

Small Business Innovation Research Program Phase II

FY 2018 Request for Applications (RFA)

APPLICATION DEADLINE: March 8, 2018

ELIGIBILITY: See Part III, A of RFA



United States
Department of
Agriculture

National Institute
of Food and
Agriculture

NATIONAL INSTITUTE OF FOOD AND AGRICULTURE; U.S. DEPARTMENT OF AGRICULTURE

Small Business Innovation Research Program Phase II

CATALOG OF FEDERAL DOMESTIC ASSISTANCE: This program is listed in the Catalog of Federal Domestic Assistance under 10.212 Small Business Innovation Research (see <https://www.cfda.gov/>).

DATES: Applications must be received by **5 p.m. Eastern Time** on March 8, 2018. Applications received after this deadline will normally not be considered for funding (see Part IV, C of this RFA). Comments regarding this request for applications (RFA) are requested within six months from the issuance of this notice. Comments received after that date will be considered to the extent practicable.

STAKEHOLDER INPUT: We at the National Institute of Food and Agriculture (NIFA) seek your comments about this RFA. We will consider your comments when we develop the next RFA for the program, if applicable, and we'll use them to meet the requirements of section 103(c)(2) of the Agricultural Research, Extension, and Education Reform Act of 1998 (7 U.S.C. 7613(c)(2)). Submit your written stakeholder comments by the deadline set forth in the DATES portion of this notice via email to Policy@nifa.usda.gov. (This email address is only for receiving comments regarding this RFA and *not* for requesting information or forms.) In your comments, please state that you are responding to the Small Business Innovation Research Program – Phase II RFA.

EXECUTIVE SUMMARY: NIFA requests applications for the Small Business Innovation Research (SBIR) Program Phase II for fiscal year (FY) 2018 from previous SBIR Program Phase I awardees. This RFA is being released prior to the passage of an appropriations act for FY 2018. Enactment of additional continuing resolutions or an appropriations act may affect the availability or level of funding for this program and may delay the start date of Phase II grants.

This notice identifies the objectives for SBIR Phase II projects, deadline dates, funding information, eligibility criteria for projects and applicants, and application forms and associated instructions needed to apply for a SBIR Phase II grant.

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PART I—FUNDING OPPORTUNITY DESCRIPTION

A. Legislative Authority

The Small Business Innovation Research program was established under the Small Business Innovation Development Act of 1982 (Pub. L. 97-219) with the purpose of strengthening the role of innovative small business concerns in Federally-funded research and development (R&D). The program was reauthorized through numerous extensions, the most recent of which extends the SBIR program through 2022 (Pub. L. 114-328).

This program is administered by the National Institute of Food and Agriculture (NIFA) of the United States Department of Agriculture (USDA).

This program is subject to the provisions found at 7 CFR Part 3403. These provisions set forth procedures to be followed when submitting grant applications, rules governing the evaluation of applications and the awarding of grants and regulations relating to the post-award administration of grant projects.

For additional information on the USDA NIFA SBIR program, go to <http://www.nifa.usda.gov/sbir>.

B. Purpose and Priorities

The purpose of the SBIR Program is to strengthen the role of innovative small business concerns (SBCs) in Federally-funded research or research and development (R/R&D). Specific program purposes are to: (1) stimulate technological innovation; (2) use small business to meet Federal R/R&D needs; (3) foster and encourage participation by socially and economically disadvantaged small businesses (SDBs), and by women-owned small businesses (WOSBs), in technological innovation; and (4) increase private sector commercialization of innovations derived from Federal R/R&D, thereby increasing competition, productivity and economic growth.

SBIR Phase II applications must address only scientific and rural development research activities that can be commercialized. **A small business must not propose technical assistance, large scale demonstration projects, classified research, or patent applications.** Many of the research projects supported by the SBIR program lead to the development of new products based upon the research results obtained during the project. However, projects that seek funding solely for product development where no research is involved (i.e., the funds are needed to permit the development of a product based on previously completed research) will not be accepted. Research may be carried out through the construction and evaluation of a laboratory prototype, where necessary.

Literature surveys should be completed prior to the Phase II application and should not be proposed as part of the R&D effort. Phase II Applicants must respond to a topic area listed (see Part I, B.) that corresponds to the Phase I work that was previously funded.

The purpose of a research application is to provide a written statement that contains sufficient

information to persuade members of the research and business community who review the application and then advise the USDA NIFA SBIR professional staff that the proposed activities are a sound approach to an important scientific and/or rural development question and is worthy of support under the stated USDA NIFA evaluation criteria. The application should be self-contained and written with the care and thoroughness accorded papers for publication. Each application should be reviewed carefully by the applicant prior to submission and by others knowledgeable on the subject to ensure inclusion of data essential for comprehensive evaluation.

USDA-NIFA is soliciting applications for the SBIR Phase II program under the following topic areas (preceding each topic area description is the Program Code/Program Code Name):

Program Code/Program Code Name

8.1 Forests and Related Resources

The Forests and Related Resources topic area aims to address the health, diversity, and productivity of the Nation's forests to meet the needs of present and future generations through the development of environmentally sound approaches to increase productivity of forest lands, improve sustainability and develop value-added materials derived from forest resources.

Program contact: Charles Cleland ccleland@nifa.usda.gov

8.2 Plant Production and Protection – Biology

The objective of this topic area is to examine novel ways of enhancing crop production and protection by: applying biological approaches to develop new methods for plant improvement, applying traditional plant breeding methods and new technologies to develop new food and non-food crop plants, developing plant characteristics that reduce the harmful impact of plant pests and biotic stresses, and developing new genotypes of existing crop plants with characteristics that allow for their use in new commercial applications. Program contact: Robert Nowierski

rnowierski@nifa.usda.gov

8.3 Animal Production and Protection

The Animal Production and Protection topic area aims to develop innovative, marketable technologies that will provide significant benefit to the production and protection of agricultural animals. Program contact: Robert Smith rsmith@nifa.usda.gov

8.4 Air, Water and Soils

The Air, Water and Soils topic area aims to develop technologies for conserving and protecting air, water and soil resources while sustaining optimal farm productivity. Climate variability is a major focal points of this topic area. Program contact: Karelyn Cruz karelyn.cruz@nifa.usda.gov

8.5 Food Science and Nutrition

The Food Science and Nutrition topic area aims to fund projects that support research focusing on developing new and improved processes, technologies, or services that address emerging food safety, food processing, and nutrition issues. Program contact: Jodi Williams

jwilliams@nifa.usda.gov

8.6 Rural Development

The Rural Development topic area aims to fund the development of new technology, or for the

utilization of existing technology, that address important economic and social development issues or challenges in rural America. The applications need not be centered on agriculture, but may be focused on any area that has the potential to provide significant benefit to rural Americans. Program contact: Toija Riggins Toija.Riggins@nifa.usda.gov

8.7 Aquaculture

The Aquaculture topic area aims to develop new technologies that will enhance the knowledge and technology base necessary for the expansion of the domestic aquaculture industry as a form of production agriculture. Program contact: Gene Kim Gene.W.Kim@nifa.usda.gov

8.8 Biofuels and Biobased Products

The objective of this topic area is to promote the use of biofuels and non-food biobased products by developing new or improved technologies that will lead to increased production of biofuels, industrial chemicals, and other value-added products from agricultural materials. Program contact: Toby Ahrens toby.ahrens@nifa.usda.gov

8.12 Small and Mid-Size Farms

The Small and Mid-Size Farms topic area aims to promote and improve the sustainability and profitability of small and mid-size farms and ranches (where annual sales of agricultural products are less than \$250,000 for small farms and \$500,000 for mid-size farms). Program contact: Denis Ebodaghe debodaghe@nifa.usda.gov

8.13 Plant Production and Protection – Engineering

The objective of this topic area is to enhance crop production by creating and commercializing engineering technologies that enhance system efficiency and profitability and protect crops from pests and pathogens in economically and environmentally sound ways. Program contact: Rachel Melnick rmelnick@nifa.usda.gov

In addition to the areas listed above, the USDA NIFA reports to the Small Business Administration (SBA) and Congress on innovations that support Agriculturally-related Manufacturing Technology, and Energy Efficiency and Alternative and Renewable Energy Technologies. USDA NIFA recognizes that these two areas have relevance to all areas listed in this program solicitation. The USDA NIFA encourages applicants to address these technologies, as appropriate, within their applications for reporting purposes back to the SBA and Congress.

Agriculturally-related Manufacturing Technology

On February 26, 2004, the President issued Executive Order 13329 (69 FR 9181) entitled “Encouraging Innovation in Manufacturing.” In response to this Executive Order, USDA NIFA encourages applicants that deal with some aspect of agriculturally-related manufacturing technology to notify USDA NIFA in the application for reporting purposes to SBA and Congress. Since manufacturing impacts all aspects of agriculture and rural development, applications dealing with manufacturing could be submitted to any of the USDA NIFA SBIR topic areas.

Energy Efficiency and Alternative and Renewable Energy

In an effort to find alternatives to fossil fuels and to reduce overall energy usage, the USDA established research on energy efficiency, and alternative and renewable energy as areas of research that can be submitted to any of the USDA NIFA SBIR topic areas. Such research

includes: development of new energy crops; improved methods for producing biofuels, such as ethanol, butanol and biodiesel; producing hydrogen and other fuel gases from agricultural waste, and more efficient use of energy in agricultural production and in rural communities. Energy issues impact all aspects of agriculture and rural development and thus applications dealing with energy efficiency and alternative and renewable energy could be submitted to any of the topic areas. Applications that meet this priority are encouraged to notify USDA NIFA within the application. Applications selected for an award will have this information, if applicable, reported to SBA and Congress.

The USDA NIFA SBIR Program is aligned with the USDA 2014-2018 Strategic Plan (<http://www.usda.gov/documents/usda-strategic-plan-fy-2014-2018.pdf>) by addressing Strategic Goal 1. (sub-goals 1.1, 1.2 and 1.3); Strategic Goal 2. (sub-goals 2.1, 2.3, and 2.4); Strategic Goal 3. (sub-goals 3.1 and 3.2); Strategic Goal 4. (sub-goals 4.1, 4.2, 4.3 and 4.4).

The USDA NIFA SBIR program is aligned with the USDA Research, Education, and Economics Action Plan (<http://nifa.usda.gov/resource/ree-action-plan>), and addresses Goal 1. (sub-goal 1A, 1B, 1C and 1D); Goal 2. (sub-goal 2B); Goal 3. (sub-goal 3A and 3B); Goal 4.; Goal 5. Food Safety; Goal 6. and Goal 7.

The USDA NIFA SBIR Program is aligned with the NIFA Strategic Plan (<http://nifa.usda.gov/resource/nifa-strategic-plan-fy2014-fy2018>) and specifically addresses Goal 1: Science- Catalyze exemplary and relevant research, education and extension programs (sub-goal 2 1.1, 1.2, 1.3, 1.4, 1.5, 1.6 and 1.7).

C. Three-phase Program

The USDA NIFA SBIR program is carried out in three separate phases. The SBIR Program Phase I is to determine the scientific or technical feasibility of ideas submitted by applicants on research topic areas solicited by this program.

The SBIR Program Phase II applications require a more comprehensive application, outlining the proposed effort in detail. This RFA is only for the preparation and submission of Phase II applications. USDA recognizes that Phase II awards may not be sufficient in either dollars or time for the firm to complete the total Research/Research and Development (R/R&D) required to bring the project results to commercialization in the market place. Therefore, completion of the research under these circumstances may have to be carried into Phase III.

The purpose of Phase III is to stimulate technological innovation and the national return on investment from research through the pursuit of commercialization objectives resulting from the USDA-supported work carried out in Phases I and II. Federal SBIR funds may not be used to support Phase III projects. However, firms are strongly encouraged to secure Phase III funding from their own resources or from other public and private sources.

D. Potential Commercial Outcome and Commercialization Assistance Training Program

In addition to supporting scientific research and development, the program's primary goal is to

provide incentive and opportunity for small business firms to convert USDA NIFA-sponsored research to technological innovations that can be adopted in the private sector or a commercial market. All proposed research must have a potential commercial outcome at a national or global level. Phase II applicants are encouraged to obtain a contingent commitment for non-SBIR follow-on funding to pursue further development of the commercial potential during Phase III. Obtaining follow-on financial commitment(s) is the responsibility of the applicant. For Phase II applicants to receive consideration of follow-on funding during the review and evaluation process, a signed contingent commitment between the small business firm and the entity providing the follow-on financial support should be submitted with the Phase II application. While such commitment agreements are optional when submitting Phase II applications, they will receive special consideration as a point of merit in the review and evaluation process where applications are evaluated as being of approximately equal technical merit. The greater value (in Phase II evaluation) will be given for a signed formal agreement with reasonable terms and funding equal to or in excess of the Federal investment requested in the Phase II application. The agreement must set forth the specific amount of Phase III funds and must indicate the dates that such funds will be made available to the small business concern. The terms cannot be contingent upon the obtaining of a patent due to the length of time this process requires.

The commitment may be in the form of: venture capital, a package including venture capital, contract research and development, a joint venture, a research and development limited partnership, or other agreement with a non-SBIR source of funding. No amortization, repayment, or repurchase of commitment funds may be included during the Phase II period of performance.

USDA understands that any such commitment will likely be contingent upon the Phase II awardee attaining technical objectives that are mutually agreed upon between the small business firm and the provider of the follow-on funding. These objectives should be closely related to those delineated in the Phase II research application. The technical objectives should be clearly defined and measurable and should be specified in the commitment agreement at the threshold level that would justify such an investment. The objectives do not have to be identical to those stated in the Phase II application, but they must be able to be accomplished within the scope of the proposed SBIR-funded research. Any letters or other forms of tentative commitment for follow-on Phase III funding from sources other than Federal SBIR Programs will be considered.

Applicants who are successful in receiving an award are required to participate in a Phase II Commercialization Assistance Training Program (CATP). Currently, the USDA NIFA SBIR Program expects to cover \$10,000 of commercialization assistance expenses for each awarded project (this expense should not be included in the proposed budget). You are expected to cover travel costs to attend a two (2) day USDA SBIR commercialization workshop that will be held in the Washington DC area, and the time needed (approximately 65 to 80 hours) to complete the program requirements; you may include these expenses in the proposed budget.

PART II—AWARD INFORMATION

A. Available Funding

This RFA is being released prior to the passage of an appropriations act for FY 2018. Enactment of additional continuing resolutions or an appropriations act may affect the availability or level of funding for this program and may delay the start date for Phase II grants.

Phase II awards will not exceed \$600,000 for a period of 24 months with a start date of September 1, 2018. There is no commitment by USDA to fund any particular application or to make a specific number of awards.

The Automated Standard Applications for Payment System (ASAP), operated by the Department of Treasury's Bureau of the Fiscal Service, is the designated payment system for awards resulting from this RFA. For more information see

https://www.fiscal.treasury.gov/fsservices/gov/pmt/asap/asap_home.htm.

B. Types of Applications

In FY 2018, you may only submit a new application to the SBIR Phase II Program.

New application. This is a project application that has not been previously submitted to the SBIR Phase II Program. We will review all new applications competitively using the screening for administrative requirements, review panel evaluation of applications using evaluation criteria, and selection process described in Part V- Application Review Requirements.

C. Responsible and Ethical Conduct of Research

For information about the Responsible and Ethical Conduct of Research, see <http://nifa.usda.gov/responsible-and-ethical-conduct-research>.

PART III—ELIGIBILITY INFORMATION

A. Eligible Applicants

Only previous USDA NIFA SBIR Phase I awardees who have not previously applied for Phase II support are eligible to apply for Phase II support through this FY 2018 RFA. A Phase I project may only apply for a Phase II award once. If a Phase I awardee was unsuccessful in receiving a Phase II award with a previous application, then the awardee is not eligible to resubmit the proposal under this program solicitation. Failure to meet an eligibility criterion by the application deadline may result in the application being excluded from consideration or, even though an application may be reviewed, will preclude USDA NIFA from making an award.

Each applicant submitting an application must qualify as a Small Business Concern (SBC) for R/R&D purposes at the time of award (see Definitions in Part VIII).

A potential grantee that is a subsidiary must show that the parent company or parent companies are also a small business entity and the parent company or parent companies must provide documentation supporting their small business status (see Field 12. under Part IV , C.3.). If the parent company or one of the parent companies is a nonprofit organization, then the subsidiary is not eligible to submit an SBIR application.

Joint ventures and limited partnerships are eligible provided the entity created qualifies as a small business concern as defined in this program solicitation.

In addition, the primary employment of the Project Director (PD) **must** be with the small business concern at the time of award and during the conduct of the proposed research. Eligible primary employment means that more than one-half (51% or higher) of the PD's time is spent in the employ of the small business. Primary employment with the small business precludes the PD as a full-time employee with another organization including universities. Prior Federal Employees must provide documentation that post termination requirements have been completed at time of submission per 18 U.S.C. § 207(c)(1). These requirements apply to Phase II awards and any deviations from this requirement must be approved in writing by the USDA NIFA Authorized Departmental Officer (ADO) after consultation with the appropriate National Program Leader (NPL). While the PD must work more than one-half of his/her time for the small business during the entire grant period, there is no time requirement for the PD's work on the proposed research. Additionally any university faculty members that are proposed to work on the project will have to reduce their faculty appointment to less than 49% if they are to be employed by the company. If the faculty member is not able to reduce their time to less than 49% with the university then the faculty member can only support the project through a sub-contract or consultant agreement between the company and the university.

Additional eligibility requirements are:

(1) Size

- a. A USDA NIFA SBIR awardee, combined with its affiliates, must not have more than 500 employees.

- b. The small business concern must be the primary performer of the proposed research effort.
- c. In Phase II, a minimum of **one-half (1/2)** of the research or analytical work, as determined by budget expenditures, must be performed by the proposing organization.

(2) Work in the United States

For Phase II, the **R/R&D work must be performed in the United States**. On rare and unique circumstances, for example, a supply, material or project requirement may not be available in the United States, USDA SBIR may allow that particular portion of the R/R&D work to be performed or obtained outside of the United States. Approval, in writing, is necessary by both a USDA SBIR NPL and the ADO for such specific conditions.

PART IV—APPLICATION AND SUBMISSION INFORMATION

A. Required Registrations and Electronic Application Package

Only electronic applications may be submitted via Grants.gov to NIFA in response to this RFA. We **STRONGLY** urge you to submit early to the Grants.gov system so there is time to address any issues that may arise during the submission process. For information about the pre-award phase of the grant lifecycle see <http://www.grants.gov/web/grants/learn-grants/grants-101/pre-award-phase.html>.

Required Registrations:

1. Small Business Administration (SBA)

All applicants are required to update or register with the SBIR company registry and update their commercialization status through the SBIR company registry at www.sbir.gov/registration. After the registration is completed, applicants are to provide the PDF document that indicates the registration has been completed (see Field 12. Add Other Attachments under item B below).

2. New Users of Grants.gov

Prior to preparing an application, we recommend that the Project Director/Principal Investigator (PD/PI) first contact an Authorized Representative (AR, also referred to as Authorized Organizational Representative, or AOR) to determine if the organization is prepared to submit electronic applications through Grants.gov. If not (e.g., the institution/organization is new to the electronic grant application process through Grants.gov), then the one-time registration process must be completed PRIOR to submitting an application. It can take as long as four weeks to complete the registration process so it is critical to begin as soon as possible. In such situations, the AR should go to “Register,” in the top right corner of the Grants.gov web page (or go to <http://www.grants.gov/web/grants/register.html>), for information on registering the institution/organization with Grants.gov. Part II,1 of the NIFA Grants.gov Application Guide contains detailed information regarding the registration process. Refer to item 2, below, to locate the “NIFA Grants.gov Application Guide.”

3. Returning Grants.gov Users

If your company has already registered with Grants.gov in the past, you will need to login to your Grants.gov account and ensure all the required registrations are up to date and complete. Applicants should check their account PRIOR to submitting an application as the re-registration process can take several weeks to complete.

Steps to Obtain Application Package Materials

To receive application materials:

1. You must download and install a version of [Adobe Reader](#) compatible with Grants.gov

to access, complete, and submit applications. For basic system requirements and download instructions, see <http://www.grants.gov/web/grants/applicants/adobe-software-compatibility.html>. Grants.gov has a test package that will help you determine whether your current version of Adobe Reader is compatible.

2. To obtain the application package from Grants.gov, go to <http://www.grants.gov/web/grants/applicants/download-application-package.html> and enter the funding opportunity number

Funding Opportunity Number: USDA-NIFA-SBIR-006428

Click “Search.” On the displayed page, click the corresponding link to continue. A Grant Application Package is tied to a particular funding opportunity. You may submit an application ONLY to the particular funding opportunity to which the Grant Application Package is associated.

Contained within the application package is the “NIFA Grants.gov Application Guide.” This RFA contains directions on when to refer to the “NIFA Grants.gov Application Guide.” This “NIFA Grants.gov Application Guide.” contains an introduction and general Grants.gov instructions, information about how to use a Grant Application Package in Grants.gov, and instructions on how to complete the application forms.

If you require assistance to access the application package (e.g., downloading or navigating Adobe forms) **or submitting the application**, refer to resources available on the Grants.gov website (<https://www.grants.gov/web/grants/support.html>). Grants.gov assistance is also available at:

Grants.gov customer support

800-518-4726 Toll-Free or 606-545-5035

Business Hours: 24 hours a day, 7 days a week. Closed on [federal holidays](#).

Email: support@grants.gov

Grants.gov iPortal (see <https://grants-portal.psc.gov/Welcome.aspx?pt=Grants>):

Top 10 requested help topics (FAQs), Searchable knowledge base, self-service ticketing and ticket status, and live web chat (available 7 a.m. - 9 p.m. EST).

Have the following information available when contacting Grants.gov:

- Funding Opportunity Number (FON)
- Name of agency you are applying to
- Specific area of concern

B. Content and Form of Application Submission

You should prepare electronic applications following the directions in this RFA and Parts V and VI of the NIFA Grants.gov Application Guide. The “NIFA Grants.gov Application Guide” is part of the corresponding application package (see Section A of this part). The following is **additional information** you need to prepare an application in response to this RFA. **If there is discrepancy between the two documents, the information contained in this RFA is overriding.**

Note the attachment requirements (e.g., PDF) in Part III, Section 3 of the guide. ANY APPLICATIONS THAT ARE NON-COMPLIANT WITH THE REQUIREMENTS (e.g., content format, PDF file format, file name restrictions, and no password protected files) WILL BE AT RISK OF BEING EXCLUDED FROM NIFA REVIEW. Grants.gov does not check for NIFA required attachments or whether attachments are in PDF format; see Part III, Section 6.1 of the guide for how to check the manifest of submitted files. Partial applications will be excluded from NIFA review. We will accept subsequent submissions of an application until close of business on the closing date in the RFA (see Part V, 2.1 of the NIFA Grants.gov Application Guide for further information).

For any questions related to the preparation of an application, review the NIFA Grants.gov Application Guide and the applicable RFA. If assistance is still needed for preparing application forms content, contact:

- Email: electronic@nifa.usda.gov
- ☐ Phone: 202-401-5048
- Business hours: Monday through Friday, 7 a.m. – 5 p.m. EST, excluding [federal holidays](#).

Modifications to the application will not be accepted after the closing date of this program solicitation unless indicated below. Under some circumstances, changes, additions, or corrections may be necessary to an application submitted to the USDA NIFA SBIR program via Grants.gov **before the specified program solicitation closing date.** Modifications to applications will require a resubmission of the entire application package and the applicant must notify the program at sbir@nifa.usda.gov of the resubmission. **Submitting changes to Grants.gov without contacting the program contact could significantly delay your application submission and may result in the application not being reviewed.**

1. SF 424 R&R Cover Sheet

Information related to the questions on this form is dealt with in detail in Part V, 2 of the NIFA Grants.gov Application Guide unless specified by this RFA. See Part V, Section 2.18 of the NIFA Grants.gov Application Guide for the required certifications and assurances (e.g., Prohibition Against Entities Requiring Certain Internal Confidentiality Agreements).

Field 4. SBIR Phase II applicants must include the award number of the prior Phase I grant that was awarded.

Field 12. Proposed Project Start Date and End Date – The proposed duration of Phase II projects should not exceed 24 months. In most circumstances, the following dates should be used for these fields:

	Start	End
Phase II	9/1/2018	8/31/2020

Field 17. Complete Certification – Refer to the NIFA Grants.gov Application guide for information on the Certifications that are being agreed to by checking this box.

NOTE: An applicant who is delinquent on Federal debts must attach explanatory information detailing all relevant particulars concerning the Federal debt in PDF format in

Field 12 of the R&R Other Project Information form (Other Attachments).

Field 20. Pre-application – This is not applicable to the USDA NIFA SBIR program. No attachments should be added.

2. SF 424 R&R Project/Performance Site Location(s)

Detailed information related to the questions on this form is available in Part V, 3 of the NIFA Grants.gov Application Guide.

3. R&R Other Project Information Form

Detailed information related to the questions on this form is available in Part V, 4 of the NIFA Grants.gov Application Guide.

Field 7. Project Summary/Abstract. – (PDF Format Only) – This is required for a Phase II application submission

See Part V, section 4.7 of NIFA Grants.gov Application Guide for further instructions and a link to a suggested template. In the project abstract, include a brief description of the problem or opportunity, project objectives, and a description of the effort. Provide another paragraph discussing the anticipated results and potential commercial applications of the proposed research. The project summary/abstract of successful applications may be published by USDA and, therefore, should not contain proprietary information. For your convenience a template for the project summary can be found at <https://nifa.usda.gov/resource/application-support-templates>.

The Summary/Abstract is limited to one page. Applications that exceed this limitation will be excluded from review.

Field 8. Project Narrative. – (PDF Format Only) – This is required for a Phase II application submission

NOTE: The Project Narrative shall not exceed 20 pages of written text using font no smaller than 12 point with at least 1-inch margins, regardless of whether it is single- or double-spaced. Labels for figures and tables may use a font no smaller than 10 point. This maximum (20 pages) is to ensure fair and equitable competition. Applications that exceed this limitation will be excluded from review.

The USDA SBIR Program encourages applicants to only include information pertaining to the items listed below. Applicants **must not** include additional information such as cover sheets, table of contents, reference listings, budgets, and appendixes unless the applicant intends for these to be considered in the page count. It is the responsibility of the applicant to review the attachment for page limit and PDF compliance before submission.

The Project Narrative must include all of the following:

- (1) Responsiveness to USDA SBIR Program Priorities**– Indicate if the application has a connection to agriculturally-related manufacturing technology or alternative and renewable energy as found in Part I B. Provide a brief explanation of how the application is related to the topic area indicated.

- (2) **Prior USDA Support** – USDA NIFA is interested in documenting examples of SBIR projects that are developing new technologies based on earlier USDA-supported research and development projects awarded to the proposing small business, university, or government scientist collaborators by other USDA research and development programs, such as the Agricultural Food and Research Initiative (AFRI). If any such support exists, it should be documented in this section by listing the PD, application title, organization that received the award, and the USDA program that awarded the project.
- (3) **Identification and Significance of the Problem or Opportunity** – Clearly state the specific technical problem or opportunity addressed and its importance.
- (4) **Background and Rationale** – Indicate the overall background and technical approach to the problem or opportunity as identified in the Phase I project. Describe the part that the proposed Phase II research plays in providing needed results to scale up the research and development and commercialization. As a part of this section, it is critical that applications adequately cite relevant scientific literature. **Moreover, all citations provided must be properly referenced in the Bibliography & References Cited attachment.**
- (5) **Relationship with Research or Research and Development** – Discuss the results of the Phase I project. Include a discussion of the overall background of the Phase I project, a list of the Phase I technical objectives, a presentation of a detailed description of the Phase I results, a clear interpretation of the results, and conclusions as to the feasibility of the project. This section is where the Phase II applicant establishes technical feasibility by presenting results from Phase I. Therefore, this section should provide an adequate discussion of Phase I results. The applicant should also state the anticipated results of the proposed approach if the project is successful.
- (6) **Technical Objectives** – State the specific objectives of the research or R&D effort. Include the technical questions needed to establish the technical feasibility of the proposed approach.
- (7) **Work Plan** – The work plan must provide an explicit, detailed description of the research or research and development approach. The plan should: list the tasks to be performed; **provide details of the methodology that would be used to research each task**, including statistical analysis, if applicable; and indicate how and where the work will be carried out. The work plan should be linked with the technical objectives of the research and the questions the effort is designed to answer. **This section should constitute a substantial portion of the project narrative.**
- (8) **Related Research or Research and Development** – Describe significant research or R&D activities that are directly related to the proposed effort, including any conducted by the project director or by the proposing small business concern, how the proposed effort expands on the related work, and any planned coordination with outside sources. **The applicant must persuade reviewers that he or she is aware of related research in the selected subject.** It is critical that the applicant make a convincing case that the proposed research builds upon previous research and, if successful, will lead to the development of new product, process, service, or technology or to substantial improvement of an existing

product, process, service, or technology.

- (9) **Potential Post Application** – In Phase II, commercialization potential is more important and thus a more extensive commercialization plan must be presented as directed later in this RFA (see section 7. SBIR/Small Business Technology Transfer Program (STTR) Information, Field 7). For this section briefly describe the market potential for the innovation.
- (10) **Satisfying the Public Interest** – Specify how the proposed research will satisfy one or more of the following USDA strategic goals: (more information can be found at <http://www.usda.gov/documents/usda-strategic-plan-fy-2014-2018.pdf>)
- a. Strategic Goal 1: Assist Rural Communities to Create Prosperity so They Are Self-Sustaining, Repopulating, and Economically Thriving.
 - b. Strategic Goal 2: Ensure Our National Forests and Private Working Lands Are Conserved, Restored, and Made More Resilient to Climate Change, While Enhancing Our Water Resources.
 - c. Strategic Goal 3: Help America Promote Agricultural Production and Biotechnology Exports as America Works to Increase Food Security.
 - d. Strategic Goal 4: Ensure that All of America’s Children Have Access to Safe, Nutritious, and Balanced Meals.

Field 10 Facilities & Other Resources – see Part V, 4.10 of the NIFA Grants.gov Application Guide. Also see Field 12. for documentation regarding use of outside facilities.

Field 11 Equipment Documentation – see Part V, 4.11 of the NIFA Grants.gov Application Guide. Also see Field 12. for documentation regarding use of outside equipment.

Field 12. Add Other Attachments

The following forms MUST be provided as a PDF attachment in this field. Applicants can access these forms at <https://nifa.usda.gov/resource/application-support-templates>.

The following required forms are:

1. Conflicts of Interest Felony & Tax Delinquent Status (See Part V. Section 4.12 of the NIFA Grants.gov Application Guide (Field 12 on the form) for instructions regarding mandatory Felony Convictions or Tax Delinquent Status),
2. Organizational Information (NIFA-666)

The following are additional instructions for documentation that may be required for your application.

1. **Use of Facilities or Equipment** – If university facilities, private facilities, or government laboratories are being used, there must be a letter in the application from the authorized organizational representative of the university, private facility, or government laboratory describing the arrangement and testifying that the facilities will be subject to the exclusive use and control of the applicant.

2. **Outside Services** – Involvement of university, government, or other outside personnel in the planning and research stages of the project as consultants or through subcontracting arrangements is permitted and may be particularly helpful to small businesses. Establishment of a Cooperative Research and Development Agreement (CRADA) with a USDA laboratory or other Federal laboratory may also be beneficial to proposing firms. If the application involves outside consultants, subcontracts, or involvement with a CRADA partner, these arrangements should be described in detail. **Applications must include letters from proposed consultants, subcontractors or CRADA cooperators indicating their willingness to serve in order for such participation to be considered during the application review and evaluation process.**
3. **Letters of Support** – General letters of support from potential end-users of the technology or from individuals/organizations that want to express support for the application.
4. **Duration Exceeds Normal Project Period** – If the proposed duration of the proposed project exceeds 24 months, then documentation must be included to justify the need for the additional time.
5. **Applicant is a Subsidiary** – A potential grantee that is a subsidiary must include documentation to support its independent viable financial status and documentation from the parent company or parent companies supporting their small business status.
6. **Statement as to Delinquency on Federal Debts by Applicants for Federal Assistance** – An applicant that is delinquent on Federal debts must attach, in PDF format, explanatory information detailing all relevant particulars concerning the Federal debt.
7. **Non-Domestic Performance Explanation** – Provide the purpose, the destination, method of travel, number of persons traveling, number of days, and estimated cost for each trip. If details of each trip are not known at the time of application submission, provide the basis for determining the amount requested. All Applicants **MUST** note that per the terms and conditions of the award “All foreign travel performed under this project must be approved in writing by USDA NIFA prior to departure. If foreign travel is authorized under this project, the approved budget will identify funds for this purpose. Where foreign travel is contemplated subsequent to the effective date of the project, a written request must be submitted to the USDA NIFA outlining the purpose of the proposed trip, the inclusive dates of travel, the destination, and estimated costs involved.”

4. R&R Senior/Key Person Profile (Expanded)

. Detailed information related to the questions on this form is available in Part V, section 5 of the NIFA Grants.gov Application Guide. This section of the guide includes instructions about senior/key person profile requirements including details about the biographical sketch and the current and pending support. The following is additional guidance:

- All biographical sketches must indicate the employment history of each PD and Co-PD for the last 10 years.

5. R&R Personal Data

As noted in Part V, section 6 of the NIFA Grants.gov Application Guide, the submission of this

information is voluntary and is not a precondition of award. Part V, section 6 also notes the importance and use of the information.

6. R&R Budget

Detailed information related to the questions on this form is available in Part V, section 7 of the NIFA Grants.gov Application Guide.

A Research and Related Budget form must be completed for each year for which work is proposed under this program solicitation. **Applicants must ensure that the budget provided in the R&R Budget forms matches the requested budget amount found in Field 15(a) on the SF-424 R&R Cover Page form and does not exceed \$600,000 for 24 months.**

Budget requests that exceed the ceiling of \$600,000 will be excluded from review.

Fields A. and B. Salaries and Wages - Indicate the number and kind of personnel for whom salary support is sought, including job tasks. For key personnel, also indicate the number of work months of involvement to be supported with USDA funds, and explain how the level of compensation was established (e.g., the hourly rate of pay, the monthly rate of pay, or the yearly rate of pay).

Field C. Equipment Description - Performing organizations are expected to have appropriate facilities, suitably furnished and equipped. However, funding for items of equipment may be requested provided that they are specifically identified with the dollar amount and adequately justified, see Field K of the R&R Budget. Adequate justification must be included for any equipment purchases; the justification will be carefully reviewed with respect to need and appropriateness for the research proposed. **Awardees should plan to lease expensive equipment.**

Field D. Travel - Applicants must include in their budget travel expenses to the Washington DC area for a two (2) day commercialization assistance workshop. The type and extent of travel and its relationship to the project should be specified. Funds may be requested for field work or for travel to professional meetings. Requests for foreign travel may be approved by USDA NIFA based on the justification provided in the application and the terms and conditions of the grant. In the budget justification, provide the purpose, the destination, method of travel, number of persons traveling, number of days, and estimated cost for each trip. If details of each trip are not known at the time of application submission, provide the basis for determining the amount requested.

Field D. Foreign Travel Costs Funds Requested - Requests for foreign travel must be approved based on the justification provided in the application. In the budget justification, provide the purpose, the destination, method of travel, number of persons traveling, number of days and estimated cost for each trip. If details of each trip are not known at the time of application submission, provide the basis for determining the amount requested. All applicants **MUST** note that per the terms and conditions of the award: "All foreign travel performed under this project must be approved in writing by USDA NIFA prior to departure. If foreign travel is authorized under this project, the approved budget will identify funds for this purpose. Where foreign travel is contemplated subsequent to the effective date of the project, a written request must be

submitted to the USDA NIFA outlining the purpose of the proposed trip, the inclusive dates of travel, the destination, and estimated costs involved.”

Fields E, F, and G - Participant/Trainee Support Costs, Other Direct Costs, and Direct Costs, respectively – Part V, 7.6 through 7.9 of the NIFA Grants.gov Application Guide includes detailed information. The following is additional information:

All Other Direct Costs - Other anticipated direct costs not included above should be itemized. Examples include, but are not limited to, subcontracts and consultants. See Field 12 “Other Attachments” of the R&R Other Project Information form for required documentation associated with subcontracts and consultants. A budget and budget justification stating sub-contractual and consulting costs and the rationale for the amount of the costs are required. In Phase II, a minimum of one-half (1/2) of the research or analytical work, as determined by budget expenditures, must be performed by the proposing organization. Consultants’ rate of pay cannot exceed \$608/day for an 8 hour day, or not more than \$76/hour.

Field H, Indirect Costs – Indirect costs are allowable and are subject to information included in Part V, 7.9 of the NIFA Grants.gov Application Guide

If you request indirect costs and do not have a negotiated rate, then indirect costs funds that are part of an award, will only be released after review and approval (this process may take 6 to 12 months to complete).

Field J. Fee - A reasonable fee, not to exceed seven percent of total Federal funds awarded (.07527 of Field I, Total Direct and Indirect Costs) is permitted under this program solicitation, but applicants are encouraged to minimize fee requests due to the small amount of funds available. **All fees are subject to negotiation with USDA. If a fee is requested, the amount should be indicated in Field J “Fee” on the R&R Budget form.**

Field K, Budget Justification – (PDF Format is Required) – For each dollar amount included in the budget, the supporting information/justification is to be included in the budget justification. A budget justification is required for each entity for which a Research and Related Budget Form is submitted.

The combined total of “Section I - Total Direct and Indirect Costs” and “Section J – Fee” on the Research & Related (R&R) Budget form must not exceed \$600,000; budgets that exceed this amount will be excluded from review.

5. R&R Subaward Budget Attachment

Information related to the questions on this form is dealt with in detail in Part V, section 8 of the NIFA Grants.gov Application Guide.

6. Supplemental Information Form

Detailed information related to the questions on this form is available in Part VI, section 1 of the NIFA Grants.gov Application Guide.

Field 2. Program to which you are applying. This refers to the **SBIR topic area** (see **Part I, B.**) to which you are submitting your USDA SBIR application. For example:

Program Code Name:

Animal Production and Protection

Program Code:

8.3

You must submit your Phase II to the same SBIR topic area as your Phase I award. MUST indicates that it is not negotiable. It is extremely important that the Program Code Name and Program Code are spelled correctly and exactly match one of the topic areas for which you are applying. Failure to complete these fields correctly could significantly delay the review of your application.

Field 8. Conflict of Interest List. See Part VI, section 1.8 of the NIFA Grants.gov Application Guide for further instructions as well as a suggested template. Title the attachment as ‘Conflict of Interest’ in the document header and save file as ‘ConflictofInterest’.

7. SBIR/Small Business Technology Transfer Program (STTR) Information

Information related to the questions on this form is dealt with in detail in Part VI, section 3 of the NIFA Grants.gov Application Guide unless otherwise noted below.

Program Type – Select SBIR only. USDA does not offer a STTR program.

SBIR/STTR Type – Select Phase II. The USDA NIFA SBIR program does not offer a Fast-Track Option.

Field 7. Commercialization Plan – (PDF format only) – This is required for a Phase II application submission.

The commercialization plan is limited to 10 pages.

The plan is to only include information pertaining to the items listed below. The Commercialization Plan shall not exceed 10 pages of written text using font no smaller than 12 point with at least 1-inch margins, regardless of whether it is single- or double-spaced. Labels for figures and tables may use a font no smaller than 10 point.

The commercialization plan should provide a description of each of the following areas:

1. Introduction of the SBIR Project and Expected Outcomes: Describe, in layperson's terms, the proposed project and its key technology objectives. Clarify the need addressed, specifying weaknesses in the current approaches to meet this need. In addition, describe the commercial applications of the research and the innovation inherent in the application.

2. Company Information: Give a brief description of your company including corporate objectives, core competencies, size (annual sales level and number and types of employees for the last 5 years, if company has existed for more than 5 years), and any current

products/services that have significant sales. Those grantees existing for less than five years should provide this information for the years they have been operational. Indicate your vision for the future and how you will grow/maintain a sustainable business entity. Include a short description of the origins of the company.

3. The Market, Customer, and Competition: Describe the national and/or global market and/or market segments (for the product, technology or service) you are targeting. Provide information on the size of the market(s) and a brief profile of the potential customer(s). Tell what significant advantages your innovation will bring to the market(s) (e.g., better performance, lower cost, faster, more efficient or effective, new capability). Explain the hurdles you will need to overcome in order to gain market/customer acceptance of your innovation. Briefly explain the plans you have for approaching your potential customers (i.e., your marketing and sales strategy).

Describe the current competition and any potential competitors over the next several years. Include a schedule showing the projected needs (e.g., amount of additional investment, timeframe, etc.) from the end of Phase II until commercialization. Indicate any other potential commercial factors that are not described above.

4. Intellectual Property: Describe how you will protect the intellectual property that results from your innovation. Note any actions you may consider to attain at least a temporary competitive advantage. What is the company's prior record in this area? Comment on the company's strategy to build a sustainable business through protection of intellectual property.

5. Revenue Stream: Describe the plans for generating a revenue stream and include the assumptions that form the basis for revenue projections. Address how the revenue stream will be profitable to the company or at least sustain the product through its life cycle.

6. Financing: How will you raise the necessary financing for Phase III commercialization? Show you have a plan for this funding in one or more of the following ways:

- a. A letter of commitment for follow-on funding;
 - i. Add any formal commitment letters or agreements to Field 12 found under section B.
- b. A letter of intent or evidence of negotiations to provide funding, should the Phase II project be successful and the market need still exists;
 - i. Add any formal letters of intent to Field 12 found under section B.
- c. A letter of support for the project and/or some in-kind commitment; and
 - i. Add any formal letters of support to Field 12 found under section B.
- d. A specific plan to secure Phase III funding.

Field 8. Documentation of Prior SBIR Phase II Awards – A small business firm that submits a Phase II application and has received more than 15 SBIR Phase II awards during the preceding 5 fiscal years must document the extent to which it was able to secure Phase III funding to develop concepts resulting from previous Phase II SBIR awards. In addition, the documentation must include the name of the awarding agency, date of award, funding agreement number, amount, topic or subtopic title, follow-on agreement amount, source and date of commitment, and current commercialization status

for each Phase II award. This information will be retained for the report required under section 105 of the Small Business Research and Development Enhancement Act of 1992.

Fields 10-11. STTR-Specific Questions – Do not respond to these questions. They are not applicable to the USDA SBIR program.

C. Submission Dates and Times

We recommend that you conduct an administrative review of the application before submission of it via Grants.gov to ensure that it complies with all preparation instructions including page limits. An application checklist is included in Part VII of the NIFA Grants.gov Application Guide to assist with this review.

Instructions for submitting an application are included in Part IV, Section 1.9 of the NIFA Grants.gov Application Guide.

Applications must be received by Grants.gov by **5 p.m. Eastern Time on March 8, 2018**. Applications received after this deadline will normally not be considered for funding.

If you have trouble submitting an application to Grants.gov, you should **FIRST** contact the Grants.gov Help Desk to resolve any problems. Keep a record of any such correspondence. See Part IV. A for Grants.gov contact information.

It is recommended that applicants begin submitting their completed application at least one day prior to the deadline in order to allow time to address submission issues since late applications may only be considered in situations involving an exceptional circumstance (**e.g., hurricane, flood, fire, Grants.gov issue that impacts the entire applicant community**) (see **Part III, 6.1 of the NIFA Grants.gov Application Guide**) **occurring prior to the deadline**. Please note that registration issues with Grants.gov are not valid reasons to request USDA NIFA accept a late application submission. Documentation of the problem will be required. Applicants who have problems with their submissions to Grants.gov must call the Grants.gov help desk to resolve the problems and keep a record of the following:

1. Grants.gov Tracking Numbers
2. Case numbers provided by Grants.gov
3. Any correspondence with Grants.gov regarding the submission problem
4. Any correspondence with SAM and Dunn and Bradstreet during the registration process

Once the application is successfully submitted to Grants.gov, the applicant must forward the information above via email to sbir@nifa.usda.gov. This information, as well as the timing of its receipt, will be used in determining whether or not to accept the late application.

We send email correspondence to the AR regarding the status of submitted applications. We strongly encourage you to provide accurate email addresses, where designated, on the SF-424 R&R Application for Federal Assistance.

If the AR has not received correspondence from NIFA regarding a submitted application within

30 days of the established deadline, contact the Agency Contact identified in Part VII of the RFA and request the application number assigned to the application. **Failure to do so may result in the application not being considered for funding by the peer review panel. Once the application has been assigned an application number, you should cite this number on all future correspondence.**

D. Other Submission Requirements Including Supplementary Information

You should follow the submission requirements noted in Part IV, Section 1.9 in the document entitled “NIFA Grants.gov Application Guide.”

Submitting Supplementary Information:

If you wish to send supplementary information that is pertinent to the review of your application (e.g., additional data), you MUST use the following guidelines below.

Supplementary information is not required. Submitted information is sent to panel reviewers shortly before the panel meets in Washington D.C. (usually after the initial, individual reviews have been written).

Submission of supplementary information may not exceed two (2) pages. The deadline for electronic receipt of this supplementary information is 5:00 pm (Eastern Time) March 30, 2018.

The information must be:

- 1) Directly relevant to the submitted application;
- 2) Sent as a PDF attachment to an email addressed to sbir@nifa.usda.gov;
- 3) The email Subject Header should read: “2-page update for [your application number and the lead Project Director's Last Name]” (Example: Subject: 2-page update for 2018-00000 Smith); and
- 4) Within the PDF document, also include the Application Number, Project Title, and lead Project Director's Name.

It is anticipated that the evaluation of SBIR Phase II applications be completed by June 2018, at which time all applicants (i.e., successful and unsuccessful) will be notified of final award decisions.

For information about the **status of a submitted application**, see Part III, Section 6 of the NIFA Grants.gov Application Guide.

PART V—APPLICATION REVIEW REQUIREMENTS

A. General

We evaluate each application in a two-part process. First, we screen each application to ensure that it meets the administrative requirements as set forth in this RFA. Second, a technical review panel will evaluate applications that meet the administrative requirements.

We select external peer reviewers based upon their training and experience in relevant scientific, business, or commercialization fields, taking into account the following factors:

- the level of relevant formal scientific, technical education, extension experience, or business experience of the individual, as well as the extent to which an individual is engaged in relevant research and commercialization activities;
- the need to include experts from various areas of specialization within relevant scientific research and development fields;
- the need to include other experts (e.g., producers, range or forest managers/operators, and consumers) who can assess relevance of the applications to targeted audiences and to program needs;
- the need to include experts from a variety of organizational types (e.g., colleges, universities, industry, state and federal agencies, and private profit and non-profit organizations) and geographic locations;
- the need to maintain a balanced composition with regard to minority and female representation and an equitable age distribution; and
- the need to include reviewers who can judge the effective usefulness of each application to end users and the general public.

After each peer review panel has completed its deliberations and provided a recommendation, the responsible program staff of the USDA NIFA SBIR program will determine if the panel recommendations can be supported from currently available funds or be declined due to insufficient funds or unfavorable review.

The USDA NIFA SBIR program reserves the right to negotiate with the PD/PI and/or with the submitting organization or institution regarding project revisions (e.g., reductions in the scope of work, funding level, period, or method of support) prior to recommending any project for funding.

We will send copies of reviews, *not* including the identity of reviewers, and a summary of the panel comments to the PD after the review process has been completed.

B. Evaluation Criteria

We will use the evaluation criteria below to review applications submitted in response to this RFA:

Initial Screening Criteria

Applications that do not satisfy all of the screening criteria will be returned to the proposing entity without review. Returned applications may not be resubmitted (with or without revision) under this solicitation. The initial screening criteria are the following:

- (A) The proposing firm must qualify as a small business concern.
- (B) The application must meet the Application Content and Format requirements as described in this RFA. This includes page length requirements, all required forms, and all files in PDF.
- (C) The proposed budget must be within the dollar ceiling identified in this RFA.
- (D) The proposed Phase II research must fall within the topic area that the project was originally funded under Phase I.
- (E) An application must contain adequate scientific/technical information clearly stating the research plan and objectives. We reserve the right not to submit for review any application that does not have insufficient scientific/technical information.
- (F) It is clear that the project director will work a minimum of 51 percent of his/her time for the small business firm during the period of the grant and that the small business firm will conduct a minimum of one-half of the research effort. However, the project director may spend less than 50 percent of his/her time on the Phase II project.

Phase II Application Evaluation Criteria

Only awardees in Phase I are eligible to participate and submit a Phase II application. This includes those awardees identified via a “novated” or “successor-in-interest” revised funding agreement. The evaluation criteria that will be used by reviewers to evaluate all applications are listed below. Approximately equal consideration will be given to each criterion, **except for items (A), (B), and (C) which will receive twice the value of any of the other items:**

A. Degree to Which Phase I Objectives were Met and Technical Feasibility Established:

1. Phase I project demonstrated novelty, innovation, uniqueness, and originality;
2. Conceptual adequacy of the research and suitability of the hypothesis, as applicable;
3. Clarity and delineation of Phase I objectives;
4. Demonstration of feasibility through preliminary data; and
5. Probability of success of the project to move into Phase II is appropriate given the level of scientific originality, and risk-reward balance.

B. Phase II Scientific and Technical Feasibility:

1. Project objectives and outcomes are clearly described, adequate, and appropriate. All project components (i.e., research and commercialization) are reflected in one or more project objectives;
2. Proposed approach, procedures, or methodologies are innovative, original,

- clearly described, suitable, and feasible;
3. Expected results or outcomes are clearly stated, measurable, and achievable within the allotted time frame;
 4. Proposed research fills knowledge gaps that are critical to the development of new innovations to address the stated problem or issue; and
 5. Proposed research is up-to-date on the current state of the art (i.e., literature reviews have been completed)

C. Commercial Potential: The commercial potential will be assessed based on how well the following criteria are presented:

1. Demonstration of the company's ability to commercialize the innovation;
2. Relevant and current market information for the innovation (stakeholder needs for the innovation, size of the market, potential customers, competition, etc.);
3. Strategy for commercializing the innovation including follow-on commitments from private sector or non-SBIR funding sources;
4. Plans for protection of intellectual property;
5. Projected revenue stream and assumptions; and
6. Record of commercializing new products and/or services during the last 5 years, especially from prior SBIR and STTR projects.

A Commercialization Plan showing that the proposing firm has no prior Phase II awards will not affect the evaluation of an application; the application will be evaluated for commercial potential based on its commercialization strategy.

D. Importance of the Problem: How well the application justifies the importance of the problem. The degree the project satisfies a public interest (one or more of the strategic goals listed in this RFA).

E. Investigator and Resource Qualifications:

1. Roles of key personnel are clearly defined;
2. Key personnel have sufficient expertise to complete the proposed project, and where appropriate, partnerships with other disciplines and institutions are established;
3. PD and Co-PD biographic information/resumes provide current and relevant employment history;
4. Support personnel, facilities, and instrumentation are sufficient;

5. A clear plan is articulated for project management, including time allocated for attainment of objectives and delivery of products, maintenance of partnerships and collaborations, and a strategy to enhance communication, data sharing, and reporting among members of the project team;
6. Consultants, subcontractors, or CRADA cooperators that are involved in the project have provided letters verifying their willingness to participate in the project; and
7. Personnel on subcontract(s) and consulting agreement(s) have defined roles and responsibilities.

F. Budget:

1. The budget is appropriate for the proposed project; and
2. There is sufficient budget detail to indicate clearly how the funds would be utilized

G. Duplication:

1. There is no duplication of any ongoing or previous research by the small business firm or by other researchers; and
2. Application clearly indicates how the proposed technology would differ significantly from existing innovations.

Additional factors that will be considered in the review process are whether an application involves a CRADA with a USDA laboratory or contains a follow-on funding commitment for Phase III. In the event that two or more applications are of approximately equal merit, the existence of a CRADA with a USDA laboratory or a follow-on funding commitment for Phase III will be an important consideration to break the tie. The value of any commitment will depend upon the degree of financial commitment made by non-Federal investors, with the greater **value resulting from a signed agreement with reasonable terms for an amount at least equal to the funding requested from USDA in Phase II.**

C. Conflicts of Interest, Confidentiality

During the peer evaluation process, we take extreme care to prevent any actual or perceived conflicts of interest that may impact review or evaluation. See http://www.nifa.usda.gov/business/competitive_peer_review.html for further information about conflicts of interest and confidentiality as related to the peer review process.

D. Proprietary Information

The inclusion of proprietary information in an application is discouraged unless it is necessary for the proper evaluation of the application. If proprietary information is to be included, it should be confined to a few critical technical items which, if disclosed, could jeopardize the obtaining of foreign or domestic patents, trade secrets, salaries, or other information that could jeopardize commercial competitiveness. Applications or reports that attempt to restrict dissemination of large amounts of information may be found unacceptable by USDA.

When providing propriety information, set it apart from other text on a separate page, and key

to the text by numbers. must be clearly marked by the applicant with the term “confidential proprietary information,” and the following legend must appear on each PDF attachment submitted as a part of the application: “These data shall not be disclosed outside the Government and shall not be duplicated, used or disclosed in whole or in part for any purpose other than evaluation of this application. If a funding agreement is awarded to this applicant as a result of or in connection with the submission of these data, the Government shall have the right to duplicate, use or disclose the data to the extent provided in the funding agreement and pursuant to applicable law. This restriction does not limit the Government’s right to use information contained in the data if it is obtained from another source without restriction. The data subject to this restriction are contained on pages ___ of this application.”

Any other legend may be unacceptable to the Government and may constitute grounds for removing the application from further consideration without assuming any liability for inadvertent disclosure. The Government will limit dissemination of such information to within official channels.

USDA NIFA, by law, is required to make the final decision as to whether the information is required to be kept in confidence. Information contained in unsuccessful applications will remain the property of the applicant. However, USDA NIFA will retain for three years one file copy of all applications received. Public release of information for any application submitted will be subject to existing statutory and regulatory requirements. The legislation reauthorizing the SBIR Program strengthened the protection of awardee firms relative to maintaining confidentiality of proprietary information for a period of four years after the end of the grant period. However, any application which is funded will be considered an integral part of the award and normally will be made available to the public upon request through the Freedom of Information Act, except for designated proprietary information.

E. Rights in Technical Data

Rights in technical data, including software developed under the terms of any funding agreement resulting from an application submitted in response to this solicitation, shall remain with the grantee. However, the Government shall have the limited right to use such data for Governmental purposes and shall not release such data outside the Government without permission of the grantee for a period of four years from completion of the project under which the data were generated. Effective at the conclusion of the four-year period, the Government shall retain a royalty-free license for Governmental use of any technical data delivered under the agreement, whether patented or not.

Rights in Data Developed Under SBIR Funding Agreement.

The Act provides for “retention by an SBC of the rights to data generated by the concern in the performance of an SBIR award.”

(1) Each agency must refrain from disclosing SBIR technical data to outside the Government (except reviewers) and especially to competitors of the SBC, or from using the information to produce future technical procurement specifications that could harm the SBC that discovered and developed the innovation.

(2) SBIR agencies must protect from disclosure and non-governmental use all SBIR technical data developed from work performed under an SBIR funding agreement for a period of not less than four years from delivery of the last deliverable under that agreement (either Phase I, Phase II, or Federally-funded SBIR Phase III) unless, subject to paragraph (3) of this section, the agency obtains permission to disclose such SBIR technical data from the awardee or SBIR applicant. Agencies are released from obligation to protect SBIR data upon expiration of the protection period except that any such data that is also protected and referenced under a subsequent SBIR award must remain protected through the protection period of that subsequent SBIR award. For example, if a Phase III award is issued within or after the Phase II data rights protection period and the Phase III award refers to and protects data developed and protected under the Phase II award, then that data must continue to be protected through the Phase III protection period. Agencies have discretion to adopt a protection period longer than four years. The Government retains a royalty-free license for Government use of any technical data delivered under an SBIR award, whether patented or not. This section does not apply to program evaluation.

(3) SBIR technical data rights apply to all SBIR awards, including subcontracts to such awards, that fall within the statutory definition of Phase I, II, or III of the SBIR Program, as described in §4 of this Policy Directive. The scope and extent of the SBIR technical data rights applicable to Federally-funded Phase III awards is identical to the SBIR data rights applicable to Phases I and II SBIR awards. The data rights protection period lapses only:

- (i) upon expiration of the protection period applicable to the SBIR award; or
- (ii) by agreement between the awardee and the agency.

F. Copyrights

With prior written permission of the Authorized Departmental Officer, the grantee normally may copyright and publish (consistent with appropriate national security considerations, if any) material developed with USDA support. USDA receives a royalty-free license for the Federal Government and requires that each publication contain the following acknowledgment and disclaimer statement:

“The project was supported by the Small Business Innovation Research program of the U.S. Department of Agriculture, grant number #. Any opinions, findings and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture.”

The last sentence may be omitted from articles published in scientific journals.

G. Patents and Inventions

Allocation of rights to inventions shall be in accordance with 35 U.S.C. 202-206 and the Department of Commerce implementing regulations entitled “Rights to Inventions Made by Nonprofit Organizations and Small Business Firms under Government Grants, Contracts and Cooperative Agreements” at 37 C.F.R. Part 401. These regulations provide that small businesses normally may retain the principal worldwide patent rights to any invention developed with USDA support. USDA receives a royalty-free license for Federal Government use, reserves the right to require the patentee to license others in certain

circumstances, and requires that anyone exclusively licensed to sell the invention in the United States must normally manufacture it domestically. To the extent authorized by 35 U.S.C. 205, USDA NIFA will not make public any information disclosing a USDA-supported invention for a four-year period to allow the grantee a reasonable time to file an initial patent application. Additional information may be obtained by contacting:

Bart Hewitt, Director of Planning, Accountability, and Reporting
National Institute of Food and Agriculture, USDA
STOP 2213
1400 Independence Avenue, SW
Washington, DC 20250-2213
Telephone: (202) 720-5623
Facsimile: (202) 720-7714
bayhdole@nifa.usda.gov

SBIR awardees must report inventions to the awarding agency within two months of the inventor's report to the awardee. The reporting of inventions must be made through submission to Interagency Edison (www.iedison.gov). Specific instructions for invention reporting are contained in the agency's terms and conditions, <https://nifa.usda.gov/terms-and-conditions>.

H. Research Involving Special Considerations

A number of situations frequently encountered in the conduct of scientific research require the submission of special information for a particular project. Since some types of research targeted for SBIR support have high probability of involving human subjects at risk or vertebrate animals, special instructions follow:

If the proposed research will involve human subjects at risk or vertebrate animals, the application must so indicate by checking "Yes" on the RR_OtherProjectInfo form found in section IV. Further, in the event that the project is funded, the applicant may be required to have the research plan reviewed and approved by the appropriate review board or committee. It is suggested that applicants contact local universities, colleges, or nonprofit research organizations which have established such reviewing mechanisms to have this service performed.

Guidelines to be applied and observed when conducting such research are outlined below.

- (A) **Human Subjects at Risk** - Regulations issued by the Department of Agriculture to be used in safeguarding the rights and welfare of human subjects used in research supported with USDA grant funds are contained in 45 CFR Part 46 and USDA regulations set forth in 7 CFR Part 1c. All nonexempt research projects involving human subjects must be approved by an Institutional Review Board prior to commencing actual substantive work.
- (B) **Animal Care** - The performing organization must comply with the Animal Welfare Act (7 U.S.C., 2131-2156); Public Law 89-544, 1996 and the regulations issued by the Department of Agriculture in 9 CFR parts 1, 2, 3 and 4.

In the case of domesticated farm animals housed under farm conditions, the grantee must adhere to the principles stated in the Guide for the Care and Use of Agricultural Animals in Agricultural Research and Teaching, Federation of Animal Sciences Societies, 1999. In the event a project involving the use of living vertebrate animals results in a grant award, funds will be released only after a qualified Institutional Animal Care and Use Committee has approved the project.

I. Grantee Commitments

Upon issuance of a research grant by USDA, the awardee will be required to make certain legal commitments through acceptance of the award document and the terms and conditions attached thereto, as well as any project-specific terms or conditions outlined.

J. Additional Information

- (A) This RFA is intended for informational purposes and reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting SBIR funding agreement, the terms of the funding agreement are controlling.
- (B) If an applicant or a grantee is contemplating any type of transaction involving the entity (i.e., merger, spin-off or sale), it is advised that the applicant or the grantee contact one of the SBIR NPLs (see Part VII) for knowledge of how the transaction may affect a potential grant or the grant, as applicable.
- (C) USDA is not responsible for any monies expended by the applicant prior to the award of any funding agreement.
- (D) This RFA is not an offer by USDA NIFA and does not obligate USDA NIFA to make any specific number of awards. Also, awards under this program are contingent upon the availability of funds.
- (E) Unsolicited applications will not be accepted under the SBIR program.
- (F) The applicant must provide the total number of employees for the organization and its subsidiaries and/or parent company, if applicable.

K. Organizational Management Information

Before the award of an SBIR funding agreement, USDA NIFA requires the submission of certain organizational management, personnel, and financial information to assure responsibility of the applicant, including certification that the proposing organization is in compliance with the Civil Rights Act of 1964. These forms will be provided to the small business concern by the Office of Grants and Financial Management, NIFA, prior to the forwarding of the funding agreement for acceptance. The information contained in both forms shall be submitted one-time, with updates on an as-needed basis. (If significant changes

occur within the organization to warrant submission of new or additional information, additional forms should be requested by calling (202) 401-4986). It is anticipated that all Phase II awardees will be required to submit the above information. Although an applicant may be eligible based on its status as one of these entities, there are factors that may exclude an applicant from receiving federal financial and nonfinancial assistance and benefits under this program (e.g., debarment or suspension of an individual involved or a determination that an applicant is not responsible based on submitted organizational management information). **Please note that NIFA will not issue an award until all requested organizational management and financial information has been received. Delaying or failing to submit this information could result in the application not being funded.**

L. Application Disposition

An application may be withdrawn at any time before a final funding decision is made regarding the application. Each application that is not selected for funding, including those that are withdrawn, will be retained by USDA SBIR for a period of three years.

PART VI—AWARD ADMINISTRATION

A. General

Within the limit of funds available for such purpose, the NIFA awarding official shall make grants to those responsible, eligible applicants whose applications are judged most meritorious under the procedures set forth in this RFA. The date specified by the NIFA awarding official as the effective date of the grant shall be no later than September 30 of the federal fiscal year in which the project is approved for support and funds are appropriated for such purpose, unless otherwise permitted by law. The project need not be initiated on the grant effective date, but as soon thereafter as practical so that project goals may be attained within the funded project period. All funds granted by NIFA under this RFA may be used only for the purpose for which they are granted in accordance with the approved application and budget, regulations, terms and conditions of the award, applicable federal cost principles, USDA assistance regulations, and NIFA General Awards Administration Provisions at 7 CFR part 3430, subparts A through E.

B. Award Notice

The award document will provide pertinent instructions and information including, at a minimum, the information described in [2 CFR 200.210](#).

See <http://www.nifa.usda.gov/business/awards/awardterms.html> to view current NIFA award terms and conditions.

C. Administrative and National Policy Requirements

Several federal statutes and regulations apply to grant applications considered for review and to project grants awarded under this program. These may include, but are not limited to, the ones listed on the NIFA web page – <http://nifa.usda.gov/federal-regulations>.

NIFA Federal Assistance Policy Guide—a compendium of basic NIFA policies and procedures that apply to all NIFA awards, unless there are statutory, regulatory, or award-specific requirements to the contrary—is available at <http://nifa.usda.gov/policy-guide>.

Responsible and Ethical Conduct of Research

Refer to Part II, C for more information.

D. Expected Program Outputs and Reporting Requirements

The output and reporting requirements are included in the award terms and conditions (see <http://www.nifa.usda.gov/business/awards/awardterms.html> for information about NIFA award terms). If there are any program or award-specific award terms, those, if any, will be identified in the award.

SBIR Phase II Technical Reports

All Phase II awards will be required to submit an interim technical progress report at

approximately the mid-point in the project which, upon acceptance and approval will release the final 50% increment of funding on the project (in most cases 50% of funding is released in first half of project period). In addition, a comprehensive final technical report will be required. Each Phase II project will schedule an out briefing with SBIR staff to discuss the results of the grant and provide an impact statement document that USDA NIFA can use for communicating success of the program and its funded projects. Additional information on the deliverables and schedules can be found in the terms and conditions provided with the award.

Please note: All technical reports will be held confidential for a period covering four years after the termination of the project. **As such, proprietary information may be included in the interim and final technical reports when necessary to provide the USDA NIFA SBIR staff adequate information to evaluate the outcome of the project.** For the out briefing USDA SBIR staff may request permission from the grantee to use some of the information to communicate the success of the grant and the USDA SBIR program.

REReport

Grantees are to submit initial project information and annual and summary reports to NIFA's electronic, Web-based inventory system, REReport, that facilitates both grantee submissions of project outcomes and public access to information on Federally-funded projects. The details of these reporting requirements are included in the award terms and conditions. More information about REReport can be found at <https://nifa.usda.gov/resource/reepreport-guide-project-directors>. Reports submitted via REReport will be placed in the [USDA Current Research Information System \(CRIS\) database](#). CRIS is an online public database meant to provide information to the general public on all awards made by USDA. **As such, proprietary information should not be included in these reports.** Additionally a REReport submission does not meet the requirements for the interim and final technical report as these are additional reports required under the terms and conditions for the grant.

PART VII—AGENCY CONTACTS

Applicants and other interested parties are encouraged to contact:

Programmatic Contacts-

Dr. Toby Ahrens (toby.ahrens@nifa.usda.gov)

Telephone: (202) 401-6050

8.8 Biofuels and Biobased Products

Dr. Charles Cleland (cceleland@nifa.usda.gov)

Telephone: (202) 401-6852

8.1 Forests and Related Resources

Dr. Karelyn Cruz (karelyn.cruz@nifa.usda.gov)

Telephone: (202) 401-6417

8.4 Air, Water, and Soil

Dr. Denis Ebodaghe (debodaghe@nifa.usda.gov)

Telephone: (202) 401-4385

8.12 Small and Mid-Size Farms

Mr. Brent Elrod (belrod@nifa.usda.gov)

Telephone: (202) 690-3468

8.6 Rural Development

Dr. Gene Kim (Gene.W.Kim@nifa.usda.gov)

Telephone: (202) 401-1108

8.7 Aquaculture

Dr. Rachel Melnick (rmelnick@nifa.usda.gov)

Telephone: (202) 401-4980

8.13 Plant Production and Protection –
Engineering

Dr. Robert Nowierski (rnowerski@nifa.usda.gov)

Telephone: (202) 401-4900

8.2 Plant Production and Protection- Biology

Dr. Robert Smith (rsmith@nifa.usda.gov)

Telephone: (202) 401-4892

8.3 Animal Production and Protection

Dr. Jodi Williams (jwilliams@nifa.usda.gov)

Telephone: (202) 720-6145

8.4 Food Science and Nutrition

Questions of a general nature about this SBIR solicitation should be sent to sbir@nifa.usda.gov or can be directed to:

Mr. Scott Dockum (sdockum@nifa.usda.gov)
Telephone: (202) 720-6346
SBIR Program Coordinator

Mr. Elden Hawkes (sbir@nifa.usda.gov)
Telephone: (202) 401-4002
SBIR Program Specialist

Administrative/Business Contact –

Susan Bowman (sbowman@nifa.usda.gov)
Awards Management Division, National Institute of Food and Agriculture
Telephone: (202) 401-4324

OR

Adriene Woodin (awoodin@nifa.usda.gov)
Awards Management Division, National Institute of Food and Agriculture
Telephone: (202) 401-4320

PART VIII—OTHER INFORMATION

A. Use of Funds; Changes

1. Delegation of Fiscal Responsibility

Unless the terms and conditions of the award state otherwise, awardees may not in whole or in part delegate or transfer to another person, institution, or organization the responsibility for use or expenditure of award funds.

2. Changes in Budget or Project Plans

In accordance with [2 CFR 200.308](#), awardees must request prior approval from NIFA for the following program or budget-related reasons:

- i.** Change in the scope or the objective of the project or program (even if there is no associated budget revision requiring prior written approval).
- ii.** Change in a key person specified in the application or the federal award.
- iii.** The disengagement from the project for more than three months, or a 25 percent reduction in time devoted to the project, by the approved project director or principal investigator.
- iv.** The inclusion, unless waived by the federal awarding agency, of costs that require prior approval in accordance with 2 CFR 200 Subpart E—Cost Principles of this part or 45 CFR Part 75 Appendix IX, “Principles for Determining Costs Applicable to Research and Development under Awards and Contracts with Hospitals,” or 48 CFR Part 31, “Contract Cost Principles and Procedures,” as applicable.
- v.** The transfer of funds budgeted for participant support costs as defined in §200.75 Participant support costs to other categories of expense.
- vi.** Unless described in the application and funded in the approved federal awards, the subawarding, transferring or contracting out of any work under a federal award, including fixed amount subawards as described in §200.332 Fixed amount subawards. This provision does not apply to the acquisition of supplies, material, equipment, or general support services.
- vii.** Changes in the approved cost-sharing or matching provided by the non-federal entity.
- viii.** The need arises for additional federal funds to complete the project.

The awardee will be subject to the terms and conditions identified in the award. See <http://www.nifa.usda.gov/business/awards/awardterms.html> for information about NIFA award terms.

B. Confidential Aspects of Applications and Awards

When an application results in an award, it becomes a part of the record of NIFA transactions, available to the public upon specific request. Information that the Secretary of Agriculture determines to be of a confidential, privileged, or proprietary nature will be held in confidence to the extent permitted by law. Therefore, any information that the applicant wishes to have considered as confidential, privileged, or proprietary should be clearly marked within the

application. We will retain for three years a copy of an application that does not result in an award. Such an application will be released only with the consent of the applicant or to the extent required by law. An application may be withdrawn at any time prior to the final action thereon.

C. Regulatory Information

This program is not subject to the provisions of Executive Order 12372, which requires intergovernmental consultation with state and local officials.

Under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35), the collection of information requirements contained in this notice have been approved under OMB Document No. 0524-0039.

D. Definitions

Refer to [7 CFR 3430, Competitive and Noncompetitive Non-formula Financial Assistance Programs--General Award Administrative Provisions](#), and [7 CFR 3403, Small Business Innovation Research Program](#), for applicable definitions for this NIFA grant program.

Ad hoc Reviewers

Experts or consultants, qualified by training and experience in particular scientific or technical fields to render expert advice on the scientific technical merit of the grant applications in those fields, who review on an individual basis one or several of the eligible applications submitted to this program in their area of expertise and who submit to the Department written evaluations of such applications.

Affiliate

This term has the same meaning as set forth in 13 CFR part 121—Small Business Size Regulations, section 121.103. Further information about SBA's affiliation rules and a guide on affiliation is available at www.SBIR.gov and www.SBA.gov/size.

Applicant

The organizational entity that, at the time of award, will qualify as a small business concern and that submits a grant application for a funding agreement under the SBIR Program.

Authorized Departmental Officer

The Secretary or any employee of the Department who has the authority to issue or modify grant instruments on behalf of the Secretary.

Authorized Organizational Representative

The president, director, chief executive officer or other designated official of the applicant organization who has the authority to commit the resources of the organization. Also referred to as the Authorized Representative (AR).

Commercialization

The process of developing marketable products, processes, technologies, or services and the production and delivery (whether by the originating party or others) of the products, processes,

technologies, or services for sale to or use by the Federal government or commercial markets.

Covered Small Business Concern

A small business that:

(1) Was not majority-owned by multiple venture capital operating companies (VCOCs), hedge funds, or private equity firms on the date on which it submitted an application in response to a solicitation under the SBIR program; and

(2) Is majority-owned by multiple venture capital operating companies, hedge funds, or private equity firms on the date of the SBIR award.

Department

The United States Department of Agriculture.

Direct Costs

Costs that occur in direct support of a single project or that can be clearly identified, segregated and billed directly to the project via the companies' accounting system.

Essentially Equivalent Work

Occurs when (1) substantially the same research is proposed for funding in more than one grant application submitted to the same Federal agency; (2) substantially the same research is submitted to two or more different Federal agencies for review and funding consideration; or (3) a specific research objective and the research design for accomplishing an objective are the same or closely related in two or more applications or awards, regardless of the funding source.

Fee

The amount of profit a company will receive from the grant.

Funding Agreement

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.

Grant

A financial assistance mechanism providing money, property or both to an eligible entity to carry out the approved project or activity, and substantial programmatic involvement by Government is not anticipated.

Grantee

The small business concern designated in the grant award document as the responsible legal entity to whom the grant is awarded under this part. Also referred to as an "awardee."

Historically Underutilized Business Zone (HUBZone)

A small business concern meeting the following criteria:

(A) Located in a "historically underutilized business zone" or HUBZone area located in one or

more of the following:

- (1) **A qualified census tract** (as defined in section 42(d)(5)(C)(i)(I) of the Internal Revenue Code of 1986); or
- (2) **A qualified “non-metropolitan county”** (as defined in section 143(k)(2)(B) of the Internal Revenue Code of 1986); or
- (3) **On an Indian Reservation**- Land within the boundaries of a federally recognized Indian Reservation.

(B) Owned and controlled by one or more U.S. Citizens; and

(C) At least 35 percent of its employees **must** reside in a HUBZone.

Indirect Costs

Costs which occur in support of more than one objective and therefore cannot be identified readily and specifically with a particular project, often called overhead or General & Administrative (G&A).

Innovation

A new or improved item having marketable potential including (1) development of new technologies;
(2) refinement of existing technologies; or (3) development of new applications for existing technologies.

Intellectual Property

The separate and distinct types of intangible property that are referred to collectively as “intellectual property,” including but not limited to: patents, trademarks, copyrights, trade secrets, SBIR technical data (as defined in this section), ideas, designs, know-how, business, technical and research methods, other types of intangible business assets, and all types of intangible assets either proposed or generated by a small business concern as a result of its participation in the SBIR program.

Joint Venture

An association of concerns with interests in any degree or proportion by way of contract, express or implied, consorting to engage in and carry out a single specific business venture for joint profit, for which purpose they combine their efforts, property, money, skill or knowledge, but not on a continuing or permanent basis for conducting business generally. A joint venture is viewed as a business entity in determining power to control its management.

Manufacturing Related

Encompasses improvements in existing methods or processes as well as wholly new processes, machines, or systems. Four main areas include:

(A) Unit process level technologies that create or improve manufacturing processes, including:

1. Fundamental improvements in existing manufacturing processes that deliver substantial productivity, quality, or environmental benefits; or

2. Development of new manufacturing processes, including new materials, coatings, methods, and associated practices.

(B) Machine level technologies that create or improve manufacturing equipment, including:

1. Improvements in capital equipment that create increased capability, such as accuracy or repeatability, increased capacity through productivity improvements or cost reduction or increased environmental efficiency, such as safety, energy efficiency and, environmental impact; or
2. New apparatus and equipment for manufacturing, including additive and subtractive manufacturing, deformation and molding, assembly and test, semiconductor fabrication, and nanotechnology.

(C) Systems level technologies for innovation in the manufacturing enterprise, including:

1. Advances in controls, sensors, networks, and other information technologies that improve the quality and productivity of manufacturing cells, lines, systems, and facilities;
2. Innovation in extended enterprise functions critical to manufacturing, such as quality systems, resource management, supply change integration and distribution, scheduling, and tracking; or
3. Technologies that enable integrated and collaborative product and process development, including computer-aided and expert systems for design, tolerance development, process and materials selection, life-cycle cost estimation, rapid prototyping, and tooling.

(D) Environment or societal level technologies that improve workforce abilities, productivity, and manufacturing competitiveness, including:

1. Technologies for improved workforce health and safety, such as human factors and ergonomics; or
2. Technologies that aid and improve workforce manufacturing skill and technical excellence, such as educational systems incorporating improved manufacturing knowledge and instructional methods.

Outcomes

The measure of long-term, eventual, program impact.

Outputs

The measures of near-term program impact.

Peer Review Group

Experts or consultants, qualified by training and experience in particular scientific or technical fields to give expert advice on the scientific and technical merit of grant applications to those fields, who assemble as a group to discuss and evaluate all of the eligible applications submitted to this program in their area of expertise.

Program Solicitation

A formal request for applications whereby a Federal agency notifies the small business community of its Research or Research and Development (R/R&D) needs and interests in broad and selected areas, as appropriate to the agency, and requests applications from small business concerns in response to these needs and interests.

Project Director/Principal Investigator (PD/PI)

An individual designated by the applicant to provide the scientific and technical direction to a project supported by the funding agreement.

Prototype

A model of something to be further developed, which includes designs, protocols, questionnaires, software, and devices.

Project Period

The total length of time approved by the Department for conducting the research project as outlined in an approved grant award. Also referred to as the period of performance.

Research or Research and Development (R/R&D)R/R&D means any activity which is:

- (1) A systematic, intensive study directed toward greater knowledge or understanding of the subject studied;
- (2) A systematic study directed at applying new knowledge to meet a recognized need; or
- (3) A systematic application of knowledge toward the production of useful materials, devices and systems or methods, including design, development and improvement of prototypes, and new processes to meet specific requirements.

Research Project Grant

The award by the Department of funds to a grantee to assist in meeting the costs of conducting for the benefit of the public an identified project, which is intended and designed to establish, discover, elucidate, or confirm information or the underlying mechanisms relating to a research topic area identified in the annual solicitation of applications.

SBIR Participants

Business concerns that have received SBIR awards or that have submitted SBIR applications.

SBIR Technical Data

All data generated during the performance of an SBIR award.

SBIR Technical Data Rights

The rights a small business concern obtains in data generated during the performance of any SBIR award that an awardee delivers to the Government during or upon completion of a Federally-funded project and to which the government receives a license.

Small Business Concern (SBC)

A concern that meets the requirements set forth in 13 CFR 121.702 (available at <https://www.gpo.gov/fdsys/granule/CFR-2011-title13-vol1/CFR-2011-title13-vol1-sec121-702>)

).

Small Business Entity

A small business entity is typically defined as a sole proprietorship, partnership, corporation, and S corporation. A Limited Liability Company (LLC) is a business structure allowed by state statute.

Small and Mid-Size Farms

Small Farms are defined as farms or ranches with less than \$250,000 in annual agricultural sales. Mid-Size Farms are defined as farms or ranches with less than \$500,000 in annual agricultural sales.

Socially and Economically Disadvantaged Small Business Concern

A socially and economically disadvantaged small business concern is one:

- (1) Which is at least 51 percent owned by (i) an Indian tribe or a native Hawaiian organization or (ii) one or more socially and economically disadvantaged individuals; and
- (2) Whose management and daily business operations are controlled by one or more socially and economically disadvantaged individuals.

For purposes of this solicitation, a socially and economically disadvantaged individual is defined as a member of any of the following groups: Black Americans, Hispanic Americans, Native Americans, Asian-Pacific Americans, Subcontinent Asian Americans, other groups designated from time to time by the Small Business Administration (SBA) to be socially disadvantaged, or any other individual found to be socially and economically disadvantaged by the SBA pursuant to Section 8(a) of the Small Business Act, 15 U.S.C. 637(a).

Note: The certification of socially and economically disadvantaged small business is for statistical purposes only.

Subcontract

Any agreement, other than one involving an employer-employee relationship, entered into by an awardee of a funding agreement calling for supplies or services for the performance of the original funding agreement.

United States

The 50 states, the territories and possessions of the Federal Government; the Commonwealth of Puerto Rico; the District of Columbia; the Republic of the Marshall Islands; the Federated States of Micronesia; and the Republic of Palau.

Women-owned Small Business Concern

A women-owned small business concern is a SBC:

- (1) Which is at least 51 percent owned by one or more women; and
- (2) Whose management and daily business operations are controlled by one or more women.

Note: Certification of women-owned small business is for statistical purposes only.

E. Materials Available on the Internet

SBIR program information will be made available on the NIFA website at <https://nifa.usda.gov/program/small-business-innovation-research-program-sbir>. The following are among the materials available on the web page:

1. Phase I & Phase II Solicitations
2. USDA SBIR Eligibility Requirements
3. Small Business Innovation Research (SBIR) Grantee Resources
4. Advancing NIFA Basic Research Findings to Commercial Applications
5. Commercialization Plan Guidance for Phase II Applications
6. Government Agencies and Programs Promoting Public-Private Technology Transfer