



October 2021

# SMALL BUSINESS RESEARCH PROGRAMS

## Agencies Should Further Improve Award Timeliness



A Century of Non-Partisan Fact-Based Work

# GAO@100 Highlights

Highlights of [GAO-22-104677](#), a report to congressional committees

## Why GAO Did This Study

SBIR and STTR participating agencies awarded over \$3 billion to small businesses in fiscal year 2020 to develop and commercialize new technologies. Timely issuance of these awards can affect the speed with which small businesses receive funds and begin work, according to the SBA.

SBA's SBIR/STTR policy directive provides time frames for notification and award issuance—90 days for award notification and 180 days for award issuance. The Fiscal Year 2019 National Defense Authorization Act (NDAA) included a provision for GAO to review the timeliness of award notification and issuance. The Fiscal Year 2021 NDAA conference report included a provision for GAO to review instances of agencies not following through with awards. This report, GAO's third, examines, among other things: (1) agencies' timeliness in notification and issuance, (2) the extent to which agencies have addressed risks to award timeliness, and (3) the extent to which DOD established a pilot program to improve timeliness.

GAO analyzed SBIR and STTR award data, reviewed documentation, interviewed SBA officials, and sent a questionnaire to all 29 participating agencies and select small businesses.

## What GAO Recommends

GAO is making 22 recommendations to 20 federal agencies, including to improve the timeliness of awards to small businesses. Agencies concurred with 20 recommendations. DOD partially concurred with one and did not concur with another recommendation that GAO maintains still is warranted.

View [GAO-22-104677](#). For more information, contact Candice Wright at (202) 512-6888 or [WrightC@gao.gov](mailto:WrightC@gao.gov).

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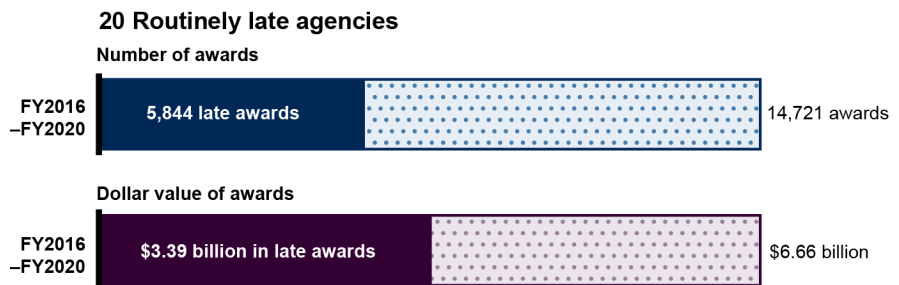
## SMALL BUSINESS RESEARCH PROGRAMS

### Agencies Should Further Improve Award Timeliness

## What GAO Found

Most federal agencies that participate in the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs did not consistently issue timely awards to small businesses in fiscal year 2020. The Small Business Administration's (SBA) SBIR/STTR policy directive recommends that most agencies issue such awards within 180 days of the closing date of the solicitation. On the one hand, timeliness across agencies has improved since fiscal year 2017. Agencies issued 69 percent of awards within the recommended time that year, compared to 82 percent of awards that we reviewed for fiscal year 2020. On the other hand, only nine of the 29 participating agencies were consistently on time in fiscal year 2020, meaning they issued at least 90 percent of their awards within 180 days. This lack of timeliness dates back at least 5 years: 20 agencies were routinely late during that period, issuing fewer than 90 percent of their awards on time for 3 or more of the 5 fiscal years since 2016 (see figure).

#### Total Number and Value of Late Awards Issued by Routinely Late Agencies



Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | [GAO-22-104677](#)

Nearly all of the agencies that were routinely late in issuing awards to small businesses have taken some steps to address risks to the timeliness of their awards. Such risks included not having standardized proposal review procedures and a lack of dedicated staff to issue awards. Agencies have taken some steps to improve timeliness by, for example, streamlining proposal reviews and the award contracting process. However, they have not fully addressed risks they identified or evaluated steps already taken and may continue to issue late awards until they do so.

Although the Department of Defense (DOD) has taken some steps to improve timeliness, it has not established a required pilot program. According to officials, DOD has not done so, in part, because it would be too difficult to standardize practices across the department. GAO found that 12 of the 13 DOD participating agencies are not consistently issuing timely awards to small businesses. Without addressing the pilot program requirements, or by not reporting to Congress if the requirements are infeasible, DOD may be missing an opportunity to obtain technologies more quickly, as well as sustain small businesses that can provide such technologies.

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## Abbreviations

|          |   |
|----------|---|
| ACL      | Administration for Community Living                                   |
| ARPA-E   | Advanced Research Projects Agency-Energy                              |
| CDC      | Centers for Disease Control and Prevention                            |
| CWMD     | Countering Weapons of Mass Destruction Office                         |
| DARPA    | Defense Advanced Research Projects Agency                             |
| DHA      | Defense Health Agency   |
| DLA      | Defense Logistics Agency  |
| DMEA     | Defense Microelectronics Activity                                     |
| DPC      | Defense Pricing and Contracting                                       |
| DTRA     | Defense Threat Reduction Agency                                       |
| DOD      | Department of Defense   |
| DOT      | Department of Transportation  |
| EPA      | Environmental Protection Agency                                       |
| FDA      | Food and Drug Administration  |
| FY       | fiscal year   |
| MDA      | Missile Defense Agency  |
| NDAA     | National Defense Authorization Act                                    |
| NGA      | National Geospatial-Intelligence Agency                               |
| NIH      | National Institutes of Health   |
| NSF      | National Science Foundation   |
| OUSD R&E | Office of the Under Secretary of Defense for Research and Engineering |
| 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 14, 2021

### Congressional Committees

The Small Business Innovation Research (SBIR) program and the Small Business Technology Transfer (STTR) program were established to enable federal agencies to support research and development (R&D) projects carried out by small businesses.<sup>1</sup> According to small businesses, SBIR and STTR program funding has been instrumental to their success in commercializing and bringing important technologies to market, such as machines that help individuals recover from stroke and other brain injuries.

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 also required to participate in the STTR program.<sup>2</sup> According to the Small Business Administration (SBA), which oversees the programs, and in accordance with the statute, 11 federal agencies and their subcomponents participate in the SBIR program or in both the SBIR and STTR programs. According to data from these 11 agencies, they made over \$3 billion in SBIR and STTR awards in fiscal year 2020.<sup>3</sup>

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<sup>1</sup>The 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 provided additional amendments to 15 U.S.C. § 638.

<sup>2</sup>15 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.

<sup>3</sup>In this report, we refer to the agencies and their respective components that issue SBIR and STTR awards as participating agencies, and we use the term "award" to include contracts, grants, and cooperative agreements.

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In 2019, SBA issued an updated policy directive on the general operation of the SBIR and STTR programs.<sup>4</sup> In particular, 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 for proposals, and all but two participating agencies are recommended to issue an award within 180 days after the closing date.<sup>5</sup> 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, 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.

The John S. McCain National Defense Authorization Act (NDAA) for Fiscal Year 2019 (FY 2019 NDAA) includes a provision for GAO to report annually for 4 years on the timeliness of participating agencies' SBIR and STTR proposal reviews and award issuances.<sup>6</sup> In prior reports, we found that many participating agencies took longer to notify applicants than required, and issued awards later than recommended, with much variation among the agencies.<sup>7</sup> In addition, in September 2020, we found that agencies used various practices to improve the timeliness of award notification and issuance, a few of which we found may make agencies more likely to meet timeliness requirements or recommendations.<sup>8</sup> The FY 2019 NDAA also includes a provision for GAO to report on best

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<sup>4</sup>15 U.S.C. §§ 638(j), (p); Small Business Administration, SBIR/STTR Policy Directive (May 2, 2019). Subsequently, SBA issued an additional update to this policy directive on Oct. 1, 2020.

<sup>5</sup>The directive requires two agencies, NIH and NSF, 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).

<sup>6</sup>Pub. L. No. 115-232 § 854(b)(2)(B), 132 Stat. 1636, 1887 (2018), codified at 15 U.S.C. § 638(ii)(2).

<sup>7</sup>GAO, *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 GAO, *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).

<sup>8</sup>[GAO-20-693](#). In the context of all 29 agencies in this report, 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.



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practices for shortening proposal review and award times; where each agency needs improvement regarding proposal review and award times; the Department of Defense's (DOD) pilot program to improve timeliness; and the pros and cons of using contracts compared to grants.<sup>9</sup> Additionally, the conference report accompanying the William M. (Mac) Thornberry NDAA for Fiscal Year 2021 (FY 2021 NDAA), includes a provision for GAO to report on all agency selections made during the preceding 5-year period that were not followed with funding awards, including characteristics of such selections and actions taken by agencies.<sup>10</sup>

This report—the third of the annual reports required by the FY 2019 NDAA, and in accordance with the FY 2021 NDAA conference report—examines: (1) how timely participating agencies were in notifying applicants and issuing SBIR and STTR awards from fiscal years 2016 through 2020; (2) the extent to which participating agencies have addressed risks to SBIR and STTR award timeliness; (3) the extent to which SBIR and STTR participating agencies have informed small businesses of their selection without issuing an award for fiscal years 2016 through 2020; and (4) the extent to which DOD has established a pilot program to improve timeliness in issuing SBIR and STTR awards.

The scope of our review included the 11 agencies that participated in either or both of the SBIR or STTR programs in fiscal years 2016 through 2020. Within the 11 federal agencies that participated in the SBIR and STTR programs, five—the Departments of Commerce, Defense, Energy, Health and Human Services, and Homeland Security—have among them a total of 23 components that issue SBIR and 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).

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<sup>9</sup>Pub. L. No 115-232 § 854(b)(2)(B), 132 Stat. 1636, 1887 (2018), codified at 15 U.S.C. § 638(ii)(2). [GAO-20-693](#) addresses part of this provision, specifically, for GAO to report on best practices for shortening proposal review and award times. We reported on practices agencies used to improve timeliness and assessed their effect on award notification and issuance timeliness.

<sup>10</sup>H.R. Rep. No. 116-617, at 1565 (2020).

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

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**Department of Commerce**

- 1. National Institute of Standards and Technology
- 2. National Oceanic and Atmospheric Administration

**Department of Defense**

- 3. Department of the Air Force
- 4. Department of the Army, SBIR<sup>a</sup>
- 5. Department of the Army, STTR<sup>a</sup>
- 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. Joint Science and Technology Office for Chemical and Biological Defense
- 13. Missile Defense Agency
- 14. National Geospatial-Intelligence Agency
- 15. Special Operations Command

**Department of Energy**

- 16. Advanced Research Projects Agency-Energy
- 17. Office of Science

**Department of Health and Human Services**

- 18. Administration for Community Living
- 19. Centers for Disease Control and Prevention
- 20. Food and Drug Administration
- 21. National Institutes of Health

**Department of Homeland Security**

- 22. Science and Technology Directorate
- 23. Countering Weapons of Mass Destruction Office

**24. Department of Education**

**25. Department of Transportation**

**26. Environmental Protection Agency**

**27. National Aeronautics and Space Administration**

**28. National Science Foundation**

**29. U.S. Department of Agriculture**

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Source: GAO analysis of agency data. | GAO 22-104677

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

<sup>a</sup>The Department of the Army oversees SBIR and STTR awards through two program offices.

To examine the timeliness of agencies in notifying applicants and issuing SBIR and STTR awards, we used a data collection instrument to collect and analyze timeliness data provided by the 29 participating agencies. We reviewed agency data for omissions, outliers, and duplicates; we followed up with participating agencies, who made corrections as necessary. 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 examine the extent to which agencies addressed risks they identified to SBIR and STTR award timeliness, we determined agency timeliness by combining and reviewing agency timeliness data from fiscal year 2020 with past years (fiscal years 2016 through 2019). We also sent questions to agencies, interviewed agency officials, and requested supporting documentation to determine: timeliness risks; agency actions to address risks; the extent to which agencies informed small businesses of their selection without issuing an award for fiscal years 2016 through 2020; and the extent to which DOD has established a pilot program to improve

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timeliness in issuing SBIR and STTR awards. We compared agencies' efforts against *Standards for Internal Control in the Federal Government*, including performing monitoring activities.<sup>11</sup>

In addition, we sent a questionnaire to a non-generalizable sample of 84 small businesses that received late notifications or awards in fiscal year 2019.<sup>12</sup> While not generalizable, the information from the survey provided illustrative examples of the effect delays have on small businesses, and small business perspectives regarding agency timeliness. For additional information on our objectives, scope, and methodology, see appendix I.

We conducted this performance audit from December 2020 to October 2021 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.

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## Background

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### SBIR and STTR Phase I and II Awards

Each year, small businesses may apply for SBIR/STTR awards from a participating agency to develop and commercialize innovative technologies. Awards include phase I awards, where agencies issue awards to determine the scientific and technical merit and feasibility of ideas that appear to have commercial potential. Awards also include phase II awards, where small businesses with phase I projects that demonstrate scientific and technical merit and feasibility, in addition to commercial potential, may compete for awards to 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 issue direct to phase II awards, which are phase II awards to small businesses that did not receive a phase I award for R&D for the same project. Direct to phase II awards are designed for small business that had completed phase I milestones using non-SBIR funds. As of

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<sup>11</sup>GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

<sup>12</sup>We received responses from 44 of the 84 small businesses in our sample, for a response rate of 52 percent.

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November 2020, agencies may issue a phase I award (including modifications) of up to \$259,613 and a phase II award (including modifications) of up to \$1,730,751 without seeking approval from SBA, which oversees the SBIR and STTR programs.<sup>13</sup>

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## SBIR and STTR Award Process and Timeliness Requirements and Recommendations

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.<sup>14</sup> Each participating agency is to review the proposals it receives to determine which small businesses should receive awards, then negotiate contracts, grants, or cooperative agreements to issue the awards to the selected small business applicants.

The Small Business Act and SBA's SBIR/STTR policy directive state that all but two participating agencies—NIH and the National Science Foundation (NSF)—are required to review proposals and notify applicants of the agency's decision no more than 90 calendar days after the closing date of the solicitation.<sup>15</sup> Further, the policy directive recommends that all but two participating agencies (NIH and NSF) issue awards—that is, finalize the funding agreement with the selected small business applicants—no more than 180 calendar days after the closing date of the solicitation.<sup>16</sup> According to SBA officials, SBA's SBIR/STTR policy directive requires the time period for applicant notification because this time period is explicitly required by statute, whereas the policy directive recommends the time period for award issuance because the statute is

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<sup>13</sup>Participating agencies may also issue phase III awards for small businesses to pursue commercialization of technology developed in prior phases. Such awards are funded by sources other than the SBIR and STTR programs.

<sup>14</sup>SBIR/STTR Policy Directive § 5(a).

<sup>15</sup>15 U.S.C. § 638(g)(4), (o)(4); SBIR/STTR Policy Directive § 7(c)(1). The Act and directive require NIH and NSF to notify applicants no more than 1 year after the closing date of the solicitation. 15 U.S.C. § 638(g)(4), (o)(4); SBIR/STTR Policy Directive § 7(c)(1).

<sup>16</sup>SBIR/STTR Policy Directive § 7(c)(1). The directive recommends that NIH and NSF issue awards no more than 15 months after the closing date of the solicitation. SBIR/STTR Policy Directive § 7(c)(1). The SBA's SBIR/STTR Policy Directive defines funding agreement as any contract, grant, or cooperative agreement entered into between any federal agency and any small business concern for the performance of experimental, developmental, or research work, including products or services, funded in whole or in part by the federal government. SBIR/STTR Policy Directive § 3(r).

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silent.<sup>17</sup> In addition, according to an SBA official, these time periods apply to all SBIR/STTR program awards, including both phase I and II awards.

SBA's SBIR/STTR policy directive directs agencies to submit a written request for additional time (a waiver) to SBA if the agency believes it will not meet timeliness requirements for applicant notification.<sup>18</sup> The directive is silent regarding what agencies should do when they believe they need more time and will not meet award issuance timeliness recommendations. The directive also states that, even if SBA grants an extension of time for notification, the agency is required to develop programs or measures to reduce the time to notification as well as time to award issuance. The directive does not establish a limit on the time that elapses between phases.<sup>19</sup>

In addition, the FY 2019 NDAA includes a requirement for DOD's Under Secretary for Research and Engineering (OUSD R&E) acting through the Director of the Defense Pricing and Contracting Office<sup>20</sup> (DPC) to establish a pilot program to improve the timeliness of DOD's SBIR and STTR awards. This is to include: developing simplified and standardized procedures and model contracts; specifically reducing the amount of time to issue phase I awards, time between phase I and II awards, time to issue direct to phase II awards, and time between phase II awards, to be as close to 90 days as possible; and consult with DOD's Office of Small Business Programs.<sup>21</sup>

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<sup>17</sup>While the statute is silent on the required time for award issuance, federal agencies participating in the SBIR or STTR programs are required, pursuant to 15 U.S.C. § 638(hh), to shorten the amount of time between the provision of notice of an award under the SBIR or STTR programs and the subsequent release of funding with respect to the award, to the extent possible.

<sup>18</sup>SBIR/STTR Policy Directive § 7(c)(1).

<sup>19</sup>However, DOD participating agencies are required, pursuant to DOD's pilot program to accelerate DOD SBIR/STTR awards, to reduce the time to be as close to 90 days as possible (1) between the end of a phase I award and the start of the phase II award, for phase II awards and (2) between phase II awards, for sequential phase II awards. 15 U.S.C. § 638(hh)(2).

<sup>20</sup>The Defense Pricing and Contracting Office was formerly known as the Defense Procurement and Acquisition Policy Office.

<sup>21</sup>Pub. L. No. 115-232 § 854(b)(1)(C), 132 Stat. 1636, 1887, (2018), codified at 15 U.S.C. § 638(hh)(2).

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## Participating Agency Budget Authority

Budget authority is defined as an authority provided by federal law, usually in the form of appropriations, to enter into financial obligations that will result in immediate or future outlays involving federal government funds.<sup>22</sup> For example, Congress has granted budget authority for participating agencies to finance SBIR and STTR programs. The duration of a participating agency's budget authority varies by agency, ranging from 1-year (budget authority available for obligation only during a specific fiscal year that expires at the end of that fiscal year), to multiple-year (budget authority available for a fixed period of time in excess of 1 fiscal year, which generally takes the form of 2-year, 3-year, and so forth, availability), and no-year (budget authority that remains available for obligation for an indefinite period of time). Twenty-five of the 29 participating agencies have multiple-year or no-year budget authority to fund their SBIR and STTR programs. Agencies with greater than 1-year budget authority may have more flexibility in timing their awards and meeting timeliness requirements and recommendations, as well as mitigating funding challenges such as continuing resolutions.<sup>23</sup>

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## Participating Agencies Did Not Consistently Notify Awardees or Issue Awards On Time

In fiscal year 2020, many participating agencies did not consistently notify awardees within the required timeframes, and most agencies did not issue SBIR and STTR awards within the recommended timeframes.<sup>24</sup> About half of the agencies met notification timeliness requirements and about one-third met issuance timeliness recommendations for at least 90 percent of their awards.

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<sup>22</sup>GAO, *A Glossary of Terms Used in the Federal Budget Process*, [GAO-05-734SP](#) (Washington, D.C.: Sept. 1, 2005).

<sup>23</sup>A 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-05-734SP](#).

<sup>24</sup>In the context of all 29 agencies in this report, 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.

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## Half of Participating Agencies Did Not Consistently Notify Awardees On Time

The Small Business Act and SBA's SBIR/STTR policy directive requires all but two participating agencies to review proposals and notify small business applicants of the agency's award decision within 90 calendar days after solicitation close; the Act and directive require NIH and NSF to do so within 1 year.<sup>25</sup> According to data provided by participating agencies, 14 of the 29 participating agencies met the notification timeliness requirement for at least 90 percent of their SBIR and STTR awards in fiscal year 2020. Looking at all awards in aggregate, agencies notified awardees within the required time for 6,501 of the 7,306 awards (89 percent) that we reviewed for fiscal year 2020. This government-wide timeliness rate has steadily improved since fiscal year 2017 (where 78 percent of awardees were notified within the required time). Moreover, 17 of the 29 agencies had a median time to notify awardees that was 90 days or less. See tables 7 and 8 in appendix II for additional descriptive statistics on notification timeliness performance by agency.

Many participating agencies were about as timely with notifications in fiscal year 2020 as they were in the previous 4-year period (fiscal years 2016 through 2019). Specifically, we found that 16 of the 29 participating agencies notified awardees within the required time at about the same rate (within 10 percentage points), nine improved by 10 percentage points or more, and four declined by 10 percentage points or more (see table 2).<sup>26</sup> For example, Army's STTR notification timeliness improved from 14 to 99 percent from fiscal years 2019 through 2020. According to officials, this was the result of process changes—including reducing the required length of proposals—which facilitated quicker reviews.

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<sup>25</sup>15 U.S.C. § 638(g)(4), (o)(4); SBIR/STTR Policy Directive § 7(c)(1).

<sup>26</sup>The improvement in notification time was statistically significant for seven of the nine agencies ( $p < 0.05$ ). The decline in notification timeliness was statistically significant for all four agencies ( $p < 0.05$ ). Also, agencies with a timeliness performance of more than 90 percent are not able to improve by 10 percentage points.

**Table 2: Participating Agencies' Award Notification Performance in Fiscal Year 2020, Compared with the Previous 4-year Period**

| Performance | Measure                                   | Number of agencies | Participating departments or agencies   |
|-------------|---|--------------------|---|
| Improvement | Improved by 10 or more percentage points  | 9                  | Administration for Community Living, Defense Threat Reduction Agency*, Department of Education, Department of Transportation*, Department of the Army, SBIR*, Department of the Army, STTR*, Department of the Navy*, Office of Science*, and U.S. Department of Agriculture*   |
| Decline     | Declined by 10 or more percentage points  | 4                  | Advanced Research Projects Agency-Energy*, Defense Health Agency*, National Geospatial-Intelligence Agency*, and National Oceanic and Atmospheric Administration*   |
| No change   | Changed by less than 10 percentage points | 16                 | Centers for Disease Control and Prevention, Countering Weapons of Mass Destruction Office, Defense Advanced Research Projects Agency, Defense Logistics Agency, Defense Microelectronics Activity, Department of the Air Force, Environmental Protection Agency, Food and Drug Administration, Joint Science and Technology Office for Chemical and Biological Defense, Missile Defense Agency, National Aeronautics and Space Administration, National Institute of Standards and Technology, National Institutes of Health, National Science Foundation, Science and Technology Directorate, and Special Operations Command |

Legend: \*Indicates that the improvement or decline of ten percentage points or more was statistically significant ( $p < 0.05$ ).

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-22-104677

## Two-Thirds of Participating Agencies Did Not Consistently Issue Awards On Time

SBA'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.<sup>27</sup> Nine of the 29 agencies met these award issuance timeliness recommendations for at least 90 percent of their SBIR and STTR awards in fiscal year 2020, according to our analysis of agency data. Looking at all awards in aggregate, participating agencies issued awards within the recommended time for 5,999 of 7,307 awards (82 percent) we reviewed for fiscal year 2020.<sup>28</sup> This government-wide timeliness rate has improved since fiscal year 2017 (when 69 percent of awards were issued within the recommended time). See tables

<sup>27</sup>SBIR/STTR Policy Directive § 7(c)(1).

<sup>28</sup>Our fiscal year 2020 data, which had the necessary dates to calculate award issuance time, lacked a notification date for one observation. We were unable to confirm the date with the agency when we were finalizing the analysis. Therefore, there is one additional observation for award issuance percentage.

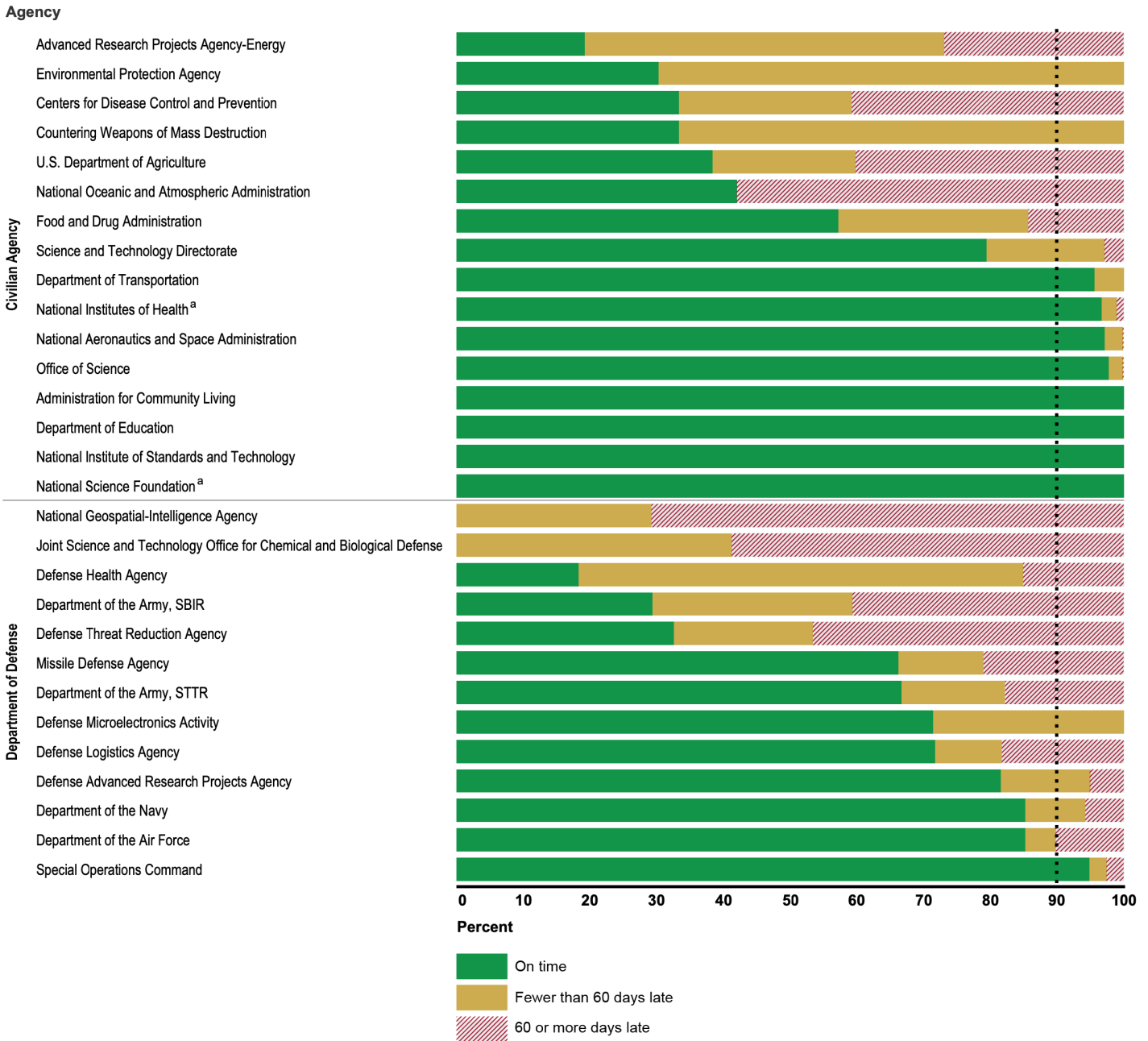


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9 and 10 in appendix II for additional descriptive statistics on award issuance performance by agency.

The extent of the issuance delays varied in fiscal year 2020. Specifically, figure 1 and the appendix tables show agency issuance timeliness can vary across several metrics (percent of awards on time, the percent of awards 60 or more days late, and median and mean issuance times). For example, four agencies issued all of their awards on time, while another three issued more than half of their awards 60 or more days late (see fig. 1).

**Figure 1: Percentage of Awards Issued On Time, Fewer than 60 Days Late, or More than 60 Days Late by Agency, Fiscal Year 2020**



Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-22-104677

<sup>a</sup>The National Science Foundation and National Institutes of Health should issue awards within 15 months. All other agencies should issue an award in no more than 180 calendar days.

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About half of participating agencies improved award issuance timeliness in fiscal year 2020, compared with the previous 4-year period (fiscal years 2016 through 2019). Specifically, we found that 14 of the 29 participating agencies improved their percentage of awards issued within the recommended time by 10 percentage points or more, 10 issued awards within the recommended time at about the same rate (within 10 percentage points), and five declined by 10 percentage points or more (see table 3).<sup>29</sup> For example:

- The Department of Homeland Security’s Science and Technology Directorate met issuance timeliness recommendation for all its awards in fiscal years 2016, 2017, and 2019, though not in fiscal year 2020 (with 79 percent of its awards issued within the recommended time). According to agency officials, the decline in fiscal year 2020 was due to changes in privacy compliance documentation requirements that increased the amount of necessary paperwork and delayed awards that were under negotiation. In addition, changes in operations due to the Coronavirus Disease 2019 (COVID-19) pandemic added to these delays.
- The National Oceanic and Atmospheric Administration’s issuance timeliness declined from 100 percent in fiscal year 2019 to 42 percent in fiscal year 2020. According to agency officials, this was due to changes in operations during the COVID-19 pandemic. For example, small businesses with phase I awards from fiscal year 2019 were given a 90-day extension to complete their work, which in turn delayed the beginning of the phase II process for fiscal year 2020.

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<sup>29</sup>The improvement in award issuance time was statistically significant for 12 of the 14 agencies ( $p < 0.05$ ). The decline in issuance timeliness was statistically significant for all five of the agencies ( $p < 0.05$ ). Also, agencies with a timeliness performance of 90 percent are not able to improve by 10 percentage points.

**Table 3: Participating Agencies' Award Issuance Performance in Fiscal Year 2020, Compared with the Previous 4-year Period**

| Performance | Measure                                   | Number of agencies | Participating departments or agencies   |
|-------------|---|--------------------|---|
| Improvement | Improved by 10 or more percentage points  | 14                 | Administration for Community Living*, Advanced Research Projects Agency-Energy, Defense Advanced Research Projects Agency*, Defense Logistics Agency*, Defense Microelectronics Activity*, Defense Threat Reduction Agency*, Department of Transportation*, Department of the Air Force*, Department of the Army, STTR*, Department of the Navy*, Environmental Protection Agency*, Food and Drug Administration, Office of Science*, and U.S. Department of Agriculture* |
| Decline     | Declined by 10 or more percentage points  | 5                  | Defense Health Agency*, Joint Science and Technology Office for Chemical and Biological Defense*, National Geospatial-Intelligence Agency*, National Oceanic and Atmospheric Administration*, and Department of Homeland Security's Science and Technology Directorate*   |
| No change   | Changed by less than 10 percentage points | 10                 | Centers for Disease Control and Prevention, Countering Weapons of Mass Destruction Office, Department of Education, Department of the Army, SBIR, Missile Defense Agency, National Aeronautics and Space Administration, National Institute of Standards and Technology, National Institutes of Health, National Science Foundation, and Special Operations Command   |

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-22-104677

Note: \*Indicates that the improvement or decline of 10 percentage points or more was statistically significant ( $p < 0.05$ ).

In addition to our analysis of agency timeliness in notifying awardees and issuing awards, we analyzed selected award characteristics—phase (I and II), program (SBIR and STTR), budget authority (e.g., one-year, multiple-year, and no year), award vehicle (e.g., contracts and grants), and award amount—that were potentially associated with timeliness, as well as the time between phase I and a first phase II award. Appendix III contains additional information on these topics.

## Routinely Late Agencies Identified Award Timeliness Risks that Have Not Been Fully Addressed

According to award data from participating agencies, 20 of 29 agencies were routinely late, issuing fewer than 90 percent of their awards within the recommended time for 3 or more of the 5 fiscal years in our review (2016 through 2020). See table 4.

**Table 4: Routinely Late Participating Agencies, Fiscal Years 2016 through 2020**

| Number of years late | Participating departments or agencies <sup>a</sup>  |
|----------------------|---|
| 1                    | Administration for Community Living<br>Department of Transportation<br>National Geospatial-Intelligence Agency <sup>b</sup>   |
| 2                    | Countering Weapons of Mass Destruction Office   |
| 3                    | Advanced Research Projects Agency-Energy<br>Centers for Disease Control and Prevention<br>Defense Advanced Research Projects Agency<br>Defense Health Agency<br>Defense Logistics Agency<br>Defense Microelectronics Activity<br>Defense Threat Reduction Agency<br>Department of the Air Force<br>Department of the Army, SBIR<br>Department of the Army, STTR<br>Department of the Navy<br>Environmental Protection Agency<br>Food and Drug Administration<br>Joint Science and Technology Office for Chemical and Biological Defense<br>Missile Defense Agency<br>U.S. Department of Agriculture |

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-22-104677

<sup>a</sup>We define routinely late as agencies issuing fewer than 90 percent of their awards within the recommended time for 3 or more of the 5 fiscal years in our review (2016 through 2020).

<sup>b</sup>The National Geospatial-Intelligence Agency did not issue SBIR awards in fiscal year 2016. It was routinely late for 3 of 4 years in our data. This difference in the number of years of available data makes the agency's issuance timeliness closer to agencies that were late for 4 of 5 years in our data.

While nearly all of these routinely late agencies have taken some steps to improve timeliness, they identified areas of ongoing and unaddressed risks to timeliness, as described in table 5.

**Table 5: Agencies' Reported Actions to Address Ongoing Risks to SBIR and STTR Award Timeliness**

| Agency  | Actions Taken and Remaining Risks to Timeliness <sup>a</sup>  |
|---|---|
| <i>Administration for Community Living (ACL)</i>            | In fiscal year (FY) 2020, ACL streamlined its peer and internal review processes for evaluating applications and issuing awards. Since FY 2016, ACL has had mixed results in meeting the timeframes for award issuance. In FY 2020, ACL improved its timeliness. However, it is too early to tell whether ACL's recent actions to address timeliness will help the agency sustain its recent progress into future years. ACL officials stated they do not plan to evaluate the effect of these recent changes.  |
| <i>Advanced Research Projects Agency-Energy (ARPA-E)</i>    | ARPA-E cited timeliness delays associated with lengthy negotiations with small businesses. Also, ARPA-E usually issues phase I and II awards at the same time, which requires more time for proposal review and award negotiations. ARPA-E is piloting an effort to use fixed dollar amount grants, which officials believe should help to improve timeliness. However, ARPA-E also uses cooperative agreements for larger and more complex awards that require more time to negotiate. The agency did not describe plans for evaluating the effects of its pilot efforts or how it plans to shorten the time for issuing cooperative agreements within SBA's recommended timeframes.   |
| <i>Centers for Disease Control and Prevention (CDC)</i>     | CDC implemented a new management tool for its grants process and established a dedicated grants services team specifically for research grants including SBIR. However, officials stated that delays can occur due to incomplete applications and applications that may exceed award caps, which require negotiation with the applicant. Officials attributed other delays to a lengthy interdepartmental communication process. Furthermore, CDC noted it relies on NIH to facilitate its award program but has not clarified with SBA whether the longer notification and award timelines provided to NIH can be applied to CDC as well. CDC has not taken steps to address these risks to timeliness and has not evaluated changes to its grants practices to measure their effect on timeliness.  |
| <i>Countering Weapons of Mass Destruction Office (CWMD)</i> | CWMD has adjusted the timing of phase I solicitations to better match reviewer availability, developed simplified and standardized contracts, developed a template for proposal review, and is developing a portal to facilitate the analysis of program data. Although CWMD monitors its program, it has not evaluated the impact of these changes. Officials also stated department-level policy changes that occur during award cycles can affect timeliness. Although CWMD increased staff in 2019, its SBIR program does not have dedicated contracting officers, and officials stated that SBIR contracts compete with other contracting priorities. CWMD has not taken steps to address these risks to timeliness.   |
| <i>Defense Advanced Research Projects Agency (DARPA)</i>    | In FY 2020, DARPA worked closely with and trained SBIR/STTR contracting officers to expedite communication to small businesses about awards and also implemented a streamlined cost guidance document to aid small businesses in the application process. DARPA began these changes in FY 2020; agency officials said they would expect to see the effects on timeliness in FY 2021. DARPA regularly evaluates its award process to streamline procedures and states that most delays are due to working with small businesses unfamiliar with conducting business with the government. For example, award issuance can be delayed because of the time needed to review SBIR/STTR awardees' accounting systems for cost-reimbursement contracts. <sup>b</sup> DARPA has not stated how it plans to assess and mitigate this risk as part of its regular evaluation process. |
| <i>Defense Health Agency (DHA)</i>                          | DHA cited the time-consuming nature of cost-reimbursement contracts as a risk to its timeliness, and said it was moving towards using more fixed-price contracts to save time. DHA officials stated they expected timeliness to improve based on this change in contract type; however, those changes have not resulted in improvements. DHA's timeliness decreased in FY 2020. DHA has not evaluated the effect of recent changes on its award timeliness. The agency also stated that it handles a large number of applications for research involving humans and animals, which take more time to evaluate and can create delays on the small business side as well. DHA believes it should be allotted additional time for these awards, but it has not addressed this with SBA or taken steps to assess this risk.   |

| Agency  | Actions Taken and Remaining Risks to Timeliness <sup>a</sup>  |
|---|---|
| <i>Defense Logistics Agency (DLA)</i>           | DLA instituted a 30-day limit on its internal proposal evaluation process and is working with contracting officers to improve the timeliness of the contract process. DLA’s SBIR program officials stated that insufficient funding availability and lack of contracting prioritization for SBIR contracts have affected its award timeliness. Further, DLA cited the lack of dedicated contracting officers and reliance on another office to process its awards as a challenge to meeting the award issuance timeframes. DLA has not taken steps to mitigate the impact of these risks on timeliness or to evaluate whether the recent changes to its award process will help it consistently meet timeliness requirements.   |
| <i>Defense Microelectronics Activity (DMEA)</i> | DMEA developed an internal policy to establish times for proposal review and contract preparation and timed the release of its solicitations to coincide with anticipated funding availability. DMEA also plans to follow up with internal staff involved in the SBIR/STTR award process. However, DMEA cited delays in coordinating with other offices involved in the review of certain proposals, and has not implemented steps to mitigate this risk or evaluated whether recent changes will allow it to meet timeliness requirements consistently.  |
| <i>Defense Threat Reduction Agency (DTRA)</i>   | DTRA established an award tracking website to have more oversight over award status and shortened proposal evaluation times to allow for more time to prepare and award contracts. However, DTRA cited ongoing issues with delayed proposal evaluations and selections, appropriations delays, workload issues and interdepartmental coordination delays. In addition, DTRA does not have SBIR-dedicated contracting or program staff, and, therefore, SBIR activities compete with other mission priorities. DTRA has not taken steps to address these risks or evaluated whether recent changes will allow it to meet timeliness requirements consistently.   |
| <i>Department of the Air Force</i>              | Beginning in FY 2018, the Air Force began a SBIR and STTR management reorganization process to increase contracting centralization and automation. The agency also established “pitch days” and “contract sprints” <sup>c</sup> to improve timeliness. Air Force has shown improvement in its timeliness since FY 2017. However, Air Force officials also noted that the program’s workload has increased in recent years, requiring staff to meet SBA’s SBIR/STTR policy directive timelines for several hundred more awards per year. It is unclear if Air Force’s steps will be sufficient to address this workload issue, and Air Force has not developed a plan to evaluate the effects of recent program changes on timeliness.   |
| <i>Department of the Army-SBIR</i>              | The agency said that a lack of dedicated contracting officers was a key risk to timeliness in addition to a lack of standardized contracting procedures for its SBIR awards. The Army has not yet instituted a centralized contracting center, though the need for dedicated contracting support has been under internal discussion for more than one year. Army officials stated they have not analyzed how these risks affect timeliness. Army also officials stated that they divided their SBIR award portfolio into two parts starting in FY 2021 to better meet varied mission needs and improve timeliness, and have not yet evaluated the impact of these changes.  |
| <i>Department of the Army-STTR</i>              | In FY 2020, the Army reduced the required length of STTR proposals, which has decreased the proposal review time and time to notification, allowing for more time to meet issuance timeliness recommendations. While the agency has noted a link between earlier award selections and overall award issuance timeliness, it has not evaluated whether the decreases in proposal review time will allow it to meet overall timeliness requirements consistently. The Army has not yet instituted a centralized contracting center, though the need for dedicated contracting support has been under internal discussion for more than one year. Officials noted that high contracting staff turnover has led to staffing shortages, and low-dollar value STTR awards receive less priority than other types of contracts with higher values. |
| <i>Department of the Navy</i>                   | The Navy established dedicated contracting officers for most of its SBIR/STTR offices, using a new form of award instrument—a basic ordering agreement—for phase I awards to simplify the contracting process, and limiting the length of submitted proposals. However, the Navy found that its use of customized templates and processes was more time-consuming. Navy officials stated that they previously evaluated risks to timeliness and implemented a number of new practices in FY 2020. Navy has not yet evaluated whether the recent changes will allow it to meet timeliness requirements consistently.   |

| Agency   | Actions Taken and Remaining Risks to Timeliness <sup>a</sup>  |
|--|---|
| <i>Department of Transportation (DOT)</i>                                      | In FY 2020, DOT standardized its proposal review process, created a phase I model contract to aid small businesses in the application process and avoid contract negotiation delays, and introduced “pitch days.” DOT is also assessing options to streamline the documentation requirements for phase I awards. DOT officials stated that, due to the small size of their program, they have not formally assessed risks to timeliness, relying instead on anecdotal assessments and changes in timeliness data.   |
| <i>Environmental Protection Agency (EPA)</i>                                   | EPA officials stated they streamlined and simplified the proposal review process in FY 2020, acquired an electronic review system, and changed their notification process, all of which they expect will improve future timeliness. As EPA continues to employ a two-stage review process, the extent to which the steps taken will fully address its award issuance delays is unknown, particularly as EPA has not issued more than 30 percent of their awards on time in any of the 5 years of our review. EPA has not evaluated the effect of these recent changes.  |
| <i>Food and Drug Administration (FDA)</i>                                      | Funding availability for the program usually is unknown until about halfway through each fiscal year, so FDA does not make awards until after this time to prevent further delays. FDA relies on NIH for proposal review and notification and has not clarified with SBA whether the longer notification and award timelines provided to NIH can be applied to FDA as well. As a result, FDA is issuing awards later than the 180 days permitted by SBA’s SBIR/STTR policy directive. FDA has not evaluated whether clarifying with SBA if the longer timeframes allotted to NIH would help the agency address its timeliness risks.  |
| <i>Joint Science and Technology Office for Chemical and Biological Defense</i> | The agency cited a lack of dedicated contracting officers and saw it as a DOD-wide risk that it was not in a position to address. Officials also mentioned that some contracting officers preferred to use more time-consuming cost-reimbursement contracts. The agency is considering soliciting proposals for fewer topics going forward, which might help with proposal review timeliness, but otherwise has not evaluated potential steps to address risks to timeliness.   |
| <i>Missile Defense Agency (MDA)</i>  | In FY 2020, MDA took steps to streamline the award process with its SBIR/STTR contracting office. Specifically, MDA instituted a virtual approval process due to increased telework during the COVID-19 pandemic and took steps to maintain a closer working relationship between program office and contracting officials. The agency has not evaluated whether these changes will allow it to meet overall timeliness requirements. Officials also noted particular timeliness challenges with the type of award vehicle (cost-reimbursement contracts) they use for phase II awards but has not taken steps to mitigate the impact of this risk on timeliness.   |
| <i>National Geospatial-Intelligence Agency (NGA)</i>                           | Officials stated that a lack of standardized award procedures was a risk to timeliness and recently made changes including implementing standardized award procedures and establishing a time limit on the internal proposal review process. The agency has yet to evaluate whether the changes will allow it to consistently meet overall timeliness requirements. In addition, NGA has not addressed ongoing staff resource issues and has struggled to prioritize funding for SBIR/STTR awards.  |
| <i>U.S. Dept. of Agriculture (USDA)</i>  | USDA set deadlines and established dedicated leads for its external peer review process, hired additional staff, and increased training. In an effort to better manage its award review process, at the end of FY 2020, USDA implemented a planning and implementation tool to help provide visibility and ensure accountability of program, financial, and policy staff from announcement to award. USDA has not evaluated the effect of its recent changes on award timeliness. In addition, due to complexities in the nature of proposals submitted, USDA must recruit reviewers with specialized expertise for each topic. Agency officials stated they believe USDA should be allocated the same extended timeframes provided to NIH and the National Science Foundation. Although USDA officials stated this is a priority, they have not yet addressed this issue with SBA or assessed the effect of such a change. |

Source: GAO analysis of agency information, documents, and Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) data. | GAO-22-104677

<sup>a</sup>Although some agencies noted delays caused by the COVID-19 pandemic, these agencies had a pattern of late notification and awards that pre-dates the pandemic effect. One agency stated that moving to a virtual working format decreased process times and had a positive effect on timeliness.

<sup>b</sup>According to some agencies and our analysis of agency data, cost-reimbursement contracts can take longer to issue. Agency officials attribute the difference to the need to review the awardee’s accounting system in accordance with federal acquisition regulations.



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<sup>o</sup>Agencies described “pitch days” as scheduled events where small business applicants give brief presentations to proposal reviewers, with decisions made shortly thereafter. “Contract sprints” ensure the availability of contracting officers and have contributed to a reduction in the time it takes to issue awards by streamlining award issuance activities.

The SBA SBIR/STTR policy directive requires that participating agencies notify selected awardees of their selection within 90 days after the solicitation closing and recommends that participating agencies issue an award within 180 days after the closing date.<sup>30</sup> Despite taking some steps to address delays in issuing SBIR/STTR awards, these agencies have not demonstrated consistency in issuing awards on time. For example, none of the 20 routinely late agencies have issued 90 percent or more of their awards on time for 2 consecutive years since FY 2016.<sup>31</sup> As illustrated earlier in table 4, 16 of the 20 routinely late agencies did not have a single fiscal year from 2016 through 2020 where they issued 90 percent or more of their awards on time.<sup>32</sup> Moreover, these routinely late agencies contributed to an estimated 5,844 late awards valued at over \$3 billion issued between fiscal years 2016 and 2020 (see fig. 2).

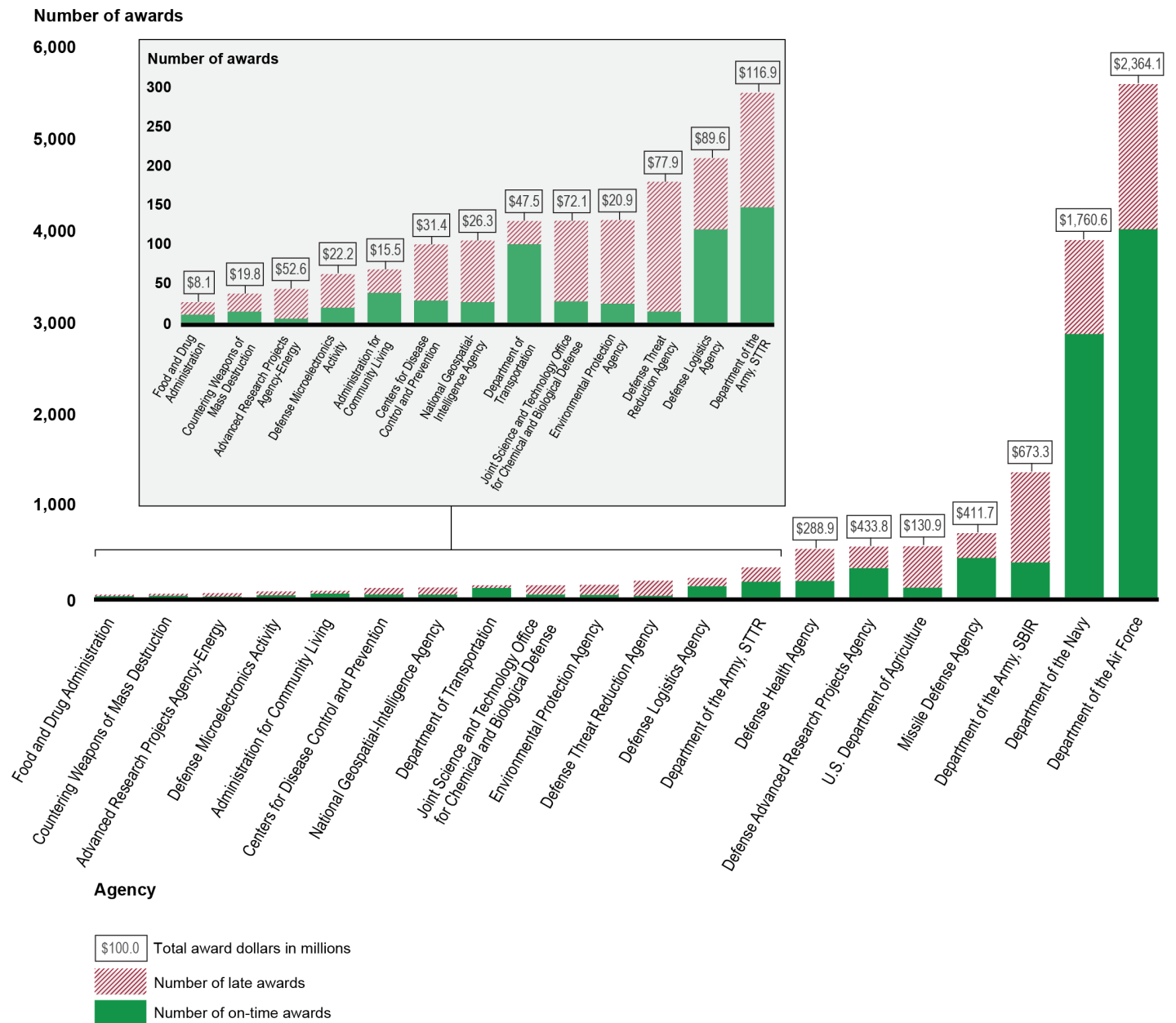
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<sup>30</sup>SBIR/STTR Policy Directive § 7(c)(1). NIH and NSF have up to 1 year after the solicitation closing date to notify selected awardees and up to 15 months from that date to issue their awards.

<sup>31</sup>The steps described by the agencies above may have led to some improvements in award issuance timeliness, according to agency officials and our analysis, though the effects of more recent steps may not be realized until fiscal year 2021 or later.

<sup>32</sup>Two routinely late agencies’ data identified a single year where they issued 90 percent or more of their awards on time: Countering Weapons of Mass Destruction Office and National Geospatial-Intelligence Agency. Two routinely late agencies’ data identified 2 years where they issued 90 percent or more of their awards on time: Department of Transportation and Administration for Community Living. Neither of those two agencies with 2 years on time has had consecutive years on time. See appendix II, table 10.

**Figure 2. Number and Total Value of Late SBIR and STTR Awards Issued by Routinely Late Agencies**



Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-22-104677

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The risks these agencies identified may be contributing in whole, or in part, to their challenges to consistently issue awards on time, which can negatively affect small businesses. For example, according to a few of the small businesses that responded to our questionnaire, they had to release employees or reduce employees' schedules from full-time to part-time because of the delays with FY 2019 awards. Many of the small businesses stated that late awards had a number of negative effects, including:

- Needing to transfer employees to other projects
- Delaying project activities
- Impediments to their ability to hire or retain employees
- Impediments to the commercialization and launch of new products
- Needing to seek other sources of funding
- Needing to cut expenses to address financial difficulties
- Needing to raise overhead costs

*Standards for Internal Control* calls for agencies to respond to risks they identify that could be impeding progress towards achieving their objectives—in this case, meeting SBIR/STTR program award issuance timeframes consistent with SBA's SBIR/STTR policy directive.<sup>33</sup> Further, consistent with internal control standards, agencies are to evaluate the effectiveness of corrective actions taken to address risks. By evaluating the effectiveness of steps they have taken to improve timeliness, agencies will be better positioned to fully respond to the risks they identified and take any necessary additional steps to help ensure they are consistently meeting award issuance timeframes specified in SBA's policy directive.

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## Most Agencies Issued Awards to Small Businesses They Selected; the Air Force Did Not Consistently Do So

After selecting small businesses and informing them that they would receive an SBIR or STTR award, participating agencies generally issued those awards. However, the Air Force is an exception, and while it has taken steps to address this issue, the team it has tasked with addressing a backlog of unissued awards lacks documented policies and procedures to govern its process.

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<sup>33</sup>[GAO-14-704G](#).

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## Nearly All Agencies Issue Awards after Notifying Small Businesses of Their Selection

According to agency officials, instances of agencies not issuing awards after notifying small businesses of their selection were rare from fiscal years 2016 through 2020. For example, 23 of the 29 participating agencies had 10 or fewer instances, and 11 of these had none. Agencies estimated 107 such instances, with potential awards valued at about \$57 million, excluding the Air Force (see below). Table 12 in appendix IV provides more details.

Agencies had various reasons in the instances when they did not issue an award after notifying a small business of its selection. For example, one agency reported that a small business filed for bankruptcy and went out of business. In other cases, agency officials stated that the small business withdrew its proposal. Most agencies described a variety of processes and procedures to help ensure that all small businesses that are notified of their selection for award actually receive the award. For example, agencies reported using checks between contracting officers and program managers, specific tracking numbers which are flagged if a funding date is missed, an online tracking system, or regular status updates.

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## Air Force Lacks Documented Policies and Procedures for Addressing Unissued Awards

According to Air Force documentation and agency officials, as of July 2021, the Air Force had identified 365 instances from fiscal years 2016 through 2020 of awards that were not issued.<sup>34</sup> These instances included (1) notifications of selection not followed by award, (2) Air Force not responding to phase II proposals submitted by small businesses, or (3) not requesting phase II proposals. The Air Force's actions resulted in award processing delays and small businesses' confusion regarding whether they would receive an award.

According to agency officials, in FY 2018, the Air Force began a process to reorganize and centralize parts of its SBIR and STTR program. Subsequently, officials stated, the Air Force also changed how it solicited new technologies from small businesses through its SBIR and STTR programs—transitioning from using mostly traditional specific topics to

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<sup>34</sup>The Air Force refers to these as 365 separate instances; some small businesses had more than one instance. We refer to these instances generally as unissued awards for simplicity, but the specific delay can occur at different points in the proposal review or award issuance processes based on the type of delay. Our non-generalizable sample confirmed some instances of selections not being followed by awards but was not designed to corroborate all instances.

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open topics in its solicitations.<sup>35</sup> According to Air Force officials, these changes occurred without clear guidance and direction, causing confusion regarding how the changes would be implemented and by which offices, as well as the amount of available funding allocated for each office (to align with the program change). Officials stated that this series of events caused three types of instances, including<sup>36</sup>:

1. **Selected but not awarded.** Air Force officials estimated 34 instances (9 percent of total instances) in which the Air Force had notified a small business they were selected for a phase I or II award, though later told them the award would not be issued for funding reasons.
2. **Proposal submitted and no response.** Air Force officials estimated 73 instances (20 percent of total instances) in which small businesses had submitted a phase II proposal, though the Air Force did not respond to their proposal.
3. **No request for proposals.** Air Force officials estimated 258 instances (71 percent of total instances) in which the Air Force did not invite small businesses to submit a phase II proposal through a request for proposals after phase I ended, although the Air Force SBIR/STTR procedures state that phase I participating businesses should receive instructions for submitting proposals for phase II awards.

In response to our questionnaire, small businesses highlighted these award issues, and said they negatively affected their business. For example, a few stated that they have been waiting for over a year to hear from the Air Force about whether they will receive an award, which has led to personnel and financial challenges.

According to Air Force officials, as of July 2021, the Air Force had fully resolved 179 instances (49 percent of total instances) by obligating funding for awards, issuing awards, or determining which applicants would not receive an award after reviewing small businesses' proposals. As of July 2021, the Air Force has not fully resolved the remaining 186 instances (51 percent of total instances), and plans to allocate FY 2021 funding to issue awards for selected proposals.

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<sup>35</sup>In contrast to traditional topics which request applicants submit solutions for specific problems with identified criteria, open topics solicit innovative dual-purpose (commercial and military) technologies or solutions.

<sup>36</sup> The greatest number of instances were in fiscal year 2019 and for SBIR phase II awards.

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According to agency officials and documentation we reviewed, the Air Force has instituted some processes and procedures to help ensure the issue does not happen again. Examples include:

- In March 2021, the Air Force started requiring offices to use its electronic database to manage and document the process for each SBIR and STTR award, including for proposals and awards that fall under the three types of delays. The Air Force believes that widespread use of this database will prevent potential reoccurrence of the delays.
- The Air Force established a new centralized budgeting process that clarifies the amount of funding available for SBIR and STTR awards, possibly preventing future uncertainty, and ensuring sufficient funding is available.

While these steps may help to prevent future instances, we found that the Air Force's process to address the 365 instances of unissued awards does not include having documented comprehensive policies or procedures for how the Air Force is identifying and addressing the issue, thereby making it difficult to determine whether all of the instances have been identified and are being addressed.<sup>37</sup> According to agency officials, the Air Force's process for addressing the instances includes the following:

- In December 2020, the Air Force established a team (which they deemed the "Tiger Team," hereafter called the "team") to identify and address the 365 instances. However, the Air Force stated the formation of the team was "ad hoc," and the Air Force has not documented policies and procedures to govern its process. Specifically, the Air Force has no documentation of the team's establishment, function, and responsibilities. Such documentation can help ensure the team has sufficient direction and understanding of its role in resolving the issue or ensure process continuity in the event of staff turnover.
- The team also surveyed Air Force mission teams to determine the nature and extent of the issue, but does not have documentation on the approach it is using to validate and address instances. For example, the Air Force does not have documented policies or procedures regarding how the team was to confirm that it captured all

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<sup>37</sup>More specifically, we were unable to validate instances of the issue through Air Force documentation, though we were able to validate some instances through a questionnaire sent to a non-generalizable sample of small businesses.

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instances, as well as validate instances they identified to ensure they are relevant. In addition, the Air Force did not have documented policies or procedures regarding how the team was to address the instances, particularly for each type of delay, or regarding what communication would be made with the affected small businesses.

- While the team is using a spreadsheet to track the resolution of the instances, the Air Force did not have procedural or guidance documents outlining how this spreadsheet is maintained and how the team ensures its accuracy. Such procedures might include who has authority to update the spreadsheet and what criteria are used to determine when an instance has been resolved.

The *Standards for Internal Control* state that management should implement control activities through documented policies and procedures to address operational risks that can hinder program effectiveness.<sup>38</sup> For example, the standards call for management to establish and document policies and procedures, which in this case could better position the Air Force to help ensure a common understanding of roles, responsibilities, and processes. Such documentation can also mitigate the risk of having key institutional knowledge that is limited to a few personnel. Further, documenting corrective actions can better facilitate the Air Force's control activities, such as continuous review and audits, to ensure these actions are sufficient and effective to address the instances. In addition, having a comprehensive and documented policies and procedures that details how the Air Force team is identifying and addressing the issue, may help ensure adequate controls are in place to fully address the issue.

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## DOD Has Not Established a Pilot Program to Improve Timeliness as Required by Law

The FY 2019 NDAA included a requirement for DOD's OUSD R&E to establish a pilot program to improve the timeliness of DOD's SBIR and STTR awards,<sup>39</sup> though OUSD R&E has not done so. Specifically, the FY 2019 NDAA requires OUSD R&E acting through the Director of Defense

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<sup>38</sup>GAO-14-704G.

<sup>39</sup>Pub. L. No. 115-232. § 854(b)(1)(C), 132 Stat. 1636, 1887 (2018), codified at 15 U.S.C. § 638(hh)(2).

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### Small Business Perspective

A few small businesses that responded to our questionnaire stated that the contracting process for SBIR and STTR awards is not well-adapted to small businesses who have fewer resources and staff. A few small businesses suggested agencies streamline and standardize their process and use contract templates (similar to the statutory requirements) to make the process less cumbersome on small businesses.

Source: GAO analysis of small business questionnaire responses. | GAO 22-104677

Pricing and Contracting office<sup>40</sup> (DPC) to establish a pilot program by August 13, 2019, to reduce the time for awards under DOD's SBIR and STTR programs, and to:

- Develop simplified and standardized procedures and model contracts<sup>41</sup>
- Specifically reduce the amount of time to be as close to 90 days as possible: (1) to issue phase I awards;<sup>42</sup> (2) between phase I and phase II awards;<sup>43</sup> (3) to issue direct to phase II awards;<sup>44</sup> and (4) between phase II awards<sup>45</sup>
- Consult with the DOD's Office of Small Business Programs in carrying out the pilot program.

Based on our interviews with DOD agency officials and our review of agency documents and the FY 2019 NDAA, we found:

- **OUSD R&E activities do not meet pilot program requirements.** The FY 2019 NDAA specifically calls for OUSD R&E, acting through DPC, to establish a pilot program, and it has not done so. According to OUSD R&E and DPC officials, it is not feasible for them to establish a formal DOD-wide pilot program, and they are unable to implement all the elements specifically required by the statute due to significant challenges. For example, these officials explained that standardizing and providing DOD-wide contracting guidance would be difficult and too prescriptive and would stifle innovation given the wide variation and autonomous nature of the contracting authorities and practices among the DOD participating agencies. As a result, DOD has not established standardized procedures and model contracts for SBIR phase I, II, or III awards in accordance with the statute. However, OUSD R&E has undertaken some activities that may contribute to

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<sup>40</sup>Formerly known as the Defense Procurement and Acquisition Policy office, Defense Pricing and Contracting (DPC) is responsible for all policy matters related to pricing, contracting, and procurement in DOD.

<sup>41</sup>Specifically, throughout DOD for phase I, phase II, and phase III SBIR awards.

<sup>42</sup>Between solicitation closure and award.

<sup>43</sup>Between the end of a phase I award and the start of the phase II award.

<sup>44</sup>For phase II awards that skip phase I, reduce the amount of time between solicitation closure and award for the phase II.

<sup>45</sup>For sequential phase II SBIR and STTR awards, reduce the amount of time between phase II awards.



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award timeliness. For example, according to officials, OUSD R&E established the Contracting Officers Working Group and SBIR/STTR Program Managers meetings to discuss and share best practices across the DOD participating agencies.

- **Individual DOD participating agency activities do not fully meet the pilot program requirements.** According to OUSD R&E and DPC officials, some of the DOD participating agencies have established their own pilot programs to address the challenges of timeliness in innovative ways. However, according to our analysis, not all DOD participating agencies have taken steps to improve award timeliness, or standardize and simplify their acquisition procedures or develop model contracts templates, in accordance with statutory requirements. For example, the Joint Science and Technology Office for Chemical and Biological Defense has not undertaken pilot activities to improve award timeliness, or taken steps to standardize and simplify its acquisition procedures or develop contract templates, according to agency officials.
- **DOD participating agencies are not meeting timeliness requirements.** Our analysis of agency data shows that, of the 13 DOD participating agencies, three met notification requirements and none met award issuance recommendations for all of their awards in FY 2020. In addition, DOD participating agencies are generally less timely than civilian agencies, with nine DOD agencies issuing 10 to 70 percent of their awards 60 or more days late in FY 2020, as illustrated earlier in fig. 1 of this report. DOD, in aggregate, has had modest improvements in timeliness, from 83 to 86 percent of awards notified on time and from 62 to 74 percent of awards issued on time in fiscal years 2016 and 2020, respectively (see table 10 in appendix II).

By not meeting the statutory requirements to establish a pilot program, or not reporting to Congress if the requirements are infeasible, OUSD R&E and DOD participating agencies are missing an opportunity to further improve their award timeliness, which could benefit DOD's ability to obtain technology solutions more quickly, as well as ensure the continued financial viability of small businesses that can help DOD participating agencies achieve their mission.

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## Conclusions

SBIR and STTR awards significantly contribute to the growth of innovative small businesses, as well as to solutions to agencies' science and technology related problems. For example, in FY 2020, 29 SBIR and STTR participating agencies awarded over \$3 billion through more than 7,000 awards to small businesses. According to small businesses who receive these awards, agencies' timeliness has been a challenge that

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negatively affects their business. We found that most federal agencies are not consistently making timely awards to small businesses, despite having identified risks that contribute to delays. Absent an evaluation of steps already taken to improve timeliness and any necessary additional steps, agencies will likely continue to issue late awards, impeding small business growth and financial viability and delaying agencies' access to science and technology solutions to meet their needs. In addition, while we found that nearly all agencies issued awards to small businesses they had informed of selection, the Air Force has not consistently done so. While the Air Force has taken steps to address this issue, it has not documented the policies, responsibilities, and procedures for the corrective actions to ensure the issue has been fully addressed and will not reoccur. Furthermore, DOD's Office of the Under Secretary for Research and Engineering has not implemented a statutorily-required pilot program to improve timeliness. While the office has taken some steps, the requirements have not been fully addressed, nor has the office reported to Congress that the requirements are infeasible. Not establishing this statutorily-required program puts future timely awards at risk.

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## Recommendations for Executive Action

We are making a total of 22 recommendations to 20 agencies: 14 to the Department of Defense, three to the Department of Health and Human Services, one to the Department of Agriculture, one to the Department of Energy, one to the Department of Homeland Security, one to the Department of Transportation, and one to the Environmental Protection Agency. Specifically:

- The Administrator of the Administration for Community Living should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 1)
- The Director of the Advanced Projects Research Agency-Energy should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 2)
- The Secretary of Agriculture should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 3)

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- The Secretary of the Air Force should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 4)
  - The Secretary of the Army should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 5)
  - The Secretary of the Army should evaluate the effectiveness of steps taken to improve STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 6)
  - The Director of the Centers for Disease Control and Prevention should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 7)
  - The Assistant Secretary for Countering Weapons of Mass Destruction should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 8)
  - The Director of the Defense Advanced Research Projects Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 9)
  - The Assistant Secretary of Defense for Health Affairs should evaluate the effectiveness of steps taken to improve the Defense Health Agency's SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 10)
  - The Director of the Defense Logistics Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 11)
  - The Assistant Secretary of Defense for Sustainment should evaluate the effectiveness of steps taken to improve the Defense Microelectronics Activity's SBIR and STTR award timeliness and take

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any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 12)

- The Director of the Defense Threat Reduction Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 13)
- The Administrator of the Environmental Protection Agency should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 14)
- The Commissioner of the Food and Drug Administration should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 15)
- The Director of the Joint Science and Technology Office for Chemical and Biological Defense should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 16)
- The Director of the Missile Defense Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 17)
- The Director of the National Geospatial-Intelligence Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 18)
- The Secretary of the Navy should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 19)
- The Secretary of Transportation should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (Recommendation 20)

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- The Secretary of the Air Force should document policies and procedures for the team tasked with addressing the previously unissued SBIR and STTR awards. (Recommendation 21)
  - The Under Secretary of Defense for Research and Engineering acting through the Principal Director of Defense Pricing and Contracting should establish a pilot program to improve timeliness or report to Congress on the infeasibility of these requirements. (Recommendation 22)

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## Agency Comments and Our Evaluation

We provided a draft of this report to SBA and the 11 federal agencies that participated in the SBIR and STTR programs in fiscal years 2016 through 2019 for their review and comment. The Department of Commerce, Department of Education, NASA, NSF, and SBA did not provide written comments. Written comments from the other seven agencies are reprinted in appendices V through XI and summarized below. DHS and DOE also provided technical comments, which we incorporated as appropriate.

In their letters, DHS, DOE, HHS, DOT, and EPA stated they agreed with the recommendations, and USDA stated it concurred with the findings. In some cases, agencies' written comments described planned or completed actions to address the recommendations. We will collect documentation to determine if the agencies' actions address the intent of the recommendations.

DOD concurred with 12 of the 14 recommendations, did not concur with the recommendation for DARPA, and partially concurred with the recommendation for the Office of the Undersecretary for Defense for Research and Engineering (OUSD R&E).

- For DARPA, DOD stated in its letter that the agency had improved its SBIR and STTR award timeliness in 2020 and continuously reviews its programs and procedures to keep making improvements. In addition, DARPA cited factors outside of their control that affect timeliness, such as delays in small businesses' responses to contracting officers. As detailed in Table 10 in App. II, DAPRA struggled with timely issuance between FY 2016 and FY 2019, with a low of 25 percent on time award issuance in FY 2018. As we noted in Table 5 of this report, DARPA made a number of changes to its SBIR/STTR program in FY 2020, such as training contracting officers and implementing streamlined guidance for small businesses, which likely contributed to its issuing 82 percent of awards on time in FY

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2020. We maintain that evaluating the steps it has taken and taking any necessary additional steps can better position DARPA to sustain its recent progress to consistently issue timely awards beyond FY 2020. For example, DARPA could take additional steps to identify why small businesses have response delays and could develop additional support and/or guidance to the businesses.

- In its written response, DOD stated that it partially concurred with the recommendation to establish a pilot program or report to Congress on the infeasibility of the requirements. DOD stated in its letter that, as GAO recommended, the Department plans to report to Congress on the infeasibility of OUSD R&E implementing a DOD-wide pilot program to improve timeliness. DOD also elaborated on various reasons why a DOD-wide pilot program would be infeasible, such as a lack of a common system for awarding contracts and that a model contract or process would not work across the Department.

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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](mailto: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 XII.



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

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*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 Cardin  
Chairman  
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 Velázquez  
Chairwoman  
The Honorable Blaine Luetkemeyer  
Ranking Member  
Committee on Small Business  
House of Representatives

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# Appendix I: Objectives, Scope, and Methodology

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This report—the third of the annual reports required by the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (FY 2019 NDAA) and in accordance with the conference report accompanying the William M. (Mac) Thornberry NDAA for Fiscal Year 2021 (FY 2021 NDAA) —examines (1) how timely participating agencies were in notifying applicants and issuing SBIR and STTR awards from fiscal years 2016 through 2020, (2) the extent to which participating agencies have addressed risks to SBIR and STTR award timeliness, (3) the extent to which SBIR and STTR participating agencies have informed small businesses of their selection without issuing an award for fiscal years 2016 through 2020, and (4) the extent to which the Department of Defense has established a pilot program to improve timeliness in issuing SBIR and STTR awards.

The scope of our review included the 11 agencies that participated in either or both of the SBIR or STTR programs in fiscal years 2016 through 2020. Within the 11 federal agencies that participated in the SBIR and STTR programs, five—the Departments of Commerce, Defense, Energy, Health and Human Services, and Homeland Security—have among them a total of 23 components that issue SBIR and 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 6).



**Table 6: Twenty-Nine Agencies or Component Agencies Participating in Small Business Award Programs**

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

Source: GAO analysis of agency data. | GAO 22-104677

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

<sup>a</sup>The Department of the Army oversees SBIR and STTR awards through two program offices.

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<sup>1</sup> made by 29 participating agencies during FY 2020, the most recent year for which data were available.<sup>2</sup> For each of these awards, we repeated the analysis we conducted for our prior award reports. We conducted additional analyses related to timeliness to address issues raised in agency

<sup>1</sup>The 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 R&D 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).

<sup>2</sup>In the context of all 29 agencies in this report, 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.

comments in our prior reports. Specifically, we analyzed data from FY 2016 through FY 2020 to identify associations between timeliness and other characteristics, such as award phase, program (SBIR or STTR), and award vehicle. We also calculated the time between the end of phase I awards and the beginning of the first related phase II award.

We analyzed participating agencies' data to determine their timeliness in notifying awardees and issuing awards in FY 2020 and to identify trends and changes, if any, since our last reports.<sup>3</sup> In particular, for every award issued in FY 2020, 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.<sup>4</sup>

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 of 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.<sup>5</sup> 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

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<sup>3</sup>[GAO-19-620](#) and [GAO-20-693](#).

<sup>4</sup>SBA'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.

<sup>5</sup>In 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.

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time.<sup>6</sup> We counted notification or issuance as late if they were 1 or more days past the required or recommended period of time.

We combined data on awards for FY 2020 with data from our previous reports on awards made in fiscal years 2016 through 2019 to determine:

1. whether participating agencies' timeliness in FY 2020 improved or declined by 10 percentage points or more over their average timeliness rate in fiscal years 2016 through 2019, including whether that change was statistically significant;<sup>7</sup>
2. the percentage of awardees that participating agencies notified within the required time period and the percentage of awards that agencies issued within the recommended time over fiscal years 2016 through 2020; and
3. which agencies were routinely late in issuing awards.<sup>8</sup>

We also combined data from fiscal years 2020 and 2019 to calculate the median time between phase I and associated first phase II awards.<sup>9</sup> Specifically, we calculated the time between the phase I end of period of performance and phase II beginning of period of performance.

To examine the effect award characteristics may have on timeliness, we conducted a regression analysis that tested for associations between the select award characteristics and issuance timeliness. We included the following characteristics in our analysis: award phase (I and II), program

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<sup>6</sup>An 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.

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

<sup>8</sup>We define routinely late agencies as agencies that issued less than 90 percent of their awards within the recommended timeframe for 3 or more of the 5 fiscal years in our review (2016 through 2020).

<sup>9</sup>We did not have data on related phase I awards or phase II awards issued in fiscal years 2016 through 2018. Our analysis excluded phase II awards that followed an initial phase II, as well as direct to phase II awards. We excluded the Advanced Research Projects Agency-Energy from this analysis because they negotiate and award a single agreement for all phases, which they say eliminates the time between awards. When the agency verifies that an awardee has completed a phase, the awardee can then immediately transition to the next phase; for example, agency officials described one award that transitioned from one phase to the next phase on the same day. This process did not have comparable dates to those provided by other agencies so we could not perform a similar calculation.

(SBIR and STTR), budget authority (e.g., 1-year, multiple-year, and no year), award vehicle (e.g., contracts and grants), and award amount. These characteristics were selected based on agency reporting and the FY 2019 NDAA. In addition, we sent question sets to agencies regarding:

- Any changes they made to their process that may affect the data
- Any challenges or issues regarding the data
- The effect, if any, the COVID-19 pandemic has had on timeliness
- Award characteristics (e.g., phase or program) that affect timeliness the most and whether data on this is collected and analyzed
- Strengths and weaknesses of various award vehicle types (e.g., grants and contracts)
- Budget authorities
- Practices used and challenges encountered to minimize the time between phase I and II awards

We took several steps to assess the reliability of participating agencies' award data for FY 2020. 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.<sup>10</sup> We followed up with participating agencies, who 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 they made to their process for reviewing proposals and issuing awards or challenges 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.

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<sup>10</sup>As part of our assessment, we identified 53 duplicate observations where certain agencies submitted the same award more than once. These typically occurred in separate data submissions to GAO covering different fiscal years. We classified each potential duplicate observation to a fiscal year based on the fiscal year of the award issuance date and removed the duplicate observation that was not in that year. This resulted in changes to some percentages reported in prior engagements.

To determine the extent to which agencies have addressed risks they identified to award timeliness, we determined which agencies were routinely late—participating agencies that issued less than 90 percent of their awards within the recommended timeframe for 3 or more of the 5 fiscal years in our review (2016 through 2020).<sup>11</sup> We then compared agencies efforts against Standards for Internal Control in the Federal Government.<sup>12</sup> The monitoring component of internal control—when management assesses the quality of performance over time—was significant to this objective. Equally significant was the related principle that management should operate monitoring activities to track the internal control system and to evaluate the results. We requested and reviewed supporting documentation and sent question sets to agencies regarding:

- The reasons for their delay and risks to timeliness
- Extent to which risks have been identified, assessed, and addressed
- Any changes to practices to improve timeliness and address risks
- Effective practices to improve timeliness and address risks

In addition, to understand the effect notification and award issuance delays have had on small businesses, we solicited opinions from a non-generalizable sample of small businesses.<sup>13</sup> Our sampling approach covered late award notifications and issuances for FY 2019, including (1) a random sample of one late award notification and one late award issuance from each agency<sup>14</sup> and (2) a convenience sample of small businesses identified by the Air Force as being affected by their award timeliness issue, and received a late notification or award in FY 2019. This resulted in a sample of 84 small businesses, which is not generalizable to all small businesses. We developed and pretested a questionnaire with three small businesses and revised our questions

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<sup>11</sup>In the context of routinely late agencies in this report, we use “nearly all” for 16 to 19 agencies, “most” for 11 to 15 agencies, “some” for six to 10 agencies, and “few” for one to five agencies.

<sup>12</sup>[GAO-14-704G](#).

<sup>13</sup>In this report and in the context of small business responses to our questionnaire, we define “most” as 30 to 43, “many” as 20 to 29, “several” as 10 to 19, and “few” as one to nine.

<sup>14</sup>Not all agencies had late notifications or awards in fiscal year 2019, so the random sample covered 25 of the 29 participating agencies.

based on their input. The questionnaire contained questions regarding agency notification and award issuance delays, such as:

- The nature and extent of the delays they experienced
- The reasons for the delays, if known, and whether the small business contributed to the delay
- The effect the delay had on their small business
- Practices agencies can consider to improve their timeliness
- Success stories
- Characteristics of the small business responding to the question, such as its: number of employees, percent annual funding from SBIR/STTR programs, number of SBIR/STTR awards received to date, and agencies they have received SBIR/STTR awards from to date

We received responses from 44 of the 84 small businesses (52 percent response rate). We determined that the non-generalizable sample was sufficient to obtain illustrative examples of the effect delays have on small businesses as well as to better understand small business perspectives regarding agency timeliness.

To determine the extent to which SBIR and STTR participating agencies reported instances of informing small businesses of award selection but did not issue awards between fiscal years 2016 through 2020, we reviewed information provided by agencies. The control activities component of internal control—the actions management establishes through policies and procedures to achieve objectives and respond to risks—was significant to this objective, along with the related principle that management should implement control activities through policies. To assess this principle, we sent question sets to agencies regarding:

- Processes used to inform and notify successful applicants
- Number of instances
- Estimated value of instances
- How instances would appear in their data, if at all
- Reasons why instances occurred
- Steps taken to address instances
- Existence of internal controls to detect and address instances

We also asked for documentation from agencies to support their answers and interviewed and requested additional documentation from the Air Force.

To determine the extent to which the Department of Defense has implemented FY 2019 NDAA requirements to establish a pilot program to improve timeliness in issuing SBIR and STTR awards, we interviewed officials at the Under Secretary of Defense for Research and Engineering, DOD's Defense Pricing and Contracting, and DOD's Director of the Office of Small Business Programs and requested supporting documentation. We also sent question sets to participating DOD agencies regarding their activities to improve timeliness, such as:

- Pilot activities, when they started, the extent to which pilot activities covered all awards, whether awards resulting from pilot activities were tracked, the costs associated with pilot activities, the effect of pilot activities, and whether the pilot activities were reviewed or evaluated
- Whether simplified and standardized procedures and model contracts have been developed
- Future plans, if any, to implement activities to improve timeliness

We requested supporting documentation from agencies. We also reviewed the FY 2019 NDAA pilot program requirements as well as DOD-wide and DOD participating agency timeliness trends since FY 2016.

We conducted this performance audit from December 2020 to October 2021 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.

# Appendix II: Participating Agency SBIR and STTR Award Timeliness Data

**Table 7: Number of SBIR and STTR Awards, Mean and Median Notification Times, and Percent of Awardees Notified within the Required Period by Participating Agency, Fiscal Year 2020**

| Department or agency<br>Component agency                                | Number of awards | Mean notification time (days) | Median notification time (days) | Percent of awardees notified on time <sup>a</sup> |
|---|------------------|-------------------------------|---------------------------------|---|
| <b>Department of Commerce</b>   | 70               | 183                           | 105                             | 29  |
| National Oceanic and Atmospheric Administration                         | 50               | 224                           | 309                             | ▼0  |
| National Institute of Standards and Technology                          | 20               | 79                            | 83                              | 100   |
| <b>Department of Defense</b>  | 4004             | 62                            | 41                              | 86  |
| Department of the Air Force   | 1922             | 56                            | 28                              | 83  |
| Department of the Navy  | 947              | 54                            | 57                              | ▲93   |
| Department of the Army, SBIR  | 507              | 74                            | 85                              | ▲100  |
| Missile Defense Agency  | 133              | 87                            | 87                              | 91  |
| Defense Advanced Research Projects Agency                               | 98               | 44                            | 41                              | 100   |
| Defense Health Agency   | 93               | 86                            | 93                              | ▼48   |
| Department of the Army, STTR  | 83               | 77                            | 86                              | ▲99   |
| Defense Logistics Agency  | 60               | 100                           | 65                              | 53  |
| Defense Threat Reduction Agency   | 43               | 69                            | 50                              | ▲79   |
| Special Operations Command  | 39               | 45                            | 35                              | 87  |
| Joint Science and Technology Office for Chemical and Biological Defense | 34               | 82                            | 74                              | 85  |
| National Geospatial-Intelligence Agency                                 | 24               | 188                           | 198                             | ▼0  |
| Defense Microelectronics Activity                                       | 21               | 136                           | 141                             | 0   |
| <b>Department of Energy</b>   | 635              | 84                            | 83                              | 97  |
| Office of Science   | 609              | 84                            | 83                              | ▲100  |
| Advanced Research Projects Agency-Energy <sup>b</sup>                   | 26               | 98                            | 105                             | ▼35   |
| <b>Department of Health and Human Services</b>                          | 1266             | 184                           | 169                             | 95  |
| National Institutes of Health   | 1219             | 184                           | 169                             | 98  |
| Centers for Disease Control and Prevention                              | 27               | 246                           | 224                             | 11  |
| Administration for Community Living                                     | 13               | 84                            | 94                              | △31   |
| Food and Drug Administration  | 7                | 191                           | 135                             | 0   |
| <b>Department of Homeland Security</b>                                  | 37               | 79                            | 85                              | 100   |
| Science and Technology Directorate                                      | 34               | 83                            | 85                              | 100   |
| Countering Weapons of Mass Destruction Office                           | 3                | 29                            | 29                              | 100   |
| <b>Department of Education</b>  | 24               | 77                            | 85                              | △100  |



**Appendix II: Participating Agency SBIR and STTR Award Timeliness Data**

| Department or agency<br>Component agency             | Number of awards | Mean notification time (days) | Median notification time (days) | Percent of awardees notified on time <sup>a</sup> |
|--|------------------|-------------------------------|---------------------------------|---|
| <b>Department of Transportation</b>                  | 45               | 70                            | 78                              | ▲ 100   |
| <b>Environmental Protection Agency</b>               | 33               | 134                           | 139                             | 0   |
| <b>National Aeronautics and Space Administration</b> | 573              | 73                            | 71                              | 99  |
| <b>National Science Foundation</b>                   | 507              | 169                           | 165                             | 98  |
| <b>U.S. Department of Agriculture</b>                | 112              | 116                           | 148                             | ▲ 31  |

Legend: ▲ or ▼ = Timeliness to notify awardees in 2020 improved or declined by 10 percentage points or more compared with the average number of days from fiscal years 2016 through 2019, and the change is statistically significant ( $p < 0.05$ ). Δ or ▽ = Timeliness improved or declined by 10 percentage points or more over fiscal years 2016 through 2019, and the change is not statistically significant.

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-22-104677

<sup>a</sup>The National Science Foundation and National Institutes of Health must notify awardees within 1 year. All other participating agencies must notify in no more than 90 calendar days.

<sup>b</sup>Advanced Research Projects Agency-Energy negotiates and issues a single award for phases I and II (and a subsequent phase II, if applicable). When the agency verifies that an awardee has completed a phase, the awardee can then immediately transition to the next phase; for example, agency officials described one award that transitioned from one phase to the next phase on the same day.

**Table 8: Percent of Awardees Notified within the Required Period per Fiscal Year (FY), by Participating Agency**

| Department or agency<br>Component agency <sup>a</sup>                   | FY 2016 | FY 2017 | FY 2018 | FY 2019 | FY 2020 |
|---|---------|---------|---------|---------|---------|
| <b>Department of Commerce</b>   | 100     | 98      | 100     | 53      | 29      |
| National Oceanic and Atmospheric Administration                         | 100     | 100     | 100     | 0       | 0       |
| National Institute of Standards and Technology                          | 100     | 95      | 100     | 100     | 100     |
| <b>Department of Defense</b>  | 83      | 70      | 70      | 80      | 86      |
| Department of the Air Force   | 92      | 40      | 49      | 97      | 83      |
| Department of the Navy  | 78      | 79      | 79      | 78      | 93      |
| Department of the Army, SBIR  | 99      | 49      | 87      | 36      | 100     |
| Missile Defense Agency  | 94      | 94      | 95      | 42      | 91      |
| Defense Advanced Research Projects Agency                               | 86      | 99      | 94      | 95      | 100     |
| Defense Health Agency   | 98      | 99      | 100     | 91      | 48      |
| Department of the Army, STTR  | 38      | 26      | 28      | 14      | 99      |
| Defense Logistics Agency  | 35      | 55      | 58      | 49      | 53      |
| Defense Threat Reduction Agency   | 0       | 11      | 8       | 92      | 79      |
| Special Operations Command  | 88      | 95      | 100     | 92      | 87      |
| Joint Science and Technology Office for Chemical and Biological Defense | 94      | 97      | 95      | 83      | 85      |
| National Geospatial-Intelligence Agency <sup>b</sup>                    | —       | 100     | 0       | 10      | 0       |

**Appendix II: Participating Agency SBIR and STTR Award Timeliness Data**

| <b>Department or agency<br/>Component agency<sup>a</sup></b> | <b>FY 2016</b> | <b>FY 2017</b> | <b>FY 2018</b> | <b>FY 2019</b> | <b>FY 2020</b> |
|--|----------------|----------------|----------------|----------------|----------------|
| Defense Microelectronics Activity                            | 0              | 0              | 0              | 18             | 0              |
| <b>Department of Energy</b>                                  | 100            | 49             | 96             | 100            | 97             |
| Office of Science  | 100            | 49             | 97             | 100            | 100            |
| Advanced Research Projects Agency-Energy <sup>c</sup>        | 100            | 100            | 57             | 100            | 35             |
| <b>Department of Health and Human Services<sup>d</sup></b>   | 95             | 96             | 95             | 96             | 95             |
| National Institutes of Health                                | 97             | 98             | 98             | 98             | 98             |
| Centers for Disease Control and Prevention                   | 0              | 0              | 0              | 10             | 11             |
| Administration for Community Living                          | 29             | 0              | 23             | 29             | 31             |
| Food and Drug Administration                                 | 0              | 0              | 0              | 0              | 0              |
| <b>Department of Homeland Security</b>                       | 100            | 100            | 100            | 100            | 100            |
| Science and Technology Directorate                           | 100            | 100            | 100            | 100            | 100            |
| Countering Weapons of Mass Destruction Office                | 100            | 100            | 100            | 100            | 100            |
| <b>Department of Education</b>                               | 36             | 100            | 100            | 100            | 100            |
| <b>Department of Transportation</b>                          | 89             | 90             | 38             | 93             | 100            |
| <b>Environmental Protection Agency</b>                       | 0              | 0              | 0              | 0              | 0              |
| <b>National Aeronautics and Space Administration</b>         | 99             | 100            | 96             | 96             | 99             |
| <b>National Science Foundation</b>                           | 100            | 100            | 100            | 99             | 98             |
| <b>U.S. Department of Agriculture</b>                        | 0              | 0              | 0              | 0              | 31             |

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO-22-104677

<sup>a</sup>The National Science Foundation and National Institutes of Health must notify awardees within 1 year. All other participating agencies must notify in no more than 90 calendar days.

<sup>b</sup>The National Geospatial-Intelligence Agency made no SBIR or STTR awards in fiscal year 2016.

<sup>c</sup>Advanced Research Projects Agency-Energy negotiates and issues a single award for phases I and II (and a subsequent phase II, if applicable). When the agency verifies that an awardee has completed a phase, the awardee can then immediately transition to the next phase; for example, agency officials described one award that transitioned from one phase to the next phase on the same day.

<sup>d</sup>Department of Health and Human Services results for fiscal year 2016 through fiscal year 2018 differ from those that we reported in [GAO-19-620](#) because of the addition of data on awards made by the Administration for Community Living.

**Appendix II: Participating Agency SBIR and STTR Award Timeliness Data**

**Table 9: Number of SBIR and STTR Awards, Mean and Median Issuance Times, and Percent of Awards Issued within the Recommended Period by Participating Agency, Fiscal Year 2020**

| <b>Department or agency</b><br>Component agency                         | <b>Number of awards</b> | <b>Mean issuance time (days)</b> | <b>Median issuance time (days)</b> | <b>Percent of awards issued on time<sup>a</sup></b> |
|---|-------------------------|----------------------------------|------------------------------------|---|
| <b>Department of Commerce</b>   | 70                      | 203                              | 131                                | 59  |
| National Oceanic and Atmospheric Administration                         | 50                      | 238                              | 312                                | ▼42   |
| National Institute of Standards and Technology                          | 20                      | 115                              | 128                                | 100   |
| <b>Department of Defense</b>  | 4005                    | 139                              | 114                                | 74  |
| Department of the Air Force   | 1922                    | 105                              | 56                                 | ▲85   |
| Department of the Navy  | 947                     | 119                              | 107                                | ▲85   |
| Department of the Army, SBIR  | 507                     | 239                              | 214                                | 29  |
| Missile Defense Agency  | 133                     | 200                              | 160                                | 66  |
| Defense Advanced Research Projects Agency                               | 98                      | 147                              | 129                                | ▲82   |
| Defense Health Agency   | 93                      | 204                              | 192                                | ▼18   |
| Department of the Army, STTR  | 84                      | 187                              | 174                                | ▲67   |
| Defense Logistics Agency  | 60                      | 164                              | 142                                | ▲72   |
| Defense Threat Reduction Agency   | 43                      | 274                              | 196                                | ▲33   |
| Special Operations Command  | 39                      | 98                               | 95                                 | 95  |
| Joint Science and Technology Office for Chemical and Biological Defense | 34                      | 287                              | 274                                | ▼0  |
| National Geospatial-Intelligence Agency                                 | 24                      | 288                              | 304                                | ▼0  |
| Defense Microelectronics Activity                                       | 21                      | 164                              | 165                                | ▲71   |
| <b>Department of Energy</b>   | 635                     | 131                              | 122                                | 94  |
| Office of Science   | 609                     | 127                              | 122                                | ▲98   |
| Advanced Research Projects Agency-Energy <sup>b</sup>                   | 26                      | 222                              | 205                                | △19   |
| <b>Department of Health and Human Services</b>                          | 1266                    | 249                              | 239                                | 95  |
| National Institutes of Health   | 1219                    | 251                              | 239                                | 97  |
| Centers for Disease Control and Prevention                              | 27                      | 246                              | 224                                | 33  |
| Administration for Community Living                                     | 13                      | 114                              | 106                                | ▲100  |
| Food and Drug Administration  | 7                       | 191                              | 135                                | △57   |
| <b>Department of Homeland Security</b>                                  | 37                      | 141                              | 117                                | 76  |
| Science and Technology Directorate                                      | 34                      | 137                              | 117                                | ▼79   |

**Appendix II: Participating Agency SBIR and STTR Award Timeliness Data**

| Department or agency<br>Component agency             | Number of awards | Mean issuance time (days) | Median issuance time (days) | Percent of awards issued on time <sup>a</sup> |
|--|------------------|---------------------------|-----------------------------|---|
| Countering Weapons of Mass Destruction Office        | 3                | 195                       | 230                         | 33  |
| <b>Department of Education</b>                       | 24               | 96                        | 99                          | 100   |
| <b>Department of Transportation</b>                  | 45               | 137                       | 130                         | ▲96   |
| <b>Environmental Protection Agency</b>               | 33               | 203                       | 214                         | ▲30   |
| <b>National Aeronautics and Space Administration</b> | 573              | 128                       | 127                         | 97  |
| <b>National Science Foundation</b>                   | 507              | 169                       | 165                         | 100   |
| <b>U.S. Department of Agriculture</b>                | 112              | 191                       | 227                         | ▲38   |

Legend: ▲ or ▼ = Timeliness to issue awards in 2020 improved or declined by 10 percentage points or more compared with the average number of days from fiscal years 2016 through 2019, and the change is statistically significant (p < 0.05). △ or ▽ = Timeliness improved or declined by 10 percentage points or more over fiscal years 2016 through 2019, and the change is not statistically significant.

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO 22-104677

<sup>a</sup>The National Science Foundation and National Institutes of Health should issue awards within 15 months. All other agencies should issue an award in no more than 180 calendar days.

<sup>b</sup>Advanced Research Projects Agency-Energy negotiates and issues a single award for phases I and II (and a subsequent phase II, if applicable). When the agency verifies that an awardee has completed a phase, the awardee can then immediately transition to the next phase; for example, agency officials described one award that transitioned from one phase to the next phase on the same day.

**Table 10: Percent of Awards Issued within the Recommended Period per Fiscal Year (FY), by Participating Agency**

| Department or agency<br>Component agency <sup>a</sup> | FY 2016 | FY 2017 | FY 2018 | FY 2019 | FY 2020 |
|---|---------|---------|---------|---------|---------|
| <b>Department of Commerce</b>                         | 100     | 100     | 100     | 100     | 59      |
| National Oceanic and Atmospheric Administration       | 100     | 100     | 100     | 100     | 42      |
| National Institute of Standards and Technology        | 100     | 100     | 100     | 100     | 100     |
| <b>Department of Defense</b>                          | 62      | 50      | 58      | 64      | 74      |
| Department of the Air Force                           | 66      | 42      | 54      | 75      | 85      |
| Department of the Navy                                | 76      | 61      | 71      | 74      | 85      |
| Department of the Army, SBIR                          | 43      | 29      | 30      | 19      | 29      |
| Missile Defense Agency                                | 56      | 58      | 69      | 55      | 66      |
| Defense Advanced Research Projects Agency             | 72      | 50      | 25      | 38      | 82      |
| Defense Health Agency                                 | 10      | 17      | 61      | 63      | 18      |
| Department of the Army, STTR                          | 25      | 40      | 76      | 48      | 67      |
| Defense Logistics Agency                              | 80      | 59      | 28      | 63      | 72      |
| Defense Threat Reduction Agency                       | 0       | 0       | 0       | 0       | 33      |
| Special Operations Command                            | 88      | 94      | 85      | 98      | 95      |

**Appendix II: Participating Agency SBIR and STTR Award Timeliness Data**

| <b>Department or agency</b><br>Component agency <sup>a</sup>            | <b>FY 2016</b> | <b>FY 2017</b> | <b>FY 2018</b> | <b>FY 2019</b> | <b>FY 2020</b> |
|---|----------------|----------------|----------------|----------------|----------------|
| Joint Science and Technology Office for Chemical and Biological Defense | 76             | 36             | 0              | 8              | 0              |
| National Geospatial-Intelligence Agency <sup>b</sup>                    | —              | 100            | 22             | 13             | 0              |
| Defense Microelectronics Activity                                       | 0              | 0              | 11             | 18             | 71             |
| <b>Department of Energy</b>   | 97             | 50             | 92             | 98             | 94             |
| Office of Science   | 98             | 50             | 93             | 98             | 98             |
| Advanced Research Projects Agency-Energy <sup>c</sup>                   | 0              | 0              | 0              | 0              | 19             |
| <b>Department of Health and Human Services<sup>d</sup></b>              | 92             | 95             | 94             | 94             | 95             |
| National Institutes of Health   | 93             | 96             | 96             | 96             | 97             |
| Centers for Disease Control and Prevention                              | 14             | 9              | 39             | 30             | 33             |
| Administration for Community Living                                     | 100            | 29             | 23             | 29             | 100            |
| Food and Drug Administration  | 14             | 33             | 50             | 33             | 57             |
| <b>Department of Homeland Security</b>                                  | 86             | 76             | 74             | 100            | 76             |
| Science and Technology Directorate                                      | 100            | 100            | 89             | 100            | 79             |
| Countering Weapons of Mass Destruction Office                           | 42             | 0              | 0              | 100            | 33             |
| <b>Department of Education</b>  | 100            | 100            | 100            | 100            | 100            |
| <b>Department of Transportation</b>                                     | 39             | 55             | 92             | 86             | 96             |
| <b>Environmental Protection Agency</b>                                  | 0              | 0              | 23             | 28             | 30             |
| <b>National Aeronautics and Space Administration</b>                    | 99             | 99             | 94             | 95             | 97             |
| <b>National Science Foundation</b>                                      | 100            | 100            | 100            | 100            | 100            |
| <b>U.S. Department of Agriculture</b>                                   | 0              | 0              | 30             | 25             | 38             |

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO 22-104677

<sup>a</sup>The National Science Foundation and National Institutes of Health should issue awards within 15 months. All other agencies should issue an award in no more than 180 calendar days.

<sup>b</sup>The National Geospatial-Intelligence Agency issued no SBIR or STTR awards in fiscal year 2016.

<sup>c</sup>Advanced Research Projects Agency-Energy negotiates and issues a single award for phases I and II (and a subsequent phase II, if applicable). When the agency verifies that an awardee has completed a phase, the awardee can then immediately transition to the next phase; for example, agency officials described one award that transitioned from one phase to the next phase on the same day.

<sup>d</sup>Department of Health and Human Services results for fiscal year 2016 through fiscal year 2018 differ from those that we reported in [GAO-19-620](#) because of the addition of data on awards made by the Administration for Community Living.

**Appendix II: Participating Agency SBIR and STTR Award Timeliness Data**

**Table 11: Participating Agencies' Time between Phase I and Phase II Awards, Fiscal Years 2019 through 2020**

| <b>Department or agency<br/>Component agency</b>                           | <b>Number of pairs of phase I<br/>and phase II awards</b> | <b>Median months between<br/>phase I and phase II</b> |
|--|---|---|
| <b>Department of Commerce</b>  | 32  | 6   |
| National Oceanic and Atmospheric Administration                            | 17  | 6   |
| National Institute of Standards and Technology                             | 15  | 7   |
| <b>Department of Defense</b>   | 1948  | 3   |
| Department of the Air Force  | 880   | 4   |
| Department of the Navy   | 458   | 1   |
| Department of the Army, SBIR   | 256   | 0 <sup>a</sup>  |
| Missile Defense Agency   | 81  | 9   |
| Defense Health Agency  | 58  | 7   |
| Defense Advanced Research Projects Agency                                  | 45  | 2   |
| Defense Logistics Agency   | 35  | 6   |
| Special Operations Command   | 35  | 7   |
| Defense Threat Reduction Agency  | 34  | 12  |
| Department of the Army, STTR   | 23  | 7   |
| Joint Science and Technology<br>Office for Chemical and Biological Defense | 22  | 13  |
| National Geospatial-Intelligence Agency                                    | 15  | 11  |
| Defense Microelectronics Activity  | 6   | 9   |
| <b>Department of Health and Human Services</b>                             | 654   | 10  |
| National Institutes of Health  | 625   | 10  |
| Centers for Disease Control and Prevention                                 | 19  | 11  |
| Administration for Community Living  | 8   | 6   |
| Food and Drug Administration   | 2   | 16  |
| <b>Department of Homeland Security</b>                                     | 24  | 6   |
| Science and Technology Directorate   | 18  | 6   |
| Countering Weapons of Mass Destruction Office                              | 6   | 5   |
| <b>Department of Education</b>   | 16  | 5   |
| <b>Department of Energy<sup>b</sup></b>                                    | 324   | 5   |
| <b>Department of Transportation</b>  | 19  | 6   |
| <b>Environmental Protection Agency</b>                                     | 19  | 7   |
| <b>National Aeronautics and Space Administration</b>                       | 310   | 5   |
| <b>National Science Foundation</b>   | 236   | 8   |
| <b>U.S. Department of Agriculture</b>                                      | 26  | 12  |

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) award data. | GAO 22-104677

<sup>a</sup>Department of the Army's SBIR program had a median time between phases of six days, which we rounded to 0 months.

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**Appendix II: Participating Agency SBIR and STTR Award Timeliness Data**

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<sup>b</sup>Department of Energy only includes the Office of Science. The Advanced Research Projects Agency-Energy is excluded from this analysis because they negotiate and award a single agreement for phases I and II, which agency officials say eliminates the time between awards. When the agency verifies that an awardee has completed a phase, the awardee can then immediately transition to the next phase; for example, agency officials described one award that transitioned from one phase to the next phase on the same day. This process did not have comparable dates to those provided by other agencies so we could not perform a similar calculation.

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# Appendix III: Analysis of Award Characteristics and Time between Phase I and Phase II Awards

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GAO's analysis of agency data confirmed our prior finding that cost-reimbursement contracts were associated with declines in issuance timeliness but that other characteristics did not have statistically significant associations. Several months separated the time between phase I awards and the related phase II award.

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## Select Award Characteristics Were Generally Not Associated with Timeliness

We found that among select award characteristics—phase (I and II), program (SBIR and STTR), budget authority (e.g., one-year, multiple-year, and no year), award vehicle (e.g., contracts and grants), and award amount—only the use of cost-reimbursement contracts was associated with declines in issuance timeliness, according to our analysis of agency data from fiscal years 2016 through 2020. Specifically, we conducted a regression analysis to test for associations between these characteristics and issuance timeliness. For some characteristics, such as phase, program, and award amount, we found no statistically significant associations across the participating agencies.<sup>1</sup> In other cases, such as agency use of grants and contracts, we found no evidence of associations, though the analysis faced limitations.

We illustrate the results of our modeling with a presentation of descriptive statistics about agency timeliness rates. Unless specifically noted, the data below covers fiscal years 2016 through 2020.

**Award vehicle (type of contract).** We updated our prior analysis on the timeliness of cost-reimbursement contracts<sup>2</sup> and found that for fiscal years 2019 and 2020 cost-reimbursement contracts continue to take longer than fixed-price contracts for agencies to issue awards.<sup>3</sup> In addition, we found some agencies' whose timeliness rate was at least 40 percentage points lower for cost-reimbursement contracts compared to

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<sup>1</sup>We defined statistical significance as having a p value of less than 0.05.

<sup>2</sup>[GAO-19-620](#). We previously reported that according to agency officials, cost-reimbursement contracts take additional time to issue because they require additional review of the awardee's accounting system in accordance with federal acquisition regulations.

<sup>3</sup>According to the Federal Acquisition Regulation (FAR), a wide selection of contract types is available to the government and contractors to allow for flexibility in acquiring a variety of products and services. FAR § 16.101(a). Contract types are grouped into two broad categories: fixed-price or cost-reimbursement contracts. For firm fixed-price contracts, the contractor has full responsibility for the costs of performance and the resulting profit or loss; whereas in cost type contracts the government bears responsibility for the allowable costs of the contractor. FAR §§ 16.202-1; 16.301-1.



non-cost-reimbursement contracts (i.e. non-cost-reimbursement contracts were faster to award than cost-reimbursement contracts): Defense Advanced Research Projects Agency, the Department of the Navy, Department of the Army-STTR, Department of Transportation, and Missile Defense Agency.

**Award vehicle (contracts and grants).** The percentage of awards issued on time did not differ significantly by award vehicles, such as contracts and grants. For example, fixed-price contracts and grants were 78 percent and 74 percent on time respectively across nearly all participating agencies.<sup>4</sup> These results should be considered in the context that most agencies use either contracts or grants, making it difficult to distinguish between the effect of these award vehicles and other differences between agencies that are not captured in our data.<sup>5</sup> The Centers for Disease Control and Prevention has used both contracts and grants and, according to agency officials, these two award vehicles do not differ with regard to timeliness, and our analysis of their data confirms that.<sup>6</sup> Agencies may choose to use an award vehicle type for reasons other than timeliness. For example, according to agency officials, the Department of the Navy uses cost-reimbursement contracts—even though they take more time to issue—because officials believe this award vehicle reduces the risks for small businesses and prepares them for future work with the Department of Defense. In addition, according to agency officials, the National Institute of Standards and Technology switched from using contracts to grants in 2014, citing increased innovation through greater flexibility.

**Phase (I and II).** The percentage of phase I awards issued on time was 83 percent, compared to 68 percent for phase II awards when other

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<sup>4</sup>This calculation excludes the National Institutes of Health and the National Science Foundation that are allowed more time to issue SBIR and STTR awards. Specifically, we compared timeliness rates of fixed-price contracts with grants which together accounted for over 80 percent of fiscal year 2016 through fiscal year 2020 awards.

<sup>5</sup>Only two agencies used both contracts and grants from fiscal years 2016 through 2020: the Centers for Disease Control and Prevention and the National Oceanic and Atmospheric Administration. A number of agencies reported using award vehicles other than contracts and grants to issue awards, such as cooperative agreements or other transaction authorities, and these represented about 1 percent of fiscal years 2016 through 2020 issued awards.

<sup>6</sup>According to our analysis of Centers for Disease Control and Prevention award issuance data from fiscal years 2016 through 2020, 29 percent of their grants and 24 percent of their contracts were issued on time.

characteristics are not considered. However, we did not find a substantive or statistical difference between phases across participating agencies when we controlled for other characteristics, such as award vehicle. For example, most awards using cost-reimbursement contracts are also phase II awards and, when we controlled for this characteristic and others, the difference across phases became smaller and not statistically significant. In addition, 10 agencies' phase I timeliness rates were within 5 percentage points of their phase II timeliness rates without controlling for any other characteristics.<sup>7</sup> We found some agencies had differences between timeliness rates in phase I and phase II, with certain agencies having higher rates of awards issued on time for phase I awards, while other agencies had higher rates for phase II awards. For example:

- Agencies' whose phase I timeliness rates were at least 40 percentage points higher than their phase II (i.e. phase I awards were more likely to be on time than phase II) included the Defense Advanced Research Projects Agency, the Department of Transportation, the Department of the Navy, and the Missile Defense Agency.
- Agencies whose phase II timeliness rates were at least 40 percentage points higher than their phase I (i.e. phase II awards were more likely to be on time than phase I) included the Administration for Community Living, the U.S. Department of Agriculture, and the Environmental Protection Agency.

**Program (SBIR and STTR).** The percent of SBIR awards issued on time was 78 percent, compared to 80 percent for STTR awards. In addition, seven agencies' SBIR timeliness rates were within five percentage points of their STTR timeliness rates.<sup>8</sup> We found agencies had some differences, for example:

- Agencies whose SBIR timeliness rates were at least 20 percentage points higher than STTR (i.e., SBIR awards were more likely to be on

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<sup>7</sup>These agencies include: Army SBIR and STTR, the Department of Education, the Department of Energy's Office of Science, the Food and Drug Administration, the Joint Science and Technology Office for Chemical and Biological Defense, the National Institute of Standards and Technology, the National Institutes of Health, the National Science Foundation, and Special Operations Command.

<sup>8</sup>These agencies include the Air Force, the Defense Health Agency, the Defense Threat Reduction Agency, the National Aeronautics and Space Administration, the National Institutes of Health, the National Science Foundation, and the Department of the Navy.

time than STTR awards) include the National Geospatial-Intelligence Agency and the Defense Logistics Agency.

- Agencies whose STTR timeliness rates were at least 20 percentage points higher than SBIR (i.e., STTR awards were more likely to be on time than SBIR awards) include Army SBIR and Army STTR.<sup>9</sup>

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### Agencies Generally Took Several Months to Start Phase II Awards

Several months generally separated the end of phase I awards and the start of the first phase II awards, according to agency fiscal year 2019 and 2020 data. Specifically, we found a median of about 5 months between the last day of the phase I period of performance and the first day of the phase II period of performance, with median time between phases for each agency varying from less than a month to 16 months.<sup>10</sup> See table 11 in appendix II for additional descriptive statistics. We found that for a majority of cases—2,689 of 3,935 cases or 68 percent of phase I and corresponding phase II awards—less than 1 year elapsed between phase I and II awards. In addition, many—18 of 28—agencies had a median time of 3 to 9 months between phase I and II awards.<sup>11</sup> Examples of variation among agencies include:

- Several agencies had cases of overlapping phase I and II award periods of performance. These cases accounted for 366 of 3,935 cases or 9 percent of phase I and corresponding phase II awards. Army SBIR, the Navy, and the Air Force accounted for most of these overlapping awards.<sup>12</sup>

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<sup>9</sup>The Army oversees SBIR and STTR awards through two program offices.

<sup>10</sup>This analysis includes initial phase II awards made in fiscal year 2019 or fiscal year 2020 and corresponding phase I awards identified by the agencies. We define the time between phases as the time between the last day of the period of performance of the phase I award and the first day of the period of performance of the phase II award.

<sup>11</sup>We excluded the Advanced Research Projects Agency-Energy from this analysis because they negotiate and award a single agreement for phases I and II, which agency officials say eliminates the time between awards. When the agency verifies that an awardee has completed a phase, the awardee can then immediately transition to the next phase; for example, agency officials described one award that transitioned from one phase to the next phase on the same day. This process did not have comparable dates to those provided by other agencies so we could not perform a similar calculation.

<sup>12</sup>According to officials, the Army SBIR does this on purpose to reduce the potential gap between phase I and II awards and does so through use of contract options (adding time and funding to phase I awards to bridge the gap to phase II awards).

- A few agencies had a relatively short median time between phase I and II—less than 90 days. For example, Army SBIR and the Navy had median times of 6 and 22 calendar days, respectively.
- Several agencies had longer median times between phase I and II—more than 9 months—including the Defense Threat Reduction Agency, the Food and Drug Administration, the Joint Science and Technology Office for Chemical and Biological Defense, and the National Geospatial-Intelligence Agency.
- More than half of the agencies had cases with more than 1 year between phase I and II. These cases accounted for 880 of 3,935 cases, or 22 percent of phase I and corresponding phase II awards. Awards with longer gaps ranged from slightly over a year to more than 15 years.

SBA's SBIR and STTR policy directive does not establish a limit on the time that can elapse between phases, although the FY 2019 NDAA does so for DOD participating agencies.<sup>13</sup> According to agency officials, long intervals can occur if an agency issues a phase II award associated with a phase I award that was completed years ago. However, according to SBA officials, it is important for agencies to take steps to reduce the time small businesses have to go without funding between phases, as it negatively affects their ability to retain staff and perform the work from one phase to the next. According to agency officials, however, reducing the time between awards can be a challenge. For example, agency officials at the Department of Energy Office of Science noted that their phase I period of performance can be short (e.g., 6 months). Shorter periods of performance for a phase I award can lead to longer times between awards because the agency still must conduct its review process for phase II. Furthermore, agencies said minimizing time between awards is not always practical because time is needed to, among other things, observe small business performance, assess their capacity for phase II, and assess agency need for a phase II award; and for the phase II award process, in requesting phase II proposals from small businesses and agencies reviewing, notifying, and issuing phase II awards. We previously reported on practices agencies use to reduce the time between phase I

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<sup>13</sup>The FY 2019 NDAA requires DOD participating agencies to reduce the time to be as close to 90 days as possible (1) between the end of a phase I award and the start of a phase II award (for phase II awards) and (2) between phase II awards (for sequential phase II awards pursuant to DOD's pilot program to accelerate DOD SBIR and STTR awards). Pub. L. No. 115-232, § 854(b)(1)(C), 132 Stat. 1636, 1887, (2018), codified at 15 U.S.C. § 638(hh)(2).

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**Appendix III: Analysis of Award Characteristics  
and Time between Phase I and Phase II Awards**

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and II awards, such as agencies recommending or allowing phase I small business awardees to submit a phase II proposal prior to the end of their phase I award.<sup>14</sup>

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<sup>14</sup>[GAO-20-693](#).

# Appendix IV: Instances of Participating Agencies Not Issuing Awards after Selection

**Table 12: Number of Instances Participating Agencies Did Not Issue Awards after Selection, Fiscal Years 2016 through 2020**

| Department or agency<br>Component agency <sup>a</sup>                      | Number of instances <sup>b</sup> |
|--|----------------------------------|
| <b>Department of Commerce</b>  |                                  |
| National Institute of Standards and Technology                             | 1                                |
| National Oceanic and Atmospheric Administration                            | 1                                |
| <b>Department of Defense</b>   |                                  |
| Defense Advanced Research Projects Agency                                  | 7                                |
| Defense Health Agency  | 1                                |
| Defense Logistics Agency   | 1                                |
| Defense Microelectronics Activity  | 0                                |
| Defense Threat Reduction Agency  | 4                                |
| Department of the Air Force  | 34                               |
| Department of the Army, SBIR   | 24                               |
| Department of the Army, STTR   | 3                                |
| Department of the Navy   | 8                                |
| Joint Science and Technology<br>Office for Chemical and Biological Defense | 1                                |
| Missile Defense Agency   | 15                               |
| National Geospatial-Intelligence Agency                                    | 0                                |
| Special Operations Command   | 5                                |
| <b>Department of Health and Human Services</b>                             |                                  |
| Administration for Community Living  | 0                                |
| Centers for Disease Control and Prevention                                 | 0                                |
| Food and Drug Administration   | 0                                |
| <b>Department of Homeland Security</b>                                     |                                  |
| Science and Technology Directorate   | 1                                |
| Countering Weapons of Mass Destruction Office                              | 0                                |
| <b>Department of Education</b>   |                                  |
| <b>Department of Energy</b>  |                                  |
| Advanced Research Projects Agency – Energy                                 | 0                                |
| Office of Science  | 22                               |
| <b>Department of Transportation</b>  |                                  |
| <b>Environmental Protection Agency</b>                                     |                                  |
| <b>National Aeronautics and Space Administration</b>                       |                                  |
| <b>National Science Foundation</b>   |                                  |
| <b>U.S. Department of Agriculture</b>                                      |                                  |

Source: GAO analysis of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) participating agency information and documents. | GAO-22-104677

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**Appendix IV: Instances of Participating  
Agencies Not Issuing Awards after Selection**

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<sup>a</sup>We did not include NIH in this total because its selection and notification process is different and, therefore, not comparable. For example, according to NIH officials, after initial proposal review, NIH informs competitive applicants that they are selected for consideration and invites them to submit additional documentation for further eligibility and competitiveness review. After this secondary review, the applicants are notified whether they will receive an award. NIH had 251 instances of applicants being selected for initial consideration that did not receive an award after further review from fiscal years 2016 through 2020, with an estimated value of \$215 million.

<sup>b</sup>Agencies provided reasons why the instances occurred, and they are discussed in the report.

# Appendix V: Comments from the Department of Agriculture



September 9, 2021

Candice N. Wright  
Director, Science, Technology, Assessment and Analytics (STAA)  
441 G St., NW  
Washington, DC 20548

Dear Ms. Wright:

The U.S. Department of Agriculture (USDA) appreciates the opportunity to respond to the U.S. Government Accountability Office (GAO) draft report "*SMALL BUSINESS RESEARCH PROGRAMS: Agencies Should Further Improve Award Timeliness, GAO-22-104677*" dated August 20, 2021.

USDA/NIFA generally agrees with the findings in the GAO draft report, but would like to make the following comments:

- USDA/NIFA is continuing to work to improve the Small Business Innovation Research (SBIR) award timeliness while maintaining the integrity of the peer review award process. The external peer review process utilized by NIFA with the SBIR program is central in maintaining the veracity of the awarding process.
- USDA/NIFA's award timeliness improved by 10 percentage points in Fiscal Year 2020, compared with the previous 4-year period, however it is unlikely that the USDA/NIFA will be able to meet the timeliness requirements of the Small Business Administration (SBA) Directive. USDA will draft a memo requesting the SBA grant USDA similar award timeline requirements afforded to the National Science Foundation and the National Institute of Health.

Thank you again for the opportunity to review and respond to the GAO draft report.

Sincerely,

A handwritten signature in blue ink that reads "Carrie L. Castille".

Carrie L. Castille, PhD  
Director  
U.S. Department of Agriculture  
National Institute of Food and Agriculture

1400 Independence Avenue, SW, MS 2201 | Washington, DC | 20250-2201

USDA IS AN EQUAL OPPORTUNITY PROVIDER, EMPLOYER, AND LENDER



# Appendix VI: Comments from the Department of Defense



RESEARCH  
AND ENGINEERING

OFFICE OF THE UNDER SECRETARY OF DEFENSE  
3030 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3030

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

Dear Ms. Wright:

The Department of Defense (DoD) has reviewed the Government Accountability Office (GAO) Draft Report, GAO-22-104677, "SMALL BUSINESS RESEARCH PROGRAMS: Agencies Should Further Improve Award Timeliness" dated August 20, 2021.

Attached is DoD's proposed response to the subject report. I am the point of contact for this response and can be reached at [susan.r.celis.civ@mail.mil](mailto:susan.r.celis.civ@mail.mil) and 571-214-9192.

Thank you for the opportunity to provide comments to the draft report.

Sincerely,

**CELIS.SUSAN.R.1**  
**229475394**

Digitally signed by  
CELIS.SUSAN.R.1229475394  
Date: 2021.09.27 19:06:01 -04'00'

Susan Celis  
Acting Director, Small Business and  
Technology Partnerships

GAO DRAFT REPORT DATED AUGUST 20, 2021  
GAO-22-104677 (GAO CODE 104677)

“SMALL BUSINESS RESEARCH PROGRAMS: AGENCIES SHOULD FURTHER  
IMPROVE AWARD TIMELINESS”

DEPARTMENT OF DEFENSE COMMENTS  
TO THE GAO RECOMMENDATION

**RECOMMENDATION 4:** The GAO recommends the Secretary of the Air Force should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 5:** The GAO recommends the Secretary of the Army should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 6:** The GAO recommends the Secretary of the Army should evaluate the effectiveness of steps taken to improve STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 9:** The GAO recommends the Director of the Defense Advanced Research Projects Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Non-concur. The Defense Advanced Research Projects Agency (DARPA) has demonstrated improvement in its SBIR and STTR award timeliness in the last year and continuously reviews its programs and procedures to keep making improvements. However, outside factors, such as a small business’ timeliness in responding to a contracting officer’s requests, are beyond DARPA’s purview and control and as such impacts DARPA’s ability to sometimes meet timeliness guidelines.

**RECOMMENDATION 10:** The GAO recommends the Assistant Secretary of Defense for Health Affairs should evaluate the effectiveness of steps taken to improve the Defense Health Agency’s SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 11:** The GAO recommends the Director of the Defense Logistics Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 12:** The GAO recommends the Assistant Secretary of Defense for Sustainment should evaluate the effectiveness of steps taken to improve the Defense Microelectronics Activity's SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur. DMEA requests that the recommendation language be updated to remove "the Assistant Secretary of Defense for Sustainment" and replace with "Director of the Defense Microelectronics Activity."

**RECOMMENDATION 13:** The GAO recommends the Director of the Defense Threat Reduction Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 16:** The GAO recommends that the Director of the Joint Science and Technology Office for Chemical and Biological Defense should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 17:** The GAO recommends that the Director of the Missile Defense Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 18:** The GAO recommends that the Director of the National Geospatial-Intelligence Agency should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 19:** The GAO recommends that the Secretary of the Navy should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 21:** The GAO recommends that the Secretary of the Air Force should document policies and procedures for the team tasked with addressing the previously unissued SBIR and STTR awards.

**DoD RESPONSE:** Concur.

**RECOMMENDATION 22:** The GAO recommends that the Under Secretary for Research and Engineering acting through the Director of Pricing and Contracting should establish a pilot program to improve timeliness or report to Congress on the infeasibility of these requirements.

**DoD RESPONSE:** Partially Concur. The OUSD(R&E) Small Business and Technology Partnerships (SBTP) Office will report to Congress on the infeasibility of conducting a DoD-wide pilot program to improve timeliness. The DoD has determined, though discussions between the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) and Defense Pricing and Contracting, that it is not feasible to establish a single DoD-wide formal “pilot program.”

Due to significant challenges, the Department has not established standardized procedures and model contracts for SBIR Phase I, II, or III awards. The major challenge is that DoD does not have a common system for awarding contracts. Each Military Service and DoD Component exercises independent contracting authority and there are currently over 20 contracting activities involved in making SBIR/STTR Phase I and II awards across the Department. Given these challenges and the diverse missions and autonomy of the Military Services and DoD Components, DoD has determined that a single “model” contract or process for SBIR/STTR Phase I, II, and III awards is not feasible, would be too prescriptive to the DoD Components, and could stifle business process innovation. The SBTP Office encourages Military Services and DoD Components participating in the SBIR/STTR programs to adopt practices and processes to reduce the amount of time to awards. However, as reported to the GAO, efforts have been undertaken to address the concern of timeliness of DoD SBIR/STTR awards. In addition, the Military Services have established their own pilot programs to address the challenges of timeliness in innovative ways.

# Appendix VII: Comments from the Department of Energy



**Department of Energy**  
Washington, DC 20585



September 10, 2021

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

Dear Ms. Wright:

The Department of Energy (DOE) appreciates the opportunity to provide a response to the Government Accountability Office's (GAO) draft report titled, *Small Business Research Programs: Agencies Should Further Improve Award Timeliness (GAO-22-104677)*.

The draft report contained a total of 22 recommendations to 21 agencies, of which GAO directed one (1) recommendation to DOE. DOE concurs with GAO's recommendation.

The attached provides DOE's response to the recommendation as well as technical comments on the report. GAO should direct any questions to Charles Conway, Advanced Research Projects Agency – Energy, via e-mail at [Charles.Conway@hq.doe.gov](mailto:Charles.Conway@hq.doe.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Jennifer Gerbi".

Jennifer Gerbi  
Acting Director  
Advanced Research Projects Agency-Energy

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**Appendix VII: Comments from the Department  
of Energy**

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**Department of Energy's Response to Recommendations in the GAO Draft Report**  
*Small Business Research Programs: Agencies Should Further Improve Award Timeliness (GAO-  
22-104677)*

**Recommendation 2:** The Director of the Advanced Projects Research Agency-Energy should evaluate the effectiveness of steps taken to improve SBIR and STTR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**Management Response:** DOE concurs with the recommendation. ARPA-E continues to evaluate whether the use of fixed-amount grants for certain projects up to \$500,000 speeds up the issuance of these SBIR/STTR awards. ARPA-E is now in the second round of this pilot effort and preliminary results show that award issuance times have improved for the applicable awards. Additionally, ARPA-E will evaluate other potential steps to accelerate evaluation, selection, and negotiation procedures for issuing larger awards (typically as cooperative agreements) that combine multiple SBIR/STTR phases.

**Estimated Completion Date:** 1/31/2022

# Appendix VIII: Comments from the Department of Health and Human Services



DEPARTMENT OF HEALTH & HUMAN SERVICES

OFFICE OF THE SECRETARY

Assistant Secretary for Legislation  
Washington, DC 20201

September 16, 2021

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

Dear Ms. Wright:

Attached are comments on the U.S. Government Accountability Office's (GAO) report entitled, "*Small Business Research Programs: Agencies Should Further Improve Award Timeliness*" (GAO-22-104677).

The Department appreciates the opportunity to review this report prior to publication.

Sincerely,

Rose M.  
Sullivan -S

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M. Sullivan -S  
Date: 2021.09.17 09:24:43  
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Rose Sullivan  
Acting, Assistant Secretary for Legislation  
Principal Deputy Assistant Secretary for Legislation

Attachment

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**Appendix VIII: Comments from the Department  
of Health and Human Services**

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**GENERAL COMMENTS FROM THE DEPARTMENT OF HEALTH & HUMAN  
SERVICES ON THE GOVERNMENT ACCOUNTABILITY OFFICE'S DRAFT  
REPORT ENTITLED – SMALL BUSINESS RESEARCH PROGRAMS: AGENCIES  
SHOULD FURTHER IMPROVE AWARD TIMELINESS (GAO-22-104677)**

The U.S. Department of Health & Human Services (HHS) appreciates the opportunity from the Government Accountability Office (GAO) to review and comment on this draft report.

**Recommendation 1**

The Administrator of the Administration for Community Living should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. **(Recommendation 1)**

**HHS Response**

HHS concurs with the recommendation.

ACL/NIDILRR has evaluated our SBIR award timelines and is implementing a plan to improve SBIR award timeliness.

Starting in FY 2022, ACL and NIDILRR are planning to accelerate the date of Phase I award issuance from September 1 to June 1. Phase I applications will be due January 15 and we will make the awards by June 1 -- less than 180 days. We will continue to discuss methods for meeting the 90-day requirement for notifying applicants.

NIDILRR will publish Phase II opportunities on April 1. Applications will be due 60 days later, on June 1. Awards will begin on September 1. In FY 2023 and future years, we will make SBIR Phase II grants (4 total) by June 1, 2023.

**Recommendation 7**

The Director of the Centers for Disease Control and Prevention should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. **(Recommendation 7)**

**HHS Response**

HHS concurs with the recommendation.

CDC continues to take steps to identify the organizational processes, systems, and policies that may offer opportunities for increased efficiencies.

CDC participates in the Public Health Service, HHS, SBIR/STTR Grant Omnibus Solicitation, along with the NIH and FDA. Under an interagency agreement, NIH conducts the receipt, first level review, and referral of CDC SBIR grant applications. All other program activities are managed by CDC.

Due to the nature of CDC's appropriation and budget process, CDC does not make awards until funding availability is known. CDC is taking steps to review opportunities for improving timeliness of award deadlines.

Page 1 of 2



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**Appendix VIII: Comments from the Department  
of Health and Human Services**

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**GENERAL COMMENTS FROM THE DEPARTMENT OF HEALTH & HUMAN  
SERVICES ON THE GOVERNMENT ACCOUNTABILITY OFFICE'S DRAFT  
REPORT ENTITLED — SMALL BUSINESS RESEARCH PROGRAMS: AGENCIES  
SHOULD FURTHER IMPROVE AWARD TIMELINESS (GAO-22-104677)**

**Recommendation 15**

The Commissioner of the Food and Drug Administration should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines. (**Recommendation 15**)

**HHS Response**

HHS concurs with the recommendation.

Starting fiscal year 2022, the Centers within the Food and Drug Administration will fund the SBIR grants individually, based on their Centers' budgets. Funding the awards based on each Center's individual budget will improve FDA's ability to meet SBIR timeliness guidelines.

# Appendix IX: Comments from the Department of Homeland Security

U.S. Department of Homeland Security  
Washington, DC 20528



**Homeland  
Security**

September 16, 2021

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

Re: Management Response to Draft Report GAO-22-104677, "SMALL BUSINESS RESEARCH PROGRAMS: Agencies Should Further Improve Award Timeliness"

Dear Ms. Wright:

Thank you for the opportunity to comment on this draft report. The U.S. Department of Homeland Security (DHS or the Department) appreciates the U.S. Government Accountability Office's (GAO) work in planning and conducting its review and issuing this report.

The Department is pleased to note GAO's recognition that DHS's Small Business Innovation Research (SBIR) Program took action to address ongoing risks to award timeliness. For example, DHS adjusted the timing of solicitations to determine the scientific and technical merit and feasibility of ideas that appear to have commercial potential to better match reviewer availability; developed simplified and standardized contracts, and a template for proposal review; and plans to use a portal to facilitate the analysis of program data.

DHS remains committed to encouraging U.S. small businesses to provide quality research and to develop new processes, products and technologies in support of the missions of the U.S. government by conducting outreach, exploring new initiatives, and issuing an annual solicitation with topics that cover DHS mission areas for which proposals are sought to address the needs of DHS Operational Components including the Federal Emergency Management Agency, Cybersecurity and Infrastructure Security Agency, Transportation Security Administration, U.S. Citizenship and Immigration Services, U.S. Coast Guard, U.S. Customs and Border Protection, U.S. Immigration and Customs Enforcement, and U.S. Secret Service—as well as first responders.

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**Appendix IX: Comments from the Department  
of Homeland Security**

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The draft report contained 22 recommendations, including one for DHS with which the Department concurs. Attached find our detailed response to the recommendation. DHS previously submitted technical comments addressing accuracy and other issues under a separate cover for GAO's consideration.

Again, thank you for the opportunity to review and comment on this draft report. Please feel free to contact me if you have any questions. We look forward to working with you again in the future.

Sincerely,

**JIM H CRUMPACKER**

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CRUMPACKER  
Date: 2021.09.16 11:29:20 -04'00'

JIM H. CRUMPACKER, CIA, CFE  
Director  
Departmental GAO-OIG Liaison Office

Attachment

**Attachment: Management Response to Recommendations  
Contained in Draft Report GAO-22-104677**

GAO recommended that the Assistant Secretary for Countering Weapons of Mass  
Destruction (CWMD):

**Recommendation 8:** Evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet SBA award timeliness guidelines.

**Response:** Concur. In addition to steps DHS has already taken to improve SBIR award timeliness, noted in GAO's draft report, the CWMD SBIR Office will also take the actions below, as well as monitor effectiveness during the next calendar year:

1. Hold quarterly status meetings with personnel from the DHS Office of Procurement Operations regarding the schedule, solicitation topic(s), and any concerns that would delay an SBIR award where the award period exceeds 180 days; and
2. Prepare Purchase Request placeholder packages for potential awards, earlier in the schedule (i.e., prior to the Source Selection Authority Memo being signed), so that addressing challenges with Department-level policy changes can be initiated sooner, as appropriate.

Estimated Completion Date: September 30, 2022.

# Appendix X: Comments from the Department of Transportation



**U.S. Department of  
Transportation**  
Office of the Secretary  
of Transportation

Assistant Secretary  
for Administration

1200 New Jersey Avenue, SE  
Washington, DC 20590

September 20, 2021

Candace N. Wright  
Acting Director, Science, Technology Assessment and Analytics  
U.S. Government Accountability Office (GAO)  
441 G Street NW  
Washington, D.C. 20548

Dear Ms. Wright:

The Department of Transportation (DOT) acknowledges the importance of timely award notification and contract delivery in supporting small businesses and the economy. DOT's Small Business Innovation Research (SBIR) program typically awards 30-40 contracts each fiscal year, working closely with the small businesses selected for award to ensure the procurement process follows required procedures while also aiming to streamline the contract delivery process.

Upon review of the draft report, DOT concurs with GAO's recommendation to evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps in order to consistently meet Small Business Administration (SBA) award timeliness guidelines. DOT will provide a detailed response to the recommendation within 180 days of the final report's issuance.

DOT appreciates the opportunity to respond to the GAO draft report. Please contact Madeline M. Chulumovich, Director of Audit Relations and Program Improvement, at (202) 366-6512 with any questions or if GAO would like additional information.

Sincerely,

A handwritten signature in black ink, appearing to read "Philip A. McNamara".

Philip A. McNamara  
Assistant Secretary for Administration

# Appendix XI: Comments from the Environmental Protection Agency



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Washington, DC 20460

OFFICE OF  
RESEARCH AND DEVELOPMENT

9/28/2021

Mr. Alfredo Gomez  
Acting Director  
Natural Resources and Environment  
U.S. Government Accountability Office  
Washington, DC 20548

Dear Mr. Gomez:

Thank you for the opportunity to review and comment on GAO's draft report, *Small Business Research Programs: Agencies Should Further Improve Award Timeliness* (Project No. GAO-22-104677). While U.S. Environmental Protection Agency (EPA) agrees with GAO's assessment that less than 30 percent of awards have been issued on time during the 5-year review periods, the report lacks acknowledgement that efforts have been undertaken resulting in progress not covered during this audit review period. For example, EPA has implemented new procedures to substantially improve identified timeliness issues for the current Small Business Innovative Research (SBIR) Request for Application (RFA) cycle. EPA expects further improvements following the full implementation of these procedures.

The EPA agrees with the GAO's findings, conclusions, and recommendations and a response is provided below:

**Recommendation 14:** The Administrator of the Environmental Protection Agency should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps to consistently meet SBA award timeliness guidelines.

**EPA Response:** EPA agrees with this recommendation. During this engagement, steps were taken to evaluate best practices, leading to the discovery that a formalized plan will further enhance EPA's ability to improve SBIR award timeliness. This comprehensive plan will create a structure for establishing, tracking and reviewing significant milestones in the SBIR process to determine compliance with timeliness goals. This will be accomplished by September 30, 2022.

Thank you again for the opportunity to review and respond to the GAO's draft report, *Small Business Research Programs: Agencies Should Further Improve Award Timeliness*. If additional information is needed, please contact Susan Perkins at 202-564-8618.

Sincerely,

A handwritten signature in black ink that reads "Wayne E. Cascio".

Wayne E. Cascio, M.D.

Acting Principal Deputy Assistant Administrator for  
Science and Chief Scientist

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# Appendix XII: GAO Contact and Staff Acknowledgments

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## GAO Contact

Candice N. Wright at (202) 512-6888 or [WrightC@gao.gov](mailto:WrightC@gao.gov)

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## Staff Acknowledgements

In addition to the contact named above, Robert J. Marek (Assistant Director), Diantha Garms (Analyst-in-Charge), Sharron Candon (Analyst-in-Charge), Nora Adkins, Jenny Chanley, Eric Charles, Ryan Han, Kermina Hanna, Robert Letzler, Spencer Schultz, and Ben Shouse made key contributions to this report.

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