



United States
Department of
Agriculture



Cooperative State
Research, Education,
and Extension Service

Competitive Programs

SBIR-08-2

Program Solicitation

**Small Business Innovation
Research Program – Phase II
Fiscal Year 2008**

Phase II Closing Date: February 6, 2008

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Catalog of Federal Domestic Assistance Number (CFDA)

10.212 Small Business Innovation Research

CSREES Funding Opportunity Number

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Acronym List

ADO – Authorized Departmental Officer
AOR – Authorized Organizational Representative
APHIS – Animal and Plant Health Inspection Service
AR – Authorized Representative

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
CRIS – Current Research Information System
CSREES – Cooperative State Research, Education, and Extension Service

DHHS – Department of Health and Human Services
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

NPL – National Program Leader
NRI – National Research Initiative

PD – Project Director
PDF – Portable Document Format
PI – Principle Investigator
PMS – Payment Management System
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
PROGRAM SOLICITATION – Request for Applications

SBA – Small Business Administration
SBC – Small Business Concern
SBIR – Small Business Innovation Research
STTR – Small Business Technology Transfer Program

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

The Program Solicitation may be downloaded from the USDA SBIR Web Page:

www.csrees.usda.gov/fo/sbir

***** **PLEASE READ** *****
IMPORTANT CHANGES IN THE USDA SBIR Fiscal Year (FY) 2008 PROGRAM SOLICITATION

This program solicitation is for prior USDA SBIR Phase I projects that are eligible to apply for Phase II funding. A Phase I project can only apply for Phase II funding one time, therefore if a Phase I awardee has already 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. Section 8.0 of this program solicitation includes the current research topics and is provided only for informational purposes. Applicants that are submitting under this program solicitation should provide project information that is relevant to the topic area from which the Phase I project was originally funded.

The USDA SBIR Program requires all FY 2008 applications be submitted electronically through Grants.gov. This SBIR program funding opportunity is for Phase II applications and has a closing date of February 6, 2008.

- **ALL ATTACHMENTS MUST BE SUBMITTED IN THE PORTABLE DOCUMENT FORMAT (PDF). APPLICATIONS THAT DO NOT FOLLOW THE GUIDELINES FOR ATTACHMENTS ARE NOT ELIGIBLE TO BE CONSIDERED FOR A PHASE II SBIR AWARD AND WILL NOT BE REVIEWED;**
- Applicants must allow additional time for electronic submission and plan ahead. It is recommended that applicants begin submitting their completed application at least one day prior to deadline.
- The registration procedure for companies or individuals intending to submit a grant application through Grants.gov requires several steps and must be finished prior to submitting an application. This is a one-time registration process. **It can take as much as one month to complete, so it is critical that companies begin this process as soon as possible (See Section 3.2.2);**
- Please note, individual proprietorships, i.e. farmers, ranchers, etc., must register with Grants.gov as organizations, not as individuals.
- Please note, within the Grants.gov forms, applicants will be asked to submit information relevant to specific “programs you are applying for.” This refers to the “topic area,” see section 8.0, to which you are submitting your USDA SBIR application.
- Information about the forms and submission requirements for Grants.gov can be found in section 3.0 and in the Grants.gov guide that accompanies the forms on Grants.gov;
- Applications must be submitted via Grants.gov by 5:00 p.m. Eastern Time, on the Phase II deadline of February 6, 2008, as indicated under section 6.1 of this program solicitation;
- Applicants who have problems with their submissions to Grants.gov should call the Grants.gov help desk to help resolve the problems and keep a record of any correspondence with Grants.gov regarding the submission problem;

******* PLEASE READ *******

- **Section 3.0 of this program solicitation provides additional information that is specific to the USDA SBIR program. Applicants are advised to refer to the 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 the CSREES Application Guide, the information in the program solicitation supersedes in all cases.**

Helpful Information for Submission	Website Address
Information pertaining to the transition to electronic submission can be found at the CSREES website.	www.csrees.usda.gov/funding/electronic This page will be updated frequently and should be checked for program-specific help.
Applications should be submitted through the Grants.gov website.	Grants.gov
The CSREES GRANTS.GOV Application Guide provides guidance for completing the forms required by Grants.gov and CSREES. Used in conjunction with the program solicitation, this guide will assist applicants with most field-specific questions.	Contained within the application package is the “CSREES Grants.gov Application Guide: A Guide for Preparation and Submission of CSREES 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. Applicants should reference this program solicitation for additional guidance not found in the application guide.

If you have any questions related to preparing application content, contact the CSREES Help Desk:
 Email: electronic@csrees.usda.gov
 Phone: 202-401-5048, Business hours are M-F, 7:00 am – 5:00 pm ET, excluding Federal holidays.

If you have any questions related to Grants.gov content, contact the Grants.gov Help Desk:
 Email: support@grants.gov
 Toll Free: 1-800-518-4726, Business hours are M-F, 7:00 am – 9:00 pm ET.

If you do not own PDF-generating software, Grants.gov provides online tools to assist applicants. On the Grants.gov Customer Support Webpage (<http://grants.gov/CustomerSupport>) users will find a link to “Convert Documents to PDF” (<http://grants.gov/assets/PDFConversion.pdf>). PDF documents submitted as a part of the application must also adhere to the following guidelines:

- margins not less than 1” or 2.5 cm on all sides;
- type no less than 12 point font size regardless of whether it is single or double spaced;
- Font type should be “Times New Roman, Geneva, Helvetica, or 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.

APPLICATIONS RECEIVED AFTER COB ON THE SPECIFIED CLOSING DATE, NOT MEETING ELIGIBILITY REQUIREMENTS AS DESCRIBED IN SECTION 1.4, OR NOT IN COMPLIANCE WITH APPLICATION GUIDELINES PROVIDED IN THIS PROGRAM SOLICITATION WILL NOT BE REVIEWED.

******* PLEASE READ *******

USDA recognizes **Agriculturally-related Manufacturing Technology** and **Alternative and Renewable Energy** as two cross-cutting priorities with relevance to all topic areas listed in Section 8.0 of 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 Section 8.0. 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 section (1) of the project narrative (the project narrative is included as an attachment in Field 7 of the R&R Other Project Information form) and a brief explanation of how it is related to manufacturing should be provided.

Alternative and Renewable Energy

In an effort to reduce the Nation’s dependence on fossil fuels, the USDA has established research on alternative and renewable energy as a high priority. The research may include 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 efficiently using 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 a variety of topic areas. If a proposal has a connection to alternative and renewable energy, this should be indicated in section (1) of the project narrative (the project narrative is included as an attachment in Field 7 of the R&R Other Project Information form) and a brief explanation should be included indicating how the proposed research is related to alternative and renewable energy.

USDA'S PROGRAM SOLICITATION SMALL BUSINESS INNOVATION RESEARCH FISCAL YEAR 2008

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.

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 \$350,000 (see section 3.3.5 of this solicitation for details on budget requirements) for a period normally not to exceed 24 months. **Normally, only those small businesses previously receiving Phase I awards in either FY 2006 or 2007 are eligible to submit Phase II proposals in FY 2008. Please note that for each Phase I project funded, the awardee may apply for a Phase II award only once. Proposals for Phase II normally may only be submitted to the Federal agency from which the Phase I award was received.** At the appropriate time, the SBIR Program will send a letter to Phase I awardees eligible to submit Phase II applications with instructions for preparing these applications and a deadline date for submitting applications. **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. No Federal SBIR funds may 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 program solicitation is issued pursuant to the Small Business Innovation Development Act of 1982, Pub. L. No. 97-219, as amended (15 U.S.C. 638) and 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 Pub. L. No. 99-591, 100 Stat. 3341. This program is administered by the Cooperative State Research, Education, and Extension Service (CSREES) of the USDA.

This program is subject to the provisions found at 7 CFR Part 3403. These provisions set forth procedures to be followed when submitting grant applications, rules governing the evaluation of applications and the awarding of grants and regulations relating to the post-award administration of grant projects. Changes have been made to the provisions and incorporated into this solicitation. These changes were subject to the comments provided in response to the Small Business Innovation Research Grants Program – Final Rule (7 CFR Part 3403, April 26, 2007).

This SBIR program funding opportunity for FY 2008 Phase II applications has a closing date of February 6, 2008.

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 invited Phase I winners are eligible to apply for Phase II support through this 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. Normally, only those small businesses previously receiving Phase I awards in either FY 2006 or 2007 are eligible to submit Phase II proposals in FY 2008. 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 11 “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 be performed in the United States. Approval, in writing, is necessary by both the responsible NPL and the funding agreement officer for such specific conditions.

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. Peter Burfening (pburfening@csrees.usda.gov)

Telephone: (202) 401- 5823

Fax: (202) 401- 6070

8.3 Animal Production and Protection

Dr. Charles Cleland (ccleland@csrees.usda.gov)

Telephone: (202) 401- 6852

Fax: (202) 401- 6070

8.1 Forests and Related Resources

8.4 Soil and Water Resources

8.7 Aquaculture

8.12 Small and Mid-Size Farms

Dr. William Goldner (wgoldner@csrees.usda.gov)

Telephone: (202) 401- 1719

Fax: (202) 401- 6070

8.2 Plant Production and Protection - Biology

8.8 Biofuels and Biobased Products

8.13 Plant Production and Protection - Engineering

Dr. Richard Hegg (rhegg@csrees.usda.gov)

Telephone: (202) 401- 6550

Fax: (202) 401- 6070

8.11 Animal Manure Management

Dr. Siva Sureshwaran (ssureshwaran@csrees.usda.gov)
Telephone: (202) 720 - 7536
Fax: (202) 401- 6070
8.6 Rural Development
8.9 Marketing and Trade

Dr. Dionne Toombs (dtoombs@csrees.usda.gov)
Telephone: (202) 401- 2138
Fax: (202) 401- 6070
8.5 Food Science and Nutrition

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

Mr. Scott Dockum (sbir@csrees.usda.gov)
Telephone: (202) 401- 4002 or (202) 401- 4995
Fax: (202) 401- 6070
Program Specialist – Small Business Innovation Research (SBIR)

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 organizational 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 or services as well as producing and delivering products or services for sale, whether by the originating party or by others, to Government or commercial markets.

2.7 CSREES

The Cooperative State Research, Education, and Extension Service.

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 contract 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 whom 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, tolerancing, 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, that 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, association, 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. Please note that the “Industrial Applications” topic area is now called Biofuels and Biobased Products.

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 2008 applications, the USDA SBIR program will require electronic application submission through Grants.gov (www.grants.gov). Submission through Grants.gov requires the use of forms located at the Grants.gov Website. Applications not submitted electronically and/or applications submitted using incorrect or old forms are not eligible to be considered for a Phase II SBIR award and will not be reviewed.

Please note the USDA CSREES has developed specific tools to assist applicants in completing the application forms. 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 tools, the information in the program solicitation supersedes in all cases.**

Furthermore, each applicant should use the CSREES document titled, “A Guide for Preparation and Submission of CSREES Applications via Grants.gov” also known as the “CSREES Application Guide,” that is part of this program solicitation package located at Grants.gov. The program

solicitation will direct an applicant to this guidance for completing the required forms at Grants.gov.

To access the electronic application package via Grants.gov, go to www.grants.gov, under the “Apply for Grants” heading on the left side of page and click on “Download Grant Application Packages”. Enter the CFDA number (i.e. 10.212) in the appropriate box to search by Catalog of Federal Domestic Assistance (CFDA) number. **From the search results, select the item with CFDA number 10.212, Small Business Innovation Research.** Applicants can also access the appropriate page on Grants.gov by visiting the USDA SBIR funding opportunity page at <http://www.csrees.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](http://www.grants.gov).

Applicants must download the “PureEdge Viewer” software, which is a small, free program that will allow you to access, complete, and submit applications electronically and securely on Grants.gov. For further information see <http://www.grants.gov/DownloadViewer>.

3.2.1 Resources

Online

There are considerable online resources to help potential applicants with the electronic forms and submission requirements. The “Get Registered” tab on Grants.gov (http://www.grants.gov/applicants/get_registered.jsp) provides information on registering your company with Grants.gov and the steps necessary to apply for a grant. A quick reference guide listing these steps is available as a 4-page PDF document at the following website: <http://www.grants.gov/section910/Grants.govRegistrationBrochure.pdf>.

In addition, CSREES has developed documentation to help navigate these electronic processes. The central point for all information related to the transition to electronic submission for the USDA SBIR program is www.csrees.usda.gov/funding/electronic. This site is updated frequently, and it should be checked often for program-specific help concerning electronic submission of USDA SBIR grants. As stated above, one of the principal resources available is the CSREES Application Guide, which provides guidance for completing the forms required by Grants.gov and CSREES. Used in conjunction with this program solicitation, the CSREES Application Guide will assist applicants with questions related to the fields located within each form that do not have specific SBIR directions.

Personalized

Questions about the registration process through Grants.gov, the PureEdge Viewer software, PDF files, completing and submitting electronically, or technical problems related to the Grants.gov Website should be directed to Grants.gov staff. They can be reached by phone at **1-800-518-GRANTS** or via email at support@grants.gov.

Answers to field specific questions about the SF-424 (R&R) forms package should be found in either the program solicitation or the CSREES Application guide.

If you are unable to find the answer that you need, please send an email to electronic@csrees.usda.gov with your question. Make sure to identify the form name, the field number related to your question and indicate that you will be applying to the USDA SBIR program.

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 1.5. For general questions you can also contact the USDA SBIR office at sbir@csrees.usda.gov or 202-401-4002.

3.2.2 Registration Procedures for Companies and Individuals

The registration procedure for companies or individuals intending to submit a grant application through Grants.gov requires several steps and must be finished prior to submitting an application. **This is a one-time registration process. It can take as much as one month to complete so it is critical that companies begin this process as soon as possible.**

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. A quick reference guide listing these steps is available as a 4-page PDF document at the following website: <http://www.grants.gov/section910/Grants.govRegistrationBrochure.pdf>.

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. You will receive a DUNS number within several days of your request. **Please note, individual proprietorships (i.e. farmers, ranchers etc.) can request and receive a DUNS number, but must register with Grants.gov as an organization, not as an individual.**

Register your organization with Central Contractor Registry (CCR)

The CCR is the central government repository for organizations working with the Federal government. If your organization is not already registered, identify the primary contact who should register your organization. When your organization registers with CCR, it will be required to designate an E-Business Point of Contact (E-Business POC). The E-Business POC authorizes individuals to submit grant applications on behalf of the organization and creates a special password called a Marketing Partner ID Number (M-PIN) to verify individuals authorized to submit grant applications for the organization. Visit the CCR website at <http://www.ccr.gov> to begin this process. It may take a couple of days for you to collect the information needed for your organization’s registration. The CCR Assistance Center can be reached at 888-227-2423.

STEP 2 – Register an Authorized Organizational Representative (AOR) for your Company

Obtain your 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 Credential Provider. Register with Grants.gov’s Credential Provider at http://www.grants.gov/applicants/register_credential_provider.jsp. **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.

Register with Grants.gov

After obtaining your username and password, allow 30 minutes for your data to transfer from the Credential Provider. Register with Grants.gov to set up a short AOR profile. Visit http://www.grants.gov/applicants/register_grants.gov.jsp to register your username and password and set up your profile. You will only be authorized for the DUNS number that you register in your Grants.gov profile.

STEP 3 – Get Yourself Authorized as an AOR

Obtain your E-Business POC authorization

After your 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 http://www.grants.gov/applicants/e_biz.jsp and enter your organization's DUNS number and M-PIN. 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>.

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 correct PDF format. 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 forms (viewed, completed, and submitted through the Grants.gov PureEdge Viewer) and 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 webpage (<http://grants.gov/CustomerSupport>), users will find a link to “Convert Documents to PDF” (<http://grants.gov/assets/PDFConversion.pdf>). PDF documents submitted as a part of the application must also adhere to the following guidelines:

- margins not less than 1”; 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.
- 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.

Applications that do not follow the guidelines for attachments stated above are not eligible to be considered for a Phase II SBIR award and will not be reviewed.

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 II SBIR award and will not be reviewed.

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 via the SBIR inbox at sbir@csrees.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 (see Table 1).

Table 1: Forms of a CSREES SBIR Phase II Application

Document	Required	Optional	Instructions
RR_SF424	✓		Section 3.3.1
CSREES_Supplemental_Info	✓		Section 3.3.7
RR_KeyPersonExpanded	✓		Section 3.3.3
RR_OtherProjectInfo	✓		Section 3.3.2
SBIR_STTR_Information	✓		Section 3.3.8
RR_PersonalData		✓	Section 3.3.4
RR_Budget	✓		Section 3.3.5
RR_SubawardBudget	✓		Section 3.3.6

Table 2: Attachments of a CSREES SBIR Phase II Application

Document	Required	Optional	Form Location	Instructions
Commercialization Plan	✓		Located within the SBIR_STTR_Information Form	Section 3.3.8
Project Summary/Abstract	✓		Located within the RR_OtherProjectInfo Form	Section 3.3.2
Project Narrative	✓		Located within the RR_OtherProjectInfo Form	Section 3.3.2
Bibliography & References Cited	✓		Located within the RR_OtherProjectInfo Form	Section 3.3.2
Facilities & Other Resources	✓		Located within the RR_OtherProjectInfo Form	Section 3.3.2
Equipment	✓		Located within the RR_OtherProjectInfo Form	Section 3.3.2
Other Attachments		✓	Located within the RR_OtherProjectInfo Form	Section 3.3.2
Biographical Sketch	✓		Located within the RR_KeyPersonExpanded Form	Section 3.3.3
Current and Pending Support	✓		Located within the RR_KeyPersonExpanded Form	Section 3.3.3
Additional Senior Key Persons		✓	Located within the RR_Budget Form	Section 3.3.5
Additional Equipment		✓	Located within the RR_Budget Form	Section 3.3.5
Budget Justification	✓		Located within the RR_Budget Form	Section 3.3.5

If there is a discrepancy between the program solicitation and the CSREES Application Guide, the information contained in this program solicitation is overriding.

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

3.3.1 SF-424 R&R Cover Sheet

Field 1. Type of Submission – Applicants must check the “Application” box.

Field 2. Applicant Identifier – This field is provided for the Applicant’s use if they have an internal tracking system they would like to use in tracking applications they have submitted. This field is not required.

Field 3. Date received by State and State Application Identifier – This is not applicable for USDA SBIR applications and this field does not need to be completed.

Field 4. Federal Identifier - Applicants must reference the CSREES Application Guide for directions.

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

Fields 6 – 12. Employer Identification; Type of Applicant; Name of Federal Agency; Catalog of Federal Domestic Assistance Number; Descriptive Title of Applicants Project; and Areas Affected by Project - Applicants must reference the CSREES Application Guide for directions.

Field 13. Proposed Project Start Date and End Date – The proposed duration of Phase II projects should normally not exceed 24 months, except in special, justified circumstances. In most circumstances, the following dates should be used for these fields:

	Start	End
Phase II	9/1/2008	8/31/2010

Fields 14 – 16. Congressional Districts; Project Description/Principal Investigator Contact Information; and Estimated Project Funding - Applicants must reference the CSREES Application Guide for directions.

Field 17. 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 18. Complete Certification – Please refer to the CSREES 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.
- (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 in PDF format in Field 11 Other Attachments, explanatory information detailing all relevant particulars concerning the Federal debt.

Field 19. Authorized Representative - Applicants must reference the CSREES Application Guide for directions.

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

Field 21. Attach an additional list of Project Congressional Districts if needed - Applicants must reference the CSREES Application Guide for directions.

3.3.2 R&R Other Project Information

Fields 1 – 5. Are Human Subjects Involved; Are Vertebrate Animals Used; Is Proprietary/Privileged information included...; Does this project have an actual or potential impact on the environment; Does the project involve activities outside the U.S... - Applicants must reference the CSREES Application Guide for directions.

Field 6. 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.

Field 7. Project Narrative - (PDF Format is Required)

32 PAGES is the Page Limit for the Project Narrative. **NOTE:** 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 National Research Initiative (NRI). 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 8).**

(5) Relationship with Research or Research and Development

Phase II – 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 effort should attempt to determine the technical feasibility of the proposed concept. 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)
- a. Enhance International Competitiveness of American Agriculture;
 - b. Enhance the Competitiveness and Sustainability of Rural and Farm Economics;
 - c. Support Increased Economic Opportunities and Improved Quality of Life in Rural America;
 - d. Enhance Protection and Safety of the Nation’s Agriculture and Food Supply;
 - e. Improve the Nation’s Nutrition and Health; and
 - f. Protect and Enhance the Nation’s Natural Resource Base and Environment.

Field 8 Bibliography & Cited References - (PDF Format is Required)

Provide a complete list of all references cited in the application. **For each reference, provide the complete name for each author, the year of the publication, full title of the article, name of the journal or book published, volume, and the page numbers.** The references should be listed in alphabetical order using the last name of the first author.

Field 9 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 10 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 11 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** – 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.
- (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 (e.g., applications submitted to the Marketing and Trade topic area that are focused on export issues) 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)

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 CSREES Application Guide for directions.

- (1) **Biographical Sketch (Vitae) - (PDF Format is Required)** - Identify key personnel of the small business concern, project consultants and subcontractors and include information on their directly

related education and experience, relevant publications or a current copy of their vitae. The vitae should be limited to two (2) pages each in length, excluding publications listings. The vitae should include a presentation of academic and research credentials, as applicable, e.g. earned degrees, teaching experience, employment history, professional activities, honors and awards and grants received. A chronological list of the most important and/or relevant publications in refereed journals during the past four (4) years, including those in press, must be included. Also, list only those non-refereed technical publications that have relevance to the proposed project. All authors should be listed in the same order as they appear on each paper cited, along with the title and complete reference as these usually appear in journals.

- (2) **Current and Pending Support - (PDF Format is Required)** - A current and pending support list should be included for all PDs. Please note that the project being proposed should be identified as pending in the attached document. An application that duplicates or overlaps substantially with an application already reviewed and funded (or to be funded) by another organization or agency will not be funded. The template that applicants must use for this information can be found at http://www.csrees.usda.gov/home/faq_apply.html#current.

If an identical application or one containing a significant amount of essentially equivalent work as the one submitted in response to this solicitation has been previously funded or is currently funded, pending or about to be submitted to another Federal agency or to USDA in a separate action, the applicant must provide the following information:

- a. Name and address of the agency(s) to which an application was submitted, or will be submitted, as well as from which an award is expected or has been received;
- b. Date of actual or anticipated application submission or date of award, as appropriate;
- c. Title of application or award, identifying number assigned by the agency involved and the date the application was submitted or the award was received;
- d. Applicable research topic area for each application submitted or award received; and
- e. Name and title of PD for each application submitted or award received.

3.3.4 R&R Personal Data

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

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

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 include a budget that is appropriate for this solicitation. All USDA SBIR Phase II grants have a cap of \$350,000. Any matched funds from outside sources should be discussed under "Cost Sharing" in Field K.**

Applicants should note that the USDA SBIR Program offers a Phase II commercialization program and the SBIR program will set aside the funds for each awardee to participate in this program. Currently, the USDA SBIR Program expects to cover \$8,000 of commercialization assistance expenses for each awarded project. This budgeted amount must not be included in the requested budget submitted with the application regardless of whether the awardee participates in the

commercialization program or not. Therefore the maximum amount a project may be awarded is \$350,000.

Fields A1-B. Section A&B, Budget Period 1 - Applicants must reference the CSREES Application Guide for directions.

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 reference the CSREES Application Guide for directions.

Field D2. Foreign Travel Costs Funds Requested - Requests for foreign travel are discouraged, but may be approved (e.g., applications submitted to the Marketing and Trade topic area that are focused on export issues) 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 CSREES Application Guide for directions.

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

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

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

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

Field J. Fee - Applicants must reference the CSREES Application Guide for directions.

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 (e.g., applications submitted to the Marketing and Trade topic area that are focused on export issues) 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 11 “Other Attachments” of the R&R Other Project Information form for required documentation associated with subcontracts and consultants. A budget and budget justification stating subcontractual 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.
- (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. 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. CSREES 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)

Applicants should reference the CSREES Application Guide to complete this form.

3.3.7 CSREES Supplemental Information

Field 1. Funding Opportunity – Applicants must reference the CSREES Application Guide for directions.

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 Manure Management
Program Code
8.11

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 and the application may not be reviewed.

Field 3. Type of Applicant - Applicants must reference the CSREES Application Guide for directions.

Field 4. Additional Applicant Types - Applicants must reference the CSREES Application Guide for directions.

Field 5. Supplemental Applicant Types - Applicants must reference the CSREES Application Guide for directions.

Field 6. HHS Account Information - Applicants must reference the CSREES Application Guide for directions.

Field 7. Key Words - Applicants must reference the CSREES Application Guide for directions.

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

Please note: Guidance for completing this form will not be found in the CSREES Application Guidance. Applicants should follow the instructions detailed in this program solicitation.

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 not include additional information such as cover sheets, table of contents, reference listings, budgets and appendixes unless the applicant intends for these to be considered in the page count. It is the responsibility of the applicant to review the attachment for page limit and PDF compliance before submission.

The 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 limit 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 two-thirds of the research effort.

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 7)?
- (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 nor 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 40 Phase II awards not to exceed \$350,000 each to small businesses in FY 2008. Awards are anticipated to be made on or after September 1, 2008. 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.

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 30 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@csrees.usda.gov. **The report should include a single-page executive summary as the first page.** This summary should include the purpose of the research, a brief description of the research carried out, the research findings or results, and in a final paragraph, potential applications (commercial or other) of the research. The balance of the report should include a comparison of actual accomplishments with the goals established for the grant; the reasons for slippage if established goals were not met; estimates of technical feasibility; and additional pertinent information, such as an explanation of cost over-runs or unexpectedly high unit costs. Also, identify all other recipients (public and private) of the research results documented in the report.

Please note: All technical reports are held confidential for a period covering four years after the termination of the project. **As such, proprietary information should 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 Financial Reports

For Phase II applications, a final **“Financial Status Report” (SF-269)** is due within 90 days after the expiration date of the grant and should be submitted to the Funds Management Branch, Office of Extramural Programs at the address listed below, in accordance with instructions contained in Section 3015.82 of the Uniform Federal Assistance Regulations.

Funds Management Section
Office of Extramural Programs
Cooperative State Research, Education,
and Extension Service
U.S. Department of Agriculture
STOP 2298
1400 Independence Avenue, S.W.
Washington, D.C. 20250-2298
Telephone: (202) 401-4527

Quarterly Reports of Federal Cash Transactions (SF-272) are required by the Department of Health and Human Services (DHHS) (www.dpm.psc.gov) and are submitted online through the DHHS Payment Management System (PMS) website. If you become delinquent in these reports, you will not be able to access your funds.

5.2.3 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. In addition, the AD-419 and AD-421 report form has to be submitted at the conclusion of a Phase II 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.**

5.3 Payment Schedules

Payments will be made by electronic funds transfer through the DHHS-PMS. Requests for payment should be in accordance with DHHS-PMS instructions. All questions relating to payments should be submitted to:

Funds Management Section
Office of Extramural Programs
Cooperative State Research, Education, and Extension Service
U. S. Department of Agriculture
STOP 2298
1400 Independence Avenue, S. W.
Washington, D. C. 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, up to an additional 40 percent of total dollars will become available for support of the project.
- (C) The final 10 percent of total award dollars will be paid upon receipt and acceptance of the comprehensive final technical report required under section 5.2 above.

If the awardee is a sole proprietorship, funds awarded shall be deposited in a separate bank account and CSREES, 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 CSREES in the event of the awardee's demise. However, CSREES shall not be named a joint owner of such an account, but rather as beneficiary.
2. These arrangements must also be reported to CSREES 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; extra copies will be destroyed. 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:

Director, Planning and Accountability
Cooperative State Research, Education, and Extension Service, USDA
STOP 2213
1400 Independence Avenue, S.W.

Washington, D.C. 20250-2213
Telephone: (202) 720-5623
Facsimile: (202) 720-7714
E-mail: rmacdonald@csrees.usda.gov

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

5.10 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.
- (B) 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 Extramural Programs, CSREES, 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 either (202) 401-5050 or (202) 401-4342.) It is anticipated that all Phase II awardees will be required to submit the above information. **Please note that CSREES 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 proposal not being funded.**
- (C) 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.
- (D) USDA is not responsible for any monies expended by the applicant prior to the award of any funding agreement.
- (E) 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.
- (F) Unsolicited applications will not be accepted under the SBIR program.
- (G) 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 Phase II applications must be submitted via Grants.gov by **5:00 p.m. Eastern Time on February 6, 2008**. 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 6, 2008

Normal period of research performance.....September 1, 2008 through August 31, 2010

6.2 What to Submit

USDA SBIR electronic application submissions consist of forms (viewed, completed, and submitted through the Grants.gov) and attachments. All of the necessary forms and instructions will be found on the Grants.gov Website and in section 3.0 of this program solicitation. Applicants can access the appropriate page on Grants.gov by visiting the USDA SBIR funding opportunity page at <http://www.csrees.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 in PDF.

Applications that do not follow the guidelines in section 3.0 of this program solicitation are not eligible to be considered for a Phase II SBIR award and 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 2008 Applications submitted to USDA SBIR must be submitted electronically through 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@csrees.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 6, 2008, 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

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

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

Current Research Information Center (CRIS)
USDA/CSREES/ISTM
1400 Independence Ave., S.W.
Stop 2270
Washington, D.C. 20250
<http://cris.csrees.usda.gov>

Regional Technology Transfer Centers

Far West
University of Southern California
3716 South Hope Street, Suite 200
Los Angeles, CA 90007-4344
(213) 743-2353
www.usc.edu/dept/engineering/TTC

TECC - the Technology Commercialization
Center
144 Research Drive
Hampton, VA 23666
(757) 766-9200
Fax (757) 766-2402
www.teccenter.org

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

Northeast
Center for Technology Commercialization
1400 Computer Drive
Westborough, MA 01581-5043
(508) 870-0042
www.ctc.org

Midwest
Great Lakes Industrial Technology Center
25000 Great Northern Corporate Center
Suite 260
Cleveland, OH 44070
(216) 734-0094
www.glitec.org

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

Mid-Atlantic

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.

Please note that the “Industrial Applications” topic area is now called Biofuels and Biobased Products.

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 7(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 7(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@csrees.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. William Goldner, National Program Leader for SBIR Plant Production and Protection may be contacted at wgoldner@csrees.usda.gov or (202) 401-1719 regarding questions about the suitability of research topics or to arrange a telephone consultation.

8.3 Animal Production and Protection

Dr. Peter Burfening, National Program Leader for SBIR Animal Production and Protection may be contacted at pburfening@csrees.usda.gov or (202) 401-5823 regarding questions about the suitability of research topics or to arrange a telephone consultation.

8.4 Soil and Water Resources

Dr. Charles Cleland, National Program Leader for SBIR Soil and Water Resources may be contacted at ccleland@csrees.usda.gov or (202) 401-6852 regarding questions about the suitability of research topics or to arrange a telephone consultation.

8.5 Food Science and Nutrition

Dr. Dionne Toombs, National Program Leader for SBIR Food Science and Nutrition may be contacted at dtoombs@csrees.usda.gov or (202) 401-2138 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@csrees.usda.gov or (202) 720-7536 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@csrees.usda.gov or (202) 401-6852 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@csrees.usda.gov or (202) 401-1719 regarding questions about the suitability of research topics or to arrange a telephone consultation.

8.9 Marketing and Trade

Dr. Siva Sureshwaran, National Program Leader for SBIR Marketing and Trade may be contacted at ssureshwaran@csrees.usda.gov or (202) 720-7536 regarding questions about the suitability of research topics or to arrange a telephone consultation.

8.11 Animal Manure Management

Dr. Richard Hegg, National Program Leader for SBIR Animal Manure Management may be contacted at rhegg@csrees.usda.gov or (202) 401-6550 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@csrees.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@csrees.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.csrees.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.**

10. 0 SAMPLE APPLICATIONS FROM USDA SBIR SOLICITATION

These applications, which resulted in Phase II awards, were submitted under previous USDA SBIR Program Solicitation guidelines. As such, these applications do not accurately reflect the current format nor the forms and attachments that are required for submission through Grants.gov. These sample applications are provided solely for general guidance. In the original application, the cover page was signed by both the project director and authorized organizational representative. Social security numbers, budgets and some material containing biographical information have been deleted to protect confidentiality.

Visit the web to see the sample applications available only in PDF version at:
www.csrees.usda.gov/funding/sbir/sbir_sample.html