUI has \$2.2 million in contracts from NASA and Millennium Space Systems to test the HYDROS system prototype.
- [Iris AO, Inc.: Special mirrors help NASA detect distant planets](#)
 - Since the first exoplanet discovery in 1995, NASA has dedicated resources to develop deformable mirrors for powerful telescopes to determine if there are signs of life beyond Earth on planets outside our solar system. IRIS AO products derived from SBIR funding are available for world-wide distribution by Edmund Optics - approximately \$2 million revenue generated annually from the technology developed from NASA SBIR. NASA's SBIR program invested \$875,000.

National Science Foundation (NSF)



**America's
SEED FUND**
SBIR-STTR

America's Seed Fund powered by the National Science Foundation (NSF) awards \$200 million annually to startups and small businesses, transforming scientific discovery into products and services with commercial and societal impact. Startups working across almost all areas of science and technology can receive up to \$1.5 million in non-dilutive funds to support research and development (R&D), helping de-risk technology for commercial success. America's Seed Fund is congressionally mandated through the Small Business Innovation Research (SBIR) program. The NSF is an independent federal agency with a budget of about \$7.5 billion (in FY2017) that supports fundamental research and education across all fields of science and engineering. For more information, visit seedfund.nsf.gov.

FY 2017 SBIR/STTR Highlights

- Rebrand and New Website – We launched a completely reimagined program website at seedfund.nsf.gov and rebranded the program as America's Seed Fund powered by NSF.
- Engaging and Supporting First-Time Applicants – A total of 59% of all Phase I proposals received in FY2017 were from first-time applicants (i.e. companies who had never submitted a proposal to NSF before). A total of 61% of all Phase I awards made based on these proposals were to first-time NSF applicants. Our Phase I awardee companies were mostly small (90%) and young (81%) companies.

FY 2017 Outreach Activities

- NSF launched a paid media campaign with advertisements on Google Search, Facebook, Twitter and across outlets such as TechCrunch, MIT Tech Review, NSF, How I Built This, IEEE (and many others)) which generated 85,703 website respondents, 69,575 social media engagements and 24,123,884 impressions.
- NSF sponsored and participated in more than 100 in-person and virtual events in 2017
- Broadening Participation - We reached a broad and diverse audience, sponsoring events such as South By Southwest in Austin, TX.
- Large Tradeshows - We sent more than 20 small businesses to CES to showcase their technology at Eureka Park, which was started by NSF and had more than 500 startups participating from all over the world.

FY 2017 SBIR/STTR Success Stories

- Acquisition Highlights – The calendar year 2017 saw 25 confirmed acquisitions, mergers, or initial public offerings of NSF awardee firms (including Blue River Technologies for \$305 million, Apama Medical for \$300 million, and Daylight Solutions for \$150 million). The total value of these transactions exceeded \$1 billion (with many of the acquisition valuations still unknown).
- Current and former NSF SBIR/STTR awardees raised \$1.2 billion in follow-on private sector investment. Twenty-seven different active and former portfolio companies raised single investment rounds of over \$10 million this year.
- Featured Grantee – Ginkgo Bioworks reached a billion-dollar valuation with a \$275 million funding round raised in 2017. The company has the potential to disrupt a number of massive industries, including food, chemicals, materials, and pharmaceuticals. <https://www.cnbc.com/2018/12/21/bill-gates-backed-start-up-ginkgo-bioworks-prints-synthetic-dna.html>

Department of Agriculture (USDA)



The USDA SBIR Program offers competitively-awarded grants to qualified small businesses to support high quality, advanced concepts research related to important scientific problems and opportunities in agriculture that could lead to significant public benefits.

FY 2017 SBIR Highlights

- The USDA SBIR Program continues to see the number of Phase I applications go up. In FY17 the program reviewed 525 applications, up from 478 applications in FY16, and 424 in FY15.

FY 2017 Commercialization/Outreach Activities

- In FY 2017, USDA coordinated a Webinar with U.S. Small Business Administration (SBA) on a new USDA SBIR program called SBIR-Technology Transfer. This program encourages SBIR applicants to collaborate with USDA Agricultural Research Service (ARS) researchers and/or license ARS technologies. The relevant language in the SBIR Request for Applications states: *“Additional factors that will be considered in the review process include whether an application involves a Cooperative Research and Development Agreements (CRADA) with a USDA laboratory, or a license to a USDA technology.”*
- In FY 2017, five small businesses having CRADAs with ARS submitted SBIR Phase I grant proposals. Three of these businesses (60 percent) were successful in obtaining SBIR funding. The average success rate for USDA-SBIR Phase I funding was 17 percent. In addition, three ARS CRADA partners applied for and received SBIR Phase II funding. The average success rate for USDA-SBIR Phase II funding was 46 percent. There are several reasons for this higher funding rate of SBIR proposals. A small business that has a CRADA with ARS already had its project scientifically reviewed and approved before submitting to SBIR. In addition, ARS research projects are reviewed by outside panels to make sure they are addressing important agricultural problems.

Department of Education (ED)



Through its annual competition, ED's Small Business Innovation Research program, operated out of the Institute of Education Sciences, provides up to \$1.05M to for-profit firms and research partners to develop new, commercially viable technology products to support students, teachers, and administrators in regular and special education. Two elements in particular provide a foundation for the ED/IES SBIR program and the projects it supports – *research and innovation*.

FY 2017 SBIR Highlights

- **Visible Impact** - In recent years, thousands of K12 schools and millions of students have used technologies out of the program. Examples include learning games, simulated virtual environments, adaptive tutors that scaffold learning as students progress, teacher and administrator dashboards that generate real-time data to inform real-time decision making, and assistive technologies for students with disabilities.
- **Organized Major SBIR Event** – To showcase and provide demos of the learning games and technologies out of its program, ED/IES SBIR leads the [ED GAMES EXPO](#) each year. In 2017, more than 50 companies who developed technologies through ED and other SBIR programs at NSF, USDA, NIH, and DAPRA were showcased at the event. For more information on ED/IES SBIR, this [YouTube Playlist](#) provides videos from more than 40 technologies and the [News Archive](#) posts stories out of the program. Please contact Edward.Metz@ed.gov with questions or for more information.

FY 2017 SBIR/STTR Success Stories

- ED/IES SBIR emphasizes rigorous and relevant research. This includes iterative studies to inform the development process and pilots to assess the initial promise of the technologies to lead to the intended outcomes when used in school settings. The goal of the research is twofold – to give developers systematic feedback as they look to scale their technology, and to provide schools and teachers some preliminary evidence that the technologies are feasible for use in classrooms and may be lead to positive outcomes. Many projects have published findings in peer-reviewed journals. The program also strongly encourages developers to continue research after an SBIR project ends. Several projects have or are conducting to larger scale efficacy trials to measure the impact of the technologies on student learning.
- The program also focuses on *innovation*, creating new ways to leverage the potential of technology to enhance learning, instruction, and school management. In recent years, [many awardees won national industry competitions](#) for innovation on the basis of their SBIR projects in 2017. Just a few examples include:
 - Happy Atoms by Schell Games won an AUGGIE award for Best Learning Game. [Read Here](#) and a KAPi Award for Best Educational/Learning Tool. [Read Here](#);
 - Strange Loop Games won the People's Choice award at Earth Games. [Read Here](#);
 - CharmTech Labs won *EdTech Digest's* 2017 Best Special Needs product award for Capti Voice. [Read Here](#);
 - Sokikom is named as one of the 10 Hottest K12 solution providers by *Education Technology Insights*. [See List Here](#) and [Read Article Here](#); Sokikom and Agile Mind won SBA Tibbetts Awards for commercial success resulting from their SBIR awards. [Read Here](#).

21 | Federal and State Technology Partnership (FAST) Program

The Federal and State Technology Partnership (FAST) Program, reestablished under the Consolidated Appropriations Act of 2010, is a competitive grants program administered by the SBA and designed to strengthen the technological competitiveness of small businesses. FAST improves the participation of small technology firms in the innovation and commercialization of new technology, thereby helping keep the United States on the forefront of R&D in science and technology. All 50 states, the District of Columbia, Puerto Rico, the Virgin Islands, Guam, and the American Samoa may receive funding for an array of services in support of the SBIR/STTR Programs.

FAST stimulates economic development among small, high technology businesses through federally-funded innovation and R&D programs, with an emphasis on helping socially and economically disadvantaged firms compete in the SBIR/STTR Programs. FAST program participants support areas such as: small business R&D assistance; technology transfer from universities to small businesses; technological diffusion of innovation benefiting small businesses; proposal development and mentoring for small businesses applying for SBIR/STTR awards; and, commercializing technology developed through SBIR/STTR awards.

The 2017 Cohort included 21 grantees. The cohort's efforts played a vital role in helping entrepreneurs around the country learn about funding SBIR/STTR funding opportunities, submit competitive proposals, and commercialize the work developed under their SBIR/STTR award. Examples of successful cohort initiatives included developing newsletters highlighting SBIR/STTR opportunities, strengthening relationships with other local innovation ecosystem partners, launching business plan competitions, hosting events for potential applicants particularly in underrepresented areas and populations, fostering relationships with research institutions as well as labs, offering training sessions on key issue areas, helping companies identify technical assistance needs, and connecting companies with mentors.

In August 2017, SBA announced the selection of the 2018 Cohort, which included 16 FAST grants for up to \$125,000 each, and five FAST grants for up to \$200,000 to state and local economic development agencies, business development centers, and colleges and universities to support innovative, technology-driven small businesses. FAST candidates were submitted through each of their state and territorial governors, as each governor may submit only one proposal. Panels of SBIR Program Managers conducted evaluations. Panel recommendations were jointly reviewed by SBA, DoD, and NSF. FAST awards were made based upon the merits of each proposal. Varying levels of matching funds were required, based upon the state and territory location of each economic development agency. The FAST award project and budget periods are for 12 months, beginning September 30, 2017.

The 2018 FAST Cohort includes the following awardees:

FAST State Organizations awarded up to \$125K:

- **Connecticut** | Connecticut Innovations Incorporated
- **Illinois** | Women's Business Development Center
- **Iowa** | Iowa Innovation Corporation, IICorp
- **Kansas** | Wichita State University
- **Kentucky** | Kentucky Science & Technology Corporation
- **Louisiana** | LA Business & Technology Center
- **Minnesota** | Minnesota High Tech Association
- **Montana** | Montana Department of Commerce, MT Technology Innovation Partnership
- **New Mexico** | Arrowhead Center, New Mexico State University
- **North Dakota** | University of North Dakota Center for Innovation
- **Ohio** | Ohio Aerospace Institute
- **Oklahoma** | Board of Regents of the University of Oklahoma Office of Research Services
- **Oregon** | Oregon Built Environment & Sustainable Technologies Center, Inc.
- **Pennsylvania** | Ben Franklin Technology Partners Corporation
- **Tennessee** | Launch Tennessee
- **Wisconsin** | Board of Regents of the University of Wisconsin System, UWEX

FAST State SBTDCs awarded up to \$200K:

- **Arkansas** | Arkansas Small Business and Technology Development Center
- **Delaware** | University of Delaware, DSBDC
- **Idaho** | Boise State University, Idaho Small Business Development Center
- **Nebraska** | Nebraska Business Development Center, NBDC
- **Wyoming** | The University of Wyoming, Wyoming SBDC Network

22 | Appendix: SBIR/STTR Program History

For the U.S. government to recognize the necessity of federal engagement of small businesses in R&D of high risk technology development and to coordinate such a network would not have been possible without the support of key framers, politicians, and legislators. The ‘Father’ of the SBIR Program, Roland Tibbetts (pictured right), experienced firsthand how government programs affect individuals after President Roosevelt signed the GI Bill into law in 1944. Previously, a distinguished first lieutenant in the U.S. Army Air Corp during World War II, Tibbetts was able to complete his undergraduate degree at Boston University and then his MBA at Harvard due to benefits from the GI Bill. After garnering close to 20 years of corporate experience, including serving as the VP of two small, high-tech firms, Tibbetts was appointed as a Senior Program Officer at NSF in 1972. As an NSF program manager, Tibbetts was known as a task master with well-honed instincts for enabling potentially game-changing projects. He also recognized the importance of small, high-tech firms to the economy and observed the fierce opposition they faced from other recipients when pursuing federal R&D funding.



Senator Edward Kennedy (pictured on the left) also recognized the vital role that small businesses play in America’s growing economy and spent much of the 1970s tirelessly championing for NSF to support the research of qualified small businesses as the chairman of the National Science Foundation Subcommittee of the Senate Labor and Public Welfare Committee. Kennedy continued to introduce different proposals to increase the percentage of the budget directed toward small businesses. Once NSF recognized the need for ongoing support for small business, the Foundation instituted the SBIR Program in 1977.

In addition to Senator Kennedy, much of the legislative support for the SBIR Program was directly due to the work of Arthur and Judith Obermayer, this year’s SBIR Hall of Fame recipients (also pictured above with Senator Kennedy). As early as 1970, Arthur testified before the U.S. Congress on the challenges small R&D companies faced in dealing with the government. He also lobbied alongside Kennedy for the initial 1974 NSF Authorization Act, which was actualized in the first NSF SBIR Program, designed by Roland Tibbetts. Tibbetts envisioned a 3-phase structure to foster the R&D of small, high-tech businesses and push them to realize their commercial potential. He believed these firms were instrumental in converting government R&D into public benefit through technological innovation and commercial applications, therefore stimulating aggregate economic growth. Of the 42 Phase I Awards and 21 Phase II Awards selected in 1977, one firm went on to discover the cystic fibrosis gene and complete the Human Genome Map, a small language-understanding firm (then MicroComputer) became Symantec, and a high-risk firm (then Relation Technology Inc.) became the data giant Ingres Corporation. It seems that Arthur Obermayer was on to something when he advised the Congressional committee in 1978 that the NSF SBIR Program was “potentially...the most significant government program of this century in the field of science and technology.”



Due to the success of the NSF SBIR Program, in 1979 the Small Business Administration concluded SBIR Programs should be installed at all government agencies involving research to encourage U.S. innovation and technology. Senator Kennedy, an avid supporter of small businesses, spearheaded legislation to institute a government-wide SBIR Program. He and other legislators called for every federal agency with a budget over \$100 million to establish a program modeled after Tibbetts’ NSF SBIR Program. The Obermayers convinced most delegates at the 1980 White House Conference on Small Business to support SBIR. President Reagan signed a government-wide SBIR Program

into law in 1982 (pictured on the right). To date, the Programs have resulted in 70,000 issued patents, close to 700 public companies, and approximately \$41 Billion in venture capital investments.

Legislative History

The SBIR Program was created by enactment of Public Law 97-219, the Small Business Innovation Development Act of 1982. The program was reauthorized with the enactment of the Small Business R&D Enhancement Act of 1992, Public Law 102-564. Title I of the bill expanded and reauthorized the SBIR Program while Title II created the STTR Program.

In September 1996, Public Law 104-208 reauthorized the STTR Program through FY 1997. In December 1997, Public Law 105-135 reauthorized the program through September 30, 2006. In 2000 the SBIR Program was re-authorized until September 2009 by the Small Business Innovation Research Program Reauthorization Act of 2000. In October 2001, Public Law 107-50 reauthorized the STTR Program through FY 2009 and increased the program set-aside from 0.15% to 0.30% which began in Fiscal Year 2004.

From 2009 to 2011, the SBIR and STTR Programs were authorized by a series of Continuing Resolutions issued by Congress. In December 2011, the Programs were reauthorized until Fiscal Year 2017 (FY17) by the 2012 National Defense Authorization Act, Public Law 112-81. The bill also increased the minimum set-aside amounts for both Programs:

SBIR: Participating Agencies with extramural R&D budgets exceeding \$100M were required to set aside 2.6% of their Fiscal Year 2012 (FY12) extramural R&D budget for SBIR Awards to small businesses (an increase of 0.1% over Fiscal Year 2011). The minimum percentage was then set to increase in increments of 0.1% each year until FY16 when it reached 3.0%. For FY17 and each fiscal year thereafter, the minimum percentage will remain at 3.2%, unless subsequently modified by statute.

STTR: Participating Agencies with extramural R&D budgets exceeding \$1B were required to set aside 0.35% of their FY12 and FY13 extramural R&D budget for STTR Awards to small businesses (an increase of 0.05% over Fiscal Year 2011). The minimum percentage was then set to increase to 0.40% for FYs 2014 and 2015, and again to 0.45% for FY16 and each fiscal year thereafter, unless subsequently modified by statute.

In December 2016, the National Defense Authorization Act for Fiscal Year 2017 (P.L. 114-328) extended the SBIR and STTR programs through September 30, 2022. In August 2018, the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (P.L. 115-232) made several changes to the statute, including modifying language regarding business and technical assistance and extending the expired pilot authorities through September 30, 2022. The SBIR and STTR statute is codified at 15 U.S.C. § 638.



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