



October 2022

SMALL BUSINESS RESEARCH PROGRAMS

Reporting on Award Timeliness Could Be Enhanced

Accessible Version

GAO Highlights

Highlights of [GAO-23-105591](#), a report to congressional committees

Why GAO Did This Study

Agencies participating in the SBIR and STTR programs awarded nearly \$3 billion to small businesses in fiscal year 2021. Small businesses rely on timely issuance of these awards to plan, develop, and commercialize new technologies. In its oversight role for the two programs, the Small Business Administration (SBA) sets timeliness standards for award notification and issuance. SBA is mandated to report annually to Congress on overall outcomes for both programs including award timeliness.

The fiscal year 2019 National Defense Authorization Act included a provision for GAO to review the timeliness of award notification and issuance. This report, GAO's fourth, examines, among other objectives, agencies' timeliness in award notification and issuance and trends from fiscal year 2016 through 2021, and the extent to which SBA reports on agencies' award timeliness.

GAO analyzed SBIR and STTR award data, administered a questionnaire to all 29 participating agencies, and reviewed participating agency and SBA documentation. GAO also interviewed SBA officials and conducted follow-up interviews with officials at other agencies as needed to clarify information they provided.

What GAO Recommends

GAO is recommending that SBA (1) identify and implement actions to improve timely issuance of its annual report and (2) add SBIR and STTR award timeliness data to its website. SBA concurred with these recommendations.

View [GAO-23-105591](#). For more information, contact Candice N. Wright at (202) 512-6888 or WrightC@gao.gov.

October 2022

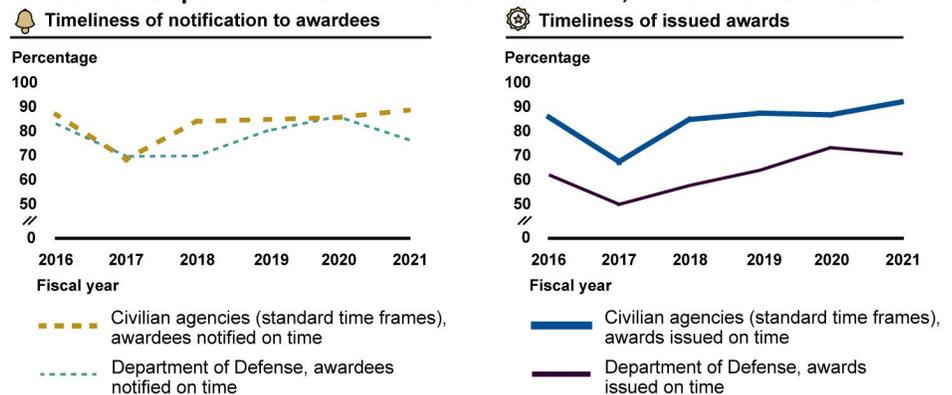
SMALL BUSINESS RESEARCH PROGRAMS

Reporting on Award Timeliness Could be Enhanced

What GAO Found

Agencies' timeliness rates for issuance of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards remained similar from fiscal year 2020 to 2021. Agencies' timeliness performance for award issuance has improved for both programs overall since fiscal year 2016. This is the case government-wide, although defense agencies have lagged behind civilian agencies in their performance (see figure). View the full results of GAO's analysis [here](#).

Civilian and Department of Defense Award Timeliness, Fiscal Years 2016-2021



Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-22-105591

Note: Civilian agencies exclude the National Science Foundation and National Institutes of Health, which have different award notification and issuance timeframes.

Government-wide, the programs' participating agencies have more consistently met the required timeframes for notifying awardees than the recommended timeframes for issuing awards. The Department of Defense's (DOD) timeliness relies on the performance of the Departments of the Army, Navy, and Air Force, which together issued 83 percent of all defense-related awards for fiscal year 2021. DOD issued 65 percent of its awards on time from fiscal year 2016 through fiscal year 2021 compared with 85 percent by civilian agencies.

SBA is required to annually report agency award timeliness data to Congress along with other information about participating agencies' implementation of the SBIR and STTR programs. However, SBA has been consistently late with its annual reports from FY 2016 to FY 2021—between 6 to 16 months late. Without a comprehensive, documented analysis of its process for developing these annual reports, it is unclear whether SBA is missing opportunities to take action to improve the timeliness of its required reports. Additionally, SBA is missing opportunities to provide real-time award timeliness data on its website. While SBA is not required to do so, providing current award timeliness data on its website would offer an alternative source of information to Congress and the public about agencies' performance in meeting award timeframes and could spur further improvements.

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Abbreviations

ACL	Administration for Community Living
ARPA-E	Advanced Research Projects Agency-Energy
CBD	Department of Defense, Chemical and Biological Defense program
CDC	Centers for Disease Control and Prevention
CR	continuing resolution
CWMD	Countering Weapons of Mass Destruction Office
DARPA	Defense Advanced Research Projects Agency
DHA	Defense Health Agency
DHS	Department of Homeland Security
DLA	Defense Logistics Agency
DMEA	Defense Microelectronics Activity
DOC	Department of Commerce
DOD	Department of Defense
DOE	Department of Energy
DOT	Department of Transportation
DTRA	Defense Threat Reduction Agency
EPA	Environmental Protection Agency
FDA	Food and Drug Administration
FY	fiscal year
HHS	Department of Health and Human Services

MDA	Missile Defense Agency
NDAA	National Defense Authorization Act
NGA	National Geospatial-Intelligence Agency
NIH	National Institutes of Health
NOAA	National Oceanic and Atmospheric Administration
NSF	National Science Foundation
R&D	research and development
SBA	Small Business Administration
SBIR	Small Business Innovation Research
STTR	Small Business Technology Transfer
USDA	U.S. Department of Agriculture

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October 12, 2022

Congressional Committees

The Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STTR) programs were established to enable federal agencies to support research and development (R&D) projects carried out by small businesses.¹ According to the National Academies of Sciences, Engineering, and Medicine, small firms are an important source of ideas that provide the basis for technological innovation, productivity increases, and subsequent economic growth. However, they found that it is difficult for these firms to find financial support for their ideas.² Small businesses have cited SBIR and STTR program funding as instrumental to their success in commercializing and bringing important technologies to market. These technologies have included a low-cost, energy-efficient alternative to florescent light fixtures and an inexpensive process to convert readily available steel into a stronger, lighter component for use in civilian and military vehicles.

Pursuant to the Small Business Act, federal agencies with an extramural budget for research or R&D in excess of \$100 million are required to participate in the SBIR program, and those with such obligations of \$1 billion or more are required to participate in the STTR program.³ According to the Small Business Administration (SBA), which oversees the programs, and in accordance with the statute, 11 federal agencies and their components participate in the SBIR program or in both the SBIR

¹The Small Business Innovation Development Act of 1982 established the SBIR program. Pub. L. No. 97-219, 96 Stat. 217 (1982). This act amended section 9 of the Small Business Act, Pub. L. No. 85-536, 72 Stat. 384 (1958), codified as amended at 15 U.S.C. § 638. The Small Business Technology Transfer Act of 1992 established the STTR program. Pub. L. No. 102-564, tit. II, 106 Stat. 4249, 4256 (1992). This act made additional amendments to section 9 of the Small Business Act.

²National Academies of Sciences, Engineering, and Medicine, *Assessment of the SBIR and STTR Programs at the National Institutes of Health* (Washington, D.C.: The National Academies Press, 2022). <https://doi.org/10.17226/26376>.

³15 U.S.C. §§ 638(f)(1), (n)(1)(A). Agencies' R&D programs generally include funding for two types of R&D: intramural and extramural. Intramural R&D is conducted by employees of a federal agency in or through government-owned, government-operated facilities. Extramural R&D is generally conducted by nonfederal employees outside of federal facilities.

and STTR programs.⁴ According to data from these 11 agencies, in fiscal year (FY) 2021, they issued nearly \$3 billion in SBIR and STTR awards.

In 2020, SBA issued an updated policy directive on the general operation of the SBIR and STTR programs.⁵ According to this and previous versions of the directive, all but two participating agencies are

- required to review proposals and notify applicants of the agency's award decision within 90 calendar days after the closing date of a solicitation and
- recommended to issue an award within 180 days after the closing date.⁶

How quickly participating agencies review proposals, notify applicants, and issue awards affects the speed with which small businesses receive funds and can begin work, according to SBA. This is important because, according to SBA's website, the SBIR and STTR programs support scientific excellence and technological innovation by investing federal research funds for critical American priorities to help build a strong national economy. Furthermore, as we reported in October 2021, small businesses stated that delays in these awards can have negative effects on their business practices. Specifically, such delays can require small businesses to release employees or reduce their hours to part-time, inhibit their ability to hire or retain employees, and impede commercialization and launch of new products.⁷ SBA is required to submit an annual report to Congress including information on agencies' award notification and issuance timeliness.⁸

⁴In this report, we refer to the agencies and their respective component agencies that issue SBIR and STTR awards as "participating agencies." Twenty-nine participating agencies participate in one or both of the programs. We use the term "award" to include contracts, grants, and cooperative agreements.

⁵See 15 U.S.C. §§ 638(j), (p); Small Business Administration, SBIR/STTR Policy Directive (Oct. 1, 2020).

⁶The directive requires two agencies, the National Institutes of Health and the National Science Foundation, to notify applicants no more than 1 year after the closing date of the solicitation and recommends award issuance no more than 15 months after the closing date. SBIR/STTR Policy Directive § 7(c)(1).

⁷GAO, *Small Business Research Programs: Agencies Should Further Improve Award Timeliness*, [GAO-22-104677](#) (Washington, D.C.: Oct. 14, 2021).

⁸15 U.S.C. §§ 638(b)(7), (ii)(1).

The John S. McCain National Defense Authorization Act (NDAA) for Fiscal Year 2019 includes a provision for GAO to report annually for 4 years on the timeliness of Department of Defense (DOD) components' SBIR and STTR proposal review and award issuance compared with that of other federal agencies that participate in the SBIR and STTR programs.⁹ In previous reports, we found that many agencies took longer both to notify small business applicants than required and to issue awards than recommended. We also reported on factors agency officials described that can affect award timeliness and practices that some agencies used that could help improve timeliness.¹⁰

In our most recent report, issued in October 2021, we found that timeliness, overall, had improved since fiscal year 2017. However, we also found that many participating agencies did not consistently notify awardees within the required time frames, and most agencies did not issue SBIR and STTR awards within the recommended time frames.¹¹ We made recommendations to 20 participating agencies to (1) evaluate the effectiveness of steps that they have taken to improve timeliness and (2) take any necessary additional steps to consistently meet the time frames in SBA's policy directive. All of the agencies concurred with the recommendation, except one component within DOD, which did not concur though we maintain the recommendation is still warranted.

Furthermore, in September 2013, we found that SBA's required annual reports to Congress on the SBIR and STTR programs were incomplete and significantly delayed, and we recommended that SBA provide timely reports to Congress.¹² SBA agreed with the recommendation and took steps to address it by developing a schedule to produce the reports as discussed further below.

This report examines: (1) agencies' notification and issuance timeliness in fiscal year 2021 and their timeliness trends since fiscal year 2016; (2) agencies' efforts to implement our prior recommendations to evaluate

⁹Pub. L. No. 115-232 § 854(b)(2)(B), 132 Stat. 1636, 1887 (2018), codified at 15 U.S.C. § 638(ii)(2).

¹⁰GAO, *Small Business Research Programs: Many Agencies Took Longer to Issue Small Business Awards than Recommended*, [GAO-19-620](#) (Washington, D.C.: Sept. 26, 2019); and *Small Business Research Programs: Many Agencies' Award Issuances Are Not Timely; Some Practices May Improve Timeliness*, [GAO-20-693](#) (Washington, D.C.: Sept. 30, 2020).

¹¹[GAO-22-104677](#).

¹²GAO, *Small Business Research Programs: Actions Needed to Improve Compliance with Spending and Reporting Requirements*, [GAO-13-421](#) (Washington, D.C.: Sept. 9, 2013).

effectiveness of past practices and implement additional practices to improve their timeliness if needed; and (3) SBA’s reporting on agencies’ award notification and issuance timeliness.

The scope of our review includes the 11 agencies that participated in either or both of the SBIR or STTR programs in fiscal years 2016 through 2021. Within the 11 federal agencies that participated in either or both of the SBIR or STTR programs, five—the Departments of Commerce, Defense, Energy, Health and Human Services (HHS), and Homeland Security—have among them a total of 23 components that issue SBIR and/or STTR awards. These 23 components may select their own topics for awards, review and select proposals for funding, and make and monitor progress on awards. In this report, we reviewed the six federal agencies as well as the 23 components of the five departments that issue awards under the programs, for a total of 29 participating agencies (see table 1).

Table 1: Twenty-Nine Agencies or Component Agencies Participating in Small Business Award Programs

<p>Department of Commerce</p> <ul style="list-style-type: none"> 1. National Institute of Standards and Technology 2. National Oceanic and Atmospheric Administration <p>Department of Defense</p> <ul style="list-style-type: none"> 3. Department of the Air Force 4. Department of the Army, SBIR^a 5. Department of the Army, STTR^a 6. Department of the Navy 7. Defense Advanced Research Projects Agency 8. Defense Health Agency 9. Defense Logistics Agency 10. Defense Microelectronics Activity 11. Defense Threat Reduction Agency 12. Chemical and Biological Defense program 13. Missile Defense Agency 14. National Geospatial-Intelligence Agency 15. Special Operations Command 	<p>Department of Energy</p> <ul style="list-style-type: none"> 16. Advanced Research Projects Agency-Energy 17. Office of Science <p>Department of Health and Human Services</p> <ul style="list-style-type: none"> 18. Administration for Community Living 19. Centers for Disease Control and Prevention 20. Food and Drug Administration 21. National Institutes of Health <p>Department of Homeland Security</p> <ul style="list-style-type: none"> 22. Science and Technology Directorate 23. Countering Weapons of Mass Destruction Office <p>Department of Education</p> <ul style="list-style-type: none"> 24. Department of Education <p>Department of Transportation</p> <ul style="list-style-type: none"> 25. Department of Transportation <p>Environmental Protection Agency</p> <ul style="list-style-type: none"> 26. Environmental Protection Agency <p>National Aeronautics and Space Administration</p> <ul style="list-style-type: none"> 27. National Aeronautics and Space Administration <p>National Science Foundation</p> <ul style="list-style-type: none"> 28. National Science Foundation <p>U.S. Department of Agriculture</p> <ul style="list-style-type: none"> 29. U.S. Department of Agriculture
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Source: GAO analysis of agency data. | GAO-23-105591

Note: Programs include the Small Business Innovation Research (SBIR) program and Small Business Technology Transfer (STTR) program.

^aThe Department of the Army oversees SBIR and STTR awards through two different organizations.

To address the first objective, we collected and analyzed timeliness data provided by the 29 participating agencies for FY 2021, the most recently available fiscal year. We combined data on awards for FY 2021 with data from our previous reports on awards made in fiscal years 2016 through

2020 to identify trends. We took several steps to assess the reliability of participating agencies' award data for fiscal year 2021. For example, we identified potential outliers and potential duplicates and followed up with agencies to make corrections as necessary. We found the award data to be sufficiently reliable for the purposes of our analyses. We also sent question sets to all 29 participating agencies to follow-up on data that they provided as well as to obtain information on agencies' actions to implement the recommendations from our October 2021 report and other factors that affect timeliness. We conducted follow-up interviews as needed with agencies' officials to clarify the information that they provided.

To examine SBA's ability to report on agencies' award notification and issuance timeliness, we obtained documentation, reviewed information on funding and staffing levels, and interviewed SBA officials regarding the agency's role in providing SBIR/STTR program oversight and reporting to Congress. We assessed SBA's efforts related to reporting on timeliness against relevant statutory provisions, agency policies, and relevant *Standards for Internal Control in the Federal Government*.¹³ For more information on our objectives, scope, and methodology, see appendix I.

We conducted this performance audit from December 2021 to October 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

Each year, small businesses may apply for SBIR/STTR awards from a participating agency to develop and commercialize innovative technologies. Agencies issue phase I awards to fund small businesses to determine the scientific and technical merit and feasibility of ideas that appear to have commercial potential. Small businesses with successful phase I projects may compete for phase II awards, which continue the R&D project for an additional period. In addition, the National Institutes of Health (NIH), DOD, and Department of Education have the authority to

¹³GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: Sept. 10, 2014).

issue direct-to-phase-II awards.¹⁴ SBA updated the award dollar thresholds for awards issued in or after November 2021. Agencies may issue a phase I award (including modifications) up to \$275,766 and a phase II award (including modifications) up to \$1,838,436 without seeking SBA approval.

According to SBA's SBIR/STTR policy directive, at least once a year each participating agency is to issue a solicitation requesting proposals that can cover a variety of topics.¹⁵ Each participating agency is to (1) review the proposals it receives, (2) determine which small businesses should receive awards, (3) notify pending awardees within their required time frame, and (4) negotiate contracts, grants, or cooperative agreements to issue the awards to the selected small business applicants within the recommended time frame. Agencies then are to review the awardees' progress on these projects, sometimes funding subsequent awards to enable the small businesses to advance the development further.

SBA is responsible for overseeing the programs under the Small Business Innovation Development Act of 1982, which established the SBIR program, and the Small Business Technology Transfer Act of 1992, which established the STTR program. These responsibilities include monitoring the programs, directing and assisting the agencies' implementation of the programs, reviewing their progress, collecting and analyzing agency reports, and reporting annually to Congress on the programs. SBA carries out its oversight and monitoring role through such avenues as:

- Publishing and updating the SBIR/STTR Policy Directive that sets guidance to the federal agencies in the SBIR and STTR programs, including time frames for notifying awardees and issuing awards;
- Hosting a monthly information sharing meeting for the program managers of the participating agencies on such topics as award notification and issuance timeliness;
- Maintaining the www.sbir.gov website which provides program information for small businesses and reports on federal agencies' participation including an up-to-date, publicly-available, searchable award database required by law; and

¹⁴Direct-to-phase-II awards are for small businesses that did not receive a phase I award for R&D for the same project because they had completed phase I milestones using non-SBIR funds.

¹⁵SBIR/STTR Policy Directive § 5(a).

- Issuing an annual report to Congress on the SBIR and STTR programs, including analysis on agencies' award timeliness.

Small Business Award Programs Have Made Some Limited Progress for Timeliness

In FY 2021, many participating agencies consistently notified awardees within the required time frames, and some agencies issued awards within the recommended time frames.¹⁶ About half of the civilian agencies consistently met timeliness requirements and recommendations in FY 2021. However, one of 13 participating DOD agencies consistently met time frames for both notifying awardees and issuing awards. Government-wide timeliness rates for issuance improved overall since FY 2016 when we began reviewing agencies' timeliness, while notification timeliness declined slightly overall.

Participating Agency Timeliness Changed Slightly from FY 2020 to FY 2021

Timeliness of participating agencies' notification declined slightly and award issuance remained similar from FY 2020 to FY 2021, according to our analysis of agency data.

Award Notification. Many of the participating agencies (18 of 29) met the requirement—within 90 days for nearly all agencies—to notify awardees of the agencies' award decision for 90 percent or more of their SBIR and STTR awards in FY 2021.¹⁷ As depicted on the left side of figure 1, the remaining 11 agencies did not notify awardees within the required time frame for at least 90 percent of their awards in FY 2021. Government-wide, agencies notified awardees within the required time frame for 5,733 of the 6,771 awards (85 percent) that we reviewed for FY

¹⁶In the context of all 29 agencies we reviewed, we use “nearly all” for 24 to 28 agencies, “most” for 19 to 23 agencies, “many” for 14 to 18 agencies, “some” for nine to 13 agencies, “several” for four to eight agencies, and “few” for one to three agencies. We define “consistently” as applying to 90 percent of a participating agency's awards within a fiscal year.

¹⁷The Small Business Act and SBA's SBIR/STTR program policy directive requires all but two participating agencies to review proposals and notify small business awardees of the agency's award decision within 90 calendar days after solicitation close. The National Institutes of Health and the National Science Foundation each have 1 year to notify awardees. 15 U.S.C. § 638(g)(4), (o)(4); SBIR/STTR Policy Directive § 7(c)(1).

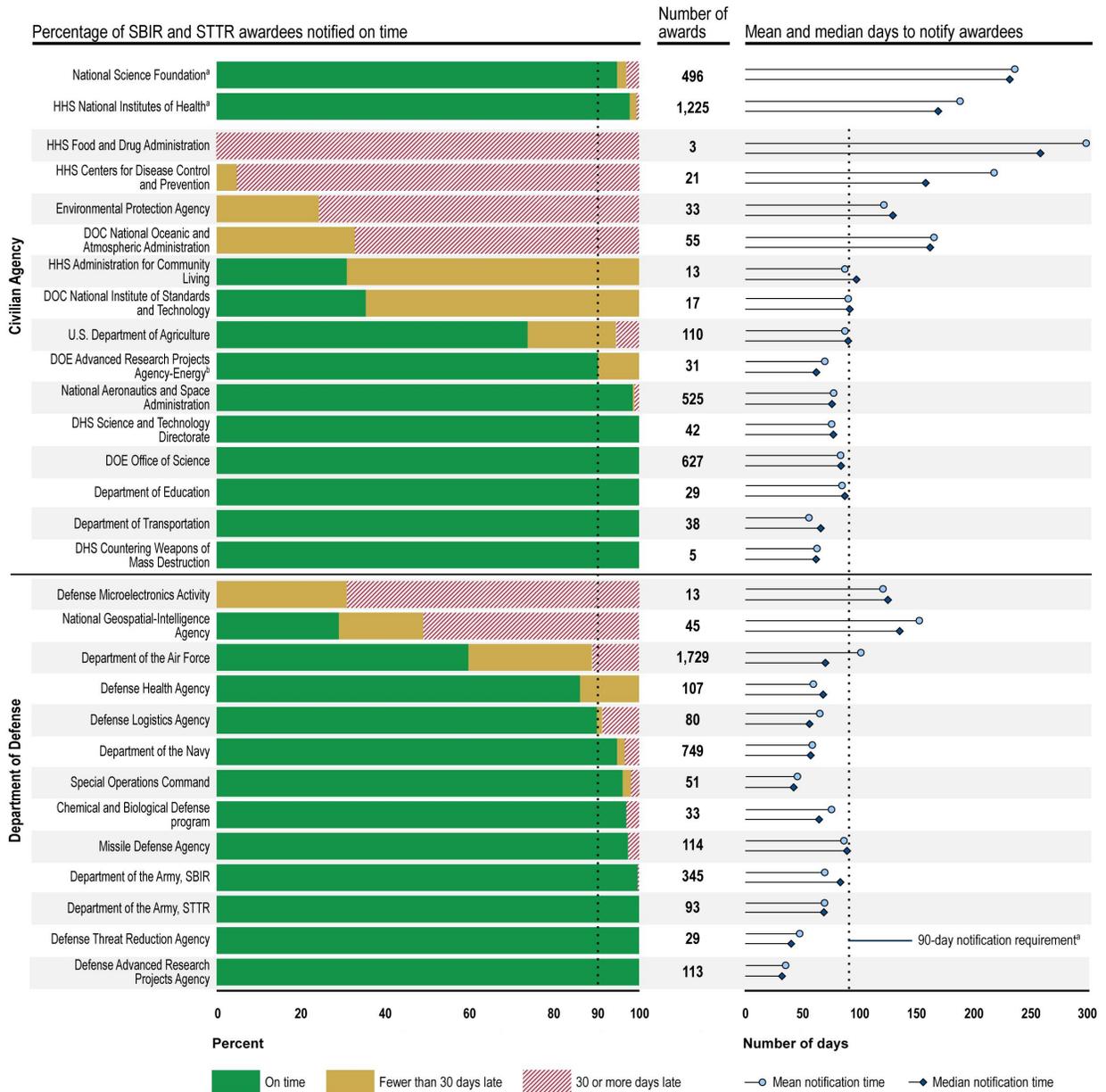
2021. This level of timeliness declined from FY 2020 where 89 percent of awardees were notified within the required time frame. For 19 agencies, their FY 2021 on-time notification rate was about the same (within 10 percentage points) as in FY 2020.¹⁸

The range of the notification delays varied in FY 2021. As depicted on the right side of figure 1, in FY 2021 the median notification time for two agencies exceeded the required time frame by fewer than 30 days, while for six agencies the median exceeded the required time frame by 30 days or more (see table 6 in app. II for more information).¹⁹ Specifically, figure 1 shows participating agency notification timeliness varying across several measures, including the percent of awards for which awardees were notified on time, the percent of awards for which awardees were notified 30 or more days late, and the mean and median days to notify awardees.

¹⁸Seven agencies improved by 10 or more percentage points in their notification timeliness, while three agencies declined by 10 or more percentage points.

¹⁹Two agencies, the National Institutes of Health and the National Science Foundation, had median times of 169 days and 232 days respectively to notify awardees. However, both agencies have longer required timeframes and were not included in the six agencies.

Figure 1: Percentage of SBIR and STTR Awardees Notified On Time, Number of Awards, and Mean and Median Days to Notify Awardees by Participating Agency, FY 2021



Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-23-105591

Legend
 DOC – Department of Commerce
 DOE – Department of Energy
 DHS – Department of Homeland Security
 HHS – Department of Health and Human Services

Letter

^aThe National Science Foundation and National Institutes of Health must notify awardees within 1 year after solicitation close. All other agencies must notify awardees within 90 calendar days after solicitation close.

^bAdvanced Research Projects Agency-Energy negotiates and issues a single award for phases I and II.

Agency	Department category	Percentage of awardees notified on time	Percentage of awardees notified fewer than 30 days late	Percentage of awardees notified 30 or more days late	Number of Awards	Mean notification time in days	Median notification time in days
National Science Foundation	Civilian Agency	94.8	2.2	3.0	496	236	232
HHS National Institutes of Health	Civilian Agency	97.8	1.6	0.6	1225	188	169
HHS Food and Drug Administration	Civilian Agency	0.0	0.0	100.0	3	299	259
HHS Centers for Disease Control and Prevention	Civilian Agency	0.0	4.8	95.2	21	218	158
Environmental Protection Agency	Civilian Agency	0.0	24.2	75.8	33	121	129
DOC National Oceanic and Atmospheric Administration	Civilian Agency	0.0	32.7	67.3	55	165	162
HHS Administration for Community Living	Civilian Agency	30.8	69.2	0.0	13	87	97
DOC National Institute of Standards and Technology	Civilian Agency	35.3	64.7	0.0	17	90	91
U.S. Department of Agriculture	Civilian Agency	73.6	20.9	5.5	110	87	90
DOE Advanced Research Projects Agency-Energy	Civilian Agency	90.3	9.7	0.0	31	69	62
National Aeronautics and Space Administration	Civilian Agency	98.5	0.4	1.1	525	77	76
DHS Science and Technology Directorate	Civilian Agency	100.0	0.0	0.0	42	75	77
DOE Office of Science	Civilian Agency	100.0	0.0	0.0	627	83	84
Department of Education	Civilian Agency	100.0	0.0	0.0	29	84	87
Department of Transportation	Civilian Agency	100.0	0.0	0.0	38	55	66
DHS Countering Weapons of Mass Destruction	Civilian Agency	100.0	0.0	0.0	5	62	62
Defense Microelectronics Activity	Department of Defense	0.0	30.8	69.2	13	120	125
National Geospatial-Intelligence Agency	Department of Defense	28.9	20.0	51.1	45	152	135

Letter

Agency	Department category	Percentage of awardees notified on time	Percentage of awardees notified fewer than 30 days late	Percentage of awardees notified 30 or more days late	Number of Awards	Mean notification time in days	Median notification time in days
Department of the Air Force	Department of Defense	59.6	29.2	11.2	1729	101	70
Defense Health Agency	Department of Defense	86.0	14.0	0.0	107	59	68
Defense Logistics Agency	Department of Defense	90.0	1.3	8.8	80	65	56
Department of the Navy	Department of Defense	94.8	1.9	3.3	749	58	57
Special Operations Command	Department of Defense	96.1	2.0	2.0	51	45	42
Joint Science and Technology Office for Chemical and Biological Defense	Department of Defense	97.0	0.0	3.0	33	75	64
Missile Defense Agency	Department of Defense	97.4	0.0	2.6	114	86	89
Department of the Army, SBIR	Department of Defense	99.7	0.0	0.3	345	69	83
Department of the Army, STTR	Department of Defense	100.0	0.0	0.0	93	69	69
Defense Threat Reduction Agency	Department of Defense	100.0	0.0	0.0	29	47	40
Defense Advanced Research Projects Agency	Department of Defense	100.0	0.0	0.0	113	35	32

Award Issuance. We found that some of the participating agencies (10 of 29) met the recommended award issuance time frame—within 180 days from solicitation close for nearly all agencies—for at least 90 percent of their SBIR and STTR awards in FY 2021.²⁰ As depicted on the left side of Figure 2, the remaining 19 agencies did not issue awards within the recommended time frame for at least 90 percent of their awards in FY 2021. Government-wide, agencies issued awards within the recommended time frame for 5,582 of the 6,771 awards (82 percent) that we reviewed for FY 2021. This timeliness rate remained about the same from FY 2020, although both mean and median days to issuance increased slightly from FY 2020 to FY 2021. For 13 agencies, their FY

²⁰SBA’s SBIR/STTR policy directive recommends that all but two participating agencies issue awards to small business applicants within 180 calendar days after the close of a solicitation, and recommends that NIH and NSF do so within 15 months. SBIR/STTR Policy Directive § 7(c)(1).

2021 on-time issuance rate was about the same (within 10 percentage points) as in FY 2020.²¹

The range of delays for issuance varied in FY 2021. As depicted on the right side of figure 2, in FY 2021 three agencies had a median time that exceeded the recommended time frame by fewer than 30 days, while five agencies had a median time that exceeded the requirement by 30 or more days (see table 6 in app. II for more information).²² Specifically, figure 2 shows that participating agency issuance timeliness can vary across several measures, including the percent of awards issued on time, the percent of awards issued 30 or more days late, and the median and mean days to issue awards.

²¹Eleven agencies improved by 10 or more percentage points in their notification timeliness, while five agencies declined by 10 or more percentage points.

²²Two other agencies, the National Institutes of Health and the National Science Foundation, had median times of 252 days and 232 days respectively to issue awards. However, both agencies have longer recommended timeframes and were not included in the five agencies.

Figure 2: Percentage of SBIR and STTR Awards Issued On Time, Number of Awards, and Mean and Median Issuance Times by Participating Agency, FY 2021



Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-23-105591

Legend
 DOC – Department of Commerce
 DOE – Department of Energy
 DHS – Department of Homeland Security
 HHS – Department of Health and Human Services

Letter

^aThe National Science Foundation and National Institutes of Health should issue awards within 15 months after solicitation close. All other agencies should issue awards in no more than 180 calendar days after solicitation close.

^bAdvanced Research Projects Agency-Energy negotiates and issues a single award for phases I and II.

Agency	Department category	Percentage of awards issued on time	Percentage of awards issued fewer than 30 days late	Percentage of awards issued 30 or more days late	Number of Awards	Mean notification time in days	Median notification time in days
HHS National Institutes of Health	Civilian Agency	95.9	0.9	3.2	1225	264	252
National Science Foundation	Civilian Agency	99.4	0.6	0.0	496	236	232
HHS Food and Drug Administration	Civilian Agency	0.0	0.0	100.0	3	299	259
HHS Administration for Community Living	Civilian Agency	30.8	0.0	69.2	13	172	212
DOE Advanced Research Projects Agency-Energy	Civilian Agency	45.2	16.1	38.7	31	216	195
HHS Centers for Disease Control and Prevention	Civilian Agency	61.9	0.0	38.1	21	218	158
DOC National Oceanic and Atmospheric Administration	Civilian Agency	63.6	1.8	34.5	55	177	169
U.S. Department of Agriculture	Civilian Agency	86.4	11.8	1.8	110	141	134
Department of Transportation	Civilian Agency	89.5	10.5	0.0	38	130	116
Environmental Protection Agency	Civilian Agency	93.9	6.1	0.0	33	174	178
DOE Office of Science	Civilian Agency	95.4	3.2	1.4	627	135	128
National Aeronautics and Space Administration	Civilian Agency	97.7	1.7	0.6	525	132	126
DOC National Institute of Standards and Technology	Civilian Agency	100.0	0.0	0.0	17	107	114
DHS Science and Technology Directorate	Civilian Agency	100.0	0.0	0.0	42	118	116
Department of Education	Civilian Agency	100.0	0.0	0.0	29	101	102
DHS Countering Weapons of Mass Destruction	Civilian Agency	100.0	0.0	0.0	5	112	111
Defense Threat Reduction Agency	Department of Defense	0.0	6.9	93.1	29	292	256
Department of the Army, SBIR	Department of Defense	19.4	6.4	74.2	345	274	274
National Geospatial-Intelligence Agency	Department of Defense	31.1	26.7	42.2	45	214	202
Joint Science and Technology Office for Chemical and Biological Defense	Department of Defense	33.3	9.1	57.6	33	252	224
Department of the Army, STTR	Department of Defense	41.9	23.7	34.4	93	201	186

Agency	Department category	Percentage of awards issued on time	Percentage of awards issued fewer than 30 days late	Percentage of awards issued 30 or more days late	Number of Awards	Mean notification time in days	Median notification time in days
Defense Health Agency	Department of Defense	68.2	14.0	17.8	107	165	160
Missile Defense Agency	Department of Defense	71.1	8.8	20.2	114	188	179
Defense Advanced Research Projects Agency	Department of Defense	72.6	7.1	20.4	113	168	154
Department of the Navy	Department of Defense	75.0	6.4	18.6	749	155	131
Defense Logistics Agency	Department of Defense	80.0	11.3	8.8	80	148	144
Department of the Air Force	Department of Defense	82.8	5.4	11.7	1729	142	106
Defense Microelectronics Activity	Department of Defense	84.6	15.4	0.0	13	159	154
Special Operations Command	Department of Defense	94.1	5.9	0.0	51	84	74

Timeliness Trends for Award Issuance Generally Improved Over the Last Six Years, While Notification Declined Slightly

Government-wide timeliness rates for issuance have improved overall since FY 2016. On the other hand, overall notification timeliness rates have declined slightly over the same period. During the same period, agencies expanded the number of SBIR and STTR awards issued—from 4,868 awards in FY 2016 to 6,771 awards in FY 2021. In addition, both the mean and median number of days to notify awardees and issue awards declined government-wide. For example, across all participating agencies, the mean number of days to issue an award in FY 2016 was 200 days (20 days after the recommended time frame) compared to 182 days in FY 2021.²³ Government-wide since fiscal year 2016, participating agencies have more consistently met time frames for notification than for issuance.

In comparing participating agencies' performance in fiscal year 2021 to their previous 5-year period (fiscal years 2016 through 2020), many

²³Median days also declined from 178 days to issue an award in FY 2016 to 151 days in FY 2021 (almost a month under the recommended timeframe).

agencies were about as timely with both notifications and issuance.²⁴ Some agencies' timeliness improved by 10 percentage points or more, while other agencies' timeliness declined. Figure 3 compares participating agencies' notification and issuance timeliness performance in FY 2021 to the average of the prior 5-year period of fiscal years 2016 through 2020.

Figure 3: Participating Agencies' Award Notification and Issuance Performance in Fiscal Year 2021, Compared with the Previous 5-year Period

	Timeliness on notifying awardees	Timeliness on issuing awards		Timeliness on notifying awardees	Timeliness on issuing awards
Department of Commerce			Department of Health and Human Services		
National Institute of Standards and Technology ^a			Administration for Community Living		
National Oceanic and Atmospheric Administration			Centers for Disease Control and Prevention		
Department of Defense			Food and Drug Administration		
Department of the Air Force			National Institutes of Health ^c		
Department of the Army, SBIR			Department of Homeland Security		
Department of the Army, STTR			Science and Technology Directorate		
Department of the Navy			Countering Weapons of Mass Destruction Office		
Defense Advanced Research Projects Agency			Department of Education		
Defense Health Agency					
Defense Logistics Agency			Department of Transportation		
Defense Microelectronics Activity					
Defense Threat Reduction Agency			Environmental Protection Agency		
Chemical and Biological Defense program					
Missile Defense Agency			National Aeronautics and Space Administration		
National Geospatial-Intelligence Agency					
Special Operations Command			National Science Foundation^c		
Department of Energy					
Advanced Research Projects Agency-Energy ^b			U.S. Department of Agriculture		
Office of Science					

	Notification		Improved ^d
	Issuance		About the same
			Declined ^d

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-23-105591

²⁴We compared the current year, FY 2021, timeliness rates against the average timeliness rates from prior years in our data set (fiscal years 2016 through 2020) and conducted tests to determine if the differences were statistically significant ($p < 0.05$). For example, an agency that improved issuance timeliness by 20 points where the change was statistically significant would be classified as improved, but an agency that showed improved issuance timeliness by 20 points and the change was not statistically significant would be classified as about the same rate.

Note: To improve or decline, an agency had to have an FY 2021 timeliness rate 10 percentage points or more different than the average of the prior five years, with the change being statistically significant. Agencies with differences less than 10 percentage points or where differences were not statistically significant were classified as about the same.

^aNIST's percentage of on time awardee notifications declined by 65 percentage points in FY 2021, a substantial decline from its average of 99 percent on time notifications from FY 2016 through FY 2020. While a majority of notifications were late, they were close to the required time frame with a median of 91 days to notify awardees and a mean of 90 days.

^bAdvanced Research Projects Agency-Energy negotiates and issues a single award for phases I and II.

^cThe National Science Foundation (NSF) and National Institutes of Health (NIH) must notify awardees within 1 year after solicitation close; all other agencies must notify awardees within 90 calendar days after solicitation close. NSF and NIH should issue awards within 15 months after solicitation close; all other agencies should issue awards in no more than 180 calendar days after solicitation close.

^dIndicates that the improvement or decline of 10 percentage points or more was statistically significant ($p < 0.05$).

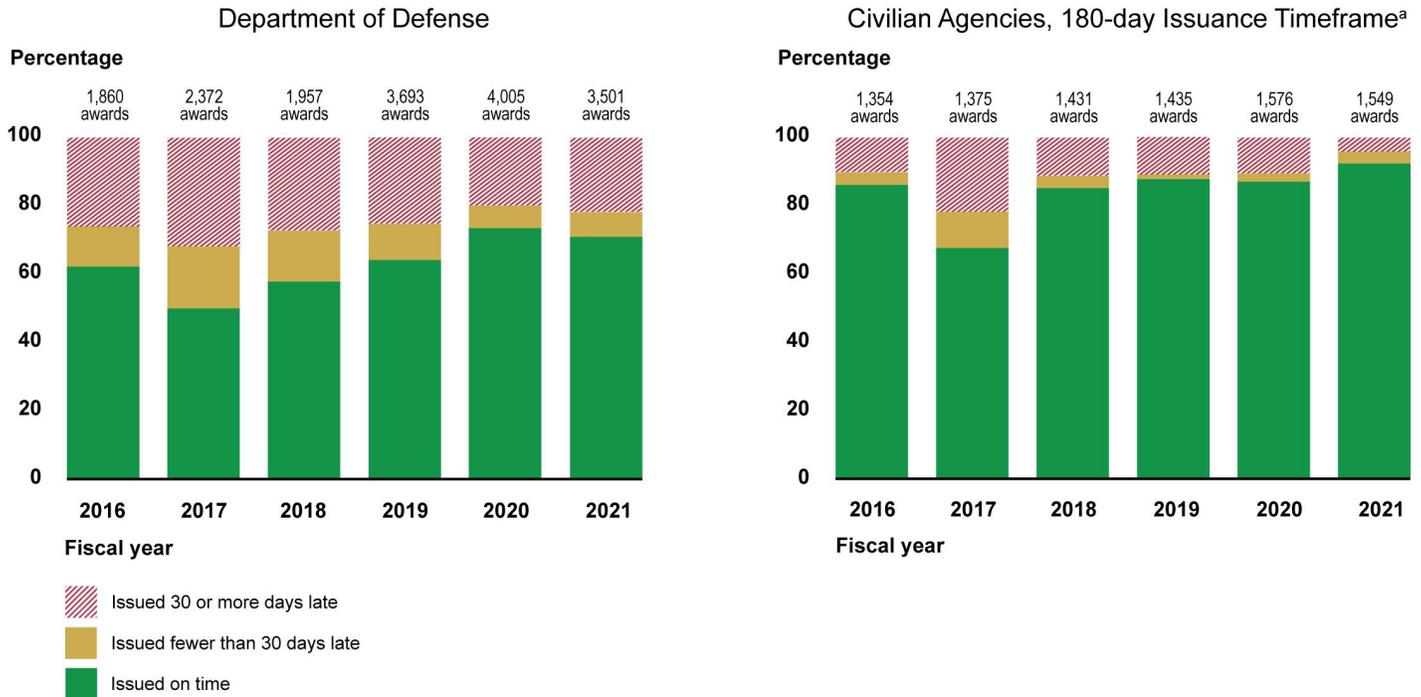
By award phase, we also found improvements in agencies' timeliness for issuing both phase I and phase II awards from FY 2016 through FY 2021. Specifically, phase I awards improved from 74 percent of awards issued on time government-wide in FY 2017 to 90 percent on time government-wide in FY 2021. Agencies' timeliness for issuing phase II awards also improved, but to a lesser degree, rising from 59 percent of awards on time in FY 2017 to 69 percent of awards in FY 2021.²⁵

Comparison of DOD and civilian agency timeliness. DOD agency timeliness has consistently lagged behind civilian agency timeliness. For example, DOD issued 65 percent of its awards on time from FY 2016 through FY 2021 compared with 85 percent from civilian agencies under the same recommended time frame. These DOD and civilian trends are shown in figure 4. Additional information on these trends are available in the interactive graphic and downloadable data file, which can be viewed [here](#).

²⁵We previously reported in [GAO-22-104677](#) that cost-reimbursement contracts—in which the contractor is reimbursed for allowable costs incurred—are associated with lower award issuance timeliness. According to our analysis of FY 2016 through FY 2021 agency data, cost-reimbursement contracts were primarily phase II awards, and fewer than half of such contracts were issued on time.

Figure 4: Comparison of Department of Defense and Civilian Agency Awards Issued on Time, Fiscal Years 2016 Through 2021

Percentage of awards issued on time, fewer than 30 days late, and 30 or more days late



Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-23-105591

^aThe National Science Foundation and National Institutes of Health should issue awards within 15 months after solicitation close and were not included in this figure. All other agencies should issue an award in no more than 180 calendar days after solicitation close.

DOD agency timeliness. DOD-wide timeliness rates for notification and issuance improved from FY 2016 through FY 2020. In FY 2021, DOD-wide timeliness rates decreased for both notification and issuance. While we found that six of 13 DOD participating agencies consistently met timeliness requirements for notification, we found that only Special Operations Command consistently met notification timeliness requirements and issuance recommendations for at least 90 percent of its awards (4 of 6 years with 90 percent on time notification and issuance). Special Operations Command officials attributed a portion of their continued timeliness in FY 2021 to a pilot program established by the FY 2020 NDAA to increase participation by small businesses in the development of technology-enhanced capabilities for special operations

Department of the Air Force Programmatic Changes

We reported in July 2022 on the significant changes to the Department of the Air Force program model since fiscal year (FY) 2018 for many of its awards. Among the changes to its program, Air Force changed how it solicited new technologies from small businesses through its Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs—transitioning from using traditional specific topics to also using open topics for its solicitations. In contrast to traditional topics that request applicants submit solutions for specific problems with identified criteria, open topics solicit innovative dual-purpose (commercial and military) technologies or solutions.

As we reported, Air Force rapidly expanded its use of open topics in FY 2018 through 2020. By the end of 2020, open topics had largely displaced its conventional awards process, which it operates in tandem with the new model. Under the new model, Air Force also reduced the dollar value and period of performance for phase I awards from a maximum of \$276,000 and 6 months to perform the award activities for SBIR and 12 months for STTR under the conventional process, to a maximum of \$50,000 and 3 months to perform under the open topics. By design, only about 20 percent of phase I awardees under the new model advance to phase II, according to Air Force officials. We reported that this approach attracted new applicant companies to the Air Force SBIR/STTR program and speeded the award process.

Also, our report discusses an April 2021 study which used early data to compare commercialization outcomes, such as obtaining venture capital or non-SBIR/STTR contracts, of companies after receiving an open topics or conventional award in fiscal years 2017 through 2019.

However, we also found (1) a few small businesses reported challenges such as advancing beyond phase I of the new model, (2) awardees were more concentrated in certain technology sectors, and (3) commercialization success was difficult to evaluate as some awardees entered the program with more mature technologies than in traditional SBIR/STTR award programs.

Source: GAO, *Small Business Research Programs: Air Force Had Success in Some Areas with New Awards Process*, [GAO-22-105223](#), (Washington, D.C.: July 21, 2022). | GAO-23-105591

forces.²⁶ However, Special Operations Command contributes a small portion of DOD’s total SBIR and STTR awards compared with other participating agencies, such as the Departments of the Army, Navy, and Air Force.

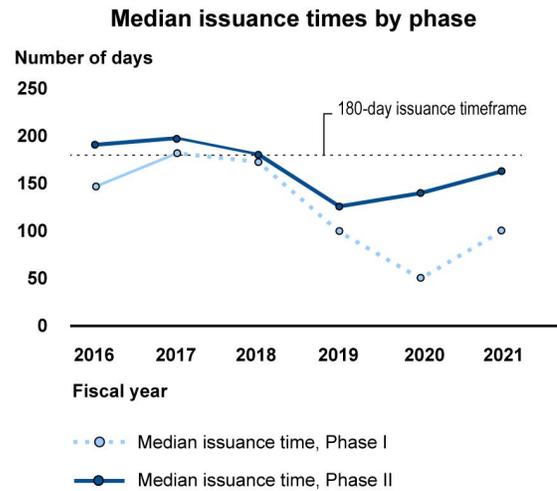
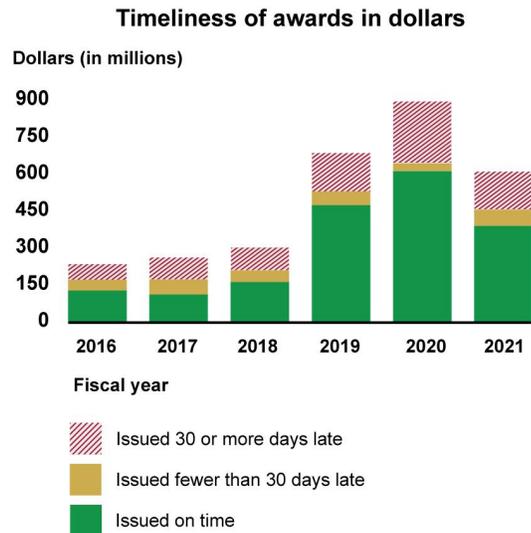
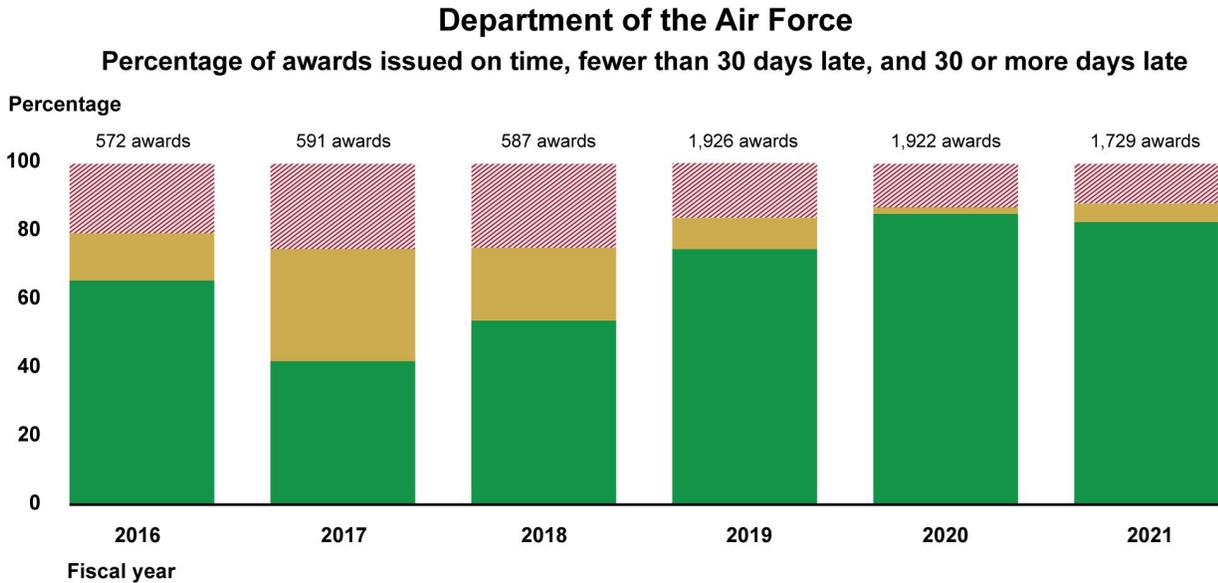
DOD-wide timeliness relies on timeliness of the Departments of the Army, Navy, and Air Force, based on our analysis of DOD data. These participating agencies issued 83 percent of all DOD FY 2021 awards. While Army’s and Navy’s programs have grown in number of awards overall since FY 2016, their timeliness in issuing awards has been inconsistent. Additional information on data trends of the Departments of the Army, Navy, and Air Force are available in the interactive and downloadable data file, which can be viewed [here](#).

Growing in both number of awards and award dollars by program since FY 2016, Air Force has seen the greatest improvement in its issuance timeliness relative to the Army and Navy. We reported in July 2022 on major programmatic changes the Department of the Air Force has incorporated (see sidebar).²⁷ Air Force’s programmatic growth and award timeliness are shown in figure 5.

²⁶Pub. L. 116–92, div. A, title VIII, § 851, 133 Stat. 1198, 1510 (2019), as amended by Pub. L. 117–81, div. A, title VIII, § 852, 135 Stat. 1541, 1846 (2021).

²⁷GAO, *Small Business Research Programs: Air Force Had Success in Some Areas with New Awards Process*, [GAO-22-105223](#) (Washington, D.C.: July 21, 2022).

Figure 5: Department of the Air Force Trends in Awards Issued on Time, Fiscal Years 2016 Through 2021



Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-23-105591

Note: During fiscal years 2016 through 2021, the Department of the Air Force implemented changes to its Small Business Innovation Research and Small Business Technology Transfer programs. These changes involved lower award amounts and shorter periods of performance, among others. For more information on these changes, see [GAO-22-105223](#). During the transition period, Air Force did not issue some awards that were expected by small businesses; Air Force designated funding in FY 2020 and FY 2021 to issue some “legacy” awards from these earlier dates as we reported in [GAO-22-104677](#). The legacy awards negatively affected Air Force timeliness rates in FY 2021 since the awards were issued a significant time period after the original solicitation close date.

The remaining DOD participating agencies' timeliness varied. For example, the Defense Advanced Research Projects Agency (DARPA) and the Missile Defense Agency (MDA) have consistently met the notification timeliness requirement for at least 90 percent of their SBIR and STTR awards since FY 2016. However, 12 of 13 DOD agencies did not consistently meet award issuance timeliness recommendations for at least 90 percent of their SBIR and STTR awards since FY 2016.

Civilian agency timeliness. Civilian-wide award timeliness rates have improved since FY 2016.²⁸ We found that eight of 16 civilian agencies consistently met timeliness requirements and recommendations for at least 90 percent of their awards since FY2016, such as the Department of Education and NASA. Other civilian agencies—U.S. Department of Agriculture (USDA) and the Environmental Protection Agency (EPA) in particular—have shown timeliness improvements over the last few years.

In contrast, the remaining civilian agencies varied in their timeliness performance during the 6 years of the data we analyzed. For example, the National Oceanic and Atmospheric Administration (NOAA) consistently notified awardees and issued awards on time for the first half of the period of our analysis (fiscal years 2016 through 2018). NOAA's notification timeliness dropped significantly in FY 2019 after the agency transitioned from using contracts to using grants in its SBIR program. In FY 2020, the agency's issuance timeliness also dropped to below the recommended time frame.²⁹ According to NOAA officials, they identified factors affecting award timeliness, such as increasing application volume and inconsistent responses to certain application items. NOAA officials said that they are taking steps to address these factors, such as requesting a letter of intent from applicants to help prepare for workload volume and clarifying guidance to applicants in areas of common application errors. In FY 2021, NOAA issued more awards to small businesses than in FY 2020, and its issuance timeliness improved by 22 percentage points. However, the agency continued to rank fairly low in timeliness in FY 2021 among the civilian agencies. Other civilian

²⁸Although civilian-wide timeliness rates were lowest in FY 2017, the overall, civilian-wide timeliness rates for notification and issuance timeliness have improved from fiscal years 2016 through 2021. Additional information on these trends are available in the interactive and downloadable data file, which can be viewed [here](#).

²⁹[GAO-22-104677](#). In this report, we issued recommendations to agencies that did not issue at least 90 percent of awards within the recommended time frame for 3 of the prior 5 years. As of its FY 2021 data, NOAA has not yet reached this threshold because, while it has notified less than 90 percent of applicants on time each of the last 3 years, NOAA has issued less than 90 percent of its awards on time for only the last 2 years.

agencies—HHS’ Administration for Community Living (ACL) and Food and Drug Administration (FDA) in particular—have shown some limited progress since FY 2016.

Agencies Are Evaluating Their Practices and Taking Additional Steps for Improvement, but Cited Some Limitations

The 20 participating agencies to which we made recommendations in October 2021 reported ongoing evaluation of their practices’ effectiveness for notifying awardees and issuing awards. Most agencies also reported having implemented additional practices for improvement. However, some cited factors that they said limit the extent to which they can shorten their timelines.

Agencies Are Evaluating and Implementing Ways to Improve Their Timeliness

Agencies reported conducting ongoing evaluations of past and current practices in order to improve the timeliness of their awards. For example, the Department of the Navy stated its intention to continue evaluating its performance and provided us with internal briefing materials noting that prior efforts to address timeliness did not have a lasting effect into the FY 2021 award cycle. As a result, the department is considering additional steps. After evaluating the impact of previous steps taken to improve timeliness, EPA is formalizing a structure for establishing, tracking, and reviewing significant milestones in the SBIR award process in order to meet SBA time frames. Officials from the Centers for Disease Control and Prevention (CDC) stated their evaluation of the effectiveness of practices that address timeliness was underway, and Department of Transportation stated its intent to track and analyze timeliness data annually after each solicitation cycle to better understand circumstances of delays and plan future improvements.

Most agencies reported having adjusted current practices and implemented new practices to improve timeliness, with the highest number reporting changes in the areas of (1) adjusting their schedules for soliciting or evaluating proposals, and (2) dedicating or prioritizing more

contracting support.³⁰ Table 2 shows the additional steps to improve timeliness that agencies described.

Table 2: Additional Agency Practices to Improve Timeliness

Practices addressed	Agencies that reported implementing practices in each category
Staffing resources, training, or workload planning	Air Force, Navy, DARPA, DTRA, CBD, NGA, DOT, USDA
Streamlining proposal requirements, providing applicants with more resources/guidance	Air Force, Army SBIR, Army STTR, Navy, DARPA, DTRA, USDA
Adjusting solicitation schedule or proposal evaluation schedule	Air Force, Army SBIR, Army STTR, DLA, DMEA, DTRA, CBD, MDA, NGA, ARPA-E, ACL, DHS ^a , EPA, USDA
Contracting support, heightened prioritization for SBIR/STTR contracts, and/or dedicated contracting officers	Air Force, Army SBIR, Navy, DARPA, DHA, DLA, DMEA, DTRA, MDA, NGA, ARPA-E, DHS ^a , EPA
Exploring better alignment of awards with timing of anticipated funding	FDA
Seeking legislative action to amend notification and issuance time frames	USDA

Source: GAO analysis of agency information. | GAO-23-105591

Legend

- ACL—Department of Health and Human Services: Administration for Community Living
- ARPA-E—Department of Energy: Advanced Research Projects Agency-Energy
- CBD—Department of Defense: Chemical and Biological Defense program
- CDC—Department of Health and Human Services: Centers for Disease Control and Prevention
- DARPA—Department of Defense: Defense Advanced Research Projects Agency
- DHA—Department of Defense: Defense Health Agency
- DHS—Department of Homeland Security: Countering Weapons of Mass Destruction Office, and Science and Technology Directorate
- DLA—Department of Defense: Defense Logistics Agency
- DMEA—Department of Defense: Defense Microelectronics Activity
- DOT—Department of Transportation
- DTRA—Department of Defense: Defense Threat Reduction Agency
- EPA—Environmental Protection Agency
- FDA—Department of Health and Human Services: Food and Drug Administration
- MDA—Department of Defense: Missile Defense Agency
- NGA—Department of Defense: National Geospatial-Intelligence Agency
- SBIR—Small Business Innovation Research Program
- STTR—Small Business Technology Transfer Program
- USDA—Department of Agriculture

^aAlthough the recommendation was directed toward the DHS Countering Weapons of Mass Destruction Office, DHS officials stated that these programmatic changes have been implemented department-wide.

Several agencies described adjustments to their solicitation schedules or internal review and approval schedules in order to shorten time frames.

³⁰Notification and award timeliness data are not yet available to assess the effectiveness of the additional steps agencies are taking to address timeliness. The data described earlier in this report are through FY 2021.

For example, HHS' Administration for Community Living shortened its proposal review schedule and adjusted its phase II schedule so as to reduce the gap in funding between phases. The Defense Microelectronics Activity (DMEA) compressed its proposal evaluation schedule, and the Defense Logistics Agency instituted a 30-day limit on its proposal evaluation process. Prior to receiving our October 2021 recommendation, EPA had begun taking additional steps to improve timeliness by establishing a new schedule to complete both the external and internal reviews simultaneously rather than consecutively as it had done previously.³¹ EPA also acquired a new electronic review system, which the agency said has helped streamline its review and selection process.

We reported in September 2020 that using contracting personnel dedicated to SBIR and STTR awards provided one of the clearest strategies for improving timeliness.³² A number of agencies, including most of the DOD participating agencies, described plans to institute or expand dedicated contracting staff or better prioritize SBIR and STTR awards in contracting support shared with other programs. For example, in March 2022, the Department of the Army instituted a pilot program to provide dedicated contracting staff to approximately 80 percent of its SBIR awards. According to Army officials, the Army anticipates expanding the dedicated contracting support to the remainder of its SBIR awards and also to its STTR awards within FY 2023.

Some civilian agencies also are strengthening contracting support. For example, Homeland Security's SBIR Program Office is working with the contracting personnel in the department's Office of Procurement Operations to facilitate earlier processing of SBIR award packages and also is standardizing its contracting process for SBIR awards across the department to simplify interactions for small businesses. Advanced Research Projects Agency-Energy (ARPA-E) is prioritizing the negotiation

³¹Our October 2021 recommendation to EPA was to evaluate the effectiveness of steps taken to improve timeliness and take any necessary additional steps to consistently meet the timeframes in SBA's policy directive. We made the recommendation to EPA because, while it had begun taking steps to improve timeliness, EPA had not yet evaluated the effectiveness of these changes. Also, as of October 2021, EPA's award issuance timeliness rate had not risen above 30 percent over the 5-year period of data encompassed by our review. Therefore, it was not clear at the time whether the steps EPA had taken or was planning to take would be sufficient.

³²[GAO-20-693](#).

of cooperative agreements with contracting personnel in order to improve the timeliness of SBIR/STTR award issuance.³³

**U.S. Department of Agriculture (USDA)
Programmatic Changes to Improve Timeliness**

USDA implemented several other changes in its Small Business Innovation Research program and realized significant timeliness improvements in fiscal year 2021, 74 percent on-time notifications and 86 percent on-time award issuance. Prior to fiscal year 2021, USDA had not risen above 31 percent on-time notification and 38 percent on-time issuance within the 5 years of data we had collected and reported previously. The agency (1) increased reminders to staff of timeliness milestones, (2) began issuing awards at more frequent intervals rather than at a single time later in the year, and (3) is exploring legislative action that would increase its allotted time to notify awardees and issue awards, similar to that granted to the National Science Foundation and the National Institutes of Health. Source: GAO analysis of agency information. | GAO 23-105591

Participating agencies described other practice adjustments, such as:

- **Staffing resources.** Air Force officials reported that they developed a Life Cycle Process and are creating a related Integrated Master Schedule to better enable current execution and management of future workload. DOD's National Geospatial Intelligence Agency (NGA) officials stated that they assigned more personnel to the SBIR program. Lastly, Transportation officials plan to hire additional support staff during peak award season.
- **Decreased burden on applicants.** Army officials stated that both its SBIR and STTR programs are working to streamline and simplify the contract package requirements from small businesses in order to expedite awards. According to officials at the Department of the Navy, they are considering options to improve education to small businesses and provide a one-page infographic guidance document on its website. USDA is considering a potential reduction in application length.
- **Funding alignment.** FDA officials reported the agency is exploring whether it should implement a decentralized award funding process to improve its ability to meet SBIR timeliness guidelines.
- **Legislative action.** USDA officials stated that they are pursuing legislative action to extend its allotted time for notifications and issuance.

SBA supports interagency information sharing on award timeliness through monthly meetings it hosts for SBIR/STTR program managers. These meetings cover a variety of topics, including practices and strategies for improving timeliness for award notification and issuance. SBA officials noted that these meetings serve as a connection point to enable agencies to identify other agencies that operate their programs in a similar way and, therefore, may face similar timeliness challenges.

³³We previously reported on major programmatic changes—including dedicated contracting support—made within the Department of the Air Force's SBIR/STTR program in [GAO-22-105223](#).

Agencies Reported Some Limitations in Their Ability to Address Timeliness

Despite the steps agencies have taken to improve award timeliness, some agencies reported limitations in their ability to address certain factors that affect timeliness. For example, as we reported in September 2019, funding uncertainties due to continuing resolutions (CR),³⁴ and small businesses' lack of familiarity in contracting with the federal government continue to affect award timeliness.³⁵ In addition, factors related to some agencies' external review process for award proposals and other programmatic issues may inhibit adherence to SBA's award notification and issuance time frames.

Although 18 of the 29 agencies stated that they have developed strategies to cope with funding uncertainties (not including FDA which currently is considering this approach), several agencies noted that CRs that extend well in the fiscal year affect their processes for issuing awards. DOD has operated under a CR for some part of the year for 5 of the 6 fiscal years since FY 2016, and the CRs in FY 2017 and FY 2018 extended at least 5 months into the fiscal year.³⁶

Some agencies rely on a DOD process for issuing broad department-wide SBIR/STTR solicitations which are on a set annual schedule that does not change relative to CR timing—the first such announcement in each fiscal year is typically issued in January. According to officials from the DMEA and NGA, delays in funding availability as a result of CRs relative to the timing of these agency-wide announcements affect their award timeliness. For example, NGA officials said the FY 2021 CR delayed their ability to issue awards until mid-May in 2021 and was the cause for 11 of

³⁴A continuing resolution is an appropriation act that provides budget authority for federal agencies, specific activities, or both to continue in operation when Congress and the President have not completed action on the regular appropriation acts by the beginning of the fiscal year. It may be enacted for the full year, up to a specified date, or until regular appropriations are enacted. A continuing resolution usually specifies a maximum rate at which the obligations may be incurred based on levels specified in the resolution. For example, the resolution may state that obligations may not exceed the current rate or must be the lower of the amounts provided in the appropriation bills passed in the House or Senate. GAO, *A Glossary of Terms Used in the Federal Budget Process*, [GAO-05-734SP](#) (Washington, D.C.: Sept. 1, 2005).

³⁵[GAO-19-620](#).

³⁶[GAO-21-541](#).

its late awards that missed the 180-day recommended issuance time frame.

Civilian agencies also are affected by CRs.³⁷ The CR in FY 2019 did not reach resolution and led to a 34-day lapse in appropriations and partial shutdown of government operations for some agencies and programs. These agencies include Transportation, USDA, Commerce, and the Department of Homeland Security—all of which fund SBIR and/or STTR programs. Transportation, NIH, and FDA referenced the need for budget certainty for award funding as a factor in award timeliness.

Some agencies cited small businesses' lack of familiarity with working with the federal government as a contributing factor to delays. For example, some small businesses may have delays in their responsiveness to requests for additional information or have limited contracting capacity. ARPA-E noted that some small businesses take longer to complete steps, such as rate negotiation or ensuring they are registered with SBA. Defense Health Agency (DHA) officials stated that many of the companies are quite small and some do not always have a person on-site with signing authority for a new contract or contract modification, which can result in delays from 1 day to several weeks. Officials at the DOD Chemical and Biological Defense program stated that it may be challenging for small businesses to manage the extreme differences between processes at contracting agencies (such as DOD and NASA) compared with granting agencies (such as NIH and NSF). Additionally, ACL stated that new applicants must have an understanding of grants management requirements and policies, and NIH cited potential delays due to ensuring an awardee's financial capability review is completed or the applicant's ability to provide information in a timely manner. Nearly all participating agencies reported that they provide guidance and support to small business applicants, and several said that they refer applicants to guidance provided by SBA on its www.sbir.gov website.

A few of the agencies in our review reported that they rely on external/peer review processes due to the specialized nature of their research areas. The process of conducting these external reviews may cause extended time frames for issuing awards as agencies must identify subject matter experts, provide guidance to them, and await their proposal reviews. NIH and NSF use external/peer reviewers for their

³⁷GAO, *FEDERAL BUDGET: Selected Agencies and Programs Used Strategies to Manage Constraints of Continuing Resolutions*, [GAO-22-104701](https://www.gao.gov/products/GAO-22-104701) (Washington, D.C.: June 30, 2022).

SBIR/STTR grants, and both agencies are authorized by statute to have up to 1 year after solicitation close to notify awardees they will receive an award. USDA also uses external reviewers and, as noted earlier, plans to pursue legislative action that would allow for extended notification and issuance time frames such as are permitted for NIH and NSF.

Some agencies have made certain programmatic choices for internal efficiency purposes that affect their timeliness:

- ARPA-E implemented a process to negotiate and award single cooperative agreements valued around \$2 million that cover all phases (e.g., phase I, phase II, and phase II supplemental, as applicable) of SBIR program awards in order to eliminate interruption or delay in funding between phases. ARPA-E then reports the data for each of these awards as a single award. ARPA-E officials noted that it takes longer than 180 days to issue these cooperative agreement awards due to the simultaneous negotiation of phase I, phase II, and phase II supplemental awards (as applicable).³⁸
- Both the FDA and CDC participate along with NIH in joint HHS-wide SBIR solicitations based on long-standing practices and which the CDC stated provides visibility to its SBIR awards. NIH then provides intake and initial processing for all the applications. As NIH has up to 1 year after solicitation close to notify awardees that they will receive an award, CDC officials noted they continue to communicate regularly with the NIH personnel about the 90 calendar-day requirement in place for CDC awardees. CDC and FDA then notify awardees and issue and administer the awards that they fund separately from those that NIH issues and administers through its funding. Notably, NIH issued over 1,220 SBIR/STTR awards in FY 2021 while CDC issued 21 awards and FDA issued three awards.

SBA Does Not Provide Current Reporting on Agencies' Timeliness

While SBA does not itself issue SBIR and STTR awards, it has the responsibility to report annually to Congress on agencies' implementation of the SBIR/STTR programs, including on award timeliness. However, SBA consistently issues late annual reports and has not developed

³⁸ARPA-E also has issued smaller grants valued under \$500,000, which the agency generally has issued within a better timeliness rate than its cooperative agreements.

alternative means of providing more real-time data on agencies' timeliness. As a result, Congress and the public lack current information.

SBA annual report. SBA's required SBIR/STTR annual report to Congress, which includes agencies' timeliness information, has been consistently late (see table 3). In response to a GAO recommendation in September 2013, SBA developed a schedule to produce a report within 13 months after the end of each fiscal year.³⁹ It did not meet its planned issuance schedule, however, for any of its annual reports for fiscal years 2016 through 2020.

Table 3: Planned and Actual Dates of the Small Business Administration's Small Business Innovation Research/Small Business Technology Transfer Annual Report

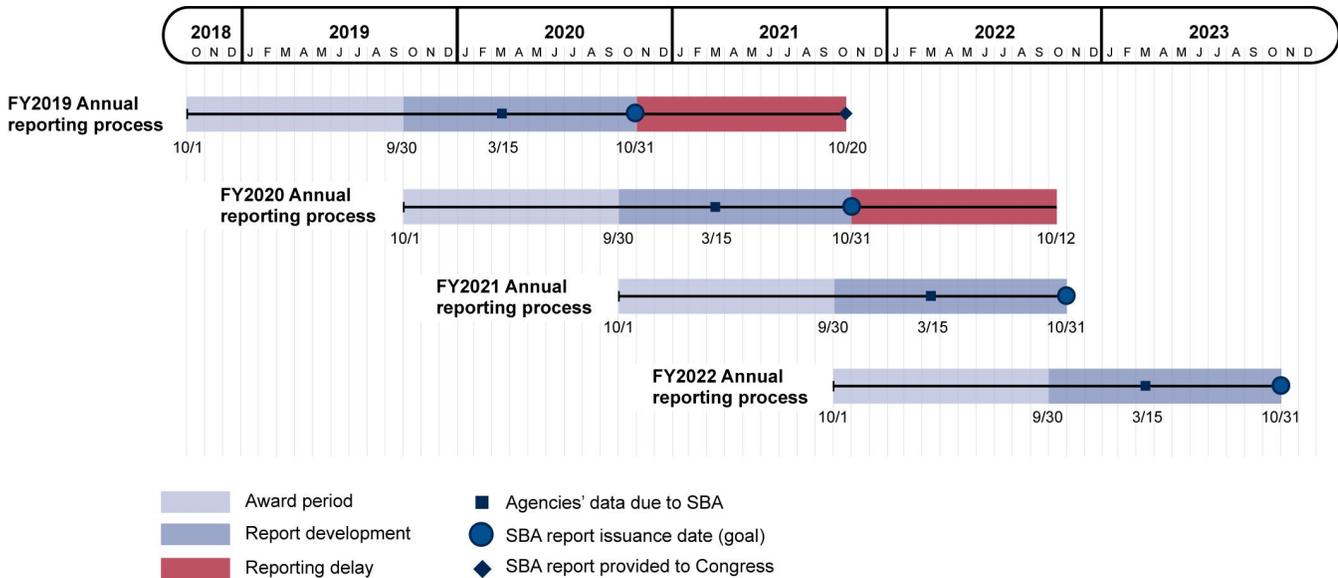
Annual Report (fiscal year)	Goal Issuance Date	Date Provided to Congress
2016	Late calendar year 2018	04/10/2019
2017	Early calendar year 2019	09/24/2019
2018	10/31/2019	02/24/2021
2019	10/31/2020	10/20/2021
2020	10/31/2021	Not Yet Delivered
2021	10/31/2022	Pending

Source: GAO analysis of agency information. | GAO-23-105591

As shown in figure 6, SBA's development of each annual report is complicated as a result of overlapping processes. Specifically, development of the report for a particular year occurs concurrently with collecting and analyzing data for the subsequent fiscal year, as well as with the award period by the participating agencies for the fiscal year two years after the report SBA is actually working on.

³⁹[GAO-13-421](#).

Figure 6: Small Business Administration’s (SBA) Small Business Innovation Research/Small Business Technology Transfer Annual Reporting Process, Fiscal Years (FY) 2019 through 2022



Source: GAO analysis of agency information. | GAO-23-105591

SBA is to report not less than annually on the SBIR/STTR programs to Congress.⁴⁰ Moreover, according to *Standards for Internal Control in the Federal Government*, management should identify, analyze, and respond to risks related to achieving its defined objectives and should evaluate and document the results of ongoing monitoring and separate evaluations to identify internal control issues.⁴¹ In the context of SBA reporting, this would include assessing the risks that hinder its ability to annually report on the SBIR/STTR programs as required and documenting the assessment process for identifying these risks in order to measure success in addressing them.

Timely oversight and reporting on agencies’ award timeliness is important to identify issues and spur corrective action where necessary to improve agency performance. Improved agency timeliness is important because delays in award issuance have costly effects for small businesses. For example, we reported in October 2021 that such effects include having to release employees or reduce employees’ hours to part-time, impeding the commercialization and launch of new products, or needing to address

⁴⁰15 U.S.C. § 638(b)(7).

⁴¹GAO-14-704G.

financial difficulties by cutting expenses or raising overhead costs.⁴² In FY 2021, 871 awards valued at approximately \$553 million were issued more than 30 days late to small businesses.

SBA officials stated that they regularly assess their report development process and identified issues such as:

- Late agency data submissions have hindered the SBA program office's ability to produce a timely report. SBA's SBIR/STTR Policy Directive requires agencies to submit their award data by March 15 of each year.⁴³ SBA officials said that data submission delays have a cascading effect as the fiscal year annual reports must be developed and issued sequentially. SBA officials told us that they piloted allowing agencies to access the portal to submit their fiscal year 2021 data earlier than they have in the past, which may have contributed to the receipt of all agencies' data on time.
- Personnel limitations and other work priorities inhibit SBA's ability to both initiate and pursue detailed data reviews until all agencies have submitted their data for SBA's annual report to Congress. According to SBA documentation, the SBIR/STTR program office has not always been able to maintain a full complement of personnel. The office had funding for up to eight personnel in FY 2015, which decreased over time to six personnel by the end of FY 2019. However, during those years, those positions were not all filled. SBA officials told GAO in March 2022 that only four personnel worked within the program office, and their duties were not exclusive to the SBIR/STTR programs.

Going forward, SBA officials told us that they plan to assess the feasibility of setting an earlier deadline for agencies' data submissions which might enable SBA to begin reviewing the data earlier than it has in the past. If implemented, this change could help to ensure that agencies submit their data in a time frame that supports timely issuance of SBA's annual report. However, this change has not been finalized as of August 2022, and it is unclear if it would be sufficient on its own to ensure timely issuance of the annual report. For example, although SBA reported it received all the agencies' data submissions for FY 2021 on time, its issuance of a timely FY 2021 report by October 2022 is uncertain since the prior year's report has not yet been issued.

Moreover, the extent to which SBA has identified or evaluated other potential process improvements that could accelerate the issuance of its

⁴²[GAO-22-104677](#).

⁴³SBIR/STTR Policy Directive § 10(h).

annual report is unclear. This is because SBA has not developed, documented, and implemented a plan to identify all of the potential actions that could improve the timely publication of its annual report. Without a plan to fully assess its SBIR/STTR annual report development process and implement actions that could improve timeliness in issuing the report, SBA may continue to be delayed in meeting its statutory requirement to provide Congress information on agencies' programs and their award timeliness.

SBIR/STTR data on SBA's website. In view of the continuing lag in annual report issuance, which—even if the report issued on time—would be 13 months after the end of each fiscal year, Congress and the public may need another source for current agency timeliness data. SBA provides some data on SBIR/STTR awards on its public website (www.sbir.gov); however, the available data do not provide current, user-friendly data on agency timeliness.

SBA's website offers up-to-date, searchable information on issued awards, but does not provide information on whether these awards were on time for notification or issuance. While SBA collects and maintains key data points on agency timeliness, the data are not readily accessible to the public until SBA's SBIR/STTR annual report is issued—which can be as much as 3 years after the awards were issued. This is because the data on key timeliness milestones that SBA posts—solicitation closing dates and award starting dates—are posted in separate parts of the website. The combination of the two milestones for each award affords some timeliness information, albeit not easily accessible for purposes of analysis. The dates on which agencies actually notify awardees are not made public, which could inhibit SBA from posting notification data for each award. However, these data are available to SBA in a format that could permit the agency to post current notification timeliness in an aggregate format by agency. In addition, SBA has a multi-year contract to develop and implement enhancements for its website. However, the planned improvements currently do not include adding user-friendly access to award timeliness information.

SBA officials cited a potential issue with providing timeliness data in real time. Specifically, SBA officials told us the timeliness data included in the agency's annual report are not published until they have been fully vetted. However, as noted above, some of these data already are published separately on the website prior to when the annual reports are vetted and added to the website.

SBA is required to develop, maintain, and make publicly-available a searchable, up-to-date, electronic award database of issued SBIR and

STTR awards as part of its website (www.sbir.gov).⁴⁴ Furthermore, *Standards for Internal Control in the Federal Government* state that agency management should externally communicate the necessary quality information needed to achieve the agency's objectives.⁴⁵

Without up-to-date information on agencies' notification and issuance timeliness, Congress lacks current data which would aid in its oversight and decision making for SBIR/STTR programs, particularly in view of the continuing lag in SBA's annual report issuance. Although SBA is not required to publish award timeliness data on its website, doing so may better position SBA to externally communicate to Congress and the public quality and timely information on participating agencies' awards to spur further improvements.

Conclusions

The SBIR and STTR programs provide critical support—nearly \$3 billion in FY 2021—to small businesses to help provide funding to develop and commercialize innovative technologies. Delays in notifying awardees that they have been selected and in issuing an award can affect small businesses by creating uncertainty as to whether or when they will be able to begin an envisioned project. This uncertainty presents an additional challenge for small businesses that may have difficulty finding alternative means of financial support to develop their ideas.

Although participating agencies' SBIR/STTR award timeliness generally has improved since FY 2016, some agencies have not consistently met required and recommended time frames for notifying awardees and issuing awards. Fully implementing the recommendations from our October 2021 report could help them to do so.

SBA does not, itself, issue SBIR and STTR awards. However, through its required reporting SBA has an important role in facilitating congressional oversight of the timeliness of the thousands of awards made annually by the participating agencies. For example, attention and oversight of timeliness is important on an ongoing basis because some agencies continue to issue awards well beyond recommended time frames, and some agencies have been inconsistent in their timeliness improvements

⁴⁴15 U.S.C. § 638(k)(1); SBIR/STTR Policy Directive § 11(b)(3), (c).

⁴⁵[GAO-14-704G](#).

from year to year. SBA's reporting of SBIR/STTR data is a key element of its role in facilitating congressional oversight.

However SBA's reporting does not provide current information on agency timeliness, as SBA's statutorily required annual report has been consistently and significantly late, and the data SBA provides on its public website do not include current information on agencies' timeliness. Developing, documenting, and executing a plan to assess its SBIR/STTR annual report development process could help SBA identify and implement actions to improve its timely reporting to Congress and the public. Additionally, enhancing SBA's public, online awards database by adding information on award timeliness would provide Congress and the public more up-to-date information between publications of SBA's required annual reports.

Recommendations for Executive Action

We are making a total of two recommendations to SBA:

The Administrator of the Small Business Administration should develop, document, and execute a plan to (1) identify actions that could improve timely publication of its annual report to Congress, and (2) implement the actions identified. (Recommendation 1)

The Administrator of the Small Business Administration should add information on award timeliness to the public online award database. (Recommendation 2)

Agency Comments

We provided a draft of this report to SBA and the 11 federal agencies that participated in either or both of the SBIR and STTR programs in fiscal years 2016 through 2021 for their review and comment. In its comments reproduced in appendix III, SBA concurred with the recommendations. Commerce, DOD, DOE, DOT, and SBA provided technical comments that we incorporated as appropriate. Officials from Education, HHS, DHS, USDA, EPA, NSF, and NASA stated via email that they had no comments on the report.

We are sending copies of this report to the appropriate congressional committees; the Secretaries of Agriculture, Commerce, Defense, Education, Energy, Health and Human Services, Homeland Security, and Transportation; the Administrators of the SBA, EPA, and NASA; the

Director of the National Science Foundation; and other interested parties. In addition, the report is available at no charge on the GAO website at <http://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-6888 or WrightC@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.



Candice N. Wright
Director, Science, Technology Assessment, and Analytics

List of Committees

The Honorable Jack Reed
Chairman
The Honorable James M. Inhofe
Ranking Member
Committee on Armed Services
United States Senate
The Honorable Benjamin L. Cardin
Chair
The Honorable Rand Paul
Ranking Member
Committee on Small Business and Entrepreneurship
United States Senate
The Honorable Adam Smith
Chairman
The Honorable Mike Rogers
Ranking Member
Committee on Armed Services
House of Representatives
The Honorable Nydia M. Velázquez
Chair
The Honorable Blaine Luetkemeyer
Ranking Member
Committee on Small Business
House of Representatives

Appendix I: Objectives, Scope, and Methodology

This report examines (1) agencies' notification and issuance timeliness in fiscal year 2021 and their timeliness trends since fiscal year 2016; (2) agencies' efforts to implement our prior recommendations to evaluate effectiveness of past practices and implement additional practices to improve their timeliness if needed; and (3) the Small Business Administration's (SBA) reporting on agencies' award notification and issuance timeliness.¹

The scope of our review included the 11 agencies that participated in either or both of the Small Business Innovation Research (SBIR) or Small Business Technology Transfer (STTR) programs in fiscal years 2016 through 2021. Within the 11 federal agencies that participated in either or both of the SBIR or STTR programs, five—the Departments of Commerce, Defense (DOD), Energy (DOE), Health and Human Services, and Homeland Security—have among them a total of 23 components that issue SBIR/STTR awards. These 23 components may select their own topics for awards, review and select proposals for funding, make awards, and monitor recipients' progress. In this report, we reviewed the six federal agencies as well as the 23 components of the five departments that issue awards under the programs for a total of 29 participating agencies (see table 4).

¹This report is GAO's fourth of four annual reports. The John S. McCain National Defense Authorization Act for Fiscal Year 2019 includes a provision for GAO to report on these issues.

Table 4: Twenty-Nine Agencies or Component Agencies Participating in Small Business Award Programs

<p>Department of Commerce</p> <ol style="list-style-type: none"> 1. National Institute of Standards and Technology 2. National Oceanic and Atmospheric Administration <p>Department of Defense</p> <ol style="list-style-type: none"> 3. Department of the Air Force 4. Department of the Army, SBIR^a 5. Department of the Army, STTR^a 6. Department of the Navy 7. Defense Advanced Research Projects Agency 8. Defense Health Agency 9. Defense Logistics Agency 10. Defense Microelectronics Activity 11. Defense Threat Reduction Agency 12. Chemical and Biological Defense program 13. Missile Defense Agency 14. National Geospatial-Intelligence Agency 15. Special Operations Command 	<p>Department of Energy</p> <ol style="list-style-type: none"> 16. Advanced Research Projects Agency-Energy 17. Office of Science <p>Department of Health and Human Services</p> <ol style="list-style-type: none"> 18. Administration for Community Living 19. Centers for Disease Control and Prevention 20. Food and Drug Administration 21. National Institutes of Health <p>Department of Homeland Security</p> <ol style="list-style-type: none"> 22. Science and Technology Directorate 23. Countering Weapons of Mass Destruction Office <p>Department of Education</p> <ol style="list-style-type: none"> 24. Department of Education <p>Department of Transportation</p> <ol style="list-style-type: none"> 25. Department of Transportation <p>Environmental Protection Agency</p> <ol style="list-style-type: none"> 26. Environmental Protection Agency <p>National Aeronautics and Space Administration</p> <ol style="list-style-type: none"> 27. National Aeronautics and Space Administration <p>National Science Foundation</p> <ol style="list-style-type: none"> 28. National Science Foundation <p>U.S. Department of Agriculture</p> <ol style="list-style-type: none"> 29. U.S. Department of Agriculture
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Source: GAO analysis of agency data. | GAO-23-105591

Note: Programs include the Small Business Innovation Research (SBIR) program and Small Business Technology Transfer (STTR) program.

^aThe Department of the Army oversees SBIR and STTR awards through two different organizations.

To examine how timely the participating agencies were in notifying applicants and issuing SBIR and STTR awards, we used a data collection instrument to obtain data on the phase I and phase II awards made by 29 participating agencies during fiscal year 2021.² This was the most recent year for which data were available. For each of these awards, we repeated the analysis we conducted for our prior reports. Specifically, we analyzed participating agencies' data to determine their timeliness in notifying awardees and issuing awards in fiscal year 2021 and to identify

²The SBIR and STTR programs each include three phases. In phase I, agencies issue awards to small businesses to determine the scientific and technical merit and feasibility of ideas that appear to have commercial potential. In phase II, small businesses with phase I awards may compete to continue their research and development project for an additional period. Phase III is for small businesses to pursue commercialization of technology developed in prior phases. We excluded phase III awards because they are funded by sources other than the SBIR and STTR programs. 15 U.S.C. § 638 (e)(4), (6).

trends and changes, if any, since our last reports.³ In particular, for every award issued in fiscal year 2021, we asked each participating agency to report certain dates, including the date the agency received the awardee's proposal (the proposal submission date), the date the solicitation closed for the awardee's proposal, the date the agency notified the awardee that their proposal was recommended for award, the date the agency and small business agreed to a final award document (the award issuance date), and the award's period of performance—the first and last days of the period during which the award activities were expected to occur.⁴

To determine participating agencies' timeliness, we calculated the time spent reviewing a proposal and notifying the awardee starting from the solicitation close date and ending at the notification to the awardee. We also calculated the time spent issuing an award starting from the solicitation close date and ending at either the award issuance date or the first day of the period of performance if the issuance date was not available.⁵ For each participating agency, we calculated (1) the mean and median notification times and the percentage of awardees notified within the required time period and (2) the mean and median award issuance times and the percentage of awards issued within the recommended time.⁶ We counted notification or issuance as late if they were 1 or more days past the required or recommended period of time.

³Our prior reports included: GAO, *Small Business Research Programs: Agencies Should Further Improve Award Timeliness*, [GAO-22-104677](#) (Washington, D.C.: Oct. 14, 2021); *Small Business Research Programs: Many Agencies' Award Issuances Are Not Timely; Some Practices May Improve Timeliness*, [GAO-20-693](#) (Washington, D.C.: Sept. 30, 2020); and *Small Business Research Programs: Many Agencies Took Longer to Issue Small Business Awards than Recommended*, [GAO-19-620](#) (Washington, D.C.: Sept. 26, 2019).

⁴SBA's SBIR and STTR policy directive states that agencies are to notify all applicants of the results of the agency's proposal review. Because we collected data on awards for this report, we did not examine the time agencies used to notify applicants whose proposals were not recommended for award.

⁵In some instances, we used the proposal submission date in lieu of the solicitation close date—for example, when agencies did not use solicitations to obtain proposals for phase II awards and, instead, requested phase II proposals from small businesses during phase I.

⁶An agency's mean notification and award issuance times represent the average amount of time spent across all awards. An agency's median notification and award issuance times represent the time at which half of the notifications were completed and awards were issued. We combined phase I and II awards for these calculations.

We combined data on awards for fiscal year 2021 with data from our previous reports on awards made in fiscal years 2016 through 2020 to determine:

- whether participating agencies' timeliness in fiscal year 2021 improved or declined by 10 percentage points or more over their average timeliness rate in fiscal years 2016 through 2020, including whether that change was statistically significant;⁷
- the percentage of awards that participating agencies issued within the recommended time period, the total funding that was awarded on time, and the average number of days to issue phase I and II awards over fiscal years 2016 through 2021; and
- the timeliness rates for notification and issuance at the DOD-wide (13 participating agencies) and civilian-wide (16 participating agencies) over fiscal years 2016 through 2021 and to compare the overall timeliness performance of DOD and civilian agencies.

We took several steps to assess the reliability of participating agencies' award data for fiscal year 2021. In particular, we reviewed agencies' responses to our data request to check for omissions or incorrect interpretations of the data elements we requested for each award. In addition, we evaluated the data for potential outliers, such as particularly long or short notification or issuance periods, and potential duplicates, such as awards with identical award numbers. We followed up with participating agencies, which made corrections as necessary. Where we found variation or trends in agencies' timeliness performance, we sought explanations from agency officials and in other information agencies provided to us. These included changes that they made to their process for reviewing proposals and issuing awards or challenges that they noted to meeting timeliness requirements or recommendations. We found the award data we obtained from participating agencies to be sufficiently reliable for the purpose of describing the time spent reviewing proposals and issuing awards at each agency.

To determine the extent to which participating agencies have implemented the recommendations from our October 2021 report, we collected and reviewed documentation provided by the agencies, requested follow-up information as necessary, and interviewed agency officials as needed to clarify the information that they had provided.⁸ We

⁷We defined statistical significance as having a p-value of less than 0.05.

⁸[GAO-22-104677](#).

collected the formal agency response letters required to be submitted by recipient agencies within 180 days of receiving a recommendation from GAO. In these letters, the agencies described the steps that they are taking to (1) evaluate the effectiveness of previous steps taken to improve timeliness and (2) additional steps that they are implementing to further improve their award timeliness.

In addition to the official agency letters, we administered a standard set of questions to all of the participating agencies and their participating subcomponents. For the agencies to which we made a recommendation in our October 2021 report, we requested a description of the agencies' efforts to evaluate past steps to improve timeliness and implement additional practices.⁹ We compared this information to what agencies submitted in their official recommendation response letters to identify common themes as well as illustrative examples from across the agencies to highlight these themes.

We also requested information from all the participating agencies on factors that affect notification and award issuance timeliness and on whether they had implemented a variety of practices that had been identified by participating agencies in our September 2020 report.¹⁰ We analyzed the agencies' responses to identify broad themes, such as effects of funding delays, small businesses' familiarity in working with the federal government, and agencies' programmatic choices that affect timeliness but may have other benefits. We used examples agencies provided to illustrate these themes.

To determine SBA's reporting on agencies' notification and award timeliness, we conducted interviews with SBA officials, collected and reviewed documentation provided by SBA, and requested follow-up information as necessary. The SBA officials included those with the SBA Office of Innovation and Technology Leadership responsible for overseeing the SBIR and STTR programs. We also identified resources that SBA employs in its oversight efforts, such as funding, personnel, guidance, documentation, and electronic resources; how they have changed over time; and SBA officials' views on whether they are sufficient.

⁹[GAO-22-104677](#).

¹⁰[GAO-20-693](#).

We assessed SBA's efforts to report on agencies' notification and award timeliness against relevant statutory provisions and agency policies and relevant *Standards for Internal Control in the Federal Government*.¹¹ We determined that a principle within the risk assessment component and an attribute within the monitoring component of the internal controls were significant to this objective. Specifically, the principle that management should identify, analyze, and respond to risks related to achieving its defined objectives and the attribute that management should evaluate and document the results of ongoing monitoring and separate evaluations to identify internal control issues.

Through information collection efforts described above and by reviewing SBA's annual reports available on SBA's public website (www.sbir.gov) we assessed whether SBA's efforts to examine its annual report process were sufficient to implement the principle that management should identify, analyze, and respond to risks related to achieving the defined objectives. Similarly, by evaluating information collected from SBA officials as well as the data SBA provides via the www.sbir.gov website, we assessed whether SBA's reporting of SBIR/STTR data were sufficient to implement the principle that management should externally communicate the necessary quality information to achieve the entity's objectives.

We conducted this performance audit from December 2021 to October 2022 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

¹¹[GAO-14-704G](#).

Appendix II: Participating Agency SBIR and STTR Award Timeliness Data

Table 5 provides information on the average number of days to notify awardees and issue awards under the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. The table provides data by participating agency for fiscal year 2021.

Table 5: Average Number of Days to Notify Awardees and Issue Awards in the SBIR and STTR Programs by Participating Agency, Fiscal Year 2021

Department or agency Component agency	Number of Awards	Average Days to Notify Awardees		Average Days to Issue Awards	
		Mean	Median	Mean	Median
Department of Commerce					
National Institute of Standards and Technology	17	90	91	107	114
National Oceanic and Atmospheric Administration	55	165	162	177	169
Department of Defense					
Department of the Air Force ^a	1,729	101	70	142	106
Department of the Army, SBIR	345	69	83	274	274
Department of the Army, STTR	93	69	69	201	186
Department of the Navy	749	58	57	155	131
Defense Advanced Research Projects Agency	113	35	32	168	154
Defense Health Agency	107	59	68	165	160
Defense Logistics Agency	80	65	56	148	144
Defense Microelectronics Activity	13	120	125	159	154
Defense Threat Reduction Agency	29	47	40	292	256
Chemical and Biological Defense program	33	75	64	252	224
Missile Defense Agency	114	86	89	188	179
National Geospatial-Intelligence Agency	45	152	135	214	202
Special Operations Command	51	45	42	84	74

Appendix II: Participating Agency SBIR and STTR Award Timeliness Data

Department of Energy					
Advanced Research Projects Agency-Energy ^b	31	69	62	216	195
Office of Science	627	83	84	135	128
Department of Health and Human Services					
Administration for Community Living	13	87	97	172	212
Centers for Disease Control and Prevention	21	218	158	218	158
Food and Drug Administration	3	299	259	299	259
National Institutes of Health ^c	1,225	188	169	264	252
Department of Homeland Security					
Science and Technology Directorate	42	75	77	118	116
Countering Weapons of Mass Destruction Office	5	62	62	112	111
Department of Education					
	29	84	87	101	102
Department of Transportation					
	38	55	66	130	116
Environmental Protection Agency					
	33	121	129	174	178
National Aeronautics and Space Administration					
	525	77	76	132	126
National Science Foundation^c					
	496	236	232	236	232
U.S. Department of Agriculture					
	110	87	90	141	134

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-23-105591

^aDuring the fiscal years 2016 through 2021 period, the Department of the Air Force implemented changes to its Small Business Innovation Research and Small Business Technology Transfer programs. These changes involved lower award amounts and shorter periods of performance, among others. For more information on these changes, see [GAO-22-105223](#). During the transition period, Air Force did not issue some awards that were expected by small businesses; Air Force designated funding in fiscal years 2020 and 2021 to issue some “legacy” awards from these earlier dates as we reported in [GAO-22-104677](#). The legacy awards negatively affected Air Force timeliness rates in FY 2021 since they were issued a significant time period after the original solicitation close date.

^bAdvanced Research Projects Agency-Energy negotiates and issues a single award for phases I and II.

^cThe National Science Foundation and National Institutes of Health must notify awardees within 1 year after the closing date of the solicitation and should issue awards within 15 months after the closing date. All other agencies must notify awardees within 90 days after the closing date of the solicitation and should issue an award in no more than 180 calendar days after the closing date.

Appendix III: Comments from the U.S. Small Business Administration



U.S. Small Business
Administration

Candice N. Wright
Director
Science, Technology Assessment, and Analytics
U.S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

September 12, 2022

Dear Candice N. Wright:

Thank you for providing the U. S. Small Business Administration (SBA) with a copy of the Government Accountability Office (GAO) draft report titled "Small Business Research Programs Reporting on Award Timeliness Could Be Enhanced", GAO-22-105591. The draft report primarily examines participating agencies' notification and issuance timeliness in fiscal year 2021 and their trend data since 2016; it also examines SBA's reporting on agencies' award notification and issuance timeliness.

SBA has reviewed the draft report and agrees with the two recommendations received.

Recommendation 1: The Administrator of the Small Business Administration should develop, document, and execute a plan to (1) identify actions that could improve timely publication of its annual report to Congress, and (2) implement the actions identified.

SBA Response: Concur. SBA has actively assessed and made changes to the Annual Report data gathering processes and will complete a fuller assessment to identify further actions that can improve the timely publication of the annual report.

Recommendation 2: The Administrator of the Small Business Administration should add information on award timeliness to the public online award database.

SBA Response: Concur. SBA has enhanced public access to SBIR and STTR award data, including the ability to download the entire award database containing 37 data elements on more than 190,000 awards. Although publishing timeliness data on the SBIR.gov website is not required, SBA is supportive of enhancing transparency of SBIR/STTR related data and will publish award timeliness data online.

Sincerely,

A handwritten signature in blue ink, appearing to read "John Williams".

John Williams
Director of Innovation and Technology
Office of Investment & Innovation
U.S. Small Business Administration

Agency Comment Letter

Text of Appendix III: Comments from the U.S. Small Business Administration

September 12, 2022

Candice N. Wright
Director
Science, Technology Assessment, and Analytics
U.S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

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SBA has reviewed the draft report and agrees with the two recommendations received.

Recommendation 1: The Administrator of the Small Business Administration should develop, document, and execute a plan to (1) identify actions that could improve timely publication of its annual report to Congress, and (2) implement the actions identified.

SBA Response: Concur. SBA has actively assessed and made changes to the Annual Report data gathering processes and will complete a fuller assessment to identify further actions that can improve the timely publication of the annual report.

Recommendation 2: The Administrator of the Small Business Administration should add information on award timeliness to the public online award database.

SBA Response: Concur. SBA has enhanced public access to SBIR and STTR award data, including the ability to download the entire award database containing 37 data elements on more than 190,000 awards. Although publishing timeliness data on the SBIR.gov website is not

**Appendix III: Comments from the U.S. Small
Business Administration**

required, SBA is supportive of enhancing transparency of SBIR/STTR related data and will publish award timeliness data online.

Sincerely,

John Williams
Director of Innovation and Technology
Office of Investment and Innovation
U.S. Small Business Administration

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Candice N. Wright, (202) 512-6888 or wrightc@gao.gov

Staff Acknowledgments

In addition to the contact named above, Christopher Murray (Assistant Director), Sharron Candon (Analyst-in-Charge), Eric Charles, Courtney Thacker, Wesley Wilhelm, Ryan Han, Robert Letzler, Nora Adkins, Susan Bernstein, and Ellen Arnold made key contributions to this report.

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