Agriculture and Food Research Initiative Sustainable Bioenergy Competitive Grants Program

MODIFICATIONS: This RFA has been modified on January 24, 2013. Changes are noted in red type on pages 15, 18 and 44.

2013 Request for Applications

APPLICATION DEADLINE: April 3, 2013

U.S. Department of Agriculture
National Institute of Food and Agriculture

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

AGRICULTURE AND FOOD RESEARCH INITIATIVE
COMPETITIVE GRANTS PROGRAM
SUSTAINABLE BIOENERGY CHALLENGE AREA

INITIAL ANNOUNCEMENT

CATALOG OF FEDERAL DOMESTIC ASSISTANCE: This program is listed in the Catalog of Federal Domestic Assistance under 10.310**.**

DATES: A Letter of Intent (LOI) must be submitted (applications for conference grants are excluded) by 5:00 p.m. Eastern Time (ET) on January 28, 2013 (see Part IV D.1). A LOI is a prerequisite to submission of an application (conference grants is the exception). Applications must be received by close of business (COB) on **April 3, 2013 (5:00 p.m. Eastern Time)**. Applications received after this deadline will normally not be considered for funding. Comments regarding this request for applications (RFA) are requested within six months from the issuance of this notice. Comments received after that date will be considered to the extent practicable.

STAKEHOLDER INPUT: The National Institute of Food and Agriculture (NIFA) is requesting comments regarding this RFA from any interested party. These comments will be considered in the development of the next RFA for the program, if applicable, and will be used to meet the requirements of section 103(c)(2) of the Agricultural Research, Extension, and Education Reform Act of 1998 (7 U.S.C. 7613(c)(2)). This section requires the Secretary to solicit and consider input on a current RFA from persons who conduct or use agricultural research, education and extension for use in formulating future RFAs for competitive programs. Written stakeholder comments on this RFA should be submitted in accordance with the deadline set forth in the DATES portion of this Notice.

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

EXECUTIVE SUMMARY: NIFA anticipates that grant funds will be available and requests applications for the **Agriculture and Food Research Initiative Sustainable Bioenergy Competitive Grants Program (AFRI-SBE)** for fiscal year (FY) 2013. The U.S. Department of Agriculture (USDA) established the Agriculture and Food Research Initiative (AFRI) under which the Secretary of Agriculture may make competitive grants for fundamental and applied research, education, and extension to address food and agricultural sciences (as defined under section 1404 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (NARETPA) (7 U.S.C. 3103)), as amended, in six priority areas. In the Sustainable Bioenergy

Challenge Area, specific program areas are designed to achieve the long term outcome of reducing the National dependence on foreign oil through the production of regionally appropriate sustainable bioenergy systems.

The amount available for support of this program in FY 2013 is approximately $10 million to support new awards within the Sustainable Bioenergy Challenge Area within AFRI. This RFA is being released prior to the passage of an Appropriations Act for fiscal year (FY) 2013. Enactment of Continuing Resolutions or an Appropriations Act may affect the overall level of funding for the AFRI program.

This notice identifies the objectives for AFRI-SBE projects, the eligibility criteria for projects and applicants, and the application forms and associated instructions needed to apply for an AFRI-SBE grant. NIFA additionally requests stakeholder input from any interested party for use in the development of the next RFA for this program.

Project types supported by AFRI within this Challenge Area will propose single-function Research Projects, multi-function Integrated Research, Education, and/or Extension Projects, and Food and Agricultural Science Enhancement (FASE) Grants. This RFA identifies research and integrated program objectives, eligibility criteria, and matching requirements for each project type.

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PART I—FUNDING OPPORTUNITY DESCRIPTION

A. Legislative Authority and Background

Section 7406 of the Food, Conservation, and Energy Act of 2008 (FCEA) (Pub. L. 110-246) amends section 2(b) of the Competitive, Special, and Facilities Research Grant Act (7 U.S.C. 450i(b)) to authorize the Secretary of Agriculture to establish the Agriculture and Food Research Initiative (AFRI); a competitive grant program to provide funding for fundamental and applied research, education, and extension to address food and agricultural sciences. Grants shall be awarded to address priorities in United States agriculture in the following areas:

1. Plant health and production and plant products;
2. Animal health and production and animal products;
3. Food safety, nutrition, and health;
4. Renewable energy, natural resources, and environment;
5. Agriculture systems and technology; and
6. Agriculture economics and rural communities.

To the maximum extent practicable, the National Institute of Food and Agriculture (NIFA), in coordination with the Under Secretary for Research, Education, and Economics (REE), will make grants for high priority research, education, and extension, taking into consideration, when available, the determinations made by the National Agricultural Research, Extension, Education, and Economics Advisory Board (NAREEEAB) pursuant to section 2(b)(10) of the Competitive, Special, and Facilities Research Grant Act (7 U.S.C. 450i(b)(10)), as amended. The authority to carry out this program has been delegated to NIFA through the Under Secretary for REE.

B. Purpose and Priorities

The purpose of AFRI is to support research, education, and extension work by awarding grants that address key problems of national, regional, and multi-state importance in sustaining all components of agriculture, including farm efficiency and profitability, ranching, renewable energy, forestry (both urban and agroforestry), aquaculture, rural communities and entrepreneurship, human nutrition, food safety, biotechnology, and conventional breeding. Through this support, AFRI advances knowledge in both fundamental and applied sciences important to agriculture. It also allows AFRI to support education and extension activities that deliver science-based knowledge to people, allowing them to make informed practical decisions. This AFRI RFA is announcing anticipated funding opportunities for fundamental research, applied research, and integrated research, education, and extension projects.

Supporting the many components of agriculture under the demands of a growing population, pressure on natural resources, and the challenges of climate variability and change, requires research, education, extension, and integrated programs that increase agricultural and natural resource sustainability. The term "sustainable agriculture" (NARETPA, 7 U.S.C. 3103) means an integrated system of plant and animal production practices having a site-specific application that will over the long-term achieve the following goals: 1) Satisfy human food and fiber needs; 2) Enhance environmental quality and the natural resource base upon which the agriculture economy depends; 3) Make the most efficient use of nonrenewable resources and on-farm

resources and integrate, where appropriate, natural biological cycles and controls; 4) Sustain the economic viability of farm operations; and 5) Enhance the quality of life for farmers and society as a whole.

The National Research Council Committee on Twenty-First Century Systems Agriculture recently updated and simplified this definition as a four-part goal: satisfy human food, feed, and fiber needs and contribute to biofuel needs; enhance environmental quality and the resource base; sustain the economic viability of agriculture; and enhance the quality of life for farmers, farm workers, and society as a whole. The Committee states that progress toward these goals will require robust systems which adapt to and continue to function in the face of stresses, are productive, use resources efficiently, and balance all four goals across all scales of farms and enterprises. They further state that if the U.S. is to maintain adequate resources to meet food, feed, fiber, and biofuel needs, progress toward meeting the four goals must be accelerated. This acceleration must be based on research that determines ways to reduce tradeoffs and enhance synergies among the four goals while managing risks associated with their pursuit. The Committee's 2010 report, *Toward Sustainable Agricultural Systems in the 21st Century*, provides a review of the contributions of farming practices and systems and fields of science that elaborates on these general goals with respect to many of the specific priorities within AFRI programs.

AFRI is intended to promote advances in U.S. agriculture and forestry. Agriculture, however, is increasingly worldwide in scope and reach. To attain AFRI's goals for U.S. agriculture, applicants to Foundational or Challenge Area RFAs may include international partnerships or engagement in proposals as appropriate. Applicants are asked to keep in mind that while international activities supported by AFRI may contribute to global food security as described in the U.S. Government's Feed the Future global food security initiative (www.feedthefuture.gov), any international activity proposed under AFRI such as partnerships, exchanges, training, trips, etc., must first and foremost support AFRI's domestic program goals. Applicants must clearly describe and demonstrate how international activities proposed in applications submitted to AFRI will contribute to and support advances in American agriculture.

If international activities (*e.g.*, partnerships, exchanges, travel, etc.) are proposed, then applicants shall describe indicators that will be used to assess those activities.

AFRI Stakeholder Input

The programs described herein were developed within the context of the authorized purposes of USDA research, extension, and education projects and activities. In addition, AFRI obtains input from Congress, the NAREEEAB, as well as many university, scientific, and agricultural committees and organizations. NIFA developed a stakeholder's Web page (www.nifa.usda.gov/business/reporting/stakeholder.html) to document stakeholder input that is considered when developing and updating Program Area Descriptions and Priorities each year.

The AFRI program was significantly restructured and refocused in FY 2010 to more effectively address societal challenges while continuing to support foundational agricultural science. A public meeting was held on June 2, 2010, to seek stakeholder comment on the FY 2010 AFRI RFAs prior to revising them for FY 2011. NIFA once again solicited stakeholder input via a

public meeting and 12 program-specific webinars. The public meeting was held on February 22, 2012 and the webinars were held during the months of March and April 2012. NIFA received more than 145 comments from stakeholders, including a wide range of scientific societies, producer associations, universities and other research organizations, policy and advocacy groups, non-profit organizations, and leading scientists in the field of agriculture and food sciences. Collectively, the non-governmental organizations represent over 300,000 stakeholders of interest. A comprehensive analysis was conducted of the written and oral stakeholder input comments received. Categorically, these comments can be clustered into the following: Production Agriculture; Food Safety; Energy, Environment, Natural Resources, and Rural Communities; Bioengineering, Biochemistry, and Plant Health; Health and Obesity; Grantmaking; and Animal Agriculture and Aquaculture.

In general, the broad range of AFRI stakeholders provided overwhelming support for NIFA and the AFRI program. During the in-person stakeholder listening session, 100 percent of the speakers expressed their appreciation for the event and the opportunity to participate. It should be noted that hundreds of e-mails were received from stakeholders indicating their regrets of not being able to attend due to other commitments, the short notification, and lack of financial resources. Overall, stakeholders applauded NIFA for expending the time, effort, and resources to facilitate sessions designed to obtain their feedback, comments, and being responsive to stakeholder input. In addition, almost ten percent of the stakeholders specifically expressed their gratitude for the Administration, USDA, and NIFA's request for an increase in funding for the AFRI program in the FY 2013 budget. Moreover, many supported full funding of the AFRI program to the level indicated in the 2008 Farm Bill. Stakeholders with current and past AFRI projects expressed their appreciation of the goals and mission of the AFRI program. The stakeholders applauded NIFA for its courage and leadership in taking on the diverse of global agricultural and food science issues. In addition, a significant proportion of the stakeholders, 40 percent, expressed in great detail the level of their gratitude of AFRI as a funding source, the competitive grants process, efforts to ensure that AFRI Challenge Area RFAs include basic research and relevant scientific disciplines. Lastly, stakeholders articulated their support for NIFA's partnership initiatives including inter-agency and public-private.

Stakeholders expressed concern regarding NIFA's compliance with AFRI authorizing language, the scientifically confining aspects of the RFAs, the funding amount and allocations between the foundational and challenge areas, the benefit and efficacy of Coordinated Agricultural Project (CAP) grants, and the overall AFRI program/project types that are under/not funded. Stakeholders expressed specific trepidation regarding the eligibility criteria for integrated projects that excludes entities beyond colleges and universities as primary recipients. Also, Stakeholders felt that the funding level of the Foundational Program was inadequate and indicated support of an allocation level of up to 50 percent of the AFRI appropriation for that part of the program. Other stakeholders provided input regarding specific AFRI set-aside amounts for program/projects, e.g. organic, classical breeding, water, and bio-technology. Overall, 30 percent of stakeholders expressed concern that CAP grants are too large. While many of the stakeholders expressed an understanding of the concept and benefit of CAP grants to long-term, interdisciplinary, scientific research, stakeholders encouraged NIFA to reconsider and balance the portfolio and funds attributed to these types of projects. Additionally, stakeholders expressed concerns regarding the overall AFRI program as it pertains to decisions that eliminate

and/or suppress investigator, hypothesis-driven scientific discovery, junior faculty award success rates, qualified and diverse panel reviewers, and a disconnect between industry and higher education scientific research.

Stakeholders provided an abundance of recommendations that are proactive and designed to have immediate, beneficial outcomes. The recommendations included the need for NIFA to define its agricultural identity among the federal agencies, improvements to the AFRI Program, current and future investments, and the development of RFAs. Some stakeholders indicated that NIFA was duplicative and/or undistinguishable in its research efforts associated with other federal agencies. However, they were supportive of the need and benefit of leveraging limited resources through inter-agency partnerships. Stakeholders expressed the need for more, smaller innovative awards in the amount of $1 million dollars and restricting the range of CAP awards to $10-20 million. Lastly, the recommendations regarding RFAs included expanding and/or clarifying the restrictive language, allowing adequate time to prepare a responsive, comprehensive proposal, systematic and consistent publishing, and associating the request for information to match the size of the award.

In response to the comments received, NIFA will take several actions. The AFRI program will undergo a rigorous external evaluation during the next 24 months to examine a number of issues around NIFA's administration of the program and to assess the quality of the work being supported. Based on the recommendations of the evaluation, as well as comments from stakeholders, NIFA will make changes to program offerings, make adjustments to award sizes, and reconsider the distribution of funds between Challenge Areas and the Foundational Program. The rate at which these changes will occur will depend, in part, on available funding.

NIFA understands that some stakeholders are concerned about priority limitations identified in the AFRI RFAs. NIFA has focused on making critical but essential decisions regarding the scientific reach and impact for each RFA that is published. These decisions included the identification of five Challenge Areas that are relevant and consistent with the priority areas identified in the AFRI legislation. Moreover, these decisions are guided by the National Agricultural Research, Extension, Education, and Economics Advisory Board, USDA Strategic Plan, the Research, Education, and Economics Action Plan, NIFA Strategic Plan, pertinent industry-related scientific reports, and stakeholder input. In the end, the RFAs reflect a comprehensive, consultative document to address the collective needs of specific scientific issues that notably impact America's agricultural and food system.

Within the stakeholder community, there is a fair amount of concern regarding NIFA's agricultural identity among the federal agencies, specifically as it applies to addressing childhood obesity prevention. NIFA emphasizes the role of foods and whole diets in the prevention of chronic degenerative diseases, while the National Institute of Health, in general addresses therapeutic aspects. Successful applications to AFRI must align with the USDA and NIFA mission, Strategic Plans, and goals. Moreover, the existing REE Action Plan encourages the formal and informal collaboration with other USDA and Federal agencies, as well as public and private partners. The focus of these partnerships is on a national and international level to ensure our research, education, and extension activities are representative of current priorities and take advantage of existing knowledge.

NIFA acknowledges the level of concern that exists within a portion of the stakeholder community regarding entities eligible to submit applications for integrated projects. Eligibility for all NIFA programs is established in authorizing legislation. Eligibility to apply to the AFRI program was established in the 2008 Farm and NIFA has adhered to that requirement. Applicants not eligible to directly apply are encouraged to partner with eligible institutions. In addition, NIFA remains committed to engaging small, mid-sized and minority-serving institutions and young scientists in all of its programs. To ensure their participation in AFRI we offer Food and Agriculture Science Enhancement (FASE) grants within all program areas. FASE gives special funding consideration to applications from qualifying schools for even the largest grants, and sets aside 10 percent of AFRI funding for this purpose. FASE-eligible schools are those with enrollments of fewer than 17,500 students, minority-serving institutions, and those in EPSCoR states (see Part II, D, 4, c, 2). In addition, AFRI gives special consideration to new faculty with fewer than five years of experience, and offers pre- and post-doctoral fellowships to encourage young scientists to engage in agricultural science.

Sustainable Bioenergy Challenge Area Stakeholder Input

A public meeting was held on February 2, 2012, and a Sustainable Bioenergy Challenge Area webinar on April 18, 2012, along with written comments, to seek stakeholder comment on the FY 2010 and FY 2012 Sustainable Bioenergy Challenge Area RFAs prior to revising them for FY 2013. The NIFA Sustainable Bioenergy Challenge Area received more than 65 comments from stakeholders, including a wide range of scientific societies, commodity groups, colleges and universities, other research organizations, non-profit organizations, and individuals.

In general, stakeholders congratulated NIFA for its focus on societal challenges, including the Sustainable Bioenergy Challenge Area, which is expected to increase the visibility and effectiveness of agricultural science for the nation. They appreciated the larger grants offered through the challenge areas RFAs, which are critical for achieving measurable outcomes in these important challenge areas. Stakeholders agreed that large, inter-disciplinary teams are necessary to successfully carry out the research, education, and Extension work needed to address the challenge areas. However, they also made it clear that it was difficult to build these teams given the relatively short application deadlines established in FY 2010 and continued in FY 2012. In response, assuming a timely release of the RFA, the FY 2013 RFA will provide a minimum of 3 months after the acceptance of a letter of intent before the program deadline. Moreover, since the FY 2013 awards will be much smaller, the program expects the teams will be smaller and more facile in organizing themselves.

Stakeholders also expressed concern that newer faculty and smaller institutions, in particular, would find it difficult to compete successfully for these larger grants. In addition, stakeholders observed that the challenge area RFAs provided few opportunities for investigator-initiated projects by small teams or single investigators. The FY 2013 RFA will support applications by individual investigators and small teams for research projects that fill critical gaps in knowledge needed to make sustainable bioenergy systems successful.

Several stakeholders pointed out areas of investigation that are important in relation to sustainable feedstock production that have previously been supported by AFRI and currently

represent a significant investment by AFRI or are supported by other programs. This includes Biochar fate and effects, genomics of feedstocks, biotechnology approaches, life-cycle assessments for sustainability, education, and worker safety.

Other stakeholders called attention to the importance of energy conservation and renewable solar and wind-based energy production. As part of the coordination of energy programs with the USDA-DOE Energy Council, the roles of USDA and DOE have been established in these areas. DOE's Division of Energy Efficiency and Renewable Energy has the lead in research, education, and Extension activities related to wind and solar energy and energy efficiency/conservation. USDA's role in the areas of energy efficiency/conservation and the production of wind and solar energy is with the socioeconomic aspects of renewable energy for ranches, farms, and rural communities. This socioeconomic research will be supported in the broad aspects of the AFRI foundational RFA and was supported previously in the FY 2012 Sustainable Bioenergy Challenge Area RFA.

Some stakeholders called for AFRI to support work with animal waste and byproducts that have been shown to be convertible to biofuels; they asked why it was excluded from the AFRI priorities. Animal waste and byproducts for biofuel production were excluded from the earlier AFRI RFAs for two reasons: 1) these technologies are mature and supported by other programs in NIFA (the Biomass Research and Development Initiative has recently made a grant for a manure digester project) and elsewhere (USDA-Rural Development with loans and grants) and 2) this resource is not large enough to help meet national goals for drop-in biofuels, which is the goal of the AFRI program. In addition, in the case of waste digesters, this is problematic since these feedstocks are more suited to the generation of heat and power.

Many pointed out the need for investment in classical breeding, which applies to sustainable bioenergy feedstocks. The first research priority in the FY 2013 RFA is bioenergy crop development. This includes breeding and phenomics research to validate the information from genomic, metabolomic, and proteomic studies. Specific attention would be called to the development of automated systems to study phenomics in the field and evaluate root performance and structure informing the classical plant breeding path to cultivar development.

Comments relevant to each Challenge Area RFA and the Foundational Program RFA will be published in those RFAs, along with NIFA's responses to those comments.

Sustainable Bioenergy Challenge Area Background:
AFRI is one of NIFA's major programs through which to address critical societal issues such as those laid out in the *New Biology for the 21st Century: Ensuring the United States Leads the Coming Revolution* report. USDA leadership has integrated the six AFRI priority areas (outlined in Part I, A) with the four challenges and the approach laid out in the "New Biology for the 21st Century" report to identify five primary challenge areas around which to structure the AFRI program and begin to focus the Department's investment in enabling an integrated approach to biological research, education, and extension. USDA science will support the following challenges:

1. Keep American agriculture competitive while ending world hunger

2. Improve nutrition and end child obesity
3. Improve food safety for all Americans
4. Secure America's energy future
5. Mitigate and adapt to climate change

In FY 2010, NIFA released several AFRI RFAs to address these challenges at a meaningful scale and to achieve outcomes of relevance to the societal challenges. These RFAs addressed each of the five challenges, enabled transition and refocused grants made previously under AFRI, and provided pre- and postdoctoral fellowship opportunities. These RFAs solicited applications for larger awards for longer periods of time to enable greater collaboration among institutions and organizations and integration of basic and applied research with deliberate education and extension programs.

Moving ahead AFRI will solicit projects addressing the above challenges through five separate challenge area RFAs, each addressing one of the challenges. AFRI will also support Research and Integrated Project grants in the six AFRI priority areas to continue building a foundation of knowledge in fundamental and applied food and agricultural sciences critical for solving current and future societal challenges.

The Sustainable Bioenergy Challenge Area RFA focuses on the societal challenge to secure America's energy future. In the Sustainable Bioenergy Challenge Area RFA, specific program areas are designed to achieve the long-term outcome of reducing the national dependence on foreign oil through the production of sustainable bioenergy. Project types supported by AFRI within this RFA include single-function research, multi-function integrated research, education, and/or Extension projects, and FASE grants.

Other sources of NIFA funding for work relevant to the Sustainable Bioenergy Challenge Area include:

- *Biomass Research and Development Initiative* (joint with DOE): Information will be made available through the NIFA and DOE websites
- *Plant Feedstock Genomics for Bioenergy* (joint with DOE): Information is available at www.nifa.usda.gov/fo/plantfeedstock.cfm
- *Small Business Innovation Research:* Information is available at www.nifa.usda.gov/fo/sbir.cfm
- *AFRI Agricultural and Natural Resources Science for Climate Variability and Change Challenge Area*: Information is available at www.nifa.usda.gov/afri
- *AFRI Food Security Challenge Area*: Information is available at www.nifa.usda.gov/afri
- *AFRI Foundational Program for Plant Health and Production and Plant Products:* Information is available at www.nifa.usda.gov/afri
- *Critical Agricultural Materials*: Information is available at www.nifa.usda.gov/fo/criticalagmaterials.cfm

Applications are being solicited for under the following areas:

(1) CAP: Development and Sustainable Production of Regionally-appropriate Biomass Feedstocks.

(2) Sustainable Bioenergy Research: Impacts of Regional Bioenergy Systems on Water Availability and Quality.

C. Program Area Description

Background

The AFRI Sustainable Bioenergy Program will fund grants that target vital topical areas related to the development of regional systems for the sustainable production of bioenergy, biopower, and biobased products. These programs will, where appropriate, align with existing Regional Bioenergy CAPs to promote NIFA's goal and mission of economic, environmental, and rural community sustainability. More information about the SBE-CAP projects is available at http://www.csrees.usda.gov/nea/plants/pdfs/2012_sustainable_bio_ag_projects_facts.pdf

Demand for biomass continues to increase as additional targets for heat, transportation fuels, power, and biobased products are met. Current policies are designed to provide agricultural support, rural enhancement, reduce dependence on foreign sources of energy, climate change mitigation/adaptation, and environmental sustainability. New policies will need to take into full account associated risks/uncertainties and unintended consequences of feedstock production systems on natural resource and ecosystem service sustainability. Research is not well developed around the implications of current and alternative regulatory policies; fuel and portfolio standards; market distorting and other production subsidies; tax credits; and agricultural assistance programs on both bioenergy and agricultural markets and production decisions, which are subject to further evaluations of environmental and other indirect effects.

To meet these identified needs, the long-term outcome for this program is to implement regional systems that materially deliver liquid transportation biofuels to help meet the Energy Independence and Security Act (EISA) of 2007 goal of 36 billion gallons/year of biofuels by 2022, reduce the national dependence on foreign oil, and, as appropriate, produce biopower and biobased products. Projects are expected to employ a systems approach to address the stated program area priorities that collectively contribute to the achievement of the following goals:

1. Deployment of superior genotypes of regionally-appropriate dedicated energy crops;
2. Refinement and implementation of sustainable regional feedstock production practice;
3. Effective and efficient logistical technologies for the biomass;
4. Scalable, sustainable conversion technologies that can accept a diverse range of feedstocks;
5. Regional marketing and distribution systems;
6. Regional sustainability analyses, data collection and management, and tools to support decision-making; and
7. A well trained workforce with the capacity to fill the cross-disciplinary needs of the biofuels industry.

In FY 2010, NIFA solicited for the establishment of five Regional Bioenergy CAPs that would focus on dedicated energy crops, including energy cane, perennial grasses, sorghum, woody biomass, and oil crops (oilseeds and algae). These sustainable crops serve as feedstocks for the production of advanced non-ethanol, infrastructure-compatible fuels and biobased products through a systems-oriented approach that links feedstock development, production, logistics, conversion, and markets. NIFA supports programs that are trans-disciplinary and integrate genetic crop development; sustainable agronomic and silvicultural practices; pest and beneficial species management; coordinated energy-efficient logistics; flexible, scalable, and sustainable conversion and refining technologies; effective marketing and distribution systems; and provide sustainable ecosystem services and rural community prosperity. In FY 2012, NIFA supported a Regional Bioenergy CAP that focused on the production and delivery of Regionally Sustainable Biomass Feedstocks. For FY 2013, NIFA will support a Regional Bioenergy CAP that focuses on the production and delivery of regionally sustainable biomass feedstocks. While the focus will be on feedstocks, competitive proposals will present their feedstock development and production concepts in the context of a complete regional supply chain.

The FY 2010 and 2012 Requests for Applications received valuable stakeholder input to help achieve program goals and to identify the specific areas of research for FY 2013 and program priorities for the next 3 years. These topics increase NIFA's pursuit of sustainability by focusing on how energy crops can improve water efficiency in agriculture, feedstock development, and adding value to agriculture by integrating bioenergy crops and products into local and regional economies. Each topic has strong ties to the environment, economic efficiency, and rural community life. Topics are important to achieving national goals and may span borders to create the potential for international collaboration and learning. These topic areas incorporate Departmental Goal 1, Objective 1.1, Pillar 2 for facilitation of sustainable renewable energy development to enhance rural prosperity, and REE Action Plan Goal 2, Subgoal 2B, to respond to climate and energy needs. Our goal is to ensure energy independence through clean biobased energy systems. While new funding opportunities to address program goals are anticipated for future years, these opportunities will be contingent on funding available to NIFA for this purpose.

The Program Area for 2013 primarily addresses the 2008 Farm Bill AFRI Priority Area on Renewable Energy, Natural Resources and Environment, primarily the Sub-Priority on sustainable production systems, but also the Sub-Priorities on fundamental structures and functions of ecosystems, forestry, and on minimizing soil and water losses and sustaining surface and ground water quality. Priorities in this Program Area also address the Priority on Plant Health Production and Plant Products, Sub-Priorities on crop plant responses to environmental stresses, conventional breeding and industrial uses; the Priority on Agriculture Systems and Technology, Sub-Priorities on new uses, risk management, water quality and management; and the Priority on Agriculture Economics and Rural Communities, Sub-Priorities on farm efficiency and competitiveness of small and medium sized farms, new decision tools for farm and market systems, technology application and new approaches to rural development.

In FY 2013 there will be two priorities: 1) Development and Sustainable Production of Regionally-appropriate Biomass Feedstocks and 2) Impacts of Regional Bioenergy Systems on Water Availability and Quality.

In FY 2014 there will be three priorities: 1) Development and Sustainable Production of Regionally-appropriate Biomass Feedstocks; 2) Regional Bioenergy Feedstock Crop Development: Evaluating Phenotypes by Informatics, Marker-Aided Selection, and Classical Breeding Systems; and 3) Feedstock Conversion.

In FY 2015 there will be three priorities: 1) Development and Sustainable Production of Regionally-appropriate Biomass Feedstocks, 2) Integrating Regional Bioenergy Systems with Existing Crop and Animal Production Systems, and 3) Feedstock Logistics.

Description
Sustainable Bioenergy Integrated Research

Program Name – *Development and Sustainable Production of Regionally-appropriate Biomass Feedstocks*
Program Code – A6101
Program Area email for Submission of Letter of Intent – bioenres@nifa.usda.gov
Letter of Intent Deadline – January 28, 2013 (5 p.m., e.t.), see Part IV, A for instructions
Application Deadline – April 3, 2013 (5 p.m., e.t.)
Proposed Budget Requests –

- Regional Coordinated Agricultural Project (CAP) **Grants must not exceed $2 million per year ($10 million total, including indirect costs) for project periods of up to 5 years.** Program anticipates making one award in FY 2013.
- Conference and FASE Grants must adhere to the guidelines outlined in the Part II, section D.
- If a project is funded, beginning in the first year of funding, the project director must attend annual investigator meetings for the duration of the award (excluding Conference, Sabbatical, and Equipment Grant applications). Seed Grant awardees must attend beginning in the second year of funding. Reasonable travel expenses should be included as part of the project budget.
- Requests exceeding the budgetary guidelines will not be reviewed.

Requested Project Type – Integrated Projects
Requested Grant Types – Regional CAP, Conference, and FASE Grants
Program Area Contacts – Dr. William Goldner (202-401-1719 or wgoldner@nifa.usda.gov)

Program Area Priority – Applicants must address the following priority:
Present a coordinated plan for developing a regional approach for feedstock development, production, and delivery to ensure the sustainable production of biomass to be used for conversion to advanced liquid transportation fuels and, if appropriate, biopower and biobased products. These systems should have net positive social, environmental, and rural economic impacts and be specifically targeted to an industrial partner or platform. It is expected that the Regional Feedstock CAP will network with and leverage existing efforts within USDA; university research, education, and Extension; other federal agencies; and the private sector by taking multidisciplinary and transdisciplinary approaches.

Other Program Area Requirements:

- All applications must adhere to the requirements beginning in see Part IV
- Applications must include at least two of three functions of the agricultural knowledge system (research, education, and Extension). Each function should be represented by one or more objectives within the application.
- We strongly encourage applications from and collaborations with minority-serving institutions.
- Information about previously awarded CAP projects is available on the following web page under the heading, Applicant Resources: http://www.nifa.usda.gov/nea/plants/sustainable_bioenergy.html
- This program focuses on the development of sustainable production and delivery systems around five groups of dedicated energy feedstocks: Energycane, perennial grasses, sorghum, woody biomass, and oilseed crops. For this solicitation, projects targeting algae are not eligible given that recently awarded grants from the Department of Energy have strongly supported algae. Certain specific woody biomass feedstocks are also not eligible given that recent awards from NIFA have strongly supported work in this area, including; western species of Abies, Alnus, Larix, Picea, Populus, Pseudotsuga, and Tsuga, except within the context of insect-killed trees (see below). The regional CAP should focus on one or more feedstocks as regionally appropriate. These systems should focus on producing the feedstock in areas with high net primary production; where inputs, such as water and fertilizer, are at their minimum; and where land is available that will not displace existing productive agricultural sectors or harm existing rural economics or environmental conditions. Applicants may determine what area comprises a region.
  Projects addressing the following feedstocks are strongly encouraged:
  - **Southern pines**
  - **Oilseed crops that may be grown separately or in rotation with major row crops (for example, in the upper Midwest or inland Pacific Northwest)**
  - **Pinion/Juniper forest material in the West**
  - **Insect-killed trees in the West (including Western conifers)**
- During the course of the project, primary data from agricultural and industrial operations for performance assessment (e.g., life cycle material and energy inputs, outputs, impacts, and costs, etc.) must be submitted online to the National Agricultural Library's (NAL) LCA Digital Commons. The LCA Digital Commons will ultimately provide a place for grantees to upload data that the grantee might use in preparing Life-Cycle Assessments, including material and energy flows, impacts, and costs of agricultural and industrial processes related to bioenergy and material production (e.g., agricultural chemical production, agronomy, logistics, and industrial operations), as well as guidelines and tools for preparing data and meta data in the EcoSpold format. NAL's LCA Digital Commons, described briefly at http://www.lcacommons.gov/, will become available to receive data by the end of 2013. Life-Cycle Inventory data must be submitted within 2 years of the proposed project termination date. This requirement may be waived NAL's LCA Digital Commons is not available for any reason.
- The project will also work to coordinate (harmonize) data parameters and sustainability indicators with the existing CAPs and other NIFA projects. The Global Bioenergy Partnership (GBEP) indicators, with some modification, may become the accepted norm

for AFRI Sustainable Bioenergy projects. The awarded project will receive guidance from the AFRI program staff.

- Applicants are encouraged to consider developing approaches, practices, and technologies that allow small and medium-size landowners to participate and contribute to the regional feedstock system.
- Transdisciplinary studies that incorporate social, behavioral, and biological/chemical/physical sciences into comprehensive study designs at an accelerated rate are highly desired, as is involving stakeholders at the outset of the project.
- Education activities should:
  - Develop human capital relevant to program goals;
  - Train students for associate, baccalaureate, master's or doctoral degrees; and/or prepare K-12 teachers and higher education faculty;
  - Synthesize and incorporate a wide range of the latest relevant research results for outreach materials; and
  - Lead to measurable, documented changes in learning, actions, or conditions in an identified audience or stakeholder group.
- Extension activities should:
  - Conduct programs and activities that deliver science-based knowledge and informal educational programs to people, enabling them to make informed decisions;
  - Include program delivery that may range from community-based to national and from face-to-face to electronic or combinations thereof;
  - Synthesize and incorporate a wide range of the latest relevant research results; and
  - Lead to measurable, documented changes in learning, actions, or conditions in an identified audience or stakeholder group.
  - **AFRI-SBE** encourages projects develop content and programs suitable for delivery through the Cooperative Extension System's eXtension Initiative. Funds may be used to contribute to existing Communities of Practice (COP) such as the Plant Breeding and Genomics COP, or to form a new COP focused on content relevant to sustainable bioenergy systems and water resource management. Projects must align with the eXtension vision, mission, and values. A letter of acknowledgement from eXtension is required and a letter of support may be required from one or more of the COPs if contributing to existing COPs. For detailed guidance on how to partner with eXtension, go to http://create.extension.org/node/2057.

- The Regional CAP supported under this RFA must direct integrated research, education, and/or Extension activities to the biomass supply chain segments where USDA has a lead national role. Feedstock conversion research is being supported by the Department of Energy and not requested in this NIFA AFRI priority area. However, **applicants must document partnerships with an end-user who anticipates a sustainable supply of feedstock to ensure that feedstock development and production are well-aligned with appropriate conversion technologies**. The following descriptions highlight aspects of the biomass supply chain segments that applicants must address:
  Feedstock Development: Optimize yields and allow for reduced inputs.
    - Maximize the range of feedstock phenotypes, through advanced genomics, breeding, and systems integration.

- Increase the geographic range where dedicated feedstocks may be grown with high yields and low inputs.
- Maximize year-around photosynthetic efficiency and net carbon fixation.
- Minimize water usage and nutrient, pesticide, and herbicide inputs through genetic improvement.

Sustainable Feedstock Production Systems: Optimize yields with minimal environmental impact.

- Identify management practices that minimize water usage and nutrient, pesticide, and herbicide inputs.
- Evaluate (from field-to-watershed scales) impacts of bioenergy feedstock production on food, feed, or fiber production and identify strategies to minimize adverse impacts.
- Optimize agronomics, cropping systems, and silviculture.

Feedstock Logistics: Develop equipment with the scale and efficiency required for sustainable biomass production.

- Harvest and collection – Operations to acquire biomass from the point of origin and move it to a storage or queuing location. Examples include cutting, harvesting, collecting, hauling, and (often) some form of densification, such as baling or bundling.
- Storage – Operations essential for holding biomass material in a stable form until preprocessing or transport to the processing facility. Storage could be at locations near the harvesting areas, at the industrial facility, or both.
- Preprocessing – Processes that physically, chemically, or biologically transform biomass into a state more suitable for transport or for product conversion. Examples include densification, thermochemical processing, grinding, drying, chemically treating, ensiling, fractionating, and blending.
- Transportation – Movement of biomass through the logistics system from harvest and collection to the processing facility. Biomass transport options are generally constrained to existing transportation infrastructure, such as truck, rail, barge, or pipeline. Develop new transportation technology including improved containers and lighter vehicles to reduce truck traffic and transportation costs, reduce impact on roads and bridges, and reduce undesirable social impacts.
- Health and Safety issues as they pertain to new systems integration and equipment.

System Performance Metrics, Data Collection, Modeling, Analysis, and Decision Tools: Generate social, environmental, and economic metrics and data to evaluate the sustainability as well as production performance of a regional system.

- Develop region and feedstock specific data management plans for Sustainability Performance Metrics and Data Acquisition methods.
  - Validate region and feedstock specific sustainability performance metrics.
- Use existing and initial data to determine if performance metrics are valid and support sustainability performance objectives.
- Data collection and management
- Environmental impact evaluation
  - Soil quality
  - Greenhouse gas emissions and carbon sequestration

    - Pollinators, wildlife, and habitat
    - Land-use change
    - Water quality and availability
- Economic impact studies
- Socioeconomic impacts
- Develop decision making tools

Sustainable Bioenergy Research

This Program Area supports research with high relevance to the development of sustainable regional systems for the production of bioenergy and biobased products. In order to attain the greatest benefit from biomass-based energy, the nation must consider the many environmental, social, and economic benefits and trade-offs associated with decisions and policies. USDA is dedicated to developing our nation's biomass based energy resources in a socially, economically, and environmentally sustainable manner. Applicants must address the priority area listed below.

Program Name – *Impacts of Regional Bioenergy Systems on Water Availability and Quality*
Program Code – A6126
Program Area email for Submission of Letter of Intent – bioenres@nifa.usda.gov
Letter of Intent Deadline – January 28, 2013 (5 p.m., e.t.), see Part IV, A for instructions.
Application Deadline – April 3, 2013 (5 p.m., e.t.)
Proposed Budget Requests –

- **Standard Grants must not exceed $1 million total, including indirect costs, for project periods of up to 5 years**. Program anticipates making up to three awards in FY 2013.
- Conference and FASE Grants must adhere to the guidelines outlined beginning in the NIFA Applications Guide.
- If a project is funded, beginning in the first year of funding, the project director must attend annual investigator meetings for the duration of the award (excluding Conference, Sabbatical, and Equipment Grant applications). Seed Grant recipients must attend beginning in the second year of funding. Reasonable travel expenses should be included as part of the project budget.
- Requests exceeding the budgetary guidelines will not be reviewed.

Requested Project Type – Research Projects
Requested Grant Types – Standard, Conference, and FASE Grants
Program Area Contacts – Dr. Nancy Cavallaro (202-401-5156 or ncavallaro@nifa.usda.gov).

Program Area Priorities – Applicants must address the following:

Water sustainability, both in terms of water quality and water availability, is a major concern across the country. Any large-scale regional changes in land cover and cropping systems, such as those proposed for biofuel feedstock production, will likely affect regional water balance. Biofuel processing and nutrient and waste management, in addition to these land cover changes, may also affect water quality. This priority seeks proposals to conduct research to understand the water implications (both positive and negative) of USDA's

evolving bioenergy strategy to contribute to the development of sustainable cellulosic bioenergy production systems. This research may include development of new models, research methods, and decision support tools. Projects that evaluate the water implications of cellulosic bioenergy feedstock production at the watershed, landscape, and regional scales to reduce conflicts between food and fuel production and the provision of ecosystem services, particularly the availability of adequate supplies of clean, fresh water, are strongly encouraged.

Other Program Area Requirements:

- All applications must adhere to the requirements beginning in Part IV.
- Applications from and collaborations with minority-serving institutions are strongly encouraged.
- Projects must show direct relevance to a current or projected regional bioenergy system for advanced liquid transportation fuels.

AFRI-SBE encourages projects that develop content and programs suitable for delivery through the Cooperative Extension System's eXtension Initiative. Funds may be used to contribute to existing Communities of Practice (COP) such as the Plant Breeding and Genomics COP, or to form a new COP focused on content relevant to sustainable bioenergy systems and water resource management. Projects must align with the eXtension vision, mission, and values. A letter of acknowledgement from eXtension is required and a letter of support may be required from one or more of the COPs if contributing to existing COPs. For detailed guidance on how to partner with eXtension, go to http://create.extension.org/node/2057.

PART II—AWARD INFORMATION

A. Available Funding

There is no commitment by USDA to fund any particular application or to make a specific number of awards. Approximately **$10 Million** is available to fund applications in FY 2013. This RFA is being released prior to the passage of an Appropriations Act for FY 2013. Enactment of additional Continuing Resolutions or an Appropriations Act may affect the availability or level of funding for this program.

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

B. Types of Applications

In FY 2013, applications may be submitted to the **AFRI-SBE** Program as one of the following types of requests:

(1) New application. This is a project application that has not been previously submitted to the AFRI-SBE Program. All new applications will be reviewed competitively using the selection process and evaluation criteria described in Part V—Application Review Requirements.

(2) Resubmitted application. This is an application that had previously been submitted to the AFRI-SBE Program but not funded. Project Directors (PDs) must respond to the previous review panel summary (see Response to Previous Review, Part IV). Resubmitted applications must be received by the relevant due dates, will be evaluated in competition with other pending applications in appropriate area to which they are assigned, and will be reviewed according to the same evaluation criteria as new applications.

Awards will be made as continuation and standard awards. A continuation award is an award instrument by which the Department agrees to support a specified level of effort for a predetermined period of time with a statement of intention to provide additional support at a future date: provided that 1) performance has been satisfactory, 2) appropriations are available for this purpose, and 3) continued support would be in the best interest of the Federal government and the public. Awardees are expected to participate in a rigorous post-award management activity to be determined by the Agency Contact at the formative stages of the project. A standard award is an award instrument by which the Department agrees to support a specified level of effort for a predetermined project period without the announced intention of providing additional support at a future date. Conference, Sabbatical, Equipment, and Seed Grants will be made as standard awards.

C. Project Types

Applications must propose one of the project types specified within the Program Area(s) and select the appropriate grant type for the application within the constraints of the grant types solicited. The project and grant types solicited in this Sustainable Bioenergy Challenge Area are indicated in the table below and described in the Program Area Descriptions beginning in Part I, C . All project types offered for the entire AFRI Program are described below.

Project and Grant Types Solicited by Sustainable Bioenergy Challenge Area

		Grant Type									
						Food and Agricultural Science Enhancement (FASE) Grants[1]					
		Standard	CAP	Planning/ Coordination	Conference	New Investigator	Strengthening Grants				
							Sabbatical	Equipment	Seed	Standard	CAP
Project Type	Research	✓			✓	✓	✓	✓	✓	✓	
	Education										
	Extension										
	Integrated[2]		✓		✓	✓	✓	✓	✓		✓

[1] FASE Grants have special eligibility requirements. Refer to Part II, D. 4 for eligibility and additional information.

The work proposed for all project types must address a specific Program Area Priority described under Program Area Descriptions beginning in Part I, B and the application must be submitted directly to that Program Area by the designated deadline date. Additionally, applicants must adhere to the Application and Submission Information beginning in Part IV when preparing applications.

Research Projects

Single-function Research Projects support fundamental or applied research conducted by individual investigators, co-investigators within the same discipline, or multidisciplinary teams.

Fundamental research *means research that (i) increases knowledge or understanding of the fundamental aspects of phenomena and has the potential for broad application and (ii) has an effect on agriculture, food, nutrition, or the environment.*

Applied research *means research that includes expansion of the findings of fundamental research to uncover practical ways in which new knowledge can be advanced to benefit individuals and society.*

Multidisciplinary projects *are those in which investigators from two or more disciplines collaborate closely to address a common problem. These collaborations, where appropriate, may integrate the biological, physical, chemical, or social sciences.*

Integrated Research, Education, and/or Extension Projects

An Integrated Project includes at least two of the three functions of the agricultural knowledge system (*i.e.*, research, education, and extension) within a project, focused around a problem or issue. The functions addressed in the project should be interwoven throughout the life of the project and act to complement and reinforce one another. The functions should be interdependent and necessary for the success of the project and no more than two-thirds of the project's budget may be focused on a single component.

1) The proposed **research** component of an integrated project should address knowledge gaps that are critical to the development of practices and programs to address the stated problem.

2) The proposed **education** (teaching and teaching-related) component of an Integrated Project should develop human capital relevant to overall program goals for U.S. agriculture. An education or teaching activity is formal classroom instruction, laboratory instruction, and practicum experience in the food and agricultural sciences and other related matters such as faculty development, student recruitment and services, curriculum development, instructional materials and equipment, and innovative teaching methodologies.

   Educational activities may include any of the following: conducting classroom and laboratory instruction and practicum experience; faculty research internships for curricula development; cutting-edge agricultural science and technology curriculum development; innovative teaching methodologies; instructional materials development; education delivery systems; student experiential learning (student led-research; internships; externships; clinics); student learning styles and student-centered instruction; student recruitment and retention efforts; career planning materials and counseling; pedagogy; faculty development programs; development of modules for on-the-job training; providing knowledge and skills for professionals creating policy or transferring to the agriculture workforce; faculty and student exchanges; and student study abroad and international research opportunities relevant to overall program goals for U.S. agriculture. Educational activities must show direct alignment with increasing technical competency in AFRI priority area(s) to ensure that U.S. agriculture remains globally competitive in the knowledge age.

   Educational components must address one or two of the following key strategic actions:
   - Train students for Associate, Baccalaureate, Master's or Doctoral degrees; and/or
   - Prepare K-12 teachers and higher education faculty to understand and present food and agricultural sciences.

   These projects should synthesize and incorporate a wide range of the latest relevant research results. Note that routine use of graduate students and postdoctoral personnel to conduct research is not considered education for the purposes of this program.

3) The proposed **extension** component of an Integrated Project should conduct programs and activities that deliver science-based knowledge and informal educational programs to

people, enabling them to make practical decisions. Program delivery may range from community-based to national audiences and use communication methods from face-to-face to electronic or combinations thereof. Extension Projects may also include related matters such as certification programs, in-service training, client recruitment and services, curriculum development, instructional materials and equipment, and innovative instructional methodologies appropriate to informal educational programs.

Extension activities address one or more of the following key strategic actions:

- Support informal education to increase food and agricultural literacy of youth and adults;
- Promote science-based agricultural literacy by increasing understanding and use of food and agricultural science data, information, and programs;
- Build science-based capability in people to engage audiences and enable informed decision making;
- Develop new applications of instructional tools and curriculum structures that increase technical competency and ensure global competitiveness;
- Offer non-formal learning programs that increase accessibility to new audiences at the rate at which new ideas and technologies are tested and/or developed at the community-scale; and
- Develop programs that increase public knowledge and citizen engagement leading to actions that protect or enhance the nations' food supply, agricultural productivity, environmental quality, community vitality, and/or public health and well-being.

These projects should synthesize and incorporate a wide range of the latest relevant research results. Please note that research-related activities such as publication of papers or speaking at scientific meetings are not considered extension for the purposes of this program.

Integrated Projects aim to resolve today's problems through the application of science-based knowledge and address needs identified by stakeholders. Integrated Projects clearly identify anticipated outcomes and have a plan for evaluating and documenting the success of the project. These projects should lead to measurable, documented changes in learning, actions, or conditions in an identified audience or stakeholder group.

Integrated Project applicants are encouraged to review www.nifa.usda.gov/funding/integrated/integrated.html for additional information on integrated programs, including tips for writing Integrated Project applications and an example of an integrated application.

D. Grant Types

Applications must propose one of the project types specified within the Program Areas and select the appropriate grant type for the application within the constraints of the grant types solicited.

1. **Standard Grants**
   Standard Grants support targeted, original scientific Research, Education, Extension, or Integrated Projects**.**

2. **Coordinated Agricultural Project Grants**
   The Coordinated Agricultural Project (CAP) is a type of Research, Education, Extension, or Integrated Project that supports large-scale, multi-million dollar projects to promote collaboration, open communication, and the exchange of information; reduce duplication of effort; and coordinate activities among individuals, institutions, States, and regions. Integrated CAP Grants address problems through multi-function projects that incorporate at least two of the three components of the agricultural knowledge system (*i.e.*, research, extension, and education). Please note that there occasionally may be programs in which an Integrated CAP Grant is required to address all three components of the agricultural knowledge system. In a CAP, participants serve as a team that conducts targeted research, education, and/or extension in response to emerging or priority area(s) of national need. Applications articulate how a CAP will complement and/or link with existing programs or projects at the national level. A CAP contains the needed science-based expertise in research, education, and/or extension, as well as expertise from principal stakeholders and partners, to accomplish project goals and objectives. Applications should outline the potential of the project, the structure, coordination, and plan of implementation, and propose several research, education, and/or extension areas that will be evaluated during the study period. All Research, Education, Extension, and Integrated Project requirements described earlier apply to CAP Grants. CAP Grants are solicited by a limited number of Program Area Priorities. Note that Food and Agricultural Science Enhancement Grants (see Part II, D. 4) can be submitted to Program Areas that solicit CAP Grants. Refer to Part I, C for Program Area Descriptions.

3. **Conference Grants**
   Conference Grants to support scientific meetings that bring together scientists to identify research, education, and/or extension needs, update information, or advance an area of science are recognized as integral parts of scientific efforts. Support for a limited number of meetings covering subject matter encompassed by this solicitation will be considered for partial or, if modest, total support. Individual conference grants are not expected to exceed $50,000 for one year and are not renewable. Indirect costs are not permitted on Conference Grant awards.

4. **Food and Agricultural Science Enhancement Grants**
   Food and Agricultural Science Enhancement (FASE) Grants strengthen science capabilities in research, education, and/or extension programs. FASE Grants are designed to help institutions develop competitive projects, and to attract new scientists and educators into careers in high-priority areas of National need in agriculture, food, and environmental sciences. The FASE Grants provide support for Pre- and Postdoctoral Fellowships which will

be solicited in a separate NIFA Fellowships Grant Program, New Investigators, and Strengthening Grants. Specific eligibility requirements for these grants are described below.

a. Pre- and Postdoctoral Fellowship Grants
Doctoral candidates and individuals who will soon receive or have recently received their doctoral degree are encouraged to submit an application for a Pre- or Postdoctoral Fellowship Grant, as appropriate, for research, education, extension, or integrated activities to the NIFA Fellowship Grants program. Program information, including the anticipated release date, is available at http://nifa.usda.gov/fo/afrinifafellowshipsgrantprogram.cfm.

b. New Investigator Grants
An individual who is beginning his/her career, does not have an extensive scientific publication record, and has less than five years postgraduate, career-track experience is encouraged to submit an application for a New Investigator Grant for research, education, and/or extension activities. The new investigator may not have received competitively awarded Federal research funds with the exception of pre- or postdoctoral grants or USDA NRI or AFRI Seed Grants. The application must contain documentation that lists all prior Federal support. The work proposed for New Investigator Grants must address a specific Program Area Priority described under Program Area Descriptions in Part I, C, and the application must be submitted directly to that Program Area by the designated deadline date.

c. Strengthening Grants
These funds are expected to enhance institutional capacity with the goal of leading to future funding in the project area, as well as strengthen the competitiveness of the investigator's research, education, and/or extension activities. Strengthening Grants consist of Standard Grant types (both single-function and multi-function projects) as well as Seed Grants, Equipment Grants, and Sabbatical Grants. The work proposed for Strengthening Grants must address a specific Program Area Priority described under Program Area Descriptions in Part I, C), and the application must be submitted directly to that Program Area by the designated deadline date. All applications submitted for Strengthening Grants must fulfill the eligibility requirements described below.

1) Strengthening Grant Eligibility
   Strengthening grants are limited to 1) small and mid-sized or minority-serving degree-granting institutions that previously had limited institutional success for receiving Federal funds or 2) State Agricultural Experiment Stations or degree-granting institutions eligible for USDA Experimental Program for Stimulating Competitive Research (EPSCoR) funding and are eligible for reserved strengthening funds for Research, Education, Extension, and Integrated Project grants. See Figure 1 following Part VIII to assist with determining eligibility for Strengthening Grants.

2) Strengthening Grant Eligibility Definitions

a) EPSCoR States

Every year, NIFA determines the states that are eligible for USDA EPSCoR funding. This list includes states having a funding level no higher than the 38th percentile of all States based on a 3-year rolling average of AFRI funding levels, excluding FASE Strengthening funds granted to EPSCoR States and small-mid-sized and minority-serving degree-granting institutions. Since this is the third year for the AFRI program and complete award data is not available, the eligibility determinations are based on the data obtained from grants made through the AFRI program from 2009 through 2011. For FY 2013, the following States meet the requirements for this category:

FY 2013 USDA EPSCoR States		
Alabama	Montana	South Carolina
Alaska	Nevada	Utah
Connecticut	New Hampshire	Vermont
Idaho	New Mexico	West Virginia
Kentucky	North Dakota	Wyoming
Maine	Oklahoma	
Mississippi	Rhode Island	

Other entities eligible for USDA EPSCoR funds in FY 2013 include the following United States commonwealths, territories, possessions and their successors, and the District of Columbia:

Other Entities eligible for USDA EPSCoR Funds	
American Samoa	Northern Mariana Islands
District of Columbia	Puerto Rico
Guam	Virgin Islands of the U.S.
Micronesia	

b) Small and mid-sized institutions. See Part VIII H. for a definition.

c) Minority-serving institutions. See Part VIII H for a definition. **Applicants applying under this** category should indicate the current percentage of applicable minority students enrolled at the institution in a cover letter.

d) **Limited institutional success.** See Part VIII H for a definition. See Table 1 following Part VIII for an alphabetical list of the most successful institutions.

All institutions grouped under one main campus as listed in Table 1 following Part VIII unless located in an EPSCoR state, are excluded from eligibility for all strengthening funds. The institution may petition for an exemption to this rule as described in Part III, B.

3) Strengthening Grant Types

An individual applicant may submit only one of the following types of strengthening applications (Sabbatical Grants, Equipment Grants, and Seed Grants) as PD this fiscal year.

a) Sabbatical Grants

Sabbatical Grants are to provide an opportunity for faculty to enhance their research, education, and/or extension capabilities by funding sabbatical leaves. Collaborative arrangements are encouraged. Grants will be limited to one year of salary and funds for travel and supplies, where justified, and are not renewable.

NIFA also encourages and will support the concept of "mini-sabbaticals" for faculty and researchers desiring short-term training to learn new techniques that will improve their competitiveness. These short-term training opportunities generally follow all of the sabbatical requirements described beginning in Part IV, B, but for a shorter duration. These grants may be used to participate in short courses offered at various research institutions.

b) Equipment Grants

Equipment Grants are designed to strengthen the research, education, and/or extension capacity of institutions by funding the purchase of one major piece of equipment. These grants are not intended to replace requests for equipment in individual project applications. Rather, they are intended to help fund items of equipment that will upgrade infrastructure. Requests for computer equipment are allowed only if the equipment is to be used in an activity integral to the proposed project. Requests for computer equipment will not be permitted if the equipment will primarily serve as a word processor or perform administrative functions.

Each request shall be limited to one major piece of equipment within the cost range of $10,000-$250,000 and are not renewable. The amount of Federal funding requested shall not exceed 50 percent of the cost or $50,000, whichever is less. Unless a waiver is granted by NIFA using the criteria listed in Part III, C, it is the responsibility of the PD to secure required matching funds with non-Federal funds. No installation, maintenance, warranty, or insurance expenses may be paid from these grants, nor may these costs be part of the matching funds. Indirect costs are not permitted on Equipment Grant awards.

c) Seed Grants

Seed Grants are to provide funds to enable investigators to collect preliminary data or perform other preliminary activities in preparation for applying for future grants from AFRI. The grants are not intended to fund stand-alone projects, but rather projects that will lead to further work applicable to one of the AFRI Program Areas. Seed Grant applications proposing an Integrated

Project only need to include one of the three functions (research, education, extension) and justify how this Seed Grant will allow the applicant to become competitive for future Integrated Project funding.

Seed Grants are limited to a total of $150,000 (including indirect costs) for two year duration and are not renewable.

d) Strengthening Standard and Strengthening CAP Grants
Research Project Standard Grant and Integrated Project CAP Grant applications that meet the eligibility requirements for Strengthening Grants are eligible for reserved strengthening funds as a Strengthening Standard Grant or Strengthening CAP Grant. The eligibility requirements only apply to the lead PD and are not required for co-PD(s) associated with the project.

E. Responsible and Ethical Conduct of Research

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

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

PART III—ELIGIBILITY INFORMATION

A. Eligible Applicants

Eligible institutions for single-function Research Projects are described in paragraph #1 below. Eligible institutions for multi-functional Integrated Projects are described in paragraph #2 below.

Grant recipients may subcontract to organizations not eligible to apply provided such organizations are necessary for the conduct of the project.

1. Research Projects

Eligible applicants for the program implemented under this subpart include: 1) State Agricultural Experiment Stations; 2) colleges and universities (including junior colleges offering associate degrees or higher); 3) university research foundations; 4) other research institutions and organizations; 5) Federal agencies, 6) national laboratories; 7) private organizations or corporations; 8) individuals who are U.S. citizens, nationals, or permanent residents; and (9) any group consisting of 2 or more entities identified in 1) through 8). Eligible institutions do not include foreign and international organizations.

2. Integrated Projects

Eligible applicants for the Integrated Projects include:

a) Colleges and universities -
the terms "college" and "university" mean an educational institution in any state which 1) admits as regular students only persons having a certificate of graduation from a school providing secondary education, or the recognized equivalent of such a certificate; 2) is legally authorized within such state to provide a program of education beyond secondary education; 3) provides an educational program for which a bachelor's degree or any other higher degree is awarded; 4) is a public or other nonprofit institution; and (5) is accredited by a nationally recognized accrediting agency or association. A research foundation maintained by a college or university is eligible to receive an award under this program.

b) 1994 Land-Grant Institutions - means one of those institutions as defined in section 532 of the Equity in Educational Land-Grant Status Act of 1994, as amended (7 U.S.C. 301 note). These institutions are commonly referred to as Tribal Colleges or Universities.

c) Hispanic-serving Agricultural Colleges and Universities (HSACUs) -
Section 7101 of the Food, Conservation, and Energy Act of 2008 (Pub. L. 110-246) amended section 1404 of NARETPA (7 U.S.C. 3103) to create a definition for a new group of cooperating institutions: Hispanic-serving Agricultural Colleges and Universities (HSACUs). HSACUs are colleges and universities that qualify as Hispanic-serving Institutions (HSIs) and offer associate, bachelors, or other accredited degree programs in agriculture-related fields. HSACUs do not include 1862 land-grant institutions.

Pursuant to section 406 of the Agricultural Research, Extension, and Education Reform Act of 1998 (AREERA) (7 U.S.C. 7626), which authorized the Integrated Research, Education,

and Extension Competitive Grant Program, all four-year HSIs are eligible to apply for integrated projects as identified in the FY 2012 AFRI RFA. Two-year HSIs may also be eligible to apply but only if the institution has been certified as a HSACU for the fiscal year in which funding is being provided.

By November 15, 2012, a list of the institutions certified and therefore eligible to apply as HSACUs for grants under FY 2013 RFAs, including this RFA, will be made available at http://www.nifa.usda.gov/nea/education/in_focus/hispanic_if_hispanic_HSACU.html. Institutions appearing on the FY 2013 list are granted HSACU certification by the Secretary for the period starting October 1, 2012, and ending September 30, 2013. Certifications are valid for FY 2013 only. Additional questions on HSACU eligibility can be addressed to Mr. Matthew Lockhart, Senior Policy Specialist, by email at mlockhart@nifa.usda.gov or phone at (202) 559-5088.

3. **Food and Agricultural Science Enhancement Grants**
   The Food and Agricultural Science Enhancement (FASE) Grants have additional eligibility requirements. See Part II, D. 4 for details.

Award recipients may subcontract to organizations not eligible to apply provided such organizations are necessary for the conduct of the project. An applicant's failure to meet an eligibility criterion by the time of an application deadline may result in the application being excluded from consideration or, even though an application may be reviewed, will preclude NIFA from making an award.

B. Request for Determination

If an applicant's institution can be considered a minority-serving institution and wishes to be considered for a Strengthening Grant (as described in Part II, D. 4. c), but does not serve one or more of the minority groups specified in the Definitions section of this RFA (see Part VIII, E), the applicant must submit to NIFA documentation supporting the request. This documentation must be submitted as part of the requestor's Letter of Intent (if required) and the application package, and must be received by NIFA by the applicable program deadline. The Secretary of Agriculture or designated individual will determine whether the group or groups identified are eligible under this program.

The Request for Determination as a minority-serving institution must be attached with the Letter of Intent (if required) and the final application. The following information must be provided in the order specified below:

1. A description of each minority group that is being submitted for determination;
2. Data or studies supporting this group's designation as a minority group; and
3. Data indicating that enrollment of the minority group(s) exceeds 50 percent of the total enrollment at the academic institution, including graduate and undergraduate and full- and part-time students.

All institutions grouped under one main campus as listed in Table 1 following Part VIII , unless located in an EPSCoR state (listed in Part II, D. 4. c. 2) a)), are excluded from eligibility for all strengthening funds. However, if any campus within a multi-campus listing can provide information demonstrating that it is administratively independent or has an independent accreditation, then the institution may petition for an exemption to this rule and request eligibility for strengthening funds. The Letter of Intent (if required) and the application must include a letter indicating how the institution is independent of the main campus, either through accreditation or administration. In addition, the letter should stipulate that the institution is eligible as a small and mid-sized or minority-serving institution due to enrollment and total federal funds received for science and engineering research and development. The letter must be signed by the Authorized Representative (AR) and included with the Letter of Intent (if required) and the completed application.

C. Cost Sharing or Matching

For Equipment Grants: The amount of Federal funds provided may not exceed 50 percent of the cost of the equipment acquired using funds from the grant, or $50,000, whichever is less. Grantees are required to match 100 percent of Federal funds awarded from non-Federal sources. The Secretary may waive all or part of the matching requirement if all three of the following criteria are met: 1) applicants must be a college, university, or research foundation maintained by a college or university that ranks in the lowest one third of such colleges, universities, and research foundations on the basis of Federal research funds received (see Table 2 following Part VIII for eligibility); 2) if the equipment to be acquired using funds from the grant costs not more than $25,000; and 3) has multiple uses within a single research project or is usable in more than one research project. If the institution believes it is eligible for the waiver for matching funds, the budget justification must include a letter signed by the institution's AR stating this information.

If a funded project is commodity-specific and not of national scope, the grant recipient is required to match the USDA funds awarded on a dollar-for-dollar basis from non-Federal sources with cash and/or in-kind contributions.

PART IV—APPLICATION AND SUBMISSION INFORMATION

A. Letter of Intent Instructions

A Letter of Intent is required for **all** grant types except conference grant types (see Part II, D), and is a prerequisite to submission of an application.

1. The Letter of Intent must adhere to the following guidelines:
   a. Font size must be at least 12 point
   b. Margins must be at least one inch in all directions
   c. Line spacing must not exceed six lines of text per vertical inch

   d. The Letter of Intent is limited to **two pages** for all project and grant types, except for Coordinated Agricultural Project (CAP) Grants for which three pages are allowed.
   e. On Page 1 provide **only** the following information:
      i. the name, professional title, department, institution and *e*-mail address of the lead project director (PD) and name, professional title, department, and institution of all collaborating investigators
      ii. the Program Area and the Priority area within that Program Area most closely addressed in the application
   f. On Page 2 (or Pages 2-3 for CAP only) include:
      i. a descriptive title
      ii. rationale
      iii. overall hypothesis or goal
      iv. specific objectives
      v. approach
      vi. potential impact and expected outcomes
   g. NIFA **REQUIRES** the Letter of Intent be in **portable document format (pdf)**.

B. Electronic Application Package and Content and Form of Application Submission

Only electronic applications may be submitted via Grants.gov to NIFA in response to this RFA. **Applicants are advised to submit early to the Grants.gov system.**

New Users of Grants.gov

Prior to preparing an application, it is suggested that the PD/PI first contact an Authorized Representative (AR) (also referred to as Authorized Organizational Representative or AOR) to determine if the organization is prepared to submit electronic applications through Grant.gov. If the organization is not prepared (e.g., the institution/organization is new to the electronic grant application process through Grants.gov), then the one-time registration process must be completed **PRIOR** to submitting an application. It can take as much as four weeks to complete the registration process so it is critical to begin as soon as possible. In such situations the AR should go to **"Get Registered" on the Grants.gov left navigation bar (or go to http://www.grants.gov/applicants/get_registered.jsp) for information on registering the institution/organization with Grants.gov. A quick reference guide listing the steps is available as a 4-page PDF document at the following website:**

http://www.grants.gov/assets/Grants.govRegistrationBrochure.pdf. Item 2. below mentions the "NIFA Grants.gov Application Guide." Part II.1. of the NIFA Grants.gov Application Guide contains additional explanatory language regarding the registration process.

Steps to Obtain Application Package Materials

The steps to access application materials are as follows:

1. In order to access, complete and submit applications, applicants must download and install a version of Adobe Reader compatible with Grants.gov. This software is essential to apply for NIFA Federal assistance awards. For basic system requirements and download instructions, please see http://www.grants.gov/help/download_software.jsp. To verify that you have a compatible version of Adobe Reader, Grants.gov established a test package that will assist you in making that determination. Grants.gov Adobe Versioning Test Package: http://www.grants.gov/applicants/AdobeVersioningTestOnly.jsp.

2. The application package must be obtained via Grants.gov, go to http://www.grants.gov, click on "Apply for Grants" in the left-hand column, click on "**Step 1:** Download a Grant Application Package and Instructions," enter the funding opportunity number **USDA-NIFA-AFRI-004029** in the appropriate box and click "Download Package." From the search results, click "Download" to access the application package.

   Contained within the application package is the "NIFA Grants.gov Application Guide: A Guide for Preparation and Submission of NIFA Applications via Grants.gov." This Guide contains an introduction and general Grants.gov instructions, information about how to use a Grant Application Package in Grants.gov, and instructions on how to complete the application forms.

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

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

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

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

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

- Specific Area of Concern

See http://grants.gov/applicants/app_help_reso.jsp or http://www.nifa.usda.gov/funding/electronic.html for additional resources for applying electronically.

Content and Form of Application Submission

Electronic applications should be prepared following Parts V and VI of the document entitled **"A Guide for Preparation and Submission of NIFA Applications via Grants.gov."** This guide is part of the corresponding application package (see Section B. of this Part). The following is **additional information** needed in order to prepare an application in response to this RFA. **If there is discrepancy between the two documents, the information contained in this RFA is overriding.**

Note the attachment requirements (e.g., portable document format) in Part III section 3. of the Guide. ANY PROPOSALS THAT ARE NON-COMPLIANT WITH THE REQUIREMENTS (i.e., content format, pdf file format, file name restrictions, and no password protected files) WILL BE AT RISK OF BEING EXCLUDED FROM NIFA REVIEW. Partial applications will be excluded from NIFA review. With documented prior approval, subsequent submissions of an application will be accepted until close of business on the closing date in the RFA.

In addition to the formatting requirements noted in Part III section 3. of the Guide, submitted PDF documents must adhere to the following formatting guidelines:

- Line spacing must not exceed six lines of text per vertical inch
- Follow the page limitations for each attachment
- Title each attachment in the document header and save each file with the referenced name

If you do not own PDF-generating software, Grants.gov provides online tools to assist applicants. Users will find a link to "Convert Documents to PDF" on http://grants.gov/help/download_software.jsp#pdf_conversion_programs.

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

- Email: electronic@nifa.usda.gov
- Phone: 202-401-5048
- Business hours: Monday through Friday, 7:00 am – 5:00 pm Eastern Time, excluding Federal holidays.

1. SF 424 R&R Cover Sheet

Information related to the questions on this form is dealt with in detail in Part V, 2. of the NIFA Grants.gov Application Guide.

2. SF 424 R&R Project/Performance Site Location(s)
Information related to the questions on this form is dealt with in detail in Part V, 3. of the NIFA Grants.gov Application Guide.

3. R&R Other Project Information Form
Information related to the questions on this form is dealt with in detail in Part V, 4. of the NIFA Grants.gov Application Guide.

a. Fields 1 and 2. Are Human Subjects Involved? or Are Vertebrate Animals Used?

☼ *For Sabbatical Grant Applications* – Applicants whose research requires use of human subjects or vertebrate animals must have their project reviewed by the appropriate committee(s) at the institution where the research will be conducted.

b. Field 7. Project Summary/Abstract. The following are instructions are in addition to those included in section 4.7 of Part V of the NIFA Grants.gov Application Guide. Title the attachment as 'Project Summary' in the document header and save file as 'ProjectSummary'.

The Project Summary must list the names and institutions of the PD and co-PDs and **indicate which specific FY 2013 Program Area Priority(ies) the proposed project addresses**. Program Area Priorities are stated within each Program Area Description (see Part I, C (page 13)). Applications that do not address at least one Program Area Priority will not be reviewed.

☼ *For Conference Grant Applications* – State the objectives of the conference, symposium, or workshop, as well as the proposed location and probable inclusive date(s) of the conference. Please state in the summary the specific Program Area Priority(ies) to which the project applies.

☼ *For Sabbatical Grant Applications* – Indicate overall project goals and supporting objectives.

☼ *For Equipment Grant Applications* – Indicate equipment sought and overall project goals for its use.

c. Field 8. Project Narrative.

PLEASE NOTE: The Project Narrative shall not exceed **18** pages or **7** pages (explained below) of written text regardless of whether it is single or double spaced.

Page Limits
For Standard Research, Standard Integrated, Coordinated Agricultural Project, Conference, New Investigator, Strengthening Standard Grant, and Strengthening CAP Grant applications, the Project Narrative section may not exceed a total of 18 pages with 12-point font and line spacing not exceeding six lines of text per vertical inch, including all figures and tables.

For Sabbatical, Equipment, and Seed Grant applications, the Project Narrative section may not exceed a total of 7 pages with 12-point font and line spacing not exceeding six lines of text per vertical inch, including all figures and tables.

To ensure fair and equitable competition, applications exceeding the applicable page limitation will be returned without review.

The Project Narrative is expected to be complete; however, preprints (see section g. 6 below) related to the Project Narrative are allowed if they are directly germane to the proposed project. Information may not be appended to an application to circumvent page limitations prescribed for the Project Narrative. Extraneous materials will not be used during the peer review process.

The Project Narrative must include all of the following:

1. Introduction
   Include a clear statement of the long-term goal(s) and supporting objectives of the proposed project. Summarize the body of knowledge or past activities that substantiate the need for the proposed project. Describe ongoing or recently completed activities significant to the proposed project including the work of key project personnel. Include preliminary data/information pertinent to the proposed project. All works cited should be referenced (see Bibliography & References Cited in section d below).

2. Rationale and Significance
   a. Concisely present the rationale behind the proposed project;
   b. Describe the specific relationship of the project's objectives to one or more of the particular Program Area priorities. Applications that do not address at least one Program Area Priority will not be reviewed; and
   c. The potential long-range improvement in and sustainability of U.S. agriculture and food systems should be shown clearly. These purposes are described under Purpose and Priorities in Part I, B. Any novel ideas or contributions that the proposed project offers should also be discussed in this section.

3. Approach (this section is not applicable to conference grants)
   The activities proposed or problems being addressed must be clearly stated and the approaches applied are to be clearly described. Specifically, this section must include:
   a. A description of the activities proposed and the sequence in which the activities are to be performed;
   b. Methods to be used in carrying out the proposed project, including the feasibility of the methods;
   c. Expected outcomes;
   d. Means by which results will be analyzed, assessed, or interpreted;
   e. How results or products will be used;
   f. Pitfalls that may be encountered;
   g. Limitations to proposed procedures;

h. A full explanation of any materials, procedures, situations, or activities related to the project that may be hazardous to personnel, along with an outline or precautions to be exercised to avoid or mitigate the effects of such hazards; and
i. A timeline for attainment of objectives and for production of deliverables that includes annual milestones with specific, measurable outcomes.

☼ *For Integrated Project Applications* – Project narratives for these applications also should:

- Include at least two of the three functions of the agricultural knowledge system (*i.e.*, research, education, and extension). Each function should be represented by one or more objectives within the application.
- Projects must budget sufficient resources to carry out the proposed set of research, extension, and/or education activities that will lead to the desired outcomes. No more than two-thirds of a project's budget may be focused on a single function.
- Integrated Projects must include individuals on the project team with significant expertise in each component of the project (research, education, and/or extension).
- Include a plan for evaluating progress toward achieving project objectives must be included. The plan must include milestones, which signify the completion of a major deliverable, event, or accomplishment and serve to verify that the project is on schedule and on track for successful conclusion. The plan should also include descriptions of indicators that you will measure to evaluate whether the research, education, and/or extension activities are successful in achieving project goals and in contributing to achievement of the stated program goals and outcomes.
- Clearly articulate:
  - Stakeholder involvement in project development, implementation, and evaluation, where appropriate;
  - Objectives for each function included in the project (note that extension and education activities are expected to differ and to be described in separate project objectives; see enumerated descriptions in Part II, C); and
  - A dissemination plan describing the methods that will be used to communicate findings and project accomplishments.
- AFRI encourages Integrated Projects that develop content suitable for delivery through eXtension. This content is for "end users" as opposed to staff development and must follow the eXtension Guiding Principles and guidelines for including eXtension in a proposal presented at http://about.extension.org/wiki/NIFA_RFA_Information. Funds may be used to 1) enhance an existing Community of Practice or 2) to establish a new Community of Practice, as appropriate.
- AFRI encourages Integrated Projects that are suitable for 4-H audiences and stakeholder groups while meeting identified program priorities. The 4-H Youth Development is the programmatic outreach of the Land Grant Universities and Institutions to our youngest citizens in their communities and provides opportunities for youth to develop skills, practical knowledge, and wisdom with an emphasis on practical application of knowledge or "learning by doing." By engaging 4-H in AFRI projects, applicants engage young people as citizen scientists; increase their awareness of the role of agriculture; and prepare young people for higher education

and the 21st century work environment. Opportunities for engaging 4-H in AFRI proposals should align with the 4-H Mission Mandates of Science, Engineering and Technology; Healthy Living; and Citizenship. See guiding principles at www.national4-hheadquarters.gov or contact your university Cooperative Extension headquarters and/or State 4-H Program Office.

☼ *For Conference Grant Applications* –The requirements noted below are in lieu of those in the Approach section mentioned above:

- A justification for the meeting;
- Recent meetings on the same subject with dates and locations;
- Names and organizational affiliations of the chair and other members of the organizing committee;
- A proposed program (or agenda) for the conference, including a listing of scheduled participants and their institutional affiliations; and
- The method of announcement or invitation that will be used.

- ☼ *For Sabbatical Grant Applications* –The Project Narrative for these applications also should include: A general description of the research, education, or extension interests and goals of the applicant in order to provide perspective for the application;
- A description of the project to be pursued while on the sabbatical leave;
- A statement of how the sabbatical leave will enhance the capabilities of the applicant; and
- A statement of future research goals and objectives once the sabbatical is complete and how the sabbatical will enable the applicant to pursue these goals.

☼ *For Equipment Grant Applications* –The Project Narrative for these applications also must include a general description of the project(s) for which the equipment will be used, how the equipment will fit into or enhance the research, education, or extension program, and how the equipment will allow the applicant to become competitive for future funding or move into new research areas. Also include a description of other similar or complementary equipment available to the PD at the institution and why the requested equipment is necessary.

☼ *For Seed Grant Applications* – Include all of the components detailed in the Project Narrative section above and present enough detail to allow adequate evaluation. In order to be competitive, long-term goals and a statement describing how this Seed Grant will allow the applicant to become competitive for future funding must be included.

d. Field 9. Bibliography & References Cited – PDF Attachment. No Page Limit. Title the attachment as 'Bibliography & References Cited' in the document header and save file as 'BibliographyReferencesCited'.

All work cited in the text should be referenced in this section of the application. All references must be complete; include titles and all co-authors; conform to an acceptable journal format; and be listed in alphabetical order using the last name of the first author or listed by number in the order of citation.

e. Field 10. Facilities & Other Resources – PDF Attachment. No Page Limit. Title the attachment as 'Facilities & Other Resources' in the document header and save file as 'FacilitiesOtherResources'.

f. Field 11. Equipment – PDF Attachment. No Page Limit. Title the attachment as 'Equipment' in the document header and save file as 'Equipment'.

Describe available equipment. Items of nonexpendable equipment necessary to conduct and successfully complete the proposed project for which funds are requested to purchase should be listed in Field C. of the R&R Budget and described in the Budget Justification (see section 6 below).

g. Field 12. Other Attachments

The following instructions are in addition to those noted in Part V 4.12 of the NIFA Grants.gov Application Guide.

1) Response to Previous Review (if applicable)
   This requirement only applies to Resubmitted Applications as described in Part II, B. The Project Narrative attachment should include two components: 1) a one-page response to the previous review panel summary titled "Response to Previous Review" included as the first page of the Project Narrative attachment and 2) the 7- or 18-page Project Narrative, as required (see section c above).

2) *Project Type* – **PDF Attachment. 1-Page Limit.** Title the attachment as 'Project Type' and save file as 'ProjectType'.

   Identify the type of project and the type of grant you are submitting by completing the Project Type template located at: www.nifa.usda.gov/funding/templates/project_type.doc. Before doing so, please refer to Part I, C of this RFA for project type descriptions requested under each Program Area Description. Part II of this RFA for a full description of each project and grant type.

3) *Key Personnel Roles* – **PDF Attachment. 2-Page Limit.** Title the attachment as 'Key Personnel' and save file as 'KeyPersonnel'.

   Clearly describe the roles and responsibilities of the PD, co-PD(s), collaborator(s), and other key personnel (biographical sketches for key personnel should not be included. If it will be necessary to enter into formal consulting or collaborative arrangements with others, such arrangements should be fully explained and justified. Evidence (letters of support) for this type of collaboration should be provided in the 'Documentation of Collaboration' (see number 5 below).

   ☼ *For Integrated Grant Applications* – state for key personnel an estimate of the percent of time devoted to research, education, and/or extension activities.

4) *Logic Model* – **PDF Attachment. Required for Integrated Projects Only. Allowable for Research Projects. 2-Page Limit.** Title the attachment as 'Logic Model' and save file as 'LogicModel'.

   Include the elements of a logic model detailing the activities, outputs, and outcomes of the proposed project. The logic model planning process is a tool that should be used to develop your project before writing your application. This information may be provided as a narrative or formatted into a logic model chart. More information and resources related to the logic model planning process are provided at www.nifa.usda.gov/funding/integrated/integrated_logic_model.html.

5) *Management Plan* – **PDF Attachment. Required for Integrated Projects Only. Allowable for Research Projects. 3-Page Limit.** Title the attachment as 'Management Plan' and save file as 'ManagementPlan'.

   The plan is to be clearly articulated and include an organizational chart, administrative timeline, and a description of how the project will be governed, as well as a strategy to enhance coordination, collaboration, communication, and data sharing and reporting among members of the project team and stakeholder groups. The plan must also address how the project will be sustained beyond the termination of the award.

   The management plan should also include an advisory group of principal stakeholders, partners, and professionals to assess and evaluate the quality, expected measurable outcomes, and potential impacts for the proposed research, education, and/or extension. Please include rationale for their role, and how they will function effectively to support the goals and objectives of the project. The plan must demonstrate how partners and stakeholders contribute to project assessment on an annual basis.

6) *Documentation of Collaboration* – **PDF Attachment. No Page Limit.** Title the attachment as 'Documentation of Collaboration' in the document header and save file as 'Collaboration'.

   Evidence, e.g., letter(s) of support, should be provided that the collaborators involved have agreed to render services.

   ☼ *For Sabbatical Grant Applications* – Provide documentation that arrangements have been made with an established investigator(s) to serve as host, including:
   - A letter from the home institution detailing the particular arrangements at the home institution with respect to salary and date and duration of sabbatical;
   - A letter from the scientific host(s) indicating willingness to serve in this capacity and a description of the host's contribution to the proposed activities both scientifically and with regard to use of facilities and equipment; and

- A statement signed by the Department Head or equivalent official at the host institution indicating a commitment to provide research space and facilities for the period of the applicant's presence.

☼ *For Equipment Grant Applications* – The application must contain a letter(s) from the organization(s) committed to providing the non-Federal matching funds. Provide evidence of institutional commitment for operation and maintenance of requested equipment. Arrangements for sharing equipment among faculty are encouraged. However, it must be evident that the PD is a principal user of the requested equipment.

7) *Preprints* – **PDF Attachment. Limited to 2 preprints.** Title the attachment as 'Preprints' in the document header and save file as 'Preprints'.

Preprints related to the Project Narrative are allowed if they are directly germane to the proposed project. Information may not be appended to an application to circumvent page limitations prescribed for the Project Narrative. **Extraneous materials will not be used during the peer review process**. Only manuscripts in press for a peer-reviewed journal will be accepted and must be accompanied by letters of acceptance from the publishing journals). Preprints attached in support of the application should be **single-spaced**. Each preprint must be identified with the name of the submitting organization, the name(s) of the PD(s), and the title of the application.

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

Instructions related to this form are explained in detail in Part V, 5. of the NIFA Grants.gov Application Guide. Additional instructions are described below.

a. ***Project Role Field*** – Complete appropriately.

☼ *For Sabbatical Grant Applications* – Select "PD/PI" for the Sabbatical Grant applicant. Select "Other" for the corresponding scientific host(s) and any other personnel whose qualification merit consideration in the evaluation of the application.

☼ *For Equipment Grant Applications* – Select "PD/PI" for the Equipment Grant applicant. Select "Faculty" for the other major users of the equipment.

b. ***Attach Biographical Sketch Field*** **– PDF Attachment. 2-Page Limit** (excluding publications listings). Title the attachment as 'Biographical Sketch' in the document header and save file as 'BiographicalSketch'.

☼ *For Sabbatical Grant Applications* – A Biographical Sketch must be submitted for the Sabbatical Grant applicant, the scientific host(s), and any other personnel whose qualifications merit consideration in the evaluation of the application.

☼ *For Equipment Grant Applications* – A Biographical Sketch for both the Equipment Grant applicant and other major users of the equipment must be submitted.

c. ***Attach Current and Pending Support Field* – PDF Attachment. No Page Limit.** Title the attachment as 'Current and Pending Support' in the document header and save file as 'CurrentPendingSupport'.

The AFRI program will not fund an application that duplicates or overlaps substantially with other NIFA funding (including non-competitive funds such as Special Grants or Hatch formula funds) or other Federal funding. As an addendum to the Current and Pending Support, provide a brief summary for any completed, current, or pending projects that appear similar to the current application, especially previous NRI or AFRI awards.

☼ *For Sabbatical Grant Applications* - Include for both the Sabbatical Grant applicant and the scientific host(s) (as documentation of on-going work in the host's laboratory).

☼ *For Equipment Grant Applications* - Include for both the Equipment Grant applicant and other major users of the equipment.

5. <u>R&R Personal Data</u> – As noted in Part V, 6. of the NIFA Grants.gov Application Guide, the submission of this information is voluntary and is not a precondition of award.

6. <u>R&R Budget</u>
Information related to the questions on this form is dealt with in detail in Part V, 7. of the NIFA Grants.gov Application Guide.

a. Budget Periods. Applications must contain a budget for each budget period; a cumulative budget will automatically be generated.

☼ *For Integrated Project Applications* – Projects must budget sufficient resources to carry out the proposed set of research, extension, and/or education activities that will lead to the desired outcomes. No more than two-thirds of a project's budget may be focused on a single component. Projects that include partnering with eXtension must include financial support for the Community of Practice core functions as well as project-specific activities.

☼ *For Conference, Sabbatical, Equipment, and Seed Grant Applications* Refer to Part II D. for budget related limitations and other information.

b. Field C. Equipment.

c. Field D. Travel – *F*or each year supported by NIFA, the project director will be required to attend an annual investigator meeting (excluding Conference, Sabbatical, and Equipment Grant applications). Seed Grant applications are required to attend beginning in the second year of funding. Reasonable travel expenses should be included as part of the project budget.

d. Field H. Indirect Costs **– NIFA is prohibited from paying indirect costs exceeding 30 percent of the total Federal funds provided under each award. This limitation is equivalent to 0.42857 of the total direct costs of an award. See Part IV, D for additional information.** Subcontracts are allowed indirect costs only if the organization has a negotiated rate agreement with a cognizant federal audit agency. Indirect costs are not permitted on Conference Grant or Equipment Grant awards.

e. Field K. Budget Justification – PDF Attachment. No Page Limit**. Title the attachment as 'Budget Justification' in the document header and save file as 'BudgetJustification'.**

Budget categories for which support is requested should be listed (with costs) in the same order as the budget and include, where appropriate, an itemization as well as explained and justified. A proposed statement of work, biographical sketch, and a budget for each arrangement involving the transfer of substantive programmatic work or the provision of financial assistance to a third party must be supplied. In multi-institutional applications, a budget and budget narrative must be included for each institution involved. The lead institution and each participating institution must be identified.

☼ *For Equipment Grant Applications* – The Budget Justification should describe the instrument requested including the manufacturer and model number, if known; provide a detailed budget breakdown of the equipment and accessories required; and indicate the amount of funding requested from USDA for each component of equipment requested.

f. Subcontract Arrangements
Grant recipients may subcontract to organizations not eligible to apply provided such organizations are necessary for the conduct of the project. If it will be necessary to enter into a formal subcontract agreement with another institution, financial arrangements must be detailed in the "R&R Subaward Budget Attachment(s) Form." Annual and cumulative budgets and a budget justification, and a letter of commitment signed by the Authorized Representative (AR) are required for each subcontract agreement. Refer to Part V, 8. of the NIFA Grants.gov Application Guide for instructions on completing this form.

g. Matching:

If a funded project is commodity-specific and not of national scope, the grant recipient is required to match the USDA funds awarded on a dollar-for-dollar basis from non-Federal sources with cash and/or in-kind contributions.

The sources and the amount of all matching support from outside the applicant organization should be summarized on a separate page and placed in the application immediately following the Budget Justification. All pledge agreements must be placed in the application immediately following the summary of matching support.

The value of applicant contributions to the project shall be established in accordance with applicable cost principles. Applicants should refer to OMB Circular A-21 (2 CFR Part 220), Cost Principles for Educational Institutions, for further guidance and other requirements relating to matching and allowable costs.

☼ *For Equipment Grant Applications* – See Part III, C. for the matching requirements.

7. <u>Supplemental Information Form</u>
Information related to the questions on this form is dealt with in detail in Part VI, 1. of the NIFA Grants.gov Application Guide.

a. Field 2. Program to which you are applying. Enter the program code name and the program code (60 character and space limitation):
(i.e. Program name - "Development and Sustainable Production of Regionally Appropr" and program code - "**A6101,**" or for our single-function research program enter "Impacts of Regional Bioenergy Systems on Water Availability" and "A6126" respectively as appropriate.)

b. Field 8. Conflict of Interest List. See Part VI, 1.8 of the NIFA Grants.gov Application Guide for further instructions and a link to a suggested template.

Collate all individual Conflict of Interest lists into a single document file. The lists can only be submitted as a single PDF attachment.

☼ *For Equipment Grant Applications* – Conflict of Interest list for the Equipment Grant applicant and other major users of the equipment must be completed.

C. Submission Dates and Times

1. Letter of Intent

a. Deadline **– January 28, 2013 (5:00 p.m., ET).**
b. Attach the PDF Letter of Intent (LOI) to an *e*-mail addressed to: bioenres@nifa.usda.gov

In the *e*-mail subject line, write: *Letter of Intent A6126 (or A6101 if applying for the Coordinated Agricultural Project)_ [PDs Last Name]*.

c. An acknowledgement receipt will be sent via email by replying to the sender within 5 business days after the letter of intent deadline.
d. LOIs will be reviewed by scientific program staff in order to plan for appropriate expertise for the application peer review panel and ensure that the proposed project fits appropriately within the Program Area Priorities.
e. Within three weeks after the LOI deadline, the PD will receive a response from the Program Area Contact. The response will indicate whether or not NIFA accepted the Letter of Intent. Note that a LOI will not be accepted if:
    i. It was not submitted by the established deadline;
    ii. It did not meet the guidelines noted in Part IV A.; and
    iii. The proposed project was not appropriate for the Program Area Priorities.

Applicants must notify the appropriate Program Area Contact of any changes to project key personnel, title, or objectives from the Letter of Intent to the submission of a full application.

1. Full Application

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

In FY2013, all Program Areas (excluding Conference Grant applications) within the AFRI-SBE require a Letter of Intent for submission of an application. **Letters of Intent are due by COB on January 28, 2013**. Refer to Part IV, A for instructions on the preparation of a Letter of Intent.

Applications must be received by Grants.gov by COB on **April 3, 2013** (5:00 p.m. Eastern Time). Applications received after this deadline will normally not be considered for funding.

Applicants who have problems with the submission of an application to Grants.gov are encouraged to FIRST contact the Grants.gov Help Desk to resolve any problems. Keep a record of any such correspondence. See Part IV. A. for Grants.gov contact information.

Correspondence regarding submitted applications will be sent using e-mail. Therefore, applicants are strongly encouraged to provide accurate e-mail addresses, where designated, on the SF-424 R&R Application for Federal Assistance.

If the AR has not received correspondence **from NIFA** regarding a submitted application within 30 days of the established deadline, please contact the Program Contact identified in Part VII of the applicable RFA and request the proposal number assigned to the application. **Failure to do so may result in the application not being considered for funding by the peer review panel. Once the application has been assigned a proposal number, this number should be cited on all future correspondence.**

D. Funding Restrictions

For FY 2012, section 720 of the General Provisions in Title VII of the Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Programs (HR 112-284), limited indirect costs to 30 percent of the total Federal funds provided under each award. Applicants should anticipate that the FY 2013 appropriation will contain a similar limitation. Therefore, when preparing budgets, applicants shall limit their requests for recovery of indirect costs to the lesser of their institution's official negotiated indirect cost rate or the equivalent of 30 percent of total Federal funds awarded.

Funds made available for grants under the AFRI program shall not be used for the construction of a new building or facility or the acquisition, expansion, remodeling, or alteration of an existing building or facility (including site grading and improvement, and architect fees).

E. Other Submission Requirements

1. Successful Application Submission

The applicant must follow the submission requirements noted in Part IV., section 1.9 in the document NIFA Grants.gov Application Guide.

The applicant should follow the submission requirements noted in Part IV, section 1.9 in the document entitled "NIFA Grants.gov Application Guide."

NOTE: PDF files must not be write protected or password protected. NIFA merges attachments to create the final proposal through an automated process.

2. Application Status

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

3. Multiple Submission

In accordance with Part III, section 5 of the NIFA Grants.gov Application Guide, duplicate, essentially duplicate or predominantly overlapping applications submitted to one or more program areas within the AFRI (including FASE Grants) in any one fiscal year will not be reviewed. In addition, applicants may not submit to AFRI an application that is considered duplicate, essentially duplicate, or predominantly overlapping with an application submitted to another NIFA program in the same fiscal year.

PART V—APPLICATION REVIEW REQUIREMENTS

A. General

Each application will be evaluated in a 2-part process. First, each application will be screened to ensure that it meets the administrative requirements as set forth in this RFA. Second, applications that meet these requirements will be technically evaluated by a review panel.

Reviewers will be selected based upon training and experience in relevant scientific, extension, or education fields, taking into account the following factors: (a) The level of relevant formal scientific, technical education, or extension experience of the individual, as well as the extent to which an individual is engaged in relevant research, education, or extension activities; (b) the need to include as reviewers experts from various areas of specialization within relevant scientific, education, or extension fields; (c) the need to include as reviewers other experts (e.g., producers, range or forest managers/operators, and consumers) who can assess relevance of the applications to targeted audiences and to program needs; (d) the need to include as reviewers experts from a variety of organizational types (e.g., colleges, universities, industry, state and Federal agencies, private profit and non-profit organizations) and geographic locations; (e) the need to maintain a balanced composition of reviewers with regard to minority and female representation and an equitable age distribution; and (f) the need to include reviewers who can judge the effective usefulness to producers and the general public of each application.

For more information on the peer review process, see
http://www.nifa.usda.gov/business/competitive_peer_review.html

B. Evaluation Criteria

The evaluation criteria below will be used in reviewing applications submitted in response to this RFA:

Projects supported under this program shall be designed, among other things, to accomplish one or more of the purposes of agricultural science, subject to the varying conditions and needs of States. Therefore, in carrying out its review, the peer review panel will take into account the following factors.

A. Research Project Applications

These evaluation criteria will be used for the review of all single-function Research Project applications.

a. Scientific Merit of the Application for Research

1) Novelty, innovation, uniqueness, and originality;
2) Where model systems are used, ability to transfer knowledge gained from these systems to organisms of importance to U.S. agriculture;
3) Conceptual adequacy of the research and suitability of the hypothesis, as applicable;
4) Clarity and delineation of objectives;

5) Adequacy of the description of the undertaking and suitability and feasibility of methodology;
6) Demonstration of feasibility through preliminary data; and
7) Probability of success of the project is appropriate given the level of scientific originality, and risk-reward balance.

b. Qualifications of Project Personnel, Adequacy of Facilities, and Project Management

1) Qualifications of applicant (individual or team) to conduct the proposed project, including performance record and potential for future accomplishments;
2) Demonstrated awareness of previous and alternative approaches to the problem identified in the application;
3) Institutional experience and competence in subject area;
4) Adequacy of available or obtainable support personnel, facilities, and instrumentation; and
5) Planning and administration of the proposed project, including: time allocated for systematic attainment of objectives; and planned administration of the proposed project and its maintenance, partnerships, collaborative efforts, and the planned dissemination of information for multi-institutional projects over the duration of the project.

c. Project Relevance

Documentation that the research is directed toward specific Program Area Priority(ies) identified in this RFA and is designed to accelerate progress toward the productivity and economic, environmental, and social sustainability of U.S. agriculture with respect to natural resources and the environment, human health and well-being, and communities;

B. Integrated Project Applications

These evaluation criteria will be used for the review of all multi-function Integrated Project applications.

a. Merit of the Application for Science Research, Education, and/or Extension

1) Project objectives and outcomes are clearly described, adequate, and appropriate. All project components (*i.e.*, research, education, extension) – at least two are required – are reflected in one or more project objectives;
2) Proposed approach, procedures, or methodologies are innovative, original, clearly described, suitable, and feasible;
3) Expected results or outcomes are clearly stated, measurable, and achievable within the allotted time frame;
4) Proposed research fills knowledge gaps that are critical to the development of practices and programs to address the stated problem or issue;
5) Proposed extension leads to measurable, documented changes in learning, actions, or conditions in an identified audience or stakeholder group; and
6) Proposed education (teaching) has an impact upon and advances the quality of food and agricultural sciences by strengthening institutional capacities and curricula to

meet clearly delineated needs and train the next generation of scientists and educators.

b. Qualifications of Project Personnel, Adequacy of Facilities, and Project Management

1) Roles of key personnel are clearly defined;
2) Key personnel have sufficient expertise to complete the proposed project, and where appropriate, partnerships with other disciplines (*e.g.*, social science or economics) and institutions are established;
3) Evidence of institutional capacity and competence in the proposed area of work is provided;
4) Support personnel, facilities, and instrumentation are sufficient;
5) A clear plan is articulated for project management, including time allocated for attainment of objectives and delivery of products, maintenance of partnerships and collaborations, and a strategy to enhance communication, data sharing, and reporting among members of the project team; and
6) The budget clearly allocates sufficient resources to carry out a set of research, education (teaching), and/or extension activities that will lead to desired outcomes, with no more than two-thirds of the budget focused on a single project component. Supporting funds for Community of Practice core functions and project-specific activities are included for partnerships with eXtension.

c. Project Relevance

1) Documentation that the research is directed toward specific Program Area Priority(ies) identified in this RFA and is designed to accelerate progress toward the productivity and economic, environmental, and social sustainability of U.S. agriculture with respect to natural resources and the environment, human health and well-being, and communities;
2) Project components (research, education, and/or extension) – at least two are required – are fully integrated and necessary to address the problem or issue;
3) The proposed work addresses identified stakeholder needs;
4) Stakeholder involvement in project development, implementation, and evaluation is demonstrated, where appropriate;
5) Plan and methods for evaluating success of project activities and documenting potential impact against measurable short and mid-term outcomes are suitable and feasible;
6) For extension or education (teaching) activities, curricula and related products will sustain education or extension functions beyond the life of the project; and
7) For extension or education (teaching) activities, the resulting curricula or products share information and recommendations based on knowledge and conclusions from a broad range of research initiatives.

C. Conference Grant Applications

a. Relevance of the proposed conference to agriculture and food systems in the U.S. and appropriateness of the conference in fostering scientific exchange;
b. Qualifications of the organizing committee and appropriateness of invited speakers to topic areas being covered; and
c. Uniqueness, timeliness of the conference, and appropriateness of budget requests.

D. New Investigator, Strengthening Standard, and Strengthening CAP Grant Applications

Refer to the review criteria listed above for the applicable Project Type (Research or Integrated) to which you are applying.

E. Sabbatical Grant, Equipment Grant, and Seed Grant Applications

a. The merit of the proposed activities or equipment as a means of enhancing the capabilities and competitiveness of the applicant and/or institution;
b. The applicant's previous experience and background along with the appropriateness of the proposed activities or equipment for the goals proposed; and
c. Relevance of the project to long-range improvements in and sustainability of U.S. agriculture, the environment, human health and well-being, and rural communities.

C. Conflicts of Interest and Confidentiality

During the peer evaluation process, extreme care will be taken to prevent any actual or perceived conflicts of interest that may impact review or evaluation. For the purpose of determining conflicts of interest, the academic and administrative autonomy of an institution shall be determined by reference to the current Higher Education Directory, published by Higher Education Publications, Inc., 1801 Robert Fulton Drive, Suite 340, Reston, Virginia 20191. Phone: (888) 349-7715. Web site: http://www.hepinc.com.

Names of submitting institutions and individuals, as well as application content and peer evaluations, will be kept confidential, except to those involved in the review process, to the extent permitted by law. In addition, the identities of peer reviewers will remain confidential throughout the entire review process. Therefore, the names of the reviewers will not be released to applicants.

D. Organizational Management Information

Specific management information relating to an applicant shall be submitted on a one time basis, with updates on an as needed basis, as part of the responsibility determination prior to the award of a grant identified under this RFA, if such information has not been provided previously under this or another NIFA program. NIFA will provide copies of forms recommended for use in fulfilling these requirements as part of the preaward process. Although an applicant may be eligible based on its status as one of these entities, there are factors which may exclude an applicant from receiving Federal financial and nonfinancial assistance and benefits under this

program (e.g., debarment or suspension of an individual involved or a determination that an applicant is not responsible based on submitted organizational management information).

PART VI—AWARD ADMINISTRATION

A. General

Within the limit of funds available for such purpose, the awarding official of NIFA shall make grants to those responsible, eligible applicants whose applications are judged most meritorious under the procedures set forth in this RFA. The date specified by the awarding official of NIFA as the effective date of the grant shall be no later than September 30 of the Federal fiscal year in which the project is approved for support and funds are appropriated for such purpose, unless otherwise permitted by law. It should be noted that the project need not be initiated on the grant effective date, but as soon thereafter as practical so that project goals may be attained within the funded project period. All funds granted by NIFA under this RFA shall be expended solely for the purpose for which the funds are granted in accordance with the approved application and budget, the regulations, the terms and conditions of the award, the applicable Federal cost principles, the Department's assistance regulations (parts 3015 and 3019 of 7 CFR), and the NIFA General Awards Administration Provisions at 7 CFR part 3430, subparts A through E.

B. Award Notice

The award document will provide pertinent instructions and information including, at a minimum, the following:

(1) Legal name and address of performing organization or institution to which the Director has issued an award under the terms of this request for applications;

(2) Title of project;

(3) Name(s) and institution(s) of PDs chosen to direct and control approved activities;

(4) Identifying award number assigned by the Department;

(5) Project period, specifying the amount of time the Department intends to support the project without requiring recompetition for funds;

(6) Total amount of Departmental financial assistance approved by the Director during the project period;

(7) Legal authority(ies) under which the award is issued;

(8) Appropriate Catalog of Federal Domestic Assistance (CFDA) number;

(9) Applicable award terms and conditions (see http://www.nifa.usda.gov/business/awards/awardterms.html to view NIFA award terms and conditions);

(10) Approved budget plan for categorizing allocable project funds to accomplish the stated purpose of the award; and

(11) Other information or provisions deemed necessary by NIFA to carry out its respective awarding activities or to accomplish the purpose of a particular award.

C. Administrative and National Policy Requirements

Several Federal statutes and regulations apply to grant applications considered for review and to project grants awarded under this program. These include, but are not limited to:

2 CFR Part 215 – Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations (OMB Circular A-110).

2 CFR Part 220 – Cost Principles for Educational Institutions (OMB Circular A-21).

2 CFR Part 225 – Cost Principles for State, Local, and Indian Tribal Governments (OMB Cirulcar A-87).

2 CFR Part 230 – Cost Principles for Non-profit Organizations (OMB Circular A-122).

7 CFR Part 1, subpart A—USDA implementation of the Freedom of Information Act.

7 CFR Part 3—USDA implementation of OMB Circular No. A-129 regarding debt collection.

7 CFR Part 15, subpart A—USDA implementation of Title VI of the Civil Rights Act of 1964, as amended.

7 CFR Part 331 and 9 CFR Part 121—USDA implementation of the Agricultural Bioterrorism Protection Act of 2002.

7 CFR Part 3015—USDA Uniform Federal Assistance Regulations, implementing OMB directives (i.e., OMB Circular Nos. A-21, A-87, and A-122, now codified at 2 CFR Parts 220, 225 and 230), and incorporating provisions of 31 U.S.C. 6301-6308 (formerly the Federal Grant and Cooperative Agreement Act of 1977, Pub. L. No. 95-224)), as well as general policy requirements applicable to recipients of Departmental financial assistance.

7 CFR Part 3016 – USDA Implementation of Uniform Administrative Requirements for Grants and Cooperative Agreements to State and Local Governments.

7 CFR Part 3017—USDA implementation of Governmentwide Debarment and Suspension (Nonprocurement).

7 CFR Part 3018—USDA implementation of Restrictions on Lobbying. Imposes prohibitions and requirements for disclosure and certification related to lobbying on recipients of Federal contracts, grants, cooperative agreements, and loans.

7 CFR Part 3019—USDA implementation of OMB Circular A-110, Uniform Administrative Requirements for Grants and Other Agreements With Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations (2 CFR Part 215).

7 CFR Part 3021—USDA Implementation of Governmentwide Requirements for Drug-Free Workplace (Grants).

7 CFR Part 3022 —Research Institutions Conducting USDA-Funded Extramural Research; Research Misconduct.

7 CFR Part 3052—USDA implementation of OMB Circular No. A-133, Audits of States, Local Governments, and Nonprofit Organizations.

7 CFR Part 3407—USDA procedures to implement the National Environmental Policy Act of 1969, as amended.

7 CFR 3430—Competitive and Noncompetitive Non-formula Grant Programs--General Grant Administrative Provisions.

29 U.S.C. 794 (section 504, Rehabilitation Act of 1973) and 7 CFR Part 15b (USDA implementation of statute) —prohibiting discrimination based upon physical or mental handicap in Federally assisted programs.

35 U.S.C. 200 et seq. —Bayh Dole Act, controlling allocation of rights to inventions made by employees of small business firms and domestic nonprofit organizations, including universities, in Federally assisted programs (implementing regulations are contained in 37 CFR Part 401).

D. Expected Program Outputs and Reporting Requirements

Grantees are to submit initial project information and annual and summary reports to NIFA' s electronic, Web-based inventory system that facilitates both grantee submissions of project outcomes and public access to information on Federally-funded projects. The details of these reporting requirements are included in the NIFA Agency-specific Terms and Conditions. Details of annual and final technical reporting requirements also are included in the award terms and conditions. All funding accounts will close 90 days after the expiration date of the award.

If a project is funded, beginning in the first year of funding, the project director will be required to attend annual investigator meetings (excluding Planning/Coordination, Conference, Sabbatical, and Equipment Grant applications). Seed Grant applications are required to attend beginning in the second year of funding. Reasonable travel expenses should be included as part of the project budget.

PART VII—AGENCY CONTACT

For general questions related to the AFRI Programs, applicants and other interested parties are encouraged to contact AFRI:

AFRI Program Office:
Dr. Franklin E. Boteler, Assistant Director, Institute of Bioenergy, Climate, and Environment
Dr. Robert E. Holland, Assistant Director, Institute of Food Safety and Nutrition
Dr. Deborah Sheely, Assistant Director, Institute of Food Production and Sustainability
Telephone: (202) 401-5022
Fax: (202) 401-6488
E-mail: AFRI@nifa.usda.gov

For general questions related to the Sustainable Bioenergy Challenge Area RFA, applicants and other interested parties are encouraged to contact:

Dr. Franklin E. Boteler, Assistant Director, Institute of Bioenergy, Climate, and Environment
Telephone: (202) 720-0740
E-mail: fboteler@nifa.usda.gov

Specific questions pertaining to technical matters may be directed to the appropriate Program Area Contacts:

Program Area	Program Area Contacts
Development and Sustainable Production of Regionally-Appropriate Biomass Feedstocks	Carmela Bailey: (202) 401-6443 or cbailey@nifa.usda.gov William Goldner: (202) 401-1719 or wgoldner@nifa.usda.gov Fen Hunt: (202) 720-4114 or fhunt@nifa.usda.gov
Sustainable Bioenergy Research	Carmela Bailey: (202) 401-6443 or cbailey@nifa.usda.gov Nancy Cavallaro: 202-401-5176 or ncavallaro@nifa.usda.gov William Goldner: (202) 401-1719 or wgoldner@nifa.usda.gov Fen Hunt: (202) 720-4114 or fhunt@nifa.usda.gov

PART VIII—OTHER INFORMATION

A. Access to Review Information

Copies of reviews, not including the identity of reviewers, and a summary of the panel comments will be sent to the applicant PD after the review process has been completed.

B. Use of Funds; Changes

1. Delegation of Fiscal Responsibility

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

2. Changes in Project Plans

a. The permissible changes by the awardee, PD(s), or other key project personnel in the approved project shall be limited to changes in methodology, techniques, or other similar aspects of the project to expedite achievement of the project's approved goals. If the awardee or the PD(s) is uncertain as to whether a change complies with this provision, the question must be referred to the Authorized Departmental Officer (ADO) for a final determination. The ADO is the signatory of the award document, not the program contact.

b. Changes in approved goals or objectives shall be requested by the awardee and approved in writing by the ADO prior to effecting such changes. In no event shall requests for such changes be approved which are outside the scope of the original approved project.

c. Changes in approved project leadership or the replacement or reassignment of other key project personnel shall be requested by the awardee and approved in writing by the ADO prior to effecting such changes.

d. Transfers of actual performance of the substantive programmatic work in whole or in part and provisions for payment of funds, whether or not Federal funds are involved, shall be requested by the awardee and approved in writing by the ADO prior to effecting such transfers, unless prescribed otherwise in the terms and conditions of the award.

e. The project period may be extended by NIFA without additional financial support, for such additional period(s) as the ADO determines may be necessary to complete or fulfill the purposes of an approved project, but in no case shall the total project period exceed any applicable statutory limit or expiring appropriation limitation. Any extension of time shall be conditioned upon prior request by the awardee and approval in writing by the ADO, unless prescribed otherwise in the terms and conditions of award.

f. Changes in Approved Budget: Unless stated otherwise in the terms and conditions of award, changes in an approved budget must be requested by the awardee and approved in writing by the

ADO prior to instituting such changes, if the revision will involve transfers or expenditures of amounts requiring prior approval as set forth in the applicable Federal cost principles, Departmental regulations, or award.

C. Confidential Aspects of Applications and Awards

When an application results in an award, it becomes a part of the record of NIFA transactions, available to the public upon specific request. Information that the Secretary determines to be of a confidential, privileged, or proprietary nature will be held in confidence to the extent permitted by law. Therefore, any information that the applicant wishes to have considered as confidential, privileged, or proprietary should be clearly marked within the application. The original copy of an application that does not result in an award will be retained by the Agency for a period of three years. Other copies will be destroyed. Such an application will be released only with the consent of the applicant or to the extent required by law. An application may be withdrawn at any time prior to the final action thereon.

D. Regulatory Information

For the reasons set forth in the final Rule related Notice to 7 CFR part 3015, subpart V (48 FR 29114, June 24, 1983), this program is excluded from the scope of the Executive Order 12372 which requires intergovernmental consultation with State and local officials. Under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 35), the collection of information requirements contained in this Notice have been approved under OMB Document No. 0524-0039.

E. Definitions

Please refer to 7 CFR 3430, Competitive and Noncompetitive Non-formula Grant Programs--General Grant Administrative Provisions, for applicable definitions for this NIFA grant program.

For the purpose of this program, the following additional definitions are applicable:

Director means the Director of the National Institute of Food and Agriculture (NIFA) and any other officer or employee of NIFA to whom the authority involved is delegated.

Food and Agricultural Science Enhancement (FASE) Grants means funding awarded to eligible applicants to strengthen science capabilities of Project Directors, to help institutions develop competitive scientific programs, and to attract new scientists into careers in high-priority areas of National need in agriculture, food, and environmental sciences. FASE awards may apply to any of the three agricultural knowledge components (i.e., research, education, and extension). FASE awards include Pre- and Postdoctoral Fellowships, New Investigator grants, and Strengthening grants.

Integrated project means a project incorporating two or three functions of the agricultural knowledge system (research, education, and extension) around a problem or activity.

Limited institutional success means institutions that are not among the most successful universities and colleges for receiving Federal funds for science and engineering research. A list of successful institutions will be provided in the RFA.

Minority-serving institution means an accredited academic institution whose enrollment of a single minority or a combination of minorities exceeds fifty percent of the total enrollment, including graduate and undergraduate and full- and part-time students. An institution in this instance is an organization that is independently accredited as determined by reference to the current version of the Higher Education Directory, published by Higher Education Publications, Inc., 1801 Robert Fulton Drive, Suite 340, Reston, Virginia 20191. Phone: (888) 349-7715. Minority means Alaskan Native, American Indian, Asian-American, African-American, Hispanic American, Native Hawaiian, or Pacific Islander. The Secretary will determine on a case-by-case basis whether additional groups qualify under this definition, either at the Secretary's initiative, or in response to a written request with supporting explanation.

Multidisciplinary project means a project on which investigators from two or more disciplines collaborate to address a common problem. These collaborations, where appropriate, may integrate the biological, physical, chemical, or social sciences.

Small and mid-sized institutions are academic institutions with a current total enrollment of 17,500 or less including graduate and undergraduate and full- and part-time students. An institution, in this instance, is an organization that possesses a significant degree of autonomy. Significant degree of autonomy is defined by being independently accredited as determined by reference to the current version of the *Higher Education Directory*, published by Higher Education Publications, Inc., 1801 Robert Fulton Drive, Suite 340, Reston, Virginia 20191. Phone: (888) 349-7715.

Strengthening Grants means funds awarded to institutions eligible for FASE Grants to enhance institutional capacity, with the goal of leading to future funding in the project area, as well as strengthening the competitiveness of the investigator's research, education, and/or extension activities. Strengthening grants consist of Standard and Coordinated Agricultural Project Grant types as well as Seed Grants, Equipment Grants, and Sabbatical Grants.

USDA EPSCoR States (Experimental Program for Stimulating Competitive Research) means States which have been less successful in receiving funding from AFRI, or its predecessor, the National Research Initiative (NRI), having a funding level no higher than the 38th percentile of all States based on a 3-year average of AFRI and/or NRI funding levels, excluding FASE Strengthening funds granted to state agricultural experiment stations and degree-granting institutions in EPSCoR States and small, mid-sized, and minority-serving degree-granting institutions. The most recent list of USDA EPSCoR States is provided in this RFA.

E. Application Disposition

When each peer review panel has completed its deliberations, the responsible program staff of AFRI will recommend that the project: (a) be approved for support from currently available funds or (b) be declined due to insufficient funds or unfavorable review.

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

An application may be withdrawn at any time before a final funding decision is made regarding the application; however, withdrawn applications normally will not be returned. One copy of each application that is not selected for funding, including those that are withdrawn, will be retained by AFRI for a period of three years.

F. Materials Available on the Internet

AFRI program information will be made available on the NIFA Web site: http://www.nifa.usda.gov/funding/afri/afri.html. The following are among the materials available on the AFRI More Information Page:

1. More information about upcoming AFRI 2013 Requests for Applications
2. AFRI Abstracts of Funded Projects
3. AFRI Annual Reports
4. AFRI Foundational Program addressing the six AFRI priority areas
5. Other AFRI Challenge Area RFAs
6. NIFA Fellowships Grant Program soliciting Pre- and Postdoctoral Fellowship Grant applications

All **AFRI program information**, including the anticipated release date of the Challenge Area RFAs and the NIFA Fellowships Grant Program RFA, is available on the NIFA Web site at: www.nifa.usda.gov/afri.

G. Electronic Subscription to AFRI Announcements

If you would like to receive notifications of all new announcements pertaining to AFRI RFA, you can register via Grants.gov at http://www.grants.gov/search/subscribeAdvanced.do.

- Enter the e-mail address at which you would like to receive the announcements
- Enter "10.310" for *CFDA Number*
- Select "Subscribe to Mailing List"

Other criteria may be selected; however, your e-mail address and the CFDA number are the only data required to receive AFRI announcements. You do not need to be a registered user of Grants.gov to use this service. You may modify your subscriptions or unsubscribe at any time.

TABLE 1. Most Successful Universities and Colleges Receiving Federal Funds*.
Use to Determine Eligibility for Strengthening Grants

Arizona State University (all campuses)	Pennsylvania State University (all campuses)	University of Massachusetts, Amherst
Baylor College of Medicine	Princeton University	University of Massachusetts, Worcester
Boston University	Purdue University (all campuses)	University of Miami
Brown University	Rutgers, The State University of New Jersey (all campuses)	University of Michigan (all campuses)
California Institute of Technology	Scripps Research Institute, The	University of Minnesota (all campuses)
Carnegie Mellon University	Stanford University	University of Missouri, Columbia
Case Western Reserve University	State University of New York, Stony Brook (all campuses)	University of New Mexico (all campuses)
Colorado State University	Texas A&M University (all campuses)	University of North Carolina, Chapel Hill
Columbia University	University of Alabama, Birmingham	University of Medicine and Dentistry New Jersey
Cornell University (all campuses)	University of Arizona	University of Pennsylvania
Dartmouth College	University of California, Berkeley	University of Pittsburgh (all campuses)
Duke University	University of California, Davis	University of Rochester
Emory University	University of California, Irvine	University of South Florida
Florida State University	University of California, Los Angeles	University of Southern California
George Washington University	University of California, San Diego	University ot Texas (all campuses)
Georgetown University	University of California, San Francisco	University of Texas, Austin
Georgia Institute of Technology (all campuses)	University of California, Santa Barbara	University of Texas Health Science Center, Houston
Harvard University	University of Chicago	University of Texas Health Science Center, San Antonio
Indiana University Purdue University Indianapolis	University of Cincinnati (all campuses)	University of Texas M.D. Anderson Cancer Center
Iowa State University	University of Colorado (all campuses)	University of Texas Medical Branch
Johns Hopkins University, The	University Corporation for Atmospheric Research	University of Texas Southwestern Medical Center, Dallas
Louisiana State University (all campuses)	University of Connecticut (all campuses)	University of Utah
Massachusetts Institute of Technology	University of Delaware	University of Virginia (main campus)
Medical College of Wisconsin	University of Florida	University of Washington
Medical University of South Carolina	University of Georgia	University of Wisconsin, Madison
Michigan State University	University of Hawaii, Manoa	Vanderbilt University
Mississippi State University	University of Illinois, Chicago	Virginia Commonwealth University
Mount Sinai School of Medicine	University of Illinois, Urbana-Champaign	Virginia Polytechnic Institute and State University
New York University	University of Iowa	Wake Forest University
North Carolina State University	University of Kansas (all campuses)	Washington University, St. Louis
Northwestern University	University of Kentucky (all campuses)	Woods Hole Oceanographic Institute
Ohio State University (all campuses)	University of Maryland, Baltimore	Yale University
Oregon Health & Science University	University of Maryland, College Park	Yeshiva University
Oregon State University		

***Data obtained from the table of Federal obligations for science and engineering research and development to the 100 universities and colleges receiving the largest amounts, ranked by total amount received in FY 2008 of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions (National Science Foundation). Campuses that are part of a larger university system as listed in Table 1 may petition for an exemption to this rule (see Part III, B for information).**

TABLE 2. Lowest One Third of Universities and Colleges Receiving Federal Funds*.
Use to Determine Eligibility for Possible Waiver of Matching Funds Requirement for Equipment Grants

A. T. Still University of Health Sciences	Greenfield Community College	Randolph-Macon College
Abilene Christian University	Greenville Technical College	Regis University
Adelphi University	Grinnell College	Rhode Island College
Agnes Scott College	Hamline University	Rider University
Aiken Technical College	Hampshire College	Roanoke College
AK Pacific University	Harford Community College	Robert Morris University
Albion College	Harris-Stowe State University	Robeson Community College
Albright College	Hawaii Pacific University	Rollins College
Allegheny College	Heidelberg College	Rust College
Alma College	High Point University	Saginaw Valley State University
American Indian Higher Ed. Consortium	Hinds Community College (Raymond, MS)	Salem State College
American University	Hiram College	Salisbury University
American University Puerto Rico	Hood College	San Diego Mesa College
Andrews University	Howard Community College	Sarah Lawrence College
Angelo State University	Hudson Valley Community College	Savannah State University
Anna Maria College	Huston-Tillotson University	Savannah Technical College
Arapahoe Community College	Illinois College of Optometry	Scripps College
Arcadia University	Illinois Wesleyan University	Seattle Community College (all campuses)
Arizona Western College	Indiana University-Purdue University Ft. Wayne	Seattle University
Arkansas Tech University	Indiana Wesleyan University	Seminole State College
Armstrong Atlantic State University	Institute of American Indian and Alaska Native Culture and Arts Development	Shawnee State University
Art Center College of Design	Iona College	Simmons College
Ashland University	Iowa Lakes Community College	Skagit Valley College
Assumption College	Ithaca College	Slippery Rock University Pennsylvania
Augsburg College	Ivy Tech Community College Indiana (all campuses)	Sojourner-Douglass College
Augustana College (Rock Island, IL)	J. F. Drake State Technical College	Sonoma State University
Augustana College (Sioux Falls, SD)	Jamestown Community College	South Florida Community College
Austin Community College	Jarvis Christian College	South Texas College
Austin Peay State University	John Carroll University	Southeast Missouri State University
Avila University	Johnson County Community College	Southeastern Oklahoma State University
Baker University	Kalamazoo College	Southern New HampshireUniversity
Baltimore City Community College	Kankakee Community College	Southern Oregon University
Bard College at Simon's Rock	Kansas City University of Medicine and Biosciences	Southern Polytechnic State University
Baton Rouge Community College	Keene State College	Southwest FL College
Bay Mills Community College	Kenyon College	Southwestern College (Chula Vista, CA)
Bellevue Community College	Kettering University	Southwestern Oklahoma State University
Belmont University	Keweenaw Bay Ojibwa Community College	Southwestern University
Beloit College	King College	Springfield College (Springfield, MA)
Benedictine University	Kutztown University Pennsylvania	St. Augustine's College
Benjamin Franklin Institute of Technology	LA Technical College Florida Parishes Campus	St. Catharine College
Berea College	Lake City Community College	St. Lawrence University
Bethel University (all campuses)	Lake Forest College	St. Mary's University (San Antonio, TX)
Bethune-Cookman University	Lake Superior State University	St. Michael's College
Birmingham-Southern College	Lansing Community College	St. Norbert College
Bismarck State College	Laramie County Community College	St. Peter's College
Black Hawk College (all campuses)	Lasell College	St. Vincent College
Black Hills State University	Lawrence University	St. Xavier University
Bloomsburg University Pennsylvania	Lawson State Community College	State Ctr. Community College District
Bridgewater State College	Lebanon Valley College	State University System Florida (all campuses)
Brookdale Community College	LeTourneau University	Stevenson University
Butler University	Liberty University	Stillman College
Butte College	Little Priest Tribal College	Stonehill College
Cabrini College	Longwood University	SUNY College Brockport
California Lutheran University	Loyola College	SUNY College Cortland
California State University, Bakersfield	Loyola University New Orleans	SUNY College Geneseo
Cameron University	Lyndon State College	SUNY College of Agriculture and Technology Morrisville
Canisius College	Lyon College	SUNY College Oneonta
Carl Albert State College	Macalester College	SUNY College Potsdam
Carlos Albizu University (San Juan, PR)	Macomb Community College	SUNY Empire State College
Carthage College	Madison Area Technical College	SUNY Farmingdale
Casper College	Mansfield University Pennsylvania	SUNY Fredonia
Central College	Marian College Fond du Lac	SUNY Institute of Technology Utica-Rome
Central FL Community College	Marion Military Institute	SUNY Purchase College
Central Georgia Technical College	Martin University	Sweet Briar College
Central MO State University	Mary Baldwin College	Tacoma Community College
Centre College	Marymount University	Tarleton State University
Charleston Southern University	Massachusetts Bay Community College	Taylor University

Chatham College	Massachusetts College of Liberal Arts	Texas College
Christian Brothers University	McKendree University	Texas Wesleyan University
Clarion University Pennsylvania (all campuses)	McNeese State University	Touro College
Clark College	Mercyhurst College	Tri-College University
Cleveland State Community College	Mesa State College	Troy University main campus
College Idaho	Mesabi Range Community and Technical College	Truman State University
College New Jersey, The	Metropolitan State College Denver	University Alaska Southeast
College of Notre Dame Maryland	Middlesex Community College	University Arkansas Ft. Smith
College of St. Catherine	Mid-South Community College	University Central Oklahoma
College of St. Rose	Midwestern University (Chicago, IL)	University Consortium for Geographic Information Science
College of St. Scholastica	Millersville University Pennsylvania	University Houston Clear Lake
College of the Atlantic	Milwaukee School of Engineering	University Illinois Springfield
College Southern Maryland	Minnesota State College Southeast Technical College	University Louisiana Monroe
College Wooster	Misericordia University	University Maine Augusta
Colorado College	Monroe Community College	University Maine Machias
Columbus State University	Mountain State University	University Maryland University College
Community College Rhode Island	MT Tech College of Technology	University New Haven
Community-Technical Colleges	Mt. Hood Community College	University Portland
Concordia Theological Seminary	Mt. St. Mary's University	University Puget Sound
Concordia University (River Forest, IL)	Mt. Wachusett Community College	University Redlands
Cooper Union	Muskingum College	University Sagrado Corazon
Covenant College	National University of Health Sciences	University South Dakota (all campuses)
CUNY Borough of Manhattan Community College	National-Louis University	University Tampa
CUNY Medgar Evers College	Naval Postgraduate School	University Turabo
CUNY New York City College of Technology	Neumann College	University West Florida
Daemen College	New Jersey School of Osteopathic Medicine	University WI-Green Bay
Daytona Beach Community College	New Mexico Military Institute	University Wisconsin-Platteville
Defense Acquisition University	New York Law School	University Wisconsin-River Falls
Del Mar College	NHTI, Concord's Community College	University Wisconsin-Stout
Denison University	Nicholls State University	University Wisconsin-Superior
DePauw University	Normandale Community College	University Wisconsin-Whitewater
Des Moines University	North Central College	Upper Midwest Aerospace Consortium
Dickinson State University	North Dakota State College of Science	Ursinus College
Dixie State College Utah	North Georgia College & State University	Utah Valley State College
Doane College	North Hennepin Community College	Valdosta State University
Dominican University California	Northampton County Area Community College	Valparaiso University
Dowling College	Northern Essex Community College	Vermont Technical College
Drury University	Northern WY Community College District	Virginia Military Institute
East Mississippi Community College	Northwestern Health Sciences University	Virginia Union University
Eastern Mennonite University	Northwestern Michigan College	Wabash College
Eastern Oregon University	Northwestern OK State University	Wake Technical Community College
El Camino College Compton Center	Northwestern State University	Waldorf College
Elizabethtown College	Norwich University	Warren Wilson College
Elmhurst College	Occidental College	Washington and Lee University
Elon University	Ohio Northern University	Washington College
Emporia State University	Orangeburg-Calhoun Technical College	Wayne State College
Erskine College	Oregon College of Oriental Medicine	Webb Institute
Everett Community College	Our Lady of the Lake University	Western Connecticut State University
Fayetteville Technical Community College	Pace University (all campuses)	Western New England College
Finger Lakes Community College	Pacific Lutheran University	Western State College Colorado
Fitchburg State College	Pacific University	Westminster College (Salt Lake City, UT)
Flathead Valley Community College	Palau Community College	Westmont College
Florence-Darlington Technical College	Pasadena City College	Wheaton College (Norton, MA)
Florida Gulf Coast University	Paul Smith's College of Arts and Sciences	Wheaton College (Wheaton, IL)
Fox Valley Technical College	Pearl River Community College	White Earth Tribal and Community College
Francis Marion University	Peninsula College	Whitman College
Franciscan University Steubenville	Pepperdine University Malibu	Wiley College
Franklin W. Olin College of Engineering	Plymouth State University	Wilkes University
Ft. Hays State University	Polk Community College	William Paterson University New Jersey
Gem National Consortium for Graduate Degrees for Minorities in Engineering and Science, InCollege	Prescott College	Winona State University
Geophysical Institute, UAF	Prince George's Community College	Wittenberg University
Gonzaga University	Quinnipiac University	York Technical College
Gordon College (Wenham, MA)	Quinsigamond Community College	
Goucher College	Radford University	

*Data obtained from the table of Federal obligations for science and engineering research and development to universities and colleges, ranked by total amount received, by agency from the FY 2008 Survey of Federal Science and Engineering Support to Universities, Colleges, and Nonprofit Institutions (National Science Foundation).

FIGURE 1. Flow Chart for Strengthening Grant Eligibility.