

NSF 19-047

Frequently Asked Questions (FAQs) for Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs

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PROGRAM BASICS

1. What are SBIR and STTR? What are the differences and which is more appropriate for my project?

The Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs are both Congressionally-mandated research and development (R&D) funding programs intended to support small businesses focused on bringing innovative technology to the marketplace. At NSF, both programs have identical philosophies, review criteria, processes, and award dollar amounts, and the two programs have similar success rates. The difference between SBIR and STTR programs at NSF is that small businesses which apply to the STTR program are required to partner with a not-for-profit research institution in their proposal. Such a partnership is optional for SBIR proposals.

We recommend that potential proposers wait until invited to submit a full proposal to choose between SBIR and STTR. The budget requirements (see Question 54) of the programs can be used to determine which is more appropriate for a given project.

2. What are the funding priorities for NSF SBIR/STTR?

The NSF SBIR/STTR program seeks to support innovative, high-risk and high-impact R&D projects with a strong case made for commercialization. The portfolio is divided into broad technology areas, which are listed here: https://seedfund.nsf.gov/portfolio/. However, this list is NOT exhaustive. A small business has the freedom to pursue any technology and market area (with the exception of drug development). The program's proposal review does NOT take into account how well a proposal fits into a topic. Rather, Phase I proposals are evaluated based on the merit review criteria listed here: https://seedfund.nsf.gov/resources/review/peer-review/. The program seeks to support innovative, high-risk and high-impact R&D projects with a strong case made for commercialization.

3. What is the best way to gauge whether a project is innovative and sufficiently technically challenging to be a good fit?

NSF SBIR/STTR seeks to fund R&D that involves a high degree of technical risk. It is a good sign if the R&D has never been attempted and/or successfully done before, and if it is focused on an attempt to overcome significant technical hurdles. Innovation takes different forms in different fields. If this is a significant question that will determine whether or not you will submit a proposal, the best approach is to reach out to an NSF SBIR/STTR Program Director and specifically ask for guidance as to whether or not the project seems to be a good match for the program. The Project Pitch submission (see Question 23) is also intended to ensure that your project is appropriate for the program. You are free to submit a Project Pitch without reaching out to a Program Director.

4. How does NSF select which projects to support? Who manages the review and selection process?

The program has two stages of review. The first stage is the submission and evaluation of a Project Pitch (see Question 21). If the Project Pitch results in an invitation, a full proposal is the next step.

All full proposals are carefully reviewed by a minimum of three experts in the technical and/or market areas pertinent to the proposal. These reviewers are selected by Program Directors, who in turn lead and oversee the review process. Each Program Director has technical and commercial expertise relevant to the portfolio area that they manage.

All NSF SBIR/STTR proposals are evaluated through use of three merit review criteria: intellectual merit, broader impacts, and commercial impact. Read more about the merit review criteria and process on the program website (https://seedfund.nsf.gov/resources/review/).

5. What activities and expenses are appropriate to be funded in a Phase I project? What activities and expenses are not permitted?

NSF SBIR/STTR funding is for research and development (R&D) only. Generally, NSF SBIR/STTR funding can be used for salary and wages for company employees, associated fringe benefits, materials and supplies, and a number of other direct costs needed to carry out the proposed R&D. As appropriate, NSF SBIR/STTR projects may also fund consultants to the project and subawards to partner institutions. Some types of indirect costs that are necessary for the small business to carry out the project are also appropriate.

In general, NSF SBIR/STTR Phase I funds cannot be used for business development, marketing and sales, production, patent costs, or any activity unrelated to the underlying research and development effort (either as direct or indirect costs). There are two notable exceptions to this rule. First of all, awardees are permitted to request a small fee as part of their award, and these funds are unrestricted. Secondly, NSF permits a limited amount of funds to be used for certain business-related activities as part of an awardee's involvement in NSF's Beat-The-Odds Boot Camp (see also Question 69 regarding what other support Phase I awardees receive).

Equipment purchases are not permitted on a Phase I award but are permitted in Phase II. Please consult the solicitation for more information.

6. Will NSF fund work on a product that has already been developed? Will the program fund small businesses to pay for patent costs, sales & marketing, business development, or other related costs?

NSF SBIR/STTR funding is for R&D only. The aim of a Phase I project should be to demonstrate the technical feasibility of the proposed innovation and thereby bring the innovation closer to commercialization. If the idea has been already proven to be technically feasible and capital is required simply to perform analytical testing on the product, execute the business plan, and/or begin manufacturing, the project is NOT a good candidate for Phase I funding. Non-incremental innovations to an existing product might be appropriate if the innovation will **significantly** enhance commercial outcomes and if the small business must undertake R&D with a great degree of technical risk in order to achieve those outcomes. Projects that focus on incremental improvements on existing products will not be funded.

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, in many cases, preliminary data can strengthen the case that the small business could

demonstrate technical feasibility with the proposed Phase I research and development.

8. Are new start-up companies appropriate candidates for the program?

Yes. NSF encourages proposals from a diversity 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 minimal history of operations are encouraged to apply. However, those small businesses must show that, if NSF SBIR/STTR funding is awarded, they have a clear plan to quickly stand up the company operations and bring together a team capable of carrying out the proposed Phase I project. Conversely, companies with significant history of operations and/or R&D funding will be evaluated based on their track record of prior technology development and commercialization.

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

NSF encourages proposals from a diversity of entrepreneurs — new and seasoned. What is most important is that the team is committed to bringing the technological innovation to market. The lack of a commercialization track record does not disadvantage a team, as long as the proposers can show commitment to the mission of the business and a path to successful commercial outcomes. Many, if not most, NSF SBIR/STTR grantees are first-time entrepreneurs.

10. What is the expected outcome (deliverable) of a Phase I project?

The aim of the Phase I project should be to demonstrate the technical feasibility of the proposed innovation and thereby bring the innovation closer to commercialization. Typically, an expected outcome of a Phase I project is not a product that is fully ready for market launch. The R&D outcomes that can best demonstrate technical feasibility vary widely based on the technology area and the particulars of the project.

The required deliverable at the end of an SBIR 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.

The Phase I R&D work is intended have high technical risk, therefore, it is understood that not all projects will achieve the desired technical outcomes. However, projects that are successful will necessarily be in a better position to obtain follow-on funding, including an SBIR/STTR Phase II grant. This is because a Phase I project should aim to de-risk the technical aspect or aspects of the innovation that are most important to future commercial success.

11. Is there a "fast-track" option to apply directly for Phase II funding? Is there an option to apply for Phase I and Phase II simultaneously?

Small businesses must receive a Phase I award before applying for a Phase II award at NSF. There is no "fast-track" option.

12. What other benefits does the program provide?

There are significant benefits beyond Phase I funding:

- Merit Review: Even proposers who do not receive a Phase I award can benefit from the NSF's merit review process. NSF provides valuable feedback from technical experts and commercial reviewers for every full proposal it receives, and this information may positively impact a company's future technology development and/or business model.
- The NSF "stamp of approval." NSF's recognized peer review process shows investors or partners that the subject project and technology met the high bar for novelty and innovation required by NSF.
- Follow-on funding: Only Phase I awardees may apply for a Phase II award, which
 is up to \$750,000. Once a small business has obtained a Phase II award, it is
 eligible to apply for additional supplemental funding that could augment the total
 Phase II amount. Many Phase II awards end up totaling close to \$1.5 million.
- Mentoring and training. NSF Program Directors add value above and beyond the R&D funding. Each staff member has experience working with startups along with technical and industrial expertise. Learn more about the NSF staff by reading their bios on the program website (https://seedfund.nsf.gov/contact/bios/).
- Access to one of the nation's largest networks of promising startups and small businesses.

13. Where do I go to learn more?

The program's website, https://seedfund.nsf.gov, is a great place to start.

14. Are examples available of recently-funded NSF Phase I proposals and/or awards?

Companies and projects funded by NSF SBIR/STTR can be explored on the portfolio page here: https://seedfund.nsf.gov/portfolio/. Company names and project titles and abstracts for recently funded Phase I awards in each topic area are provided on the topic web pages that are linked to from this page:

https://seedfund.nsf.gov/awardees/phase-1/. NSF SBIR/STTR does not provide sample proposals, nor do we disclose publicly any information about (or the existence of) declined proposals.

ELIGIBILITY

15. The NSF SBIR/STTR Phase I program solicitation requires that I must receive an invitation to submit a full proposal. How do I get invited to submit?

Potential proposers must first submit a "Project Pitch" document via the NSF SBIR/STTR Phase I Project Pitch online form. The cognizant NSF SBIR/STTR Program Director will use the Project Pitch to determine whether the proposed project is a good fit for the program's objectives to support (i) innovative technologies that show promise of commercial and/or societal impact and (ii) involve a level of technical risk. NSF will respond to all Project Pitches within three weeks of receipt.

16. What happens if I submit a Project Pitch and am not invited to submit a full proposal?

Small businesses that submit a Project Pitch that is not invited to submit a full proposal are permitted to resubmit their Project Pitch (with revisions to address any deficiencies) in the next submission window. Please refer to the solicitation for submission window dates.

A given small business is also permitted to submit up to two **unique** Project Pitches per solicitation window. However, a second Project Pitch can be submitted in a given window only if the first did not lead to a full proposal invite. Any small business should wait for the final resolution of a pending Project Pitch before submitting a new (or revised) Project Pitch.

17. Must the proposing legal entity be formed at the time of the Project Pitch submission? At the time of the full proposal submission?

Submission of a Project Pitch is permitted even if no small business has yet been formed. The proposing small business needs to be a legal entity at the time of full proposal submission. A legal entity is required to complete all of the necessary registrations. Phase I proposer small businesses, however, need not have commenced company operations at the time of submission.

18. Does NSF SBIR/STTR support non-U.S. companies or work that is performed abroad?

SBIR/STTR eligibility guidelines state that the majority (more than 50%) of a small business' equity (e.g. stock) must be directly owned and controlled by one or more individuals who are U.S. citizens or permanent residents of the United States. Additionally, NSF SBIR/STTR only supports work that is performed in the U.S. (including work performed by sub awardees and consultants).

19. Who is the Principal Investigator (PI) on an NSF SBIR/STTR Phase I grant? What

are the responsibilities of the PI? Does the PI need to have a PhD? Can the PI be a graduate student?

The PI is often the technical lead on the project. However, the program is flexible on choice of PI, as long as he or she is capable of tracking and communicating technical progress on the award. The PI is responsible for communicating with the cognizant Program Director and staff during the course of the award and monitors the performance of the project to assure adherence to performance goals, time schedules or other requirements as appropriate to the project or the terms of the grant. The PI is also responsible for submitting required reports to the NSF.

The PI is NOT required to have a PhD or any other specific degree. Graduate students and post-doctoral researchers are eligible to be the PI on an NSF SBIR/STTR Phase I proposal, as long as they have a plan to be able to meet the primary employment requirement at the time a Phase I award is made (see below). Many PIs have no post-graduate training.

However, the PI MUST be **more than 50 percent legally employed** by the proposing small business by the time of the award and for the entire duration of the Phase I project. NSF normally considers a full-time work week to be 40 hours and considers employment elsewhere of greater than 19.6 hours per week to be in conflict with this requirement. Additionally, anything that prevents an individual from meeting this legal employment requirement (including residency status or university policy) will make that individual ineligible to be PI.

In addition, the PI must commit a **minimum level of effort to the project described in the application** (not to be confused with the greater than 50% employment requirement). The minimum level of effort for the PI is one person-month per six months of project duration.

20. May a faculty member at a college or university serve as the Principal Investigator on an NSF SBIR/STTR project?

In most cases, employment as a faculty member at a college or university conflicts with the primary employment requirement for the PI of an SBIR/STTR project (see Question 19). However, in some cases, the college or university can grant a leave of absence or otherwise indicate that the faculty member is permitted to be employed more than 50% of their time employed by the small business.

THE PROJECT PITCH

21. The NSF SBIR/STTR Phase I program solicitation requires that I submit a Project Pitch prior to starting a full proposal. What is a Project Pitch and why is it

required?

The Project Pitch is a three-page document submitted by an entrepreneur or a small business that outlines the project objectives, technical innovation and associated technical risks. The Project Pitch is used (i) to provide specific feedback to potential proposers regarding whether or not their proposed project is a good fit for the NSF SBIR/STTR Phase I program prior to initiating the full proposal submission process, and (ii) to allow greater agility and flexibility in receiving and evaluating full proposals, ensuring that potential proposers do not expend time or resources in the development of full proposals where the proposal goals are clearly not appropriate given the NSF SBIR/STTR program objectives.

22. Who should submit a Project Pitch?

We recommend that the Project Pitch be submitted by the expected PI of the project and/or an officer of the small business.

23. How do I submit my Project Pitch?

You can submit the Project Pitch via the online form or use the upload document feature.

24. When should I submit my Project Pitch?

Feel free to submit a Project Pitch at any time but know that the sooner a Project Pitch is received, the sooner a small business could be invited to submit a full proposal. NSF encourages small businesses to submit the Project Pitch as soon as they think they might want to apply for funding. One thing to note, submitting your Project Pitch within six weeks of the full proposal submission window closing date may not give a small business enough time to submit a full proposal within that window. Once NSF receives the Project Pitch, it may take up to three weeks to extend an official invitation. A small business with an official invitation will have to obtain the required registrations, which can take up to one month to receive, and prepare and submit a high-quality full proposal. Small Businesses that submit a Project Pitch within six weeks of the full proposal submission window closing date may have to wait for the subsequent window to submit a full proposal (if invited).

25. How does NSF determine who is the cognizant Program Director?

NSF SBIR/STTR Program Directors review Project Pitches based on their technical topic areas. To see which Program Director covers which topics, visit our website (https://seedfund.nsf.gov/portfolio/). If you are not sure whom to contact, simply send your Project Pitch to the most relevant technical topic area. Based on the information in that submission, NSF will determine the most appropriate Program Director to respond.

Please be aware that your Project Pitch may be re-assigned and reviewed under a different topic area if determined to be better aligned with that topic. If you still have additional questions, contact us at sbir@nsf.gov.

26. What happens after I submit my Project Pitch? How does NSF use this information to decide whether to invite a small business to submit a full proposal?

Once NSF receives a Project Pitch, the cognizant Program Director will review its contents to determine whether the proposed project is a good fit for the NSF SBIR/STTR Phase I program's objectives to support (i) innovative technologies that show promise of commercial and/or societal impact and (ii) involve a level of technical risk. He or she may reach out to the small business for more information, extend an invitation to submit a full proposal (with additional guidance or feedback) or notify the small business that the project it has proposed isn't a fit for the NSF SBIR/STTR program.

27. Is there a limit to how many Project Pitches my small business can submit?

Yes. A small business may submit two **unique** Project Pitches per submission window. (Please refer to submission window dates listed on the solicitation). **However**, a second Project Pitch can be submitted in a given window only if the first did not lead to a full proposal invite. Any small business must wait for the final resolution of a pending Project Pitch before submitting a new (or revised) Project Pitch. Any small business that has received an invitation to submit a full proposal must wait for a resolution of the full proposal before submitting a new (or revised) Project Pitch. Additional Project Pitch documents submitted during the same solicitation window will not be reviewed.

PREPARING A FULL PROPOSAL

28. I have been invited to submit a proposal. What first steps I should take?

If you have been invited to submit a proposal, we STRONGLY recommend that the small business immediately start the process of completing the four required registrations, in the following order: DUNS, System for Award Management (SAM), FastLane, and the SBIR Company Registry (SBIR.gov).

- Register with DUNS at http://www.dandb.com. A DUNS and Employer Identification Number (EIN) are required for SAM registration.
- Register the small business in the System for Award Management (SAM): https://www.sam.gov as early as possible! Read the SAM Quick Start Guide for guidance.
- Before applying, you need to register your company with NSF in Research.gov.

Only after registering with Research.gov can you login to FastLane (https://www.fastlane.nsf.gov) and begin preparing your proposal. (SBIR and STTR proposals are not accepted in Research.gov). We recommend you explore FastLane before submitting your application. For help in determining who should be the PI on the project, see Question 19.

• Register with the SBIR Company Registry. See the "Registrations" page for more details: https://www.sbir.gov/registration.

Lastly, letters of support from outside individuals or organizations are an important part of the proposal. However, these letters take time to obtain. Potential proposers are recommended to start obtaining these letters as early as possible. See Question 58 for more information.

29. I noticed that the solicitation has submission "windows". How does this compare to a specific deadline? Is there a deadline?

Proposers are now able to submit their full proposal at any time during the submission window. If an invited small business misses the first window date, they can submit their full proposal for the next submission window. A submission "window," rather than a deadline, allows invited small businesses more flexibility in deciding when to submit a full proposal. Additionally, under this new method, once a full proposal is received, NSF has more flexibility and agility in conducting the merit review process, which will allow small businesses to receive funding more quickly in many cases.

Please note that the duration of the merit review process can vary between topic areas and that more details about the timeline will be provided as part of the Project Pitch process, when a full proposal is invited (see Question 24).

30. May a small business submit multiple Phase I proposals during the same submission window?

No. A given small business may only submit ONE proposal to a given submission window (note that small businesses are prohibited from submitting separate projects, or the same project, to both the SBIR and STTR program during the same submission window). This requirement is intended to allow proposers to focus on submitting one strong proposal that best aligns with the commercial goals of their business and the NSF SBIR/STTR review criteria.

31. Can NSF SBIR/STTR fund work on products whose target customers will be in the defense sector, or whose customers or end users are government entities?

NSF SBIR/STTR does not dictate which markets or customers small businesses may serve. However, if an intended customer for the solution developed under the

SBIR/STTR grant will be the Department of Defense (DOD), the Department of Homeland Security (DHS), or the National Aeronautics and Space Administration (NASA), proposers should consider applying through the SBIR/STTR programs at those respective agencies (DOD - http://www.acq.osd.mil/osbp/sbir/; DHS - http://www.dhs.gov/science-and-technology/sbir; NASA - https://sbir.nasa.gov/). Those agencies, and some others, focus on the acquisition of solutions developed under the SBIR/STTR program. The submission of an identical or overlapping proposal to both NSF and another agency is possible (see Question 33), if a project seems like it could be appropriate for both NSF and another agency.

32. Both NSF and NIH fund biomedical/health projects through the SBIR/STTR program. How are the programs different? Can a small business apply to both programs?

Generally, NSF SBIR/STTR funding is not aimed at supporting clinical trials, the clinical validation of information technologies or medical devices, or studies that are performed primarily for regulatory purposes. Limited studies with human subjects may be acceptable to the extent that they are performed in support of feasibility, proof-of-concept studies of early-stage technologies.

More specific guidance on what is funded through NSF SBIR/STTR in the biomedical and biological technologies spaces can be found on the topic pages for Digital Health and Medical Devices (https://seedfund.nsf.gov/portfolio/#digital-health-dh-and-medical-devices-md) and Biomedical Technologies

(https://seedfund.nsf.gov/portfolio/#biomedical-technologies-bm) and Biological Technologies (https://seedfund.nsf.gov/portfolio/#biological-technologies-bt). These topics and subtopics are NEITHER restrictive NOR exhaustive but give a general sense of the types of proposals received.

Another way to explore what is typically funded under NIH and/or NSF is via the Award Search at SBIR.gov, which houses data on all SBIR/STTR awards, regardless of the agency under which it was funded.

Finally, the submission of an identical or overlapping proposal to both NSF and NIH SBIR/STTR is possible (see Question 33).

Submission of a Project Pitch or direct communication with an SBIR/STTR Program Director, are the best ways to get specific feedback on this issue as it relates to your proposed project.

33. May a small business submit identical or overlapping proposals to NSF SBIR/STTR and another federal agency?

Proposers may submit overlapping proposals to different agencies, but NSF will not make **awards** that duplicate research funded by, or anticipated to be funded by, other agencies. It is very important to note potential overlap on the cover page of the NSF proposal. If a proposer fails to disclose that another Federal Agency has received this proposal (or an equivalent or overlapping proposal) on the proposal cover page, the proposer could be liable for administrative, civil, or criminal sanctions.

If a proposal is selected for award by NSF and another agency, the cognizant agencies will work together to determine which agency will fund the work. Sometimes, the project scope and/or budgets will be adjusted if both projects will be funded in order to ensure that no portion of the work is double-funded. However, NSF SBIR/STTR will not co-fund a single proposal with any other agency.

34. If a proposing small business elects to partner with a university or research institute as part of an STTR Phase I proposal, must the partner also be part of that Phase II proposal?

First, proposing small businesses are welcome to partner with a university or research institute for SBIR, not just STTR. See Question 54 or the solicitation for budget requirements that may help determine which program is more appropriate.

For Phase II STTR, proposing small businesses must have a research partner, similar to Phase I. However, the research partner does not have to be the same partner that was a sub awardee on the Phase I STTR effort.

If a Phase I STTR awardee does not wish to work with a research partner for Phase II, they may submit a Phase II proposal to the NSF SBIR program instead.

A Phase I STTR awardee may submit a Phase II SBIR proposal and a Phase I SBIR awardee may submit a Phase II STTR proposal.

35. What is the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG)? Some guidelines in the NSF PAPPG are not spelled out in the NSF SBIR/STTR Phase I solicitation or conflict with information in the solicitation. Which policy document should I follow?

The NSF Proposal & Award Policies & Procedures Guide (PAPPG), found here: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=pappg, contains NSF's general proposal preparation and submission guidelines. The SBIR/STTR programs have solicitations that modify the general provisions of the PAPPG, and, in such cases, the guidelines provided in the SOLICITATION must be followed.

The SBIR/STTR Phase I solicitations include MANY instructions that deviate from the PAPPG. As such, the solicitations strive to include, as much as possible, the rules and

guidelines that proposers should know in order to submit a proposal, referencing the PAPPG when necessary.

36. What are the rules or restrictions regarding contact with NSF SBIR/STTR Program Directors? Must a small business form a working relationship with a Program Director before submitting a proposal?

Small businesses are permitted to contact the NSF SBIR/STTR program directors at any time. However, program directors become increasingly busy as each submission window closes, so small businesses are strongly encouraged to contact them as early as possible, if they wish to seek guidance on submitting their Project Pitch or full proposal. If a small business does choose to engage an NSF program director, please do not contact multiple program directors in parallel without notifying them.

However, there is absolutely no requirement to form a working relationship with a program director prior to submission. Additionally, ALL invited full proposals that pass the initial screening for completeness undergo a rigorous peer review and will be considered for award.

37. Where do I prepare and submit a full proposal?

Full proposals are submitted via FastLane at https://fastlane.nsf.gov/.

FULL PROPOSAL PREPARATION AND SUBMISSION

38. Is help available for navigating FastLane or troubleshooting proposal submission problems?

The FastLane Step-by-Step Guide is a great resource: https://seedfund.nsf.gov/fastlane/.

As a reminder, if this guide and the solicitation conflict, the solicitation rules apply.

For advanced questions and troubleshooting, the FastLane Help Desk is another resource and can be reached at 1-800-673-6188 (available 7 a.m. to 9 p.m. Eastern time). NSF SBIR/STTR staff can be helpful regarding the contents of the proposal, but the experts for technical issues with FastLane are the FastLane Help Desk staff.

39. What if there are changes or updates after a proposal is submitted? Does NSF SBIR/STTR review proposal materials as soon as they are submitted?

NSF SBIR/STTR may start processing or viewing proposals as soon as they are received. If your company has updates or new information pertinent to the project after the full proposal is submitted, we encourage you to contact the Program Director who

reviewed your Project Pitch with details.

40. What rules must be followed to ensure that a proposal passes the initial administrative review for completeness and continues on to the peer review process?

Please see the "DOs and DON'Ts list" in the current Phase I solicitation, section V.

41. If the System for Award Management (SAM) indicates that it will take several weeks for a proposing business's registration to be complete, what should the business do?

As of March 2018, an active registration in SAM is required to create a new account in Fastlane. A Fastlane account is required to submit a proposal to NSF. If the SAM registration for a company has not been created before the end of the NSF SBIR/STTR Phase I submission window, the proposer will not be able to submit a proposal during that window. The proposer should just submit his/her proposal in the next solicitation window. We highly encourage any small business considering applying to the program to register in SAM.gov as early as possible! Read the SAM Quick Start Guide for guidance.

42. How does a proposer know that he or she has successfully submitted an NSF SBIR/STTR Phase I proposal?

When a proposal has been received by NSF, the proposer will receive a proposal number that is seven digits long and starts with the last two digits of the current federal government fiscal year. For example, proposal numbers for proposals submitted between October 1, 2018 and September 30, 2019 should be seven digits long and begin with "19".

If the final proposal number has not been assigned via email, it is likely that the PI submitted the proposal but has not yet performed the final step, which is to forward to the small business's Authorized Organizational Representative (AOR)/Sponsored Research Officer (SRO), who signs and submits the proposal. Instructions for this step can be found in the FastLane Step-by-Step Guide: https://seedfund.nsf.gov/fastlane/.

43. How can proposers check on the status of a Phase I SBIR/STTR proposal after it has been submitted?

The listed Principal Investigator (PI) on a given proposal can log in to Fastlane, (https://www.fastlane.nsf.gov/jsp/homepage/proposals.jsp) and click "Proposal Functions", then "Proposal Status." Proposals and their statuses will be listed. Navigating to an individual proposal will enable proposers to view reviewer comments, when they are available.

BUDGET PREPARATION

44. What is a reasonable salary for the PI and other personnel on the project?

The best way to ensure that salary requests are appropriate is to justify proposed salaries that do not exceed the median levels based on Bureau of Labor Statistics (BLS) Wage Data for the same geography and job title. More information on using BLS Wage Data can be found here: https://www.bls.gov/bls/blswage.htm.

45. Can I list a Co-PI on an NSF SBIR/STTR proposal?

NSF SBIR proposals may NOT have Co-PIs. Proposals may include sub awardees, but they should not list a Co-PI. NSF STTR proposals, MUST have a sub awardee research institution, with a Co-PI from that institution listed on the cover page and on the sub award budget.

46. How should indirect costs be structured for a Phase I SBIR/STTR project if the proposing small business does not have an established indirect cost rate?

Small businesses without an established indirect cost rate are recommended to make an estimate based on itemizing and estimating specific indirect costs that it expects to incur during the Phase I project. Common types of indirect costs are rent, utilities, some types of insurance, and other company expenses that are not directly required by the NSF project but are necessary for the overall operation of the business. It is recommended that small businesses without an established indirect cost rate keep their request for indirect costs and fringe benefits at or below the "safe rate" (i.e., total budgeted indirect costs plus budgeted fringe benefits do not exceed 50 percent of total direct salaries and wages; see the solicitation for details).

47. Can a person be listed on the budget as a sub awardee (or consultant) and also on the main budget?

In general, no person should request funds (or otherwise financially benefit) through more than one institutional affiliation for a single NSF SBIR/STTR project. Therefore, individuals with a financial interest in the proposing small business (this includes company equity holders or projected employees) cannot request funds through a sub award budget or as a consultant. In rare cases, this requirement might prove unusually burdensome; therefore, it is possible for NSF to grant an exception, if recommended by the Program Director and approved by the Division Director for the Division of Industrial Innovation and Partnerships.

48. May I budget a subaward to a federal lab or Federally-Funded Research and Development Center (FFRDC)?

Yes, FFRDCs and federal labs are eligible to be sub awardees on an NSF SBIR/STTR proposal. A list of FFRDCs is located at: https://www.nsf.gov/statistics/ffrdclist/.

49. What types of costs can be requested on a subaward budget?

A subaward budget (sub-budget) may request funds on the same lines as are permitted for the main project budget, but with two main exceptions. First, if the subaward is to a research institution, the sub-budget may contain a request for funds for Postdoctoral Scholar(s) in Line B.1, Other Personnel (whereas the main budget cannot). Second, sub award budgets may NOT contain funds on Line K, which is used for a fee that may only be requested by the proposing small business in the main budget.

50. May proposers submit a proposal with more than one subaward (sub-budget)?

Proposers may request funds for multiple subawards, as long as the requirements about total budget allocations are met (see the solicitation). For each subaward you request, a full subaward budget must be prepared, with an accompanying subaward budget that explains and justifies the subaward costs with the same level of detail as the main project budget.

51. How does NSF define a project participant as a consultant (line G.3 of the budget)?

Consultants (also referred to as "contractors") are persons who will work on the project, but who are not employees of the company. Consultants typically do not receive a W-2 tax form from the small business and are often used to provide a specific service or skill based on hourly or daily compensation. Consultant services include specialized work that will be performed by professionals that are not employees of the proposing small business. Purchases of analytical services, other services, or fabricated components from commercial sources should not be listed under consultant services and should instead be reported in the budget under Other Direct Costs/Other (Line G.6). No person who is an equity holder, employee, or officer of the proposing small business may be paid as a consultant unless an exception is recommended by the Program Director and approved by the Division Director for the Division of Industrial Innovation and Partnerships. All research on an SBIR project, including that conducted by consultants, must be carried out in the U.S.

52. What are the budget requirements for consultants?

Each consultant included in the budget should provide a signed commitment letter, to be included in the budget justification, stating a) what they will specifically be doing in the project; b) the number of hours or days that they are committing to the project; and c) the agreed-upon level of compensation which is not to exceed the NSF maximum of

\$1,000 per day (NSF defines a day as 8 hours). The budget justification must address how the consultant effort will contribute to the project. The biographical sketch of each consultant should also be included as part of the "biographical sketches" section of the proposal. If the company wishes to compensate a consultant at a higher rate, it must supply the additional funding from sources outside the NSF grant (and should explicitly state this in the budget justification).

53. If other R&D will be performed by the proposing small business, in parallel to the NSF SBIR/STTR-funded research, should those efforts be described in the proposal?

The funds provided by an NSF SBIR/STTR Phase I project are rarely sufficient to bring a new product to market. The NSF SBIR/STTR project focuses on specific technical goals that must be met in order to ensure the commercial success of the product or service under development. Therefore, an NSF SBIR/STTR proposal should primarily address the R&D effort proposed with the NSF funds only. Other R&D that may be performed with or funded by partners can be mentioned briefly, but the R&D plan should concentrate on only NSF-funded work.

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

54. 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 measured by the budget, must be performed by the awardee. For Phase II SBIR projects, a minimum of one-half (50 percent) of the R&D must be performed by the awardee. For Phase I and Phase II STTR projects, a minimum of 40 percent of the R&D, as measured by the budget, must be performed by the small business, and a minimum of 30 percent of the R&D, as measured by the budget, must be performed by the partner research institution.

PROPOSAL REVIEW

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

All NSF proposals are reviewed for Intellectual Merit and Broader Impact. In addition, SBIR/STTR proposals have a set of additional criteria covering Commercial Impact. For more information on what this means for SBIR/STTR proposals, please see the following webpage: https://seedfund.nsf.gov/resources/review/peer-review/. The merit review criteria are also listed in the solicitation document.

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

In Phase I, technical reviewers with expertise in the field of research being proposed and/or the target market area proposed are asked to confidentially review the proposals. These technical reviewers always possess technical training and expertise in relevant areas of science, engineering, or technology. The Phase I review process relies heavily on input from these technical reviewers, with some reviewers having a mix of commercial and technical expertise. Dedicated commercial reviewers are often asked to participate on Phase I panels. SBIR/STTR Program Directors with relevant technical and commercial expertise lead the entire review process, and also directly help evaluate the technical and commercialization details of each proposal.

In many cases, similar proposals are typically placed into groups of four to 18 proposals called a "panel." A group of three to 10 external reviewers is assigned to a panel, with each proposal being reviewed by at least three of these reviewers. The reviewers read their assigned proposals and provide feedback, and then all of the reviewers meet in person at NSF or via video conference or conference call to discuss all of the proposals in the panel. In some cases, proposals are reviewed by external reviewers who submit reviews by mail (so-called "ad hoc reviews").

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.

The Phase II process is similar, but a greater amount of time and effort is dedicated to the evaluation and discussion of each proposal. Additionally, each Phase II proposal generally is assigned to more reviewers. In Phase II, in addition to the technical reviewers, a minimum of two commercial reviewers review each proposal, paying particular attention to the commercialization plan.

57. 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 considered confidential. They are not made public and are not considered a public disclosure. Proposals are kept within NSF staff and the external reviewers, who certify that no conflicts of interest are present and that they will keep the proposal documents and review contents confidential (see the Conflict of Interest form on the peer review page at: https://seedfund.nsf.gov/resources/review/peer-review/).

SBIR/STTR data are protected from disclosure by the participating agencies for a period of not less than four years from end of the relevant Phase II award (or the relevant Phase I award, if no follow-on Phase II award is granted). The protection period is

extended with each subsequent related award or supplement in order to avoid harmful disclosure. The SBA has a full set of FAQ items that address data rights here: 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. One exception occurs in the event of a Freedom of Information Act (FOIA) request, which is a rare occurrence. Any sections of the proposal marked as proprietary will not be made available to the requestor, so it is important to mark sensitive sections of the proposal as clearly proprietary. In the event of a FOIA request, if the NSF is still able to contact the SBIR/STTR small business, there is a second opportunity for the business to redact proprietary information from the proposal. Because of the nature of this process, proposers are asked NOT to mark the entire proposal as proprietary.

58. 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 are often intended to help convince the reviewers that the proposed innovation, if developed, would solve a real market need. More generally, letters of support help validate claims made in the proposal about commercial impacts. Therefore, letters from potential end users of the technology (customers) and corporate partners/collaborators are appropriate. Letters from actual or potential investors can also help. Proposers are recommended to start early in trying to obtain these letters.

59. Some NSF SBIR/STTR companies build on basic research that was also funded by the NSF. Are companies that are proposing projects that are NOT related to NSF or any federal funding at a disadvantage?

No. All proposals are evaluated according the merit review criteria, and only the best proposals are funded. NSF seeks to understand how basic research, and in particular NSF-funded research, can lead to technological innovation and potentially commercialization. Therefore, proposers are encouraged to provide information about the scientific research that has led to the proposed innovation. For both SBIR and STTR, proposals based on NSF-funded basic research are welcomed. A solid base in fundamental research lends credibility to the intellectual merit of the proposal. NSF "lineage" alone (or lack of it) should not dramatically alter the fate of a proposal.

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

The schedule and pace of NSF SBIR/STTR Phase I peer review is affected by many factors. However, several general guidelines are provided below for proposals that undergo peer review. Proposers whose proposals did not pass the administrative

review, and therefore are not sent to the panel review stage, may learn of this decision earlier in the process (this decision is called "return without review").

Not later than 2-4 months after full proposal submission - Proposers, especially those in consideration for funding, may be contacted by the Program Director any time after the panel if the panel or Program Director have questions that must be answered in order for the proposal to be fairly and completely evaluated. This process of interaction with the Program Director is called "due diligence".

Not later than 4-6 months after full proposal submission - Phase I proposals that are chosen for award or have been declined will receive their official notification. All proposals which undergo the full merit review process will be notified of the decision and will receive anonymous written reviews that can contain helpful information on how the proposal could be improved. If the reviews are unclear or more information is desired to be able to resubmit in the next cycle, proposers may contact the Program Director that managed the review process to ask for clarification and guidance.

Not later than 6-7 months after full proposal submission - Phase I awards begin. Awards made based on proposals submitted in a given submission window will have a start date (first funds disbursed) no later than seven months after the closing of the window, and usually sooner.

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

Our hope is that applying to NSF SBIR/STTR will not change the strategy of a small business or slow down its progress. If, during the Phase I review process, a small business makes progress on some of the technical objectives or challenges that are included in a Phase I proposal that is recommended for award, the program will typically work with the proposer to update the work plan and objectives for the Phase I project. It is very rare for a Phase I award to be jeopardized simply because a proposing small business has continued to conduct R&D in parallel with the Phase I review process. However, we encourage all proposers to update NSF staff of any significant changes in company status, team, or technology, especially if contacted by NSF with a request for additional information during the review process.

62. 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 equally important for the purposes of making award recommendations.

PHASE I AWARD

63. What are my obligations to the government in terms of the intellectual property developed from NSF SBIR/STTR funding?

As a recipient of a federal research grant, you are obligated to report all patents, patent applications and invention disclosures which 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 can be found here: https://era.nih.gov/iedison/iEdison_Inventor_userguide.pdf.

Instructions for the timing of registration of your invention can be found at https://era.nih.gov/iedison/invention_timeline.htm.

64. Does the government have the right to use my invention developed under my federal grant?

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 USC 201) subject to the provisions of 35 USC 202 and 35 U.S.C. 203.

With respect to any subject invention in which the awardee retains title, 35 USC 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 US 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 of some kind (defined in the Act), and to date, they have never been exercised by the Federal government. One study that helps clarify theses rights and the government's ability to exercise them is located here: https://fas.org/sgp/crs/misc/R44597.pdf.

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

65. What are the terms and conditions associated with a Phase I SBIR/STTR award?

NSF SBIR/STTR award conditions can be found here: https://www.nsf.gov/awards/managing/special_conditions.jsp (in the section at the bottom of the page). The headings at the top of the award conditions show topics of interest, like Patent Rights, Payment Schedule, and Reporting Rights.

66. What if there are changes to the business model or R&D strategy of a small

business during the Phase I NSF SBIR/STTR project?

NSF SBIR/STTR understands that small businesses, especially those in the very early stages of development, may undergo business model changes. This may include choosing a different niche market, a different product format, etc. During Phase I, NSF SBIR/STTR works with grantees to adjust (within reason) 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 standards for high technical risk.

67. How and when does NSF release Phase I funding to my small business?

Typically, the awardee small business has access to all of the Phase I funds less \$25,000 at the beginning of the award. These funds can 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 any tax implications before withdrawing funds.

68. What other support do Phase I awardees receive?

NSF offers a number of helpful programs for Phase I awardees. One of these is our Commercialization Assistance Program (CAP). This program, which is provide free of charge to the grantee, provides additional resources and significant one-on-one guidance from seasoned advisors in the development of the business strategy associated with the Phase I research. The program also provides a wealth of information to assist Phase I grantees in getting ready to submit their Phase II proposal.

In addition, NSF also offers Beat-The-Odds Boot Camp (BTOBC) to all Phase I awardees. This activity, modeled on the NSF's 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 further refine their understanding of customers, markets, and competition.

BEYOND PHASE I

69. Does NSF have a Phase III SBIR/STTR program?

NSF does not acquire technologies that are developed under the SBIR/STTR program and therefore does not budget for a Phase III program.

Some agencies that run acquisition-based SBIR/STTR programs, such as the Department of Defense, feature Phase III. In this phase, the agency chooses to enter

into another agreement with the company to continue R&D related to the project. This project must be supported by non-SBIR/STTR funds.

NSF does offer Phase II grantees a number of supplemental opportunities, including a chance at up to \$500,000 in additional funding under the Phase IIB program, eligibility for which is based on third-party investment or product/service revenues that derive from the NSF-supported project(s). See more on all these opportunities here: https://seedfund.nsf.gov/resources/awardees/supplement/overview/.

70. When and how do I apply for a Phase II award?

Your Phase I SBIR/STTR award letter includes a choice of three deadline dates to submit a follow-on Phase II proposal. These deadlines are typically eight, 14, and 20 months after the start of your Phase I award. You are only allowed to submit ONE Phase II proposal based on any given Phase I award. More details on the Phase II application process can be found here:

https://seedfund.nsf.gov/resources/awardees/phase-2/apply/.

71. 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 start-ups and small businesses over the past 40 years. Some well-known firms, such as Qualcomm and Symantec, received early support from the NSF program. Between 2014 and 2018, firms funded (or previously funded) by our program raised more than \$6 billion in follow-on private capital and reported over 90 successful exits (IPOs, mergers, and acquisitions) – and that's just based on public data. See more success stories on https://seedfund.nsf.gov/showcase/.