

7. Must Phase I proposers submit preliminary data as part of the proposal?

Preliminary data are not required for NSF SBIR/STTR Phase I proposals; However, preliminary data often helps build the case that the small business is well positioned to demonstrate technical feasibility if the Phase I project is funded.

8. Are new startup companies appropriate candidates for the program?

Yes. NSF encourages proposals from many types of small businesses. In fact, most NSF SBIR/STTR Phase I awards are made to companies that are newly formed and very small. Companies with no current revenues and/or a minimal history of operations are encouraged to apply. However, those small businesses must show that they have a clear plan to quickly launch the company operations and assemble a team capable of carrying out the proposed Phase I project. Conversely, companies with a significant history of operations and/or R&D funding will be evaluated based on their track record of prior technology development and commercialization and whether NSF funding will be catalytic to their further development.

9. Are first-time entrepreneurs appropriate candidates to participate in the program?

Many, if not most, NSF SBIR/STTR awardee companies are launched by first-time entrepreneurs. NSF encourages proposals from entrepreneurs of all experience levels — new and seasoned. It is critical that the team demonstrate commitment to advancing the technology to the market. The lack of a commercialization track record does not result in a disadvantage if the proposer shows commitment to the business' mission and a path to successful commercial outcomes.

10. What are the expected outcomes (deliverables) of a Phase I project?

The aims of the Phase I project should include a demonstration of the technical feasibility of the proposed innovation and thereby a path to advancing the innovation toward commercialization. The R&D outcomes best demonstrating technical feasibility vary widely based on the technology field and the particulars of the project.

The required deliverable at the end of an NSF SBIR/STTR Phase I grant is a report that summarizes the project's technical accomplishments. Phase I outcomes take many forms depending on the technology area and stage of the research. Outcomes could be proof-of-concept data, a prototype, analytical/testing results of the product under development, etc.

Phase I projects should mitigate the technical risks central to future commercial success. Phase I R&D work should present high technical risk; thus, not all projects will achieve the desired technical outcomes. Successful projects will naturally be better positioned to obtain follow-on funding, including SBIR/STTR Phase II funding.

Therefore, an NSF SBIR/STTR proposal should primarily address only the R&D activities to be funded by the NSF award. Other R&D to be performed with or funded by other partners may be mentioned briefly, but the R&D plan should concentrate only on NSF-funded work.

Any resources available to or volunteered by the small business but not to be procured with Phase I award funds may be listed in the Facilities, Equipment, and other Resources section of the proposal.

62. How much of the NSF-funded research and development must be performed by the awardee? (In Phase I and Phase II)?

These requirements differ for SBIR and STTR awards:

- For **Phase I SBIR** awards, a minimum of two-thirds (66 percent) of the R&D, as stated in the budget, must be performed by the awardee. The rest may be performed by a subawardee(s). For **Phase II SBIR** projects, a minimum of one-half (50 percent) of the R&D must be performed by the awardee, with the rest performed by a subawardee(s).
- For **Phase I and Phase II STTR projects**, a minimum of 40 percent of the R&D, as stated in the budget, must be performed by the small business, and a minimum of 30 percent of the R&D, as stated in the budget, must be performed by the partner research institution.

PROPOSAL REVIEW

63. What criteria are used to evaluate NSF SBIR/STTR proposals?

All NSF proposals are reviewed for Intellectual Merit and Broader Impacts. In addition, SBIR/STTR proposals have a set of additional criteria describing Commercial Impact. For more information on these criteria in the context of SBIR/STTR proposals, see: <https://seedfund.nsf.gov/resources/review/peer-review/>. The Merit Review Criteria are given below:

Intellectual Merit criterion encompasses the potential to advance knowledge and leverages fundamental science or engineering research techniques to overcoming technical risk. This can be conveyed through the Research and Development (R&D) of the project:

- the application of creative, original, and potentially transformative concepts to systematically study, create, adapt, or manipulate the structure and behavior of the natural or man-made worlds;
- the use of the scientific method to propose well-reasoned, well-organized activities

based on sound theory, computation, measurement, observation, experiment, or modeling;

- o the demonstration of a well-qualified individual, team, or organization ready to deploy novel methods of creating, acquiring, processing, manipulating, storing, or disseminating data or metadata; and/or
- o the novel integration of new theories, analysis, data, or methods regarding cognition, heuristics, and related phenomena.

SBIR/STTR proposals are required to have both the Technical Risk and Technological Innovation.

Technical Risk assumes that the possibility of technical failure exists for an envisioned product, service, or solution to be successfully developed. This risk is present even to those suitably skilled in the art of the component, subsystem, method, technique, tool, or algorithm in question.

Technological Innovation indicates that the new product or service is differentiated from current products or services; that is, the new technology holds the potential to result in a product or service with a substantial and durable advantage over competing solutions on the market. It also generally provides a barrier to entry for competitors. This means that if the new product, service, or solution is successfully realized and brought to the market, it should be difficult for a well-qualified, competing firm to reverse-engineer or otherwise neutralize the competitive advantage generated by leveraging fundamental science or engineering research techniques.

Broader Impacts criterion encompasses the potential benefit to society and contribution to the achievement of specific, desired societal outcomes. Proposers should consider the American Innovation and Competitiveness Act ([P.L. 114-329, Section 102](#)) Broader Impacts Review Criterion Update:

1. Increasing the economic competitiveness of the United States.
2. Advancing of the health and welfare of the American public.
3. Supporting the national defense of the United States.
4. Enhancing partnerships between academia and industry in the United States.
5. Developing an American STEM workforce that is globally competitive through improved pre-kindergarten through grade 12 STEM education and teacher development, and improved undergraduate STEM education and instruction.
6. Improving public scientific literacy and engagement with science and technology in the United States.
7. Expanding participation of women and individuals from underrepresented groups in STEM.

Commercialization Potential of the proposed product or service has the potential to

disrupt the targeted market segment by way of a strong and durable value proposition for the customers or users.

- The proposed product or service addresses an unmet, important, and scalable need for the target customer base.
- The proposed small business is structured and staffed to focus on aggressive commercialization of the product/service.
- The proposed small business can provide evidence of good product-market fit (as validated by direct and significant interaction with customers and related stakeholders).

64. Who evaluates NSF SBIR/STTR full proposals? What does the review process entail?

In many cases, similar proposals are typically placed into groups called a "panel." A group of external experts is assigned to a panel, with each proposal reviewed by at least three of these experts, which NSF calls "reviewers." After the reviewers read the proposals and provide written feedback, they meet in person or virtually to discuss the entire set of proposals in the panel. Alternatively, external reviewers submit reviews by email (called "ad hoc reviews"), with a minimum of three reviewers providing feedback on each proposal. The Program Director has the discretion to determine if a proposal should be panel or ad hoc reviewed and may consider topic, reviewer expertise, and other factors. All reviewer comments are anonymized and provided verbatim back to the proposing Principal Investigator.

In Phase I, technical reviewers with expertise in the field of the proposed research and/or the target market area are asked to confidentially review the proposals. These reviewers have technical training and expertise in relevant areas of science, engineering, business, or technology. The Phase I review process relies heavily on input from these experts, with some reviewers offering both commercial and technical expertise. Dedicated commercial reviewers are often asked to participate on Phase I panels.

NSF SBIR/STTR Program Directors with relevant technical and commercial expertise lead the entire review process and directly evaluate the technical and commercialization details of each proposal. For proposals reviewed in panel, a proposing Principal Investigator will receive a Panel Summary, which is a consensus statement from all panel members. For ad hoc review of proposals (meaning that a panel was not held), the PI will not receive a Panel Summary.

In many cases, proposers still in consideration for an award will be contacted directly by NSF staff following this external review, with additional questions or concerns for the proposer to address.

An excellent way to learn about the NSF Merit Review process is to serve as a reviewer. If you would like to be considered as a proposal reviewer and/or panelist: to see a panel first-hand, learn about common proposal pitfalls, discover strategies to writing strong proposals, and meet peers and colleagues working in areas of similar interest, please see: <https://seedfund.nsf.gov/resources/review/>. Note, you cannot serve as a panelist for the NSF SBIR/STTR program while your own proposal is under review.

65. How does NSF manage confidentiality and conflicts of interest during the peer review process? What can proposers do to ensure that their proprietary information is kept safe?

NSF proposals are confidential. They are not made public and are not considered a public disclosure for patent purposes. Proposals are kept confidential by NSF staff and the external reviewers certify that no conflicts of interest exist and that they will keep the proposal documents and review contents confidential (see the [Conflict of Interest form](#)). SBIR/STTR data are protected from disclosure by the participating agencies for a period of not less than twenty years. The SBA has a full set of FAQs addressing data rights: <http://www.sbir.gov/faq/data-rights>.

Even when SBIR/STTR data are no longer under the mandatory protection, NSF still does not generally release proposal information publicly, with the rare exception of a Freedom of Information Act (FOIA) request. Sections of the proposal marked as "proprietary" will not be made available even to a FOIA requester, so it is important to clearly mark sensitive sections of the proposal as "proprietary." In the event of a FOIA request, if the NSF is able to contact the submitting small business, there is a second opportunity for the business to request redaction of proprietary information from the proposal. However, it is not appropriate to mark the entire proposal as proprietary.

NSF does not release or acknowledge proposals recommended for decline and will not respond to FOIA requests on declined proposals.

66. How important are letters of support? What does a strong letter of support contain?

Letters of support are extremely important for both Phase I and Phase II proposals. Letters of support may show the reviewers that the proposed innovation, if developed, would solve a real market need. More generally, letters of support help validate claims in the proposal regarding commercial impacts. Therefore, letters from potential end users of the technology (customers) and corporate partners/collaborators are appropriate. Letters from actual or potential investors may also be appropriate. Proposers should collect these letters early in the proposal writing process.

67. Some NSF SBIR/STTR companies build on basic research previously funded by

the NSF. Are companies proposing projects that are NOT related to NSF or any Federal funding at a disadvantage?

No. All proposals are evaluated according to the [Merit Review Criteria](#). Past NSF funding (or "lineage") is not a requirement for funding and does not advantage or disadvantage a proposal.

68. What happens if the company's R&D goals, business model, team, or vision change while the proposal is under review?

Proposers should alert NSF staff of significant changes in company status, team, or technology, especially if contacted by an NSF SBIR/STTR Program Director with a request for additional information during the review process. The Program Director may request that the small business update the work plan and objectives of the Phase I project.

69. How does the NSF weigh the three major SBIR/STTR review criteria — Intellectual Merit, Broader Impact, and Commercial Impact — during the review process?

Intellectual Merit, Broader Impacts, and Commercial Impacts are all important for the purposes of making award recommendations.

70. What is the typical success rate?

Unfortunately, many competitive Phase I proposals are not able to be funded due to NSF budgetary limitations. Success rates for the program in recent years are available to the public in SBIR/STTR annual reports provided by the SBA; These can be found at <https://www.sbir.gov/annual-reports-files>.

71. What is the typical proposal review timeline?

Our goal is to provide a recommendation to most proposals within six months of submission; however, the review process may take longer for some proposals.

Several general guidelines are listed below for proposals undergoing Merit Review. Proposers whose proposals did not progress past administrative review and therefore do not advance to the panel review stage may learn of this decision earlier in the process (this decision is called "Return Without Review"). Proposers, especially those in consideration for funding, may be contacted by the NSF SBIR/STTR Program Director any time after the panel, if the panel or Program Director need further information for the proposal to be fairly and completely evaluated. This process of interaction with the Program Director is called "due diligence".

72. When does NSF release proposal decisions? What feedback is provided?

Proposal decisions are provided for proposals approximately 6 months after proposal submission, once the entire Merit Review process has been completed.

Once the NSF SBIR/STTR Program Director makes a recommendation to Return Without Review, Award, or Decline a proposal, and their recommendation is reviewed and concurred by the Division Director (or delegate), the proposer will be notified by email. The Fastlane system will automatically update to reflect the recommendation and, if the proposal was reviewed, the anonymized, verbatim reviews and Panel Summary (if available) will become available. The proposer will also receive a Context or Process Statement giving additional information on how the review was conducted. For proposals that are returned without review, the reason for the return will be given in the "PO Comments" in Fastlane.

If a proposal is declined, the PI or SRO may contact the cognizant NSF SBIR/STTR Program Director to request a debrief whereby the NSF staff will give additional context for the decision-making process.

73. My Phase I proposal was declined. May I resubmit it?

If your proposal was declined, you must submit a new Project Pitch and, if invited, submit a new full proposal with substantial revisions addressing the reviewers' and/or panel's concerns. You may not submit the exact same proposal again.

74. My Phase I proposal was declined. May I have the decision reconsidered?

No, there are no reconsiderations for declined NSF SBIR/STTR Phase I proposals per the policy guidance in the NSF SBIR/STTR program solicitation and in the NSF Proposal and Award Policies and Procedures Guide (PAPPG), Section [IV.D.2.b](#).

PHASE I AWARD

75. What are my obligations to the government in terms of the intellectual property (IP) developed from NSF SBIR/STTR funding? Does the government have the right to use the invention developed under my Federal grant?

As a recipient of a Federal research grant, you are obligated to report all patents, patent applications, and invention disclosures that are a direct result of NSF support. This reporting is done via the iEdison system and needs to be completed within a certain time-frame (typically 60 days).

Guidelines for using iEdison are at:

https://era.nih.gov/iedison/iedison_Inventor_userguide.pdf.

Instructions for the timing of registration of your invention are at:

https://era.nih.gov/iedison/invention_timeline.htm.

The Bayh-Dole Act, 35 U.S.C. 200 et seq, provides that a small business may retain the entire right, title, and interest throughout the world to each subject invention (as defined in 35 U.S.C. 201) subject to the provisions of 35 U.S.C. 202 and 35 U.S.C. 203.

With respect to any subject invention in which the awardee retains title, 35 U.S.C. 202(c)(4) gives the Federal government "a nonexclusive, nontransferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the subject invention throughout the world."

Section 203 of the Bayh-Dole Act gives the U.S. government the ability to exercise "march-in rights" on inventions created by Federally funded research projects. However, these rights are designed to be used only in the case of a national emergency (defined in the Act). Information regarding these rights and the government's ability to exercise them is located at: <https://fas.org/sgp/crs/misc/R44597.pdf>.

Regulations implementing the Bayh-Dole Act can be found at: <https://era.nih.gov/iedison/bayh-dole.htm>.

Note that STTR projects are required to include a Cooperative Research Agreement between the awardee small business and the cooperating research institution which provides clarity of ownership of intellectual property that results from the project.

76. What are the terms and conditions associated with an NSF SBIR/STTR Phase I award?

NSF SBIR/STTR award conditions can be found at: https://www.nsf.gov/awards/managing/sbirsttr_conditions.jsp. The headings at the top of the award conditions show topics of interest including Patent Rights, Payments, and Project Reporting Requirements.

77. What if there are changes to the business model or R&D strategy of a small business during the NSF SBIR/STTR Phase I project?

NSF SBIR/STTR Program Directors understand that small businesses, especially those in the earliest stages of development, may undergo business model changes, such as identifying a different niche market, a changed product format, etc. During Phase I, the NSF SBIR/STTR Program Directors work with awardees to adjust (within reason and as appropriate) the Phase I project objectives, work plan, and budget to reflect changes in the market understanding and business model. However, changes to a Phase I project that completely shift the focus of the project away from the initially proposed core innovation are generally not permitted. Additionally, NSF SBIR/STTR will not support alternative R&D if the work no longer meets the Phase I program objectives.

78. How and when does NSF release SBIR/STTR Phase I funding to my small business?

Typically, the awardee small business has access to all of their Phase I funds, less \$25,000, at the beginning of the award. These funds may be drawn down in any amount, at any time, from NSF's Awardee Cash Management System (ACM\$). Award funds cannot be "put back" once withdrawn from ACM\$ and awardees should understand tax implications before withdrawing funds.

The last \$25,000 of the award is payable after the final report is approved by NSF.

79. What other support do NSF SBIR/STTR Phase I awardees receive?

NSF offers [Beat-The-Odds Boot Camp](#) to all Phase I awardees. This activity, modeled on the [NSF Innovation Corps \(I-Corps™\)](#) program and led by experienced NSF I-Corps instructors, teaches the fundamentals of customer discovery and allows Phase I companies to refine their understanding of customers, industry, markets, and competition. NSF support also includes a Commercialization Assistance Program (CAP), which offers additional resources and significant one-on-one guidance from seasoned advisors in the development of the business strategy associated with the Phase I research, as well as in the preparation of Phase II proposals.

BEYOND PHASE I

80. When and how do I apply for an NSF SBIR/STTR Phase II award?

The eligibility to submit a Phase II proposal is based on the start date of the corresponding NSF Phase I SBIR/STTR award. Phase II submissions are permitted between 6 and 24 months after the start date of the relevant NSF SBIR/STTR Phase I award. Please reference your Phase I award notice or contact your Program Director for your Phase I start date or other details on Phase II submission. You may submit ONLY ONE Phase II proposal for a Phase I award. Details on the Phase II proposal process can be found at: <https://seedfund.nsf.gov/resources/awardees/phase-2/apply/>.

81. Does NSF have an SBIR/STTR Phase III program?

No, NSF does not offer an SBIR/STTR Phase III program. The objective of Phase III, where appropriate, is for the small business to pursue commercialization objectives resulting from the Phase I/II R/R&D activities. The SBIR/STTR programs do not fund Phase III. At some Federal agencies, Phase III may involve follow-on non-SBIR/STTR funded R&D or production contracts for products, processes or services intended for use by the U.S. Government. NSF does not acquire technologies developed under the SBIR/STTR program, so it does not offer a Phase III option.

However, NSF does offer Phase II awardees several supplemental funding opportunities, including the possibility of obtaining up to \$500,000 in additional funding under the Phase IIB program, based on third-party investment or product/ service revenues derived from NSF-supported project(s). See information on these opportunities at: <https://seedfund.nsf.gov/resources/awardees/supplement/overview/>.

82. What are some significant outcomes or success stories that can be traced to NSF SBIR/STTR funding?

We are proud to have supported thousands of innovative startups and small businesses over the past 40+ years. Well-known firms, such as Qualcomm and Symantec, received early support from the NSF program. Since fiscal year 2016, firms funded (or previously funded) by our program have raised more than \$14 billion in follow-on private capital and reported around 200 successful exits (IPOs, mergers, and acquisitions). See more success stories on our [Showcase on seedfund.nsf.gov](#).