



United States  
Department of  
Agriculture

# Program Solicitation

**Small Business Innovation  
Research Program – Phase II  
Fiscal Year 2013**

National Institute of  
Food and Agriculture

Competitive Programs

SBIR-13-2

**Phase II Closing Date: February 28, 2013**

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**Catalog of Federal Domestic Assistance Number (CFDA)**

**10.212 Small Business Innovation Research**

**NIFA Funding Opportunity Number: USDA-NIFA-SBIR-004128**

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## Acronym List

ADO – Authorized Departmental Officer  
APHIS – Animal and Plant Health Inspection Service  
AR – Authorized Representative  
ASAP – Automated Standard Applications for Payment System

CCR – Central Contractor Registry  
CFDA – Catalog of Federal Domestic Assistance  
CFR – Code of Federal Regulations  
COI – Conflict of Interest  
CRADA – Cooperative Research and Development Agreement

DUNS – Data Universal Number System

E-Business POC - E-Business Point of Contact

F&A – Facilities and Administration  
FR – Federal Regulation  
FY – Fiscal Year

HUBZONE – Historically Underutilized Business Zone

M-PIN – Marketing Partner Identification Number

NIFA – National Institute for Food and Agriculture  
NPL – National Program Leader

PD – Project Director  
PDF – Portable Document Format  
PI – Principle Investigator  
POC – Point of Contact  
PRS – Peer Review System

R/R&D – Research or Research and Development  
R&D – Research and Development  
R&R – Research and Related

SBA – Small Business Administration  
SBC – Small Business Concern  
SBIR – Small Business Innovation Research  
SAM – System for Awards Management  
STTR – Small Business Technology Transfer Program

U.S. – United States  
USDA – United States Department of Agriculture

## 1.0 GENERAL PROGRAM DESCRIPTION

### 1.1 Introduction

The U.S. Department of Agriculture (USDA) invites previous Phase I awardees to apply for Phase II funding under this program solicitation. Phase II awards are only provided to those Phase I awardees that meet the eligibility requirements of a Phase II project. To be eligible for a Phase II award, an applicant must have been funded by the USDA SBIR program as a Phase I project and have not previously applied for Phase II funding under this program. See section 1.4 of this solicitation for other eligibility requirements.

Objectives of the SBIR program include stimulating technological innovation in the private sector, strengthening the role of small businesses in meeting Federal research and development needs, increasing private sector commercialization of innovations derived from USDA-supported research and development efforts and fostering and encouraging participation by women-owned and socially and economically disadvantaged small business firms in technological innovation.

On December 31, 2011, the President signed into law the National Defense Authorization Act for Fiscal Year 2012 (Defense Reauthorization Act), Public Law 112-81, 125-Stat. 1298, Section 5001, Division E of the Defense Authorization Act contains the SBIR/STTR Reauthorization Act of 2011 (Reauthorization Act), which amends the Small Business Act and extends the SBIR program through 2017. This program is administered by the National Institute of Food and Agriculture (NIFA) of the USDA.

In accordance with the changes in section 2.0 of this RFA, it has been modified to be consistent with the Reauthorization Act of 2011 (i.e. commercialization, covered small business concern, and small business concern).

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. Beginning in FY 2013, NIFA will begin the process to modify 7 CFR Part 3403 to, at a minimum, be consistent with the applicable definitions included in the Reauthorization Act of 2011.

This RFA is being released prior to the passage of an Appropriations Act for FY 2013. Enactment of additional Continuing Resolutions or an Appropriations Act may affect the availability or level of funding for this program.

### 1.2 Three-phase Program

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

Phase II applications require a more comprehensive application, outlining the proposed effort in detail. Phase II awards may not request more than \$450,000 (see section 3.3.5 of this solicitation for details on budget requirements) for a period normally not to exceed 24 months. **Only those small businesses previously receiving Phase I awards and have not previously applied for a Phase II are eligible to submit Phase II proposals in FY 2013. Please note that for each Phase I project funded, the awardee may apply for a Phase II award only once.** At the appropriate time, the SBIR Program will send a letter to 2010, 2011 and 2012 Phase I awardees eligible to submit Phase II applications with

instructions for preparing these applications and a deadline date for submitting applications. Phase I awardees that were funded before 2010 and have not submitted for a Phase II will need to contact the SBIR staff on how to apply ([sbir@nifa.usda.gov](mailto:sbir@nifa.usda.gov)). **This program solicitation 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 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. Additionally, Phase III is to be conducted by the small business firm, including joint ventures and limited partnerships.

**This SBIR program funding opportunity for FY 2013 Phase II applications has a closing date of February 28, 2013.**

### **1.3 Potential Commercial Outcome**

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-sponsored research to technological innovation in the private sector. All proposed research should have some potential commercial outcome. 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 proposals, they will receive special consideration as a point of merit in the review and evaluation process where proposals are evaluated as being of approximately equal technical merit. **The maximum 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 proposal.** The agreement should set forth the specific amount of Phase III funds and should indicate the dates that such funds will be made available to the small business firm. Also, the agreement should contain a few specific technical objectives which, if achieved in Phase II, will make the commitment usable by the small business firm. 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 or 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 proposal. 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 proposal, 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.

## **1.4 Eligibility**

Only previous Phase I winners who have not previously applied for Phase II support are eligible to apply for Phase II support through this FY 2013 solicitation. A Phase I project may apply for Phase II funding one time only. Therefore, if a Phase I awardee has previously applied for Phase II funding and was not successful; the awardee is not allowed to resubmit the same project under this program solicitation. Proposals for Phase II normally may only be submitted to the Federal agency from which the Phase I award was received.

Each applicant submitting an application must qualify as a small business concern for R/R&D purposes at the time of award, see definitions in section 2.0. A potential grantee that is a subsidiary must show that the parent company is also a small business entity and the parent company must provide documentation supporting their small business status (the documentation should be included in Field 12 "Other Attachments" of the Research and Related (R&R) Other Project Information form). If the parent company is not a small business entity, then the subsidiary is not eligible to submit an SBIR application. 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, unless otherwise approved in writing by the USDA funding agreement officer after consultation with the appropriate National Program Leader (NPL). Primary employment means that more than one-half of the PD's time is spent in the employ of the small business. Primary employment with the small business precludes the applicant as a full-time employee with another organization. Any deviations from this requirement must be approved in writing by the funding agreement officer after consultation with the appropriate 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 minimal time requirement for what percentage of the PD's time is spent working on the proposed research.

To be eligible to receive awards from the USDA's SBIR program, a business concern must meet the requirements of paragraphs (A) and (B) below:

### **(A) Ownership and control.**

1. An SBIR awardee must:
  - a. Be a concern which is at least 51% owned and controlled by one or more individuals who are citizens of the United States or permanent resident aliens in the United States; or
  - b. Be a concern which is at least 51% owned and controlled by another business concern that is itself at least 51% owned and controlled by individuals who are citizens of or permanent resident aliens in the United States; or
  - c. Be a joint venture in which each entity to the venture must meet the requirements set forth in either paragraphs (A)(1)(a) or (A)(1)(b) of this section.
2. If an Employee Stock Option Plan owns all or part of the concern, USDA considers each stock trustee and plan member to be an owner.



3. If a trust owns all or part of the concern, USDA considers each trustee and trust beneficiary to be an owner.

**(B) Size.**

An SBIR awardee, together with its affiliates, must not have more than 500 employees. The small business concern must be the primary performer of the proposed research effort. In Phase II, a minimum of **one-half** of the research or analytical effort, as determined by budget expenditures, must be performed by the proposing organization.

Also, for Phase II, the R/R&D work must be performed in the United States. In rare circumstances, for example, when a supply, material or project requirement is not available in the United States, agencies may allow that particular portion of the R/R&D work to be performed in a country outside of the United States. In addition, consultant services should normally be performed in the United States. Approval, in writing, is necessary by both the responsible NPL and the funding agreement officer to allow the service of a consultant from a country outside of the United States.

## **1.5 Agency Contacts**

**Applicants and other interested parties are encouraged to contact the SBIR NPL indicated for more information about each topic area listed below.**

Dr. Charles Cleland ([ccleland@nifa.usda.gov](mailto:ccleland@nifa.usda.gov))

Telephone: (202) 401- 6852

Fax: (202) 401- 6070

**8.1** Forests and Related Resources

**8.6** Rural Development

**8.7** Aquaculture

**8.12** Small and Mid-Size Farms

Dr. William Goldner ([wgoldner@nifa.usda.gov](mailto:wgoldner@nifa.usda.gov))

Telephone: (202) 401- 1719

Fax: (202) 401- 6070

**8.8** Biofuels and Biobased Products

**8.13** Plant Production and Protection – Engineering

Dr. Shing Kwok ([skwok@nifa.usda.gov](mailto:skwok@nifa.usda.gov))

Telephone: (202) 401 - 6060

Fax: (202) 401- 6070

**8.2** Plant Production and Protection- Biology

Dr. Gary Jensen ([gjensen@nifa.usda.gov](mailto:gjensen@nifa.usda.gov))

Telephone: (202) 401-6802

Fax: (202) 401-6070

**8.7** Aquaculture

Mary Ann Rozum ([mrozum@nifa.usda.gov](mailto:mrozum@nifa.usda.gov))

Telephone: (202) 401 - 4533

Fax: (202) 401- 6070

**8.4** Air, Water, and Soils

Dr. Siva Sureshwaran ([ssureshwaran@nifa.usda.gov](mailto:ssureshwaran@nifa.usda.gov))  
Telephone: (202) 720 - 7536  
Fax: (202) 401- 6070  
**8.6 Rural Development**

Dr. Adele Turzillo ([aturzillo@nifa.usda.gov](mailto:aturzillo@nifa.usda.gov))  
Telephone: (202) 401 - 6158  
Fax: (202) 401 - 6070  
**8.3 Animal Production and Protection**

Dr. Jodi Williams ([jwilliams@nifa.usda.gov](mailto:jwilliams@nifa.usda.gov))  
Telephone: (202) 720-6145  
Fax: (202) 401-6070  
**8.5 Food Science and Nutrition**

**Questions of a general nature about this SBIR solicitation should be sent to [sbir@nifa.usda.gov](mailto:sbir@nifa.usda.gov) or can be directed to:**

Mr. Elden Hawkes ([sbir@nifa.usda.gov](mailto:sbir@nifa.usda.gov))  
Telephone: (202) 401-4002  
Fax: (202)401-6070  
Program Specialist

## **1.6 Stakeholder Input**

The National Institute of Food and Agriculture (NIFA) is requesting comments regarding this solicitation from any interested party. These comments will be considered in the development of the next solicitation for the program, if applicable, and will be used 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)). This section requires the Secretary to solicit and consider input on a current solicitation from persons who conduct or use agricultural research for use in formulating future solicitations for competitive programs. Written stakeholder comments directed toward this solicitation should be submitted in accordance with the deadline set forth in the DATES portion of this notice.

Written stakeholder comments should be submitted by mail to: Policy and Oversight Division; Office of Grants and Financial Management; National Institute of Food and Agriculture; USDA; STOP 2299; 1400 Independence Avenue, SW; Washington, DC 20250-2299; or via e-mail to: [Policy@nifa.usda.gov](mailto:Policy@nifa.usda.gov). (This e-mail address is intended only for receiving comments regarding this solicitation and not for requesting information or forms.) In your comments, please state that you are responding to the Small Business Innovation Research Phase II solicitation.

## **2.0 DEFINITIONS**

The following definitions apply for purposes of this solicitation:

### **2.1 Ad hoc Reviewers**

Experts or consultants, qualified by training and experience in particular scientific or technical fields, solicited to render advice on the scientific technical merit of grant applications on an individual basis. Written evaluations of reviewed applications will be submitted for review.

### **2.2 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.

### **2.3 Authorized Departmental Officer**

The authorized departmental officer (ADO) is the Secretary or any employee of the Department who has the authority to issue or modify grant instruments on behalf of the Secretary. The ADO is also referred to as the Funding Agreement Officer.

### **2.4 Authorized Organizational Representative**

The authorized representative (AOR) is the president, director, chief executive officer or other designated official of the applicant small business concern who has the authority to commit the resources of the organization. Note: AOR is referred to as Authorized Representative (AR) on the grants.gov SF-424 (R&R forms).

### **2.5 Budget Period**

Each project is divided into different intervals of time for budgetary and reporting purposes.

### **2.6 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.

### **2.7 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.

## **2.7 NIFA**

The National Institute of Food and Agriculture.

## **2.8 Department**

The U. S. Department of Agriculture.

## **2.9 Direct Costs**

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

## **2.10 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.

## **2.11 Fee**

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

## **2.12 Funding Agreement**

A funding agreement is 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.

## **2.13 Grant**

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

## **2.14 Grantee**

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

## **2.15 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)(1) 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% of its employees must reside in a HUBZone.

## **2.16 Indirect Costs**

Costs which occur in support of more than one project, often called overhead or G&A.

## **2.17 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.

## **2.18 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.

## **2.19 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.

## **2.20 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, 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, 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.

## **2.21 Outcomes**

The measure of long-term, eventual program impact.

## **2.22 Outputs**

The measures of near-term program impact.

## **2.23 Peer Review Group**

Experts or consultants qualified by training and experience in particular scientific or technical fields, which provide advice on the scientific and technical merit of grant applications. The group assembles to discuss and evaluate all of the eligible applications submitted to this program in their area of expertise.

## **2.24 Principal Investigator/Project Director (PI/PD)**

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

## **2.25 Program Solicitation**

A formal request for applications whereby a Federal agency notifies the small business community of its research or Research and Development (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.

## **2.26 Prototype**

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

## **2.27 Project period**

The total length of time approved by the Department for conducting the research project as outlined in an approved grant application.

## **2.28 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.

## **2.29 Research Project Grant**

The award by the Department to a grantee to assist in meeting the costs of conducting 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.

## **2.30 SBIR Participants**

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

## **2.31 SBIR Technical Data**

All data generated during the performance of an SBIR award.

## **2.32 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.

## **2.33 Small Business Concern (SBC)**

SBC means a concern that, on the date of award for Phase I or Phase II funding agreements:

- (1) is organized for profit, with a place of business located in the United States, which operates primarily within the United States or which makes a significant contribution to the United States economy through the payment of taxes or use of American products, materials or labor;
- (2) is in the legal form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, trust or cooperative, except that where the form is a joint venture, there can be no more than 49 percent participation by foreign business entities in the joint venture;
- (3) is at least 51 percent owned and controlled by one or more individuals who are citizens of or permanent resident aliens in, the United States, except in the case of a joint venture, where each entity in the venture must be 51 percent owned and controlled by one or more individuals who are citizens of or permanent resident aliens in the United States; and
- (4) has, including its affiliates, not more than 500 employees. The term “affiliates” is defined in greater detail in 13 CFR 121.103. The term “number of employees” is defined in 13 CFR 121.106.

## **2.34 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.

## **2.35 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.



## **2.36 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.

## **2.37 United States**

United States means 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.

## **2.38 Women-owned Small Business Concern**

A women-owned small business concern is one:

- (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.

## 3.0 APPLICATION PREPARATION INSTRUCTIONS AND REQUIREMENTS

### 3.1 Application Requirements

Applications must address only scientific research activities. **A small business must not propose technical assistance, 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. Applications that deal principally with developing proven concepts for commercial markets or scaling up previously developed prototypes for commercial production should not be submitted. Such efforts are considered the responsibility of the private sector and therefore are not supported by USDA. An application must be limited to only one research problem.

Phase II Applicants must respond to a topic area listed under section 8.0 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 community who review the application and then advise the USDA SBIR professional staff that the proposed research is a sound approach to an important scientific question and is worthy of support under the stated USDA evaluation criteria (see section 4.0). 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.

### 3.2 USDA SBIR Application Submission Overview

**For all FY 2013 applications, the USDA SBIR program will require electronic application submission through Grants.gov ([www.grants.gov](http://www.grants.gov)). Submission through Grants.gov requires the use of forms located at the Grants.gov Website. Applications not submitted electronically are not eligible to be considered for a Phase I SBIR award and will not be reviewed.**

**Please note the USDA NIFA has developed both this Program Solicitation and a NIFA document titled “A Guide for Preparation and Submission of NIFA Applications via Grants.gov,” also known as the “NIFA Grants.gov Application Guide,” to assist in completing the application forms. Both documents are needed to complete the application process. Section 3.0 of this program solicitation provides additional information that is specific to the USDA SBIR program. Applicants are advised to refer to this program solicitation to determine if specific information is required during the submission of the forms on Grants.gov. **If directed by this program solicitation to provide information that is different from other documents, the information in this program solicitation supersedes in all cases.****

#### **Steps to Obtain Application Package Materials**

The steps to access application materials are as follows:

1. In order to access, complete and submit applications, applicants must download and install a version of Adobe Reader compatible with Grants.gov. This software is essential to apply for NIFA Federal assistance awards. For basic system requirements and download instructions, please see [http://www.grants.gov/help/download\\_software.jsp](http://www.grants.gov/help/download_software.jsp). To verify that you have a compatible version of Adobe Reader, Grants.gov established a test package that will assist you in making that determination. Grants.gov Adobe Versioning Test Package: <http://www.grants.gov/applicants/AdobeVersioningTestOnly.jsp>.
2. The application package must be obtained via Grants.gov, go to <http://www.grants.gov>, click on “Apply for Grants” in the left-hand column, click on “**Step 1: Download a Grant Application Package and Instructions,**” enter the funding opportunity number **USDA-NIFA-SBIR-004128** in the appropriate box and click “Download Package.” From the search results, click “Download” to access the application package.

Contained within the application package is the “NIFA Grants.gov Application Guide: A Guide for Preparation and Submission of NIFA Applications via Grants.gov.” This 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.

### 3.2.1 Resources

If assistance is needed to access the application package (e.g., downloading or navigating Adobe forms), or submitting the application then refer to resources available on the Grants.gov Web site first (<http://www.grants.gov/>). Grants.gov assistance is also available as follows:

Grants.gov customer support  
1-800-518-4726 Toll-Free or 606-545-5035  
Business Hours: 24 hours a day, 7 days a week. Closed on [Federal Holidays](#).  
Email: [support@grants.gov](mailto:support@grants.gov)

Grants.gov iPortal: Top 10 requested help topics (FAQs), Searchable knowledge base, self service ticketing and ticket status, and live web chat (available 7:00 A.M. - 9:00 P.M. ET). Get help now!

Please have the following information available when contacting Grants.gov, to help expedite your inquiry:

- Funding Opportunity Number (FON)
- Name of Agency You Are Applying To
- Specific Area of Concern

See [http://grants.gov/applicants/app\\_help\\_reso.jsp](http://grants.gov/applicants/app_help_reso.jsp) or <http://www.nifa.usda.gov/funding/electronic.html> for additional resources for applying electronically.

Any program-specific questions concerning the USDA SBIR program, such as the appropriateness of your proposed research or work plan, should be directed to the NPL responsible for the topic area where you wish to submit your application, see section 8.0. For general questions you can also contact the USDA SBIR office at [sbir@nifa.usda.gov](mailto:sbir@nifa.usda.gov) or 202-401-4002.

## 3.2.2 Registration Procedures for Companies

The registration procedure for companies or individual proprietorships intending to submit a grant application through Grants.gov requires several steps and must be finished prior to submitting an application. **The registration process can take as long as several weeks to complete so it is critical that companies begin this process as soon as possible. Companies that have previously registered with Grants.gov must contact Grants.gov to ensure that the company's registration is updated and complete prior to submission. Grants.gov now requires all companies to update their registration on an annual basis.**

Listed below are the steps necessary to submit an application through Grants.gov. More information about these steps is available at [http://www.grants.gov/applicants/get\\_registered.jsp](http://www.grants.gov/applicants/get_registered.jsp) (note that the website may not include recent changes to the registration process but such changes are noted in STEP 2 below).

### STEP 1 – Register Your Organization

#### Obtain your organization's Data Universal Number System (DUNS) number

A DUNS number is a unique number that identifies an organization. It has been adopted by the Federal government to help track how Federal grant money is distributed. If your organization does not have a DUNS number, call the special Dun & Bradstreet hotline at 1-866-705-5711 to receive one free of charge, or visit the Dun & Bradstreet website at: <http://fedgov.dnb.com/webform/displayHomePage.do>. You will receive a DUNS number within several days of your request. **Please note, individual proprietorships (i.e. farmers, ranchers) can request and receive a DUNS number, but must register with Grants.gov as an organization, not as an individual. DUNS numbers must be kept current and be active at the time of the award and for the length of the award.**

### STEP 2 – Register your organization with Central Contractor Registry (CCR)/System for Award Management (SAM)

Please refer to Part II 1. of the NIFA Grants.gov Application Guide for more detailed information.

### STEP 3 – Obtain your Authorized Organization Representative (AOR) username and password

To safeguard the security of your electronic information, and to submit a Federal grant application via Grants.gov, you must first obtain a username and password from the Grants.gov to serve as your “electronic signature” when submitting an application on behalf of your organization. Register with Grants.gov at <http://apply07.grants.gov/apply/OrcRegister>. **You will need to enter your organization's DUNS number to access the registration form.** Once you complete the registration form you will be given your username and you will create your own password.

**You will only be authorized for the DUNS number that you register in your Grants.gov profile.**

### STEP 4 – Become Authorized as an AOR

#### Obtain your e-Business POC authorization

After the AOR profile is completed, your organization's e-Business POC will receive an email regarding your requested AOR registration with links and instructions to authorize you as an AOR. Instruct your e-Business POC to login to Grants.gov at <https://apply07.grants.gov/apply/login.faces> and enter your organization's DUNS number and the password emailed to you from Grants.gov following organization

AOR registration. EBIZ will be prompted to enter the MPIN and will then need to establish a password different from the MPIN. The e-Business POC will be authorized as an AOR and will be the individual verified to submit grant applications. You can check your AOR status by logging in to Grants.gov at <http://www.grants.gov/applicants/applicants.jsp>. The person authorized as the AOR must have the authority to commit resources and provide various certifications and assurances related to your organization.

### 3.2.3 Special Considerations

Throughout the program solicitation, the following is specified, “Attachment Format – (PDF Format is Required).” Applicants should note that the attachments must be in the PDF format and have no file protections. It is the responsibility of the applicant to correctly submit the attachments in the correct format. Grants.gov will not check the application for adherence to this requirement at the time of submission.

USDA SBIR electronic application submissions consist of Adobe forms and PDF attachments.

#### **THE USDA SBIR PROGRAM WILL ONLY ACCEPT ATTACHMENTS IN PDF.**

If you do not own PDF-generating software, Grants.gov provides online tools to assist applicants. On the Grants.gov Customer Support Web page (<http://www.grants.gov/help/help.jsp>), users will find a link to “Download Software” ([http://www.grants.gov/help/download\\_software.jsp](http://www.grants.gov/help/download_software.jsp)) where a link to “PDF Conversion Programs” ([http://www.grants.gov/help/download\\_software.jsp#pdf\\_conversion\\_programs](http://www.grants.gov/help/download_software.jsp#pdf_conversion_programs)) is available. PDF documents submitted as a part of the application must also adhere to the following guidelines:

- margins not less than 1 inch; 2.5 cm on all sides;
- type no smaller than 12 point font size regardless of whether it is single or double spaced;
- Font type should be Times New Roman, Geneva, Helvetica, Arial; and
- Tables and graphics may be included; text for captions, headings and graphic explanations must not be smaller than 9 point and must be the same font type as the rest of the application.

**ANY PROPOSALS CONTAINING NON-PDF DOCUMENTS WILL BE AT RISK OF BEING EXCLUDED FROM NIFA REVIEW.** Incomplete applications will also be excluded from NIFA review.

#### *Page Limitations*

Applications submitted electronically via Grants.gov consist of forms and PDF attachments. **Page limitations for certain attachments must be followed, see section 3.3. APPLICATIONS THAT DO NOT FOLLOW THE PAGE LIMITS OUTLINED IN SECTION 3.3 ARE NOT ELIGIBLE TO BE CONSIDERED FOR A PHASE I SBIR AWARD AND WILL BE EXCLUDED FROM NIFA REVIEW.**

#### *Changes, Additions or Corrections*

**Modifications to the application will not be accepted after the closing date of this program solicitation.** Under some circumstances, changes, additions, or corrections may be necessary to an application submitted to the USDA 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](mailto:sbir@nifa.usda.gov) of the resubmission.

**Submitting changes to Grants.gov without contacting the program could significantly delay your application submission and may result in the application not being reviewed.**

### 3.3 Application Guidelines

Those who wish to submit an application to the USDA SBIR program should submit the following components and associated attachments via Grants.gov.

**If there is a discrepancy between the program solicitation and the NIFA Grants.gov Application Guide, the information contained in this program solicitation is overriding.**

Below are instructions for completing each field within each of the forms required in the application package. Page limitations indicated in bold are appropriate for a given section/attachment.

#### 3.3.1 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 otherwise noted below.

**Field 5. Applicant Information** – Provide all required information detailed in the NIFA Application Guide. **Please note: the USDA SBIR program’s official correspondence will be with either the PD or AOR.**

**Field 12. Proposed Project Start Date and End Date** – The proposed duration of Phase I projects should normally not exceed eight months, except in special, justified circumstances. In most circumstances, the following dates should be used for these fields:

	<b>Start</b>	<b>End</b>
<b>Phase II</b>	9/1/2013	8/31/2015

**Field 16. Is this Application Subject to Review by State Executive Order 12372 Process** – Check “No.” The USDA SBIR program is not covered by State Executive Order 12372.

**Field 17. Complete Certification** – Please refer to the NIFA Application guide for information on the Certifications that are being agreed to by checking this box. Included in the Certifications is the Statement as to Delinquency on Federal Debts. Statement as to Delinquency on Federal Debts by Applicants for Federal Assistance - Pursuant to OMB Circular A-129, (implemented by USDA in 7 CFR Part 3), “Except where required by law or approved by the head of the agency, no award of Federal funds shall be made to an applicant who is delinquent on a Federal debt until the delinquent account is made current or satisfactory arrangements are made between affected agencies and the debtor.” The certification of non-delinquency applies only to the organization requesting financial assistance and not to the individual project director. By checking the Complete Certification box, the applicant is providing the statement of non-delinquency on any Federal debt. For the purposes of this statement, the following definitions of delinquency apply:

- (1) Direct loans – a debt more than 31 days past due on a scheduled payment;
- (2) Grants – recipients of a “Notice of Grants Cost Disallowance” who have not repaid the disallowed amount or who have not resolved the disallowance; and

- (3) Guaranteed and insured loans – recipients of a loan guaranteed by the Federal Government that the Federal Government has repurchased from a lender because the borrower breached the loan agreement and is in default.

Examples of debts include delinquent taxes, audit disallowances, guaranteed and direct student loans, housing loans, farm loans, business loans, Department of Education institutional loans, benefit overpayments, and other miscellaneous administrative debts.

**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 Other Attachments.**

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

### **3.3.2 R&R Other Project Information**

Information related to the questions on this form is dealt with in detail in Part V, 4 of the NIFA Grants.gov Application Guide unless otherwise noted below.

#### **Field 7. Project Summary/Abstract - (PDF Format is Required)**

**1 PAGE is the Page Limit for the Summary/Abstract.**

In the technical 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.**

**It is the responsibility of the applicant to review the attachment for page limit and PDF compliance before submission. Applicants must ensure that the abstract attachment meets the required page limit even if single or double spaced. Applications that exceed required page limits will be excluded from review.**

#### **Field 8. Project Narrative - (PDF Format is Required)**

**20 PAGES is the Page Limit for the Project Narrative.**

**NOTE: Applicants must submit their attachments within the required page limits identified in this program solicitation.** 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.

- (1) **Responsiveness to USDA SBIR Program Priorities** – Please indicate if the application has a connection to agriculturally-related manufacturing technology or alternative and renewable energy, see section 8.0. Provide a brief explanation of how the application is related to the area indicated.

- (2) **Prior USDA Support** – USDA 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 and the part that the proposed research plays in providing needed results. 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 (see 3.3.2 – Field 9).**
- (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. **In Phase II proposals, this section should constitute a substantial portion of the project narrative.**
- (6) **Technical Objectives** – State the specific objectives of the research or research and development 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 (see Section 3.3.8).



- (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 [www.usda.gov/ocfo/usdasp/usdasp.htm](http://www.usda.gov/ocfo/usdasp/usdasp.htm))
- 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<sup>11</sup> 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 - (PDF Format is Required)**

Describe the types, location, and availability of instrumentation and physical facilities necessary to carry out the work proposed.

**Field 11 Equipment Documentation - (PDF Format is Required)**

Describe the types, location, and availability of equipment necessary to carry out the work proposed. Items of equipment to be purchased must be fully justified under this section. When purchasing equipment or a product under the SBIR funding agreement, the small business should purchase only American-made items whenever possible.

**Field 12. Other Attachments – (PDF Format is Required)** Additional documentation that may be required for your application should be grouped in this section.

- 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 business firms that have not previously received Federal research awards. 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 (see subsection 4.3 as appropriate).**
- 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** – (4) Duration Exceeds Normal Project Period – The proposed duration of Phase II projects should normally not exceed 24 months, except in special, justified circumstances.
- 5 **Applicant is a Subsidiary** – A potential grantee that is a subsidiary must show that the parent company is also a small business entity and the parent company must provide documentation supporting their small business status. The subsidiary must provide documentation to support its independent viable financial 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** – Requests for foreign travel or work are discouraged, but may 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.

### 3.3.3 R&R Senior Key Person - (PDF Format is Required)

Information related to the questions on this form is dealt with in detail in Part V, 5 of the NIFA Grants.gov Application Guide unless otherwise noted below.

Applicants must fill out a profile for the PD and anyone that will be supported by the budget. For instructions on completing the profile part of this form, applicants must reference the NIFA Grants.gov Application Guide for directions.

### 3.3.4 R&R Personal Data

As noted in Part V, 6 of the NIFA Grants.gov Application Guide, the submission of this information is voluntary and is not a precondition of award. If completing the information, do not enter any data in the field requesting the social security number.

**Social Security Number** - This is not a required field on this form. To protect the privacy of the applicant, we request that you do **not** list the applicants Social Security number on this form or in any other location in the application.

### 3.3.5 R&R Budget - (PDF Format is Required)

Information related to the questions on this form is dealt with in detail in Part V, 7 of the NIFA Grants.gov Application Guide unless otherwise noted below. Applicants who plan to have a sub award (subcontract) will need to reference section 3.3.7 for directions.

A Research and Related Budget form must be completed for each year (or partial 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 form and that this number does not exceed the budget ceiling.**

**Applicants must request a federal budget that is reasonable and must not exceed a ceiling of \$450,000.00 for 24 months. If an applicant requests a fee, 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 the ceiling of this program solicitation. Budget requests that exceed the ceiling of this program solicitation will be excluded from review.**

**Applicants should note that the USDA SBIR Program requires Phase II grantees to participate in a Phase II Commercialization Assistance Training Program (CATP). Currently, the USDA SBIR Program expects to cover \$8,000 of commercialization assistance expenses for each awarded project, except for 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 to complete the program requirements. On average the grantee will spend approximately 65 to 80 hours completing the CATP requirements, therefore the applicant may include in the proposed budget the travel and time needed to participate and complete the CATP. The USDA budgeted amount (\$8,000) must not be included in the requested budget submitted with the application.**

**Fields C1-C11. 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.

**Field D1. Domestic Travel** - Applicants must include in their budget, travel expenses to the Washington DC area for a two (2) day commercialization assistance workshop. For additional information on this section applicants must reference the NIFA Application Guide for directions.

**Field D2. Foreign Travel Costs Funds Requested** - Requests for foreign travel are discouraged, but may 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.

**Fields E 1-5. Participant/Trainee Support Costs** - Applicants must reference the NIFA Application Guide for directions.

**Fields F 1-10. Other Direct Costs** - Applicants must reference the NIFA Application Guide for directions.

**Field G. Direct Costs** - Applicants must reference the NIFA Application Guide for directions.

**Fields H 1-4. Indirect Costs** - Applicants must reference the NIFA Application Guide for directions (see 3.3.5 Field K (7)).

**Field I. Total Direct and Indirect Costs** - Applicants must reference the NIFA Application Guide for directions.

**Field J. Fee** - Applicants must reference the NIFA Application Guide for directions. **If an applicant requests a fee, 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 the ceiling of this program solicitation. Budget requests that exceed the ceiling of this program solicitation will be excluded from review.**

**Field K. Budget Justification – (PDF Format is Required)** - A budget justification with supporting detail for each budget category as noted in items (1) through (5) of this subsection must be attached. **A budget justification is required for each entity for which a Research and Related Budget Form is submitted.**

- (1) **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).
- (2) **Equipment** - Performing organizations are expected to have appropriate facilities, and be 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. The limit for Phase I of 10 percent does not apply to Phase II budgets; however, **Phase II equipment purchases must be adequately justified.** Equipment is defined as an article of nonexpendable, tangible personal property having a useful life of more than one year and an acquisition cost of \$5000 or more per unit. Awardees are usually allowed to retain title to equipment purchased with funding provided under a SBIR funding agreement. However, in some instances, USDA may direct the awardee to vest title to a third party. **Awardees should plan to lease expensive equipment.** The inclusion of equipment will be carefully reviewed with respect to need and appropriateness for the research proposed.
- (3) **Materials and Supplies** - The types of expendable materials and supplies required should be indicated in general terms with estimated costs.
- (4) **Travel** - 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 are discouraged, but may 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.
- (5) **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. Consultants’ rate of pay normally cannot exceed \$550/day for an 8 hour day. However, with proper documentation and justification, higher rates can be approved.
- (6) **Fee** - A reasonable fee, not to exceed 7 percent of total Federal funds awarded (.07527 of total Direct and Facilities and Administrative (F&A)/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. If an applicant requests a fee, 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 the ceiling of this program solicitation. Budget requests that exceed the ceiling of this program solicitation will be excluded from review.**

- (7) **Indirect Costs** - If available, the current rate negotiated with the cognizant Federal negotiating agency should be used. Indirect costs may not exceed the negotiated rate. If a negotiated rate is used, the percentage and base should be indicated in the space allotted in item H of the budget sheet. When using a negotiated rate, please include the negotiated rate agreement with the proposal. If no rate has been negotiated, a reasonable dollar amount in lieu of indirect costs may be requested, which will be subject to approval by USDA. In the latter case, if an application is recommended for funding, an indirect cost rate application must be submitted to support the amount of indirect costs requested. NIFA will request an indirect cost rate application and provide instructions, as necessary. An applicant may elect not to charge indirect costs and, instead, use all grant funds for direct costs. If indirect costs are not charged, the phrase “None requested” should be written in this space.
- (8) **Cost Sharing** - Cost sharing is permitted for applications under this program solicitation; however, cost sharing is not required nor will it be an evaluation factor in considering the competitive merit of applications submitted.

### 3.3.6 R&R Subaward Budget Attachment - (PDF Format is Required)

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

### 3.3.7 NIFA Supplemental Information

Information related to the questions on this form is dealt with in detail in Part VI, subsection 1. of the NIFA Grants.gov Application Guide unless otherwise noted below.

**Field 2. Program to Which You Are Applying and Program Code** – This refers to the **topic area** (see **section 8.0**) to which you are submitting your USDA SBIR application. For example:

Program Code Name  
*Animal Production and Protection*  
 Program Code  
 8.3

**Please note that you are expected to submit your Phase II proposal to the same topic area from which your Phase I grant was received. If you have a question about which topic area is appropriate for your application, please contact the NPL(s) in the area(s) in question. It is extremely important the Program Code Name and Program Code are spelled correctly and match exactly one of the topic areas indicated in section 8.0 of the program solicitation. Failure to complete these fields correctly could significantly delay the acceptance of your application into the program.**

**Field 8. Conflict of Interest List** – A conflict of interest attachment is not necessary for USDA SBIR applications. No attachments should be added.

### **3.3.8 SBIR/Small Business Technology Transfer Program (STTR) Information**

Information related to the questions on this form is dealt with in detail in Part VI, 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 SBIR program does not offer the Fast-Track Option.

**Field 1. Did you certify that at the time of award your organization will meet the eligibility criteria for a small business as defined in the funding opportunity announcement?** – Enter yes or no.

**Field 2. Does this application include subcontracts with Federal laboratories or any other Federal Government agencies?** Enter yes or no. **If yes, insert the names of the Federal laboratories/agencies.**

**Field 3. Are you located in a HUBZone?** – Enter yes or no.

**Field 4. Will all research and development on the project be performed in its entirety in the United States?** – Enter yes or no. **If no, provide an explanation in an attached PDF file** (this is required information).

**Field 5. Has the applicant and/or Project Director/Principal Investigator submitted applications for essentially equivalent work under other Federal program solicitations or received other Federal awards for essentially equivalent work?** – Enter yes or no. **If yes, insert the names of the other Federal agencies** (this is required information).

**Field 6. Disclosure Permission Statement: If this application does not result in an award, is the Government permitted to disclose the title of your proposed project, and the name, address, telephone number and e-mail address of the official signing for the applicant organization to organizations that may be interested in contacting you for further information (e.g., possible collaborations, investment)?** – Enter yes or no.

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

**10 Pages is the limit. NOTE: The USDA SBIR Program encourages applicants to only include information pertaining to the items listed below. Applicants must submit their attachments within the required page limits identified in each section of this program solicitation. It is the responsibility of the applicant to review the attachment for page limit and PDF compliance before submission.**

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 market and/or market segments (for the product, technology or service) you are targeting and provide information on the size of the market and a brief profile of the potential customer. Tell what significant advantages your innovation will bring to the market (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. Applicant should also indicate any other potential commercial factors.
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? Please 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. Will the revenue stream as described 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;
  - (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;
  - (c) A letter of support for the project and/or some in-kind commitment; and
  - (d) A specific plan to secure Phase III funding. The progress of this plan must be commented on in the Phase II progress report.

**Field 8. Documentation of Prior SBIR Phase II Awards** – A small business firm that submits a Phase II proposal and has received more than 15 Phase II SBIR 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. USDA shall collect and retain the information at least until the General Accounting Office submits the report required under section 105 of the Small Business Research and Development Enhancement Act of 1992.

If the applicant falls under the threshold as indicated above, provide an attachment stating that per the program solicitation guidelines, less than 15 Phase II awards have been granted to this organization/company.

**Field 9. Will the Project Director/Principal Investigator have his/her primary employment with the small business at time of award? – Check Yes or No.**

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



## 4.0 METHOD OF SELECTION AND EVALUATION CRITERIA

### 4.1 Introduction

All Phase II applications will be evaluated on a competitive basis. Applications will be initially screened to determine responsiveness to the Request for Application (program solicitation). Applications passing this initial screening will be evaluated by technical reviewers to select those with the highest scientific and technical merit. **Applications received after the specified closing date or not following application guidelines of this program solicitation will not be considered for a Phase II SBIR award and will not be reviewed.**

**External peer reviewers will be used during the technical evaluation stage of this process.** Selections will be made from among recognized specialists who are uniquely qualified by training and experience in their respective fields to render expert advice on the merit of applications received. It is anticipated that these experts will be drawn from universities, Government, and non-profit research organizations. If possible, USDA intends that peer review groups shall be balanced with minority and female representation and with an equitable age distribution.

Final decisions will be made by USDA based upon the ratings assigned by reviewers and consideration of other factors, **including the potential commercial application**, possible duplication of other research, any critical USDA requirements, program balance, and budget limitations. There is no commitment by USDA to fund any particular application, to support any specific number of applications in a given research topic area or to make a specific number of awards. USDA also may elect to fund several or none of the proposed approaches to the same topic. Care will be taken to avoid actual and potential conflicts of interest among reviewers. Evaluations will be confidential to USDA staff members, peer reviewers, and the proposed project director, to the extent permitted by law.

### 4.2 Initial Screening Criteria

To avoid misunderstanding, applicants should be aware that applications not satisfying 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 as defined in subsection 2.31.
- (B) The application must meet the Application Content and Format requirements as described in subsection 3.0.
- (C) Applications must be limited to one research problem as described in subsection 3.1.
- (D) The proposed budget must be within the dollar ceiling identified in subsection 1.2.
- (E) Applications must cover scientific research activities only as described in subsection 3.1.
- (F) The proposed Phase II research must fall within the topic area that the project was originally funded under as a Phase I. See section 8.0 for the listing of current topic areas.

- (G) An application must contain adequate scientific/technical information clearly stating the research plan and objectives. USDA reserves the right not to submit for review any application that it finds to have insufficient scientific/technical information.
- (H) 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.

### 4.3 Phase II Evaluation Criteria

Only awardees in Phase I are eligible to participate and submit a Phase II proposal. This includes those awardees identified via a “novated” or “successor-in-interest” revised funding agreement. The primary evaluation criteria used by reviewers are listed below, and except for items (B) and (C) are largely identical to those for Phase I. 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) **Scientific and Technical Feasibility:** Is there a thorough background section with an up-to-date literature review? Are the stated objectives logical and appropriate for a two year research and development period? Does the research plan offer an original and innovative approach to the problem and sufficient detail to indicate how each research objective will be investigated?
- (B) **Degree to Which Phase I Objectives were Met and Technical Feasibility Established:** Are the Phase I objectives clearly stated and Phase I results presented in sufficient detail to permit a reviewer to determine whether the objectives were fully met and technical feasibility clearly established?
- (C) **Commercial Potential:** A separate Commercialization Plan (see Section 3.3.8) is required. The commercial potential will be assessed using the following:
  1. Company information;
  2. Market information (need, size, potential customers, competition, etc.);
  3. Strategy for commercializing this product/technology/service (including second phase and third-phase 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 company Commercialization Plan showing that the proposing firm has no prior Phase II awards will not affect the firm’s ability to win an award. Such a firm’s proposal will be evaluated for commercial potential based on its commercialization strategy.**

- (D) **Importance of the Problem:** Does the proposal provide sufficient justification for the importance of the problem? Is the proposed project in the public interest by satisfying one or more of the strategic goals listed in subsection 3.3.2 (item (10) of Field 8)?
- (E) **Investigator and Resource Qualifications:** Is adequate bibliographic information provided to document that the project director, other key staff, and any consultants have the appropriate training and experience to carry out the proposed research plan? If consultants, subcontractors, or CRADA

cooperators are involved in the project, are letters from these individuals included in the proposal verifying their willingness to participate in the research study? Are adequate research facilities available that the small business firm either owns or controls for the duration of the grant? Is adequate instrumentation available for the proposed research plan?

- (F) **Budget:** Is the budget appropriate for the proposed research plan? Is sufficient budget detail provided to indicate clearly how the funds would be utilized?
- (G) **Duplication:** Does the proposed research substantially duplicate any ongoing or previous research by the small business firm or by other researchers? Does the proposal clearly indicate how the proposed technology would differ significantly from existing technology?

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

#### 4.4 Phase II Review Process

USDA uses confidential peer review as the basis for evaluating all Phase II proposals that satisfy the initial screening criteria described in section 4.2. Reviewers are drawn primarily from universities, government, and non-profit research organizations. Each proposal will be reviewed for technical merit as well as commercialization potential. As commercialization potential is more important in Phase II and beyond, the reviews of the commercialization plan will significantly impact the funding decisions.

#### 4.5 Notice to Applicants

Technical reviewers will base their conclusions and recommendations on information contained in the application. It cannot be assumed that reviewers are acquainted with any experiments referred to within an application, with key individuals or with the small business firm itself.

After final decisions have been announced, a panel summary will be assembled that briefly states the main strengths and weaknesses of the application. In addition, the written reviews of the application will be sent to the project director. The reviews will not include the scores or the identities of the reviewers. Due to funding limitations and USDA's desire to support as many worthwhile projects as possible, it may be necessary for USDA to reduce the amount of an award below the amount requested by a small business or to fund only certain objectives outlined in the application. Any significant changes will be discussed with the proposing firm, which may then be asked to submit a revised budget reflecting the reduced amount. In the event that this occurs, specific instructions will be provided to the applicant.

## 5.0 CONSIDERATIONS

### 5.1 Awards

Depending upon the availability of funds USDA expects to make approximately 35 Phase II awards not to exceed \$450,000.00 each to small businesses in FY 2013. Awards are anticipated to be made on or after September 1, 2013. USDA will announce the names of those concerns receiving awards and successful applicants will then typically have twenty-four months after awards are made to carry out their proposed Phase II effort. This RFA is being released prior to the passage of an Appropriations Act for FY 2013. Enactment of a Continuing Resolutions or an Appropriations Act may affect the availability or level of funding for this program.

**All Phase II awards will be issued as research grants** in accordance with the guidelines contained in 31 U.S.C. 6301-6308, the authority contained in Section 630 of the Act making appropriations for Agriculture, Rural Development and Related Agencies' programs for fiscal year ending September 30, 1987 and for other purposes, as made applicable by Section 101(a) of Public Law Number 99-591, 100 Stat. 3341.

A reasonable fee, not to exceed 7 percent of total Federal funds awarded (.07527 of total direct and F&A/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. Research and Related Budget.

### 5.2 Reports

#### 5.2.1 Technical Reports

For Phase II applications, a brief interim progress report must be submitted at approximately the mid-point in the project. In addition, a comprehensive final technical report must be submitted within 90 days following expiration of the Phase II grant. These reports should be submitted electronically as an attachment (MS Word or PDF) to the following email address: [sbir@nifa.usda.gov](mailto:sbir@nifa.usda.gov). **Guidance for writing these reports can be found on the USDA SBIR program website under the [Grantee Resources](#) link.**

Please note: All technical reports are held confidential for a period covering four years after the termination of the project. **As such, proprietary information may be included in all reports when necessary to provide the USDA SBIR Staff adequate information to evaluate the outcome of the project.**

#### 5.2.2 Current Research Information System (CRIS) Reports

All awardees are required to submit the AD-416 and AD-417 CRIS report forms before a project can be awarded. **Documentation must be submitted to CRIS before NIFA funds will be released.** In addition, the AD-419 and AD-421 report forms have to be submitted at the conclusion of a Phase I project as a termination report. Additional information about CRIS will be provided to all awardees prior to the start of their award. The online portal to all CRIS reports is located at <http://cwf.uvm.edu/cris>.

Please note: CRIS reports are meant to provide information about USDA SBIR grants to the general public through the online CRIS database. **As such, proprietary information should not be included in these reports.**

### 5.2.3 Financial Reports

For Phase II applications, a final “**Financial Status Report**” (SF-425) is due within 90 days after the expiration date of the grant (<http://www.whitehouse.gov/sites/default/files/omb/grants/sf269.pdf>) and should be submitted as a PDF to the Awards Management Division, Office of Grants and Financial Management at [awards@nifa.usda.gov](mailto:awards@nifa.usda.gov), in accordance with instructions contained in Section 3015.82 of the Uniform Federal Assistance Regulations.

Awards issued as a result of this Program Solicitation will have designated the Automated Standard Applications for Payment System (ASAP), operated by the Department of Treasury’s Financial Management Service, as the payment system for funds. For more information see [http://www.nifa.usda.gov/business/method\\_of\\_payment.html](http://www.nifa.usda.gov/business/method_of_payment.html).

### 5.3 Payment Schedules

Payments will be made by electronic funds transfer through the Department of Treasury’s Financial Management Service ASAP System. All questions relating to payments should be submitted to:

Financial Operation Division  
Office of Grants and Financial Management  
National Institute of Food and Agriculture  
U. S. Department of Agriculture  
STOP 2298  
1400 Independence Avenue, SW  
Washington, DC 20250-2298  
Telephone: (202) 401-4527  
Facsimile: (202) 401-3481

Drawdown instructions will be sent to the awardee under separate cover. Anticipated payments shall be made according to the following schedule:

- (A) Aggregate payment requests of up to 50 percent of total award dollars will be honored during the first half of the project.
- (B) Upon acceptance of the interim progress report, the remaining 50 percent of total dollars will become available for support of the project.

If the awardee is a sole proprietorship, funds awarded shall be deposited in a separate bank account and NIFA, through the ADO agreement officer, shall be informed of the name and location of the bank. In addition, arrangements must be reached between the awardee and the bank of deposit of the award funds in accordance with the following:

1. The account must be of a nature that permits the bank of deposit to return unused funds remaining in that account to NIFA in the event of the awardee’s demise. However, NIFA shall not be named a joint owner of such an account, but rather as beneficiary.

2. These arrangements must also be reported to NIFA through the ADO.

## **5.4 Proprietary Information**

Information contained in unsuccessful applications will remain the property of the applicant. The Government may, however, retain copies of all applications. Public release of information in any application submitted will be subject to existing statutory and regulatory requirements. If proprietary information is provided by an applicant in an application, which constitutes a trade secret, proprietary commercial or financial information, confidential personal information or data affecting the national security, it will be treated in confidence, to the extent permitted by law. This information 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, 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 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.

The inclusion of proprietary information is discouraged unless it is necessary for the proper evaluation of the application. If proprietary information is to be included, it should be limited, set apart from other text on a separate page, and keyed to the text by numbers. 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 should be similarly keyed and presented on a separate page. Applications or reports that attempt to restrict dissemination of large amounts of information may be found unacceptable by USDA.

## **5.5 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.

## 5.6 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.

## 5.7 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 CFR 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 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](mailto: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.edison.gov](http://www.edison.gov)). Specific instructions for invention reporting are contained in the agency’s terms and conditions, a copy of which can be provided upon request.

## 5.8 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. 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.

## 5.9 Responsible and Ethical Conduct of Research

The responsible and ethical conduct of research (RCR) is critical for excellence, as well as public trust, in science and engineering. Consequently, education in RCR is considered essential in the preparation of future scientists. In accordance with sections 2, 3, and 8 of 7 CFR Part 3022, institutions that conduct extramural research funded by USDA must foster an atmosphere conducive to research integrity, bear primary responsibility for prevention and detection of research misconduct and are to maintain and effectively communicate and train their staff regarding policies and procedures. In the event an application to NIFA results in an award, the AOR assures, through acceptance of the award that the institution will comply with the above requirements. Per award terms and conditions, grant recipients shall, upon request, make available to NIFA the policies and procedures as well as documentation to support the conduct of the training.

Note that the training referred to herein shall be either on-campus or the Collaborative Institutional Training Initiative (CITI) program for RCR (<https://www.citiprogram.org/rcrpage.asp>). The general content of the ethics training, at a minimum, will emphasize three key areas of research ethics: authorship and plagiarism, data and research integration and reporting misconduct. Each institution will be responsible for developing its own training system, as schools will need flexibility to develop training tailored to their specific student needs. Typically RCR education addresses the topics of: Data Acquisition and Management - collection, accuracy, security, access; Authorship and Publication; Peer Review; Mentor/Trainee Responsibilities; Collaboration; Conflict of Interest; Research Misconduct; Human Subject Research; and Use of Animals in Research.



## 5.10 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. Most of these terms and conditions are contained in USDA's Uniform Federal Assistance Regulations, 7 CFR Part 3015, which will be incorporated into all Phase II awards resulting from this program solicitation. These regulations primarily consolidate internal policies and procedures relating to USDA's assistance programs and implement various Federally issued assistance policies, including applicable Federal cost principles and uniform administrative requirements. Copies are available at:  
[www.access.gpo.gov/nara/cfr/waisidx\\_04/7cfr3015\\_04.html](http://www.access.gpo.gov/nara/cfr/waisidx_04/7cfr3015_04.html).

## 5.11 Additional Information

- (A) This program solicitation 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.
- (A) Before the award of an SBIR funding agreement, USDA 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 must normally be submitted on a one-time basis only. (If sufficient 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 I awardees will be required to submit the above 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.**
- (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 subsection 1.5) 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 program solicitation is not an offer by USDA and does not obligate USDA 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.

## 6.0 SUBMISSION OF APPLICATIONS

### 6.1 When to Submit

All complete, error-free Phase II applications must be submitted via Grants.gov by **5:00p.m. Eastern Time on February 28, 2013**. Applications received after this deadline will not be considered for funding.

For the convenience of all potential applicants, the following schedule is provided for informational purposes:

#### Phase II

Deadline date for applications                      February 28, 2013; 5:00 PM EST

Normal period of research performance              September 1, 2013 through August 31, 2015

### 6.2 What to Submit

USDA SBIR electronic application submissions consist of forms (viewed, completed, and submitted through the Grants.gov Web site) and attachments. All of the necessary forms and instructions will be found on the [Grants.gov](http://www.grants.gov) Web site, in section 3.0 of this program solicitation, and the NIFA Grants.gov Application Guide. One way applicants can access the appropriate page on Grants.gov is by visiting the USDA SBIR funding opportunity page at <http://www.nifa.usda.gov/fo/sbir>. Clicking on the Funding Opportunity Number listed near the bottom of the page will link the applicant directly to the information and forms necessary to submit through Grants.gov.

**All attachments submitted with the application must be unprotected and in PDF format.**

**ANY PROPOSALS CONTAINING NON-PDF DOCUMENTS WILL BE EXCLUDED FROM NIFA REVIEW. Partial applications will be excluded from NIFA review. Applications with critical documents which are write protected or password protected will not be reviewed.**

**Please note: Applicants must have successfully completed the entire registration process, see subsection 3.2.2, prior to being able to submit an application through Grants.gov.**

### 6.3 Where to Submit

All FY 2013 Applications submitted to USDA SBIR must be submitted electronically through [Grants.gov](http://www.grants.gov).

### 6.4 Questions Pertaining to the USDA SBIR Program or to this Solicitation

Written or verbal questions of a general nature about the USDA SBIR program, as well as general questions pertaining to this solicitation but not pertaining to requests for additional copies of the solicitation, should be sent to [sbir@nifa.usda.gov](mailto:sbir@nifa.usda.gov) or can be directed to one of the USDA SBIR NPLs, see section 1.5.

### 6.5 Information on Application Status

It is anticipated that the evaluation of Phase II applications will require approximately four months from February 28, 2013, and no information on application status will be available until final selections have been made. Both successful and unsuccessful applicants will be notified of final award decisions within approximately 4 months.

## 7.0 SCIENTIFIC AND TECHNICAL INFORMATION SOURCES

Listed below are some of the sources that can provide technology search and document services which may be useful in preparing SBIR applications. They can be contacted directly for service and cost information.

National Agricultural Library  
Service Desk  
U.S. Department of Agriculture  
10301 Baltimore Avenue  
Beltsville, MD 20705-2351  
(301) 504-5755  
[www.nal.usda.gov](http://www.nal.usda.gov)

National Technology Transfer Center  
Wheeling Jesuit University  
316 Washington Avenue  
Wheeling, WV 26003  
(304) 243-2455 or (800) 678-6882  
[www.nttc.edu](http://www.nttc.edu)

National Technical Information Service  
5285 Port Royal Road  
Springfield, VA 22161  
(800) 553-6847  
[www.ntis.gov](http://www.ntis.gov)

RPort USDA/NIFA/OIT  
1400 Independence Ave., S.W.  
Stop 2270  
Washington, D.C. 20250  
[http://www.nifa.usda.gov/business/reeport\\_imp.html](http://www.nifa.usda.gov/business/reeport_imp.html)

### Regional Technology Transfer Centers

Far West  
University of Southern California  
3716 South Hope Street, Suite 200  
Los Angeles, CA 90007-4344  
(213) 743-2353  
<http://ttc.usc.edu/>

Mid-Continent Technology Transfer Center  
Texas Engineering Extension Service  
The Texas A&M University System  
301 Tarrow  
College Station, TX 77843-8000  
(979) 845-8762

Fax (979) 845-3559  
[www.teex.com](http://www.teex.com)

Mid-Atlantic  
TECC - the Technology Commercialization  
Center  
144 Research Drive  
Hampton, VA 23666  
(757) 766-9200  
Fax (757) 766-2402  
[www.teccenter.org](http://www.teccenter.org)

Northeast

Center for Technology Commercialization  
1400 Computer Drive  
Westborough, MA 01581-5043  
(508) 870-0042  
[www.ctc.org](http://www.ctc.org)

Southeast  
Georgia Institute of Technology  
151 6th Street  
216 O'Keefe Building  
Atlanta, GA 30332  
(404) 894-6786  
[www.edi.gatech.edu/nasa](http://www.edi.gatech.edu/nasa)

## 8.0 RESEARCH TOPIC DESCRIPTIONS AND INSTRUCTIONS

Phase II Applicants must respond to a topic area listed in this section that corresponds to the Phase I work that was previously funded.

In addition, USDA recognizes **Agriculturally-related Manufacturing Technology** and **Alternative and Renewable Energy** as two cross-cutting priorities with relevance to all topic areas listed in this program solicitation. USDA encourages applicants—as appropriate—to address these priorities within their proposals for submission to one of the topic areas listed in this section. Special consideration of applications that address one of these priorities may be provided.

### **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 encourages the submission of applications that deal with some aspect of agriculturally-related manufacturing technology (Section 2.17). Since manufacturing impacts all aspects of agriculture and rural development, applications dealing with manufacturing could be submitted to any of the topic areas. If an application has a connection to manufacturing this should be indicated in R&R Other Project Information (Field 8(2)) and a brief explanation of how it is related to manufacturing should be provided.

### **Alternative and Renewable Energy**

In an effort to find alternatives to fossil fuels, the USDA established research on alternative and renewable energy as a high priority. Such research includes development of new energy crops, improved methods for producing biofuels, such as ethanol 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 alternative and renewable energy could be submitted to many of the different topic areas. If an application has a connection to alternative and renewable energy this should be indicated in R&R Other Project Information (Field 8(2)) and a brief explanation of how it is related to alternative and renewable energy should be provided.

### **Current Research Topic Areas:**

#### **8.1 Forests and Related Resources**

*Dr. Charles Cleland, National Program Leader for SBIR Forests and Related Resources may be contacted at [ccleland@nifa.usda.gov](mailto:ccleland@nifa.usda.gov) or (202) 401-6852 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

#### **8.2 Plant Production and Protection – Biology**

*Dr. Shing Kwok, National Program Leader for SBIR Plant Production and Protection may be contacted at [skwok@nifa.usda.gov](mailto:skwok@nifa.usda.gov) or (202) 401-6060 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

#### **8.3 Animal Production and Protection**

*Dr. Adele Turzillo, National Program Leader for SBIR Animal Production and Protection may be contacted at [aturzillo@nifa.usda.gov](mailto:aturzillo@nifa.usda.gov) or (202) 401 – 6158 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

## **8.4 Air, Water and Soils**

*Mary Ann Rozum, National Program Leader for SBIR Soil and Water Resources may be contacted at [mrozum@nifa.usda.gov](mailto:mrozum@nifa.usda.gov) or (202) 401-4533 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

## **8.5 Food Science and Nutrition**

*Dr. Jodi Williams, National Program Leader for SBIR Food Science and Nutrition may be contacted at [jwilliams@nifa.usda.gov](mailto:jwilliams@nifa.usda.gov) or (202) 720-6145 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

## **8.6 Rural Development**

*Dr. Siva Sureshwaran , National Program Leader for SBIR Rural Development may be contacted at [ssureshwaran@nifa.usda.gov](mailto:ssureshwaran@nifa.usda.gov) or (202) 702-7536; or Dr. Charles Cleland, National Program Leader for SBIR Rural Development may be contacted at [ccleland@nifa.usda.gov](mailto:ccleland@nifa.usda.gov) or (202) 401-6852 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

## **8.7 Aquaculture**

*Dr. Charles Cleland, National Program Leader for SBIR Aquaculture may be contacted at [ccleland@nifa.usda.gov](mailto:ccleland@nifa.usda.gov) or (202) 401-6852; or Dr. Gary Jensen, National Program Leader for SBIR Aquaculture may be contacted at [gjensen@nifa.usda.gov](mailto:gjensen@nifa.usda.gov) or 202-401-6802 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

## **8.8 Biofuels and Biobased Products**

*Dr. William Goldner, National Program Leader for SBIR Biofuels and Biobased Products may be contacted at [wgoldner@nifa.usda.gov](mailto:wgoldner@nifa.usda.gov) or (202) 401-1719 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

## **8.12 Small and Mid-Size Farms**

*Dr. Charles Cleland, National Program Leader for SBIR Small and Mid-Size Farms may be contacted at [ccleland@nifa.usda.gov](mailto:ccleland@nifa.usda.gov) or (202) 401-6852 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

## **8.13 Plant Production and Protection - Engineering**

*Dr. William Goldner, National Program Leader for SBIR Plant Production and Protection Engineering may be contacted at [wgoldner@nifa.usda.gov](mailto:wgoldner@nifa.usda.gov) or (202) 401-1719 regarding questions about the suitability of research topics or to arrange a telephone consultation.*

## 9.0 SUBMISSION FORMS AND CERTIFICATIONS

All of the necessary forms and instructions will be found on the Grants.gov website. Applicants can access the appropriate page on Grants.gov by visiting the USDA SBIR funding opportunity page at <http://www.NIFA.usda.gov/fo/sbir>. Clicking on the Funding Opportunity Number listed near the bottom of the page will link the applicant directly to the information and forms necessary to submit through Grants.gov. **Please note: Applicants must have successfully completed the entire registration process, see subsection 3.2 prior to submitting an application through Grants.gov. All attachments must be submitted in PDF format, see subsection 3.2.3.**