

Agriculture and Food Research Initiative Competitive Grants Program

Food Security Challenge Area

FY 2016 Request for Applications (RFA)

LETTER OF INTENT DEADLINE: Not Applicable
APPLICATION DEADLINE: July 7, 2016

ELIGIBILITY: See Part III, A of RFA



United States
Department of
Agriculture

National Institute
of Food and
Agriculture

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

**AGRICULTURE AND FOOD RESEARCH INITIATIVE
COMPETITIVE GRANTS PROGRAM
FOOD SECURITY CHALLENGE AREA**

INITIAL ANNOUNCEMENT

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

DATES: Applications must be received by 5:00 p.m. Eastern Time on the deadline date indicated in the Program Area Descriptions section beginning in Part I, C. Applications received after this deadline will normally not be considered for funding (see Part IV, C. of this RFA). Comments regarding this request for applications (RFA) are requested within 6 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) seeks your comments about this RFA. We will consider the comments when we develop the next RFA for the program, if applicable, and we'll use them to meet the requirements of section 103(c)(2) of the Agricultural Research, Extension, and Education Reform Act of 1998 (7 U.S.C. 7613(c)(2)). Submit written stakeholder comments by the deadline set forth in the DATES portion of this Notice 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 Food Security Challenge Area RFA.

Visit the [NIFA website](#) to access a factsheet on the center of excellence (COE) designation process, including COE criteria, and a list of programs offering COE opportunities in fiscal year (FY) 2016. You can also review a recording of COE outreach webinars held in February and March of 2015 from the site. The COE webpages will be updated throughout FY 2016 with additional information, such as a summary of comments received from stakeholders.

Pursuant to Section 7404 of the Agricultural Act of 2014 (Pub. L. 113-79), NIFA solicits proposed topics for [Agriculture and Food Research Initiative](#) RFAs from eligible state and national commodity boards on an ongoing basis. Topics must relate to the established AFRI priority areas, which are plant health and production and plant products; animal health and production and animal products; food safety, nutrition, and health; bioenergy, natural resources, and environment; agriculture systems and technology; and agriculture economics and rural communities (as stated in the 2014 Farm Bill).

NIFA received topics from eligible commodity boards until September 22, 2015 for incorporation into FY 2016 RFAs. Topics that are considered appropriate for AFRI are incorporated into the relevant AFRI RFAs. One of the topics submitted by commodity boards was chosen for inclusion as a priority in a selected Program Area within this RFA since it fit the subject matter of this RFA. The NIFA Fact Sheet on implementation of the commodity

boards provision of the 2014 Farm Bill can be found at:

<https://nifa.usda.gov/sites/default/files/resource/Commodity%20Board%20Fact%20Sheet%20P6.pdf>. Additional information on eligibility and how to submit topics for inclusion in future AFRI Requests for Applications can be found at: <http://nifa.usda.gov/commodity-boards>.

Applicants are encouraged to view the Program Area Descriptions beginning in Part I, C. of this RFA for additional details of commodity board-specific priorities and submission of applications relevant to these priorities. All applications submitted to these priorities must follow the standard application submission requirements described for the Program Area under which they are listed. Additionally, applicants must state in the last sentence of their application's Project Summary section that the proposal is submitted in response to a specific commodity board topic. Applicants also should provide a letter of support from the relevant commodity board directly to the pertinent Program Contact within 60 days after the application submission deadline. All applications will be evaluated using the same standard review procedures and consideration of funding applied to all AFRI grant applications. Applications without a letter of support from a commodity board will not be eligible to receive commodity board co-funding.

EXECUTIVE SUMMARY: Agriculture and Food Research Initiative (AFRI) is a competitive grant program that provides funding for fundamental and applied research, education, and extension projects in food and agricultural sciences. Within AFRI, the long-term goal of the AFRI Food Security Challenge Area is to sustainably increase agricultural productivity and the availability and accessibility of safe and nutritious food. In FY 2016 the AFRI Food Security Challenge Area will invest in two priority areas, pollinator health and breeding and phenomics of food crops and animals. Through these investments, NIFA will address the current problem of declining populations of managed and wild pollinators and support the development of locally adapted crop cultivars and animal breeds that will be productive despite less favorable climates and increased pressure from diseases and pests. Both of these investments will contribute to rural economic development and prosperity while enhancing regional and national resilience and food security.

In FY 2016, applications for the AFRI Food Security Challenge Area are sought in the following priority areas:

- (1) New Frontiers in Pollinator Health: From Research to Applications
- (2) Breeding and Phenomics of Food Crops and Animals

The anticipated amount available for grants in FY 2016 is approximately \$16.8 million.

This notice identifies the objectives for AFRI Food Security Challenge Area projects, the eligibility criteria for projects and applicants, and the application forms and associated instructions needed to apply for an AFRI Food Security Challenge Area grant.

Significant changes described in this AFRI Food Security RFA include: 1) modification of the Program Area Priorities; and 2) addition of a commodity board priority in the Breeding and Phenomics of Food Crops and Animals Program Area Priority.

Table of Contents

PART I—FUNDING OPPORTUNITY DESCRIPTION.....	5
A. Legislative Authority and Background	5
B. Purpose and Priorities	5
C. Program Area Description	7
PART II—AWARD INFORMATION.....	14
A. Available Funding	14
B. Types of Applications.....	14
C. Project Types	15
D. Grant Types	15
E. Responsible and Ethical Conduct of Research	15
PART III—ELIGIBILITY INFORMATION	16
A. Eligible Applicants	16
B. Request for Determination.....	17
C. Cost Sharing or Matching.....	18
D. Centers of Excellence.....	18
PART IV—APPLICATION AND SUBMISSION INFORMATION	20
A. Letter of Intent (LOI) Instructions.....	20
B. Electronic Application Package.....	20
C. Content and Form of Application Submission	21
D. Submission Dates and Times	34
E. Funding Restrictions	35
F. Other Submission Requirements.....	35
PART V—APPLICATION REVIEW REQUIREMENTS.....	37
A. General	37
B. Evaluation Criteria.....	37
C. Conflicts of Interest and Confidentiality	37
D. Organizational Management Information	37
E. Application Disposition	37
PART VI—AWARD ADMINISTRATION.....	38
A. General	38
B. Award Notice.....	38
C. Administrative and National Policy Requirements	39
D. Responsible and Ethical Conduct of Research.....	39
E. Expected Program Outputs and Reporting Requirements	39
PART VII—AGENCY CONTACTS.....	40
PART VIII—OTHER INFORMATION.....	41
A. Access to Review Information	41
B. Use of Funds; Changes	41
C. Confidential Aspects of Applications and Awards.....	42
D. Regulatory Information	42
E. Definitions	42
TABLE 1. MOST SUCCESSFUL UNIVERSITIES AND COLLEGES.....	44
TABLE 2. LOWEST ONE THIRD OF UNIVERSITIES AND COLLEGES RECEIVING FEDERAL FUNDS.....	44
FIGURE 1. FLOW CHART FOR STRENGTHENING GRANT ELIGIBILITY	45

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) amended 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 that will provide funding for fundamental and applied research, education, and extension to address food and agricultural sciences. The legislation directed the Secretary to award grants 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. Bioenergy, natural resources, and environment;
5. Agriculture systems and technology; and
6. Agriculture economics and rural communities.

To the maximum extent practicable, 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 food and agriculture, including farm efficiency and profitability, ranching, renewable energy, forestry (both urban and agroforestry), aquaculture, rural communities and entrepreneurship, human nutrition, food safety, physical and social sciences, home economics and rural human ecology, biotechnology, conventional breeding, and including both conventional and organic food production systems. Through this support, AFRI advances knowledge in both fundamental and applied sciences that is 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 funding opportunities for research only projects and integrated research, education, and/or extension projects.

AFRI is intended to promote advances in U.S. food, agriculture and forestry. Agriculture, however, is increasingly worldwide in scope and reach. To attain AFRI's goals for U.S. agriculture and global competence of our nation's agricultural workforce, applicants to Foundational or Challenge Area RFAs are encouraged to include international partnerships or engagement in proposals, as appropriate.

Applicants may submit proposals that support USDA's strategic objective (3.1) to "ensure U.S. agricultural resources contribute to enhanced global food security" (see [USDA Strategic Plan](#)

[FY2014-2018](#)). Any such activity proposed under AFRI (e.g., partnerships, exchanges, training, and/or travel), 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 U.S. agriculture.

If international activities are proposed, applicants must describe the metrics that will be used for reporting beneficial outputs and outcomes. Such metrics should reflect how the proposed international collaboration adds value to achieving the AFRI program's objectives by introducing innovative technologies/approaches, promoting synergistic science, addressing issues of mutual concern, or other means.

Additional guidance on including international activities in AFRI applications is provided on the [Center for International Programs](#) website that includes Frequently Asked Questions, descriptions of existing MOUs and other resources to assist applicants interested in enhancing the potential for global engagement.

Supporting the many components of agriculture under the constraints of a growing population, pressure on natural resources, the challenges of climate variability and change, and food security and food safety in a global economy, 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.

Stakeholder Input

For information on stakeholder input related to AFRI and the Food Security Challenge Area, please visit <https://nifa.usda.gov/resource/afri-stakeholder-feedback>.

Background

AFRI is one of NIFA's major programs through which to address critical societal issues. USDA leadership has integrated the six AFRI priority areas (outlined in Part I, A.) into the Foundational program, six primary Challenge Areas, and the Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (formerly the NIFA Fellowships program) 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 six priorities for AFRI identified in the 2014 Farm Bill, as indicated in Part I, A.

This AFRI RFA is aligned with Section 7406, Subsection (b) of the Competitive, Special, and Facilities Research Grant Act (7 U.S.C. 450i(b)) as amended by the 2014 Farm Bill under section 7401.

This AFRI RFA addresses the following priorities within the 2014 Farm Bill: A. Plant Health and Production and Plant Products – Plant systems (sub priorities i. plant genome structure and

function; and iii. conventional breeding, including cultivar and breed development, selection theory, applied quantitative genetics, breeding for improved food quality, breeding for improved local adaptation to biotic stress and abiotic stress); B. Animal Health and Production and Animal Products - Animal systems (sub priorities; iv. conventional breeding, including breed development, selection theory, applied quantitative genetics, breeding for improved food quality, breeding for improved local adaptation to biotic stress and abiotic stress, and participatory breeding; and v. identification of genes responsible for improved production traits and resistance to disease); and D. Bioenergy, Natural Resources, and Environment - Natural resources and the environment (sub priorities i. fundamental structures and functions of ecosystems; and ii. biological and physical bases of sustainable production systems).

This AFRI RFA also aligns with Strategic Goal 1 (Objectives 1.1 and 1.2), Strategic Goal 2 (Objectives 2.1 and 2.2), Strategic Goal 3 (Objectives 3.1 and 3.2), and Strategic Goal 4 (Objectives 4.1 and 4.4) of the USDA Strategic Plan (<http://www.ocfo.usda.gov/usdasp/sp2014/usda-strategic-plan-fy-2014-2018.pdf>).

This AFRI RFA aligns with the USDA Research, Education, and Economics (REE) Action Plan (http://www.ree.usda.gov/ree/news/USDA_2014_REE_Action_Plan_08-2014_Final.pdf). Program Areas in this AFRI RFA draw from specific actionable items defined in the REE Action Plan, but not all items defined by the Action Plan are addressed by this year's RFA. Several action items are addressed by other AFRI RFAs. NIFA may also solicit applications for AFRI funds through other announcements, including supplemental AFRI RFAs or RFAs issued in conjunction with other federal agencies. Such announcements will be made public in the same manner as this announcement. Other sources of NIFA funding for work relevant to this RFA can be found at www.nifa.usda.gov/afri.

This AFRI RFA is also aligned with the NIFA Strategic plan (http://nifa.usda.gov/about/pdfs/strat_plan_2014.pdf), and specifically addresses Strategic Goal 1: Science (Subgoal 1.1).

C. Program Area Description

Transformative science is necessary to address urgent current challenges in production agriculture and to provide breakthroughs for ensuring sustainable production of safe, nutritious food to meet future demands. Globally, food production needs to increase substantially to feed 9.5 billion people in 2050, with a significant proportion of this increased food production occurring in the U.S. The escalating global demand for food, especially for animal protein, provides enhanced opportunities for American agricultural producers. In FY 2016, applications are solicited under the following two Program Area Priorities, representing two critical needs for meeting the food security challenge:

1. New Frontiers in Pollinator Health: From Research to Application

Program Area Priority Code – A5170

Application Deadline – July 7, 2016 (5:00 p.m., Eastern Time)

Proposed Budget Requests

- Standard and FASE Grants must not exceed **\$1 million total per project (including indirect costs) for project periods of up to 3 years**. The program anticipates making up to 7 new awards.
- Food and Agricultural Science Enhancement (FASE) grants must adhere to the guidelines in Part II, D.
- Requests exceeding the budgetary guidelines will not be reviewed.

Requested Project Types – Integrated Projects only

Requested Grant Types – Standard and FASE (Strengthening Standard and New Investigator) grants only

Program Area Priority Contact – Dr. Mary Purcell-Miramontes (202) 401-5168, mpurcell@nifa.usda.gov

Program Area Priority –

Healthy food systems and native ecosystems rely upon robust populations of animal pollinators (e.g., bees, wasps, flies, moths, beetles, bats) that directly impact our Nation’s economy, food security, and environmental health. Pollinators provide essential ecosystem services to numerous plant species by transferring pollen in and between flowers, which ensures the production of seeds. Most fruit and vegetable crops depend on these organisms for pollination. Pollinator populations have experienced substantial declines and the proximal causes are not well understood. Individual factors and multiple interactions that significantly impact pollinators include, but are not limited to, changes in habitat size and structure, nutritional quality of forage, changes in land use, pests and pathogens, exposure to pesticides and toxins, and a loss of genetic diversity (<http://www.usda.gov/documents/ReportHoneyBeeHealth.pdf>). Several groups of stakeholders have been seriously impacted by the decline in pollinator populations including beekeepers, crop producers, commodity groups, agribusinesses and natural resource managers. To address these concerns, the White House called for a federal strategy to address pollinator declines and tasked several federal agencies to develop a Pollinator Research Action Plan, which was released in May 2015

(<https://www.whitehouse.gov/sites/default/files/microsites/ostp/Pollinator%20Research%20Action%20Plan%202015.pdf>). The plan reflects the current state of knowledge, sets explicit goals and priorities using resources of several federal agencies to support extramural and intramural research, and emphasizes partnerships between public and private entities. Consistent with the Pollinator Research Action Plan, the overall goal of this Program Area Priority is to foster innovative and environmentally sound solutions to address the problem of declining populations of managed and wild pollinators in the U.S. Specifically, the program will support problem-solving approaches that build on the advances made through foundational research. It is expected that funded projects will result in strategies to mitigate declines in pollinator populations that can be implemented within ten years.

Integrated Projects must include research and either an extension or education component and address at least one of the following priorities:

- Development and evaluation of strategies to reduce declines of pollinators in agroecosystems and/or surrounding landscapes caused by one or more factors such as habitat changes or loss, nutritional imbalances, pathogens, pests, pesticides, toxins, genetic factors, effects of climate change or management practices. Longitudinal studies are encouraged.
- Development of innovative decision tools or models which predict key events or determine factors driving changes in pollinator populations.

- Design of successful habitat restoration systems that maximize conservation of pollinators and integrate with management of other components of agricultural systems, including, but not limited to, invasive plants and other pests and diseases.
- Use of molecular tools (e.g., genome-wide marker assisted selection, next generation sequencing and/or bioinformatics approaches) to enhance selection of traits for breeding pollinators, or other technologies to increase genetic diversity.
- Development of improved best management practices for protection and conservation of pollinators and coordination with pest management practitioners using an Integrated Pest Management (IPM) framework to ensure that pests and diseases are effectively managed.

Program Area Priority Additional Information:

- All applications must adhere to the requirements beginning in Part IV.
- All Integrated grant applications require a Logic Model and Management Plan. For additional information see Part IV, C, f. Field 12. Other Attachments, 2) and 3).
- All projects require a Data Management Plan (DMP). A budget must be provided for the DMP as part of the overall management plan that includes making data publically available and/or compatible with other open data sources. For additional information see Part IV, C, f. Field 12. Other Attachments, 4).
- The project summary of the grant application must specify which sections and priority action(s) described in the [Pollinator Research Action Plan](#) the project will address.
- If an extension component is included, the following requirements apply:
 - A high degree of engagement is expected among researchers, extension personnel and stakeholders from inception through implementation of the project.
 - Studies should incorporate approaches that consider the human dimension affecting decision making (e.g., development of strategies that incentivize changes in practices to manage lands, crops and/or pollinators).
 - A plan must be included to coordinate with and use the services of eXtension (<https://about.eXtension.org>), one or more of the regional IPM Centers (<http://www.ipmcenters.org>), or another innovative outreach approach to disseminate significant project results and/or best management practices.
- If an educational component is included, projects may incorporate curriculum development, novel experiential learning opportunities, online educational resources, citizen science, apps and/or educational games. Investigators are strongly encouraged to engage with a diverse population of students in these activities (including socially disadvantaged students).
- Partnerships between public and private entities are encouraged, such as universities, government agencies (e.g., USDA's APHIS, ARS, FS, FSA, NRCS; USEPA; USGS; and/or State programs), beekeepers, crop producers, farm advisors, IPM practitioners, land managers, private industries, and non-profit organizations. The specific contribution(s) of these entities to the project (e.g., research coordination, leveraging additional funds and other resources, sharing data and information, and/or citizen engagement) must be specified in the application.
- Fundamental research grants on pollinators should be submitted to the AFRI Pests and Beneficial Species in Agricultural Production Systems Program in the FY 2016 AFRI

Foundational Programs RFA within the Plant Health and Production and Plant Products Program Area (<http://nifa.usda.gov/funding-opportunity/agriculture-and-food-research-initiative-foundational-program>).

- Collaboration with international partners is encouraged where appropriate; however, applications must be submitted by eligible U.S. institutions. Applications may include subcontracts to international partners or other institutions. Adequate justification for subcontracts to international partners is required with demonstration of the benefit to the U.S.
- Applications from, and collaborations with, small to mid-sized institutions, Minority Serving Institutions, and/or EPSCoR states are encouraged.

2. Breeding and Phenomics of Food Crops and Animals

Program Area Priority Code – A5171

Application Deadline – July 7, 2016 (5:00 p.m., Eastern Time)

Proposed Budget Requests

- Standard and FASE Grants must not exceed **\$1 million total per project (including indirect costs) for project periods of 3 years**. The program anticipates making up to **6** new awards.
- Standard Research Projects for Coordination Networks must not exceed **\$500,000 total per project (including indirect costs), for project periods of 5 years**. The program anticipates making up to **2** new awards.
- Food and Agricultural Science Enhancement (FASE) grants must adhere to the guidelines in Part II, D.
- Requests exceeding the budgetary guidelines will not be reviewed.

Requested Project Type – Research Projects only

Requested Grant Types – Standard and FASE (Strengthening Standard and New Investigator) grants only

Program Area Contacts – Dr. Ed Kaleikau (202) 401-1931, ekaleikau@nifa.usda.gov and Dr. Lakshmi Matukumalli (202) 401-1766, lmatumalli@nifa.usda.gov

Program Area Priority –

Novel approaches are needed to extend conventional genetic selection methods and accelerate the development of improved agriculture food crops and animals (livestock, poultry, and aquaculture). Classical and genomics-enabled breeding, complemented by advancements in precision, high-throughput phenotyping, will enable scientists to rapidly implement 21st century plant and animal breeding on the scale needed to increase global food production despite less favorable climatic conditions and increased pressure from diseases and pests. Advances in DNA sequencing technologies have revolutionized the process of genotyping in both plants and animals. Trait measurement and phenotyping are now often the critical bottlenecks to genetic analysis and breeding progress. To match the phenomenal advancements in genomics, novel approaches for precision, high-throughput phenotyping, or phenomic approaches including proteomics and metabolomics, are needed to decrease breeding cycle times and increase the precision and predictability of genetic improvement of crops and animals.

The goal of this Program Area Priority is to develop locally adapted crop cultivars and/or animal breeds that contribute to rural economic development and prosperity while enhancing regional and national resilience and food security. Projects are expected to lead to the

development of cultivars and/or animal breeds that are able to resist or tolerate biotic and/or abiotic threats to production, enhance diversity and resilience of production systems, and maintain or enhance nutritional value. Projects should address the needs and challenges identified by producers and consumers. Proposals may include crops, animals, or a combination of both. Projects that develop tools and resources to enable discovery and advance breeding of crops and/or animals with strong potential to meet the program goals are encouraged.

This program will support the development and use of high-throughput genomic technologies, phenomics, and advanced computational informatics to (i) produce varieties and breeds with improved resilience to climate change, drought, and extreme weather; (ii) increase protection of agricultural crops and food animals from disease and pests; and (iii) enhance nutritional composition for improved human health.

In addition, development of new tools and technologies for high-throughput phenotyping in food crops and animals will be accelerated by leveraging breeding and phenomics expertise through research Coordination Networks.

Standard Research Projects must address at least one of the following priorities:

- Development and deployment of new tools and methods for high-throughput phenotyping and informatics for end-users
- Application of predictive phenotyping that integrates traditional and novel phenotypes to develop new and improved plant cultivars or animal breeds
- Expanded understanding of the genome and epigenome to implement a systems-level approach and predictive modeling for precision plant and/or animal breeding
- Development of informatics tools such as user-friendly software interfaces, bioinformatics pipelines, and quantitative genetic analysis methods to support integration of new phenotype data for breeding.

Standard Research Projects for Coordination Networks: To facilitate tracking, title your application: “High-throughput Phenomics Coordination Network in Food Crops/Animals-Lead Applicant Institution” (e.g., “High-throughput Phenomics Coordination Network in Food Crops –Name of Project Director’s or Lead Applicant’s Institution”). Program anticipates supporting up to two Coordination Network awards, one each in food crops and animals.

Applications for Standard Research Projects for Coordination Networks must outline a vision and process for conducting a series of workshops, networking events, and breakout sessions to:

- Foster a cohesive, multi-disciplinary food crop or animal breeding and phenomics community that primarily addresses bottlenecks associated with the development of high-throughput phenotyping;
- Identify innovative and synergistic activities that will prioritize needs and develop standards for breeding and phenomics efforts;
- Bring together breeding research communities working on multiple crops or animal species into one multi-species network to jointly advance this field;
- Include robust representation of public and commercial breeders and researchers from other relevant disciplines such as geneticists, physiologists, engineers, informaticians, economists, social scientists, extension professionals and stakeholders;

- Promote collaboration with other research communities, both domestic and international, to leverage and facilitate sharing of expertise and resources; and
- Develop and maintain a website and/or other effective social networking strategies for connecting the public and private sector, students, and the media to foster interest and societal engagement in phenomics and breeding.

Commodity Board Topic. In addition to the priorities identified above, NIFA and the Kansas Wheat Commission are seeking to co-fund projects to develop innovative technologies and approaches that enable wheat breeders to pre-breed for simultaneous improvement in yield, milling, baking, and nutritional quality. Proposals must address at least one of the following priorities:

- Novel approaches, including but not limited to the application of proteomics, metabolomics, and/or genomics to identify and mobilize high-value traits within hard red winter wheat germplasm;
- Pre-breeding and germplasm enhancement through identification and mobilization of novel quality traits leading to cultivar development;
- Development and application of tools to predict phenotype from genotype to accelerate quality enhancement of finished wheat varieties; or
- The development of screening technologies for end-user demanded traits.

Applicants seeking funding through this opportunity must provide a letter of support from the relevant commodity board directly to the NIFA Program Contact within 60 calendar days after the application submission deadline. To obtain a letter of support or for further questions, please contact the Kansas Wheat Commission representative (Will Zorrilla, (785) 539-0255 or wzorrilla@earthsharvest.org). Additionally, applicants must state in the last sentence of their application's Project Summary section that the proposal is submitted in response to a specific commodity board topic.

Program Area Priority Additional Information:

- All applications must adhere to the requirements beginning in Part IV.
- Applications for Standard Research Projects must include a budget for the Data Management Plan (DMP) as part of the overall management plan that includes making data publically available and/or compatible with other open data sources. For additional information see Part IV, C., f. Field 12. Other Attachments, 4).
- Applications must also provide a description and budgeted plan for the release of research results (e.g., data, germplasm, cultivars, genetic resources) in compliance with the Research Terms and Conditions that govern NIFA-funded projects in the areas of plant and animal breeding, genetics and genomics: <http://nifa.usda.gov/resource/nifa-general-terms-and-conditions-grants-and-cooperative-agreements>. The following sections are particularly relevant: Genetic Resources from Outside of the U.S (p. 5); and Patents and Inventions including Plant Variety Protection and Release of Animal or Plant Genome Sequence Data, Distribution of Animal or Plant Genomic Resources, and the Release or Distribution of Plant Germplasm (pp. 21-26).
- Collaboration with international partners is encouraged where appropriate; however, applications must be submitted by eligible U.S. institutions. Applications may include subcontracts to international partners or other institutions. Adequate justification for

subcontracts to international partners is required with demonstration of the benefit to the U.S.

- Applications from, and collaborations with, small to mid-sized institutions, Minority Serving Institutions, and/or EPSCoR states are encouraged.

PART II—AWARD INFORMATION

A. Available Funding

The amount available to support the AFRI program in FY 2016 will be approximately \$350 million. Of this amount, no less than 30 percent will be made available to fund integrated research, education, and extension projects. Of the AFRI funds allocated to research activities, section 7406 of the FCEA directs 60 percent toward grants for fundamental (or basic) research and 40 percent toward grants for applied research. Of the AFRI funds allocated to fundamental research, not less than 30 percent will be directed toward research by multidisciplinary teams. It is anticipated that no less than 15 percent of the FY 2016 funds will be made available for Food and Agricultural Science Enhancement (FASE) Grants, and no more than two percent of the funds available for fundamental research will be made available for Equipment Grants.

In FY 2016, approximately \$16.8 million will be available to support new awards within the AFRI Food Security Challenge Area Areas that are designed to help solve critical problems across the United States for projects up to 5 years (FY 2016 – FY 2020).

Funding of projects beyond FY 2016 is contingent upon the availability of funds, and the best interests of the US government. Funding in FY 2016 does not obligate NIFA to any future-year commitments.

The funds will be awarded through a grant. There is no commitment by USDA to fund any particular application or to make a specific number of awards.

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 Bureau of the Fiscal Service, as the payment system for funds. For more information see <http://fms.treas.gov/aboutfms/index.html>.

B. Types of Applications

In FY 2016, you may submit applications to one of the Program Areas in this RFA as one of the three types of requests: (1) New Application; (2) Renewal Application; and (3) Resubmitted Application.

- (1) **New application.** This is a project application that has not been previously submitted to NIFA. We will review all new applications competitively using the selection process and evaluation criteria described in Part V—Application Review Requirements.
- (2) **Renewal application.** This is a project application that requests additional funding for a project beyond the period that was approved in an original or amended award. Applications for renewed funding must contain the same information as required for new applications; they also must contain a Progress Report (see Project Narrative, Part IV). Renewal 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.
- (3) **Resubmitted application.** This is an application that was submitted previously to NIFA 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. A renewal application that was submitted previously but not funded and is being resubmitted is considered a Resubmitted application, however, PDs must include a Progress Report (see 2 above) and a Response to Previous Review.

C. Project Types

Applicants must propose one of the AFRI project types specified within the relevant program area description beginning in Part I, C of this RFA. Only project types specifically solicited under each program area or program area priority described in Part I, C of this RFA will be considered for review. A detailed description of the project types available across AFRI is located at http://nifa.usda.gov/sites/default/files/asset/document/Project_Types_NIFA.pdf.

D. Grant Types

Applicants must select the appropriate AFRI grant type specified within the relevant program area description beginning in Part I, C of this RFA. Only grant types specifically solicited under each program area or program area priority described in Part I, C of this RFA will be considered for review. A detailed description of the grant types available across AFRI is located at http://nifa.usda.gov/afri-request-applications/Grant_Type_-_FY_2016_AFRI_RFA.pdf.

E. Responsible and Ethical Conduct of Research

In accordance with sections 2, 3, and 8 of 2 CFR Part 422, institutions that conduct USDA-funded extramural research must foster an atmosphere conducive to research integrity, bear primary responsibility for prevention and detection of research misconduct, and maintain and effectively communicate and train their staff regarding policies and procedures. In the event an application to NIFA results in an award, the Authorized Representative (AR) assures, through acceptance of the award that the institution will comply with the above requirements. Award recipients shall, upon request, make available to NIFA the policies, procedures, and documentation to support the conduct of the training. See <http://nifa.usda.gov/responsible-and-ethical-conduct-research> for more information.

PART III—ELIGIBILITY INFORMATION

A. Eligible Applicants

Applications may only be submitted by eligible entities. Eligibility is linked to the project type. All project types are described beginning in Part II, C.

Applicants must respond to the Program Area Priorities and deadlines found in this RFA. Grant 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.

1) Research Projects

Eligible applicants for Research Projects include: 1) State Agricultural Experiment Station; 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 Integrated Projects include: 1) colleges and universities; 2) 1994 Land-Grant Institutions; and (3) Hispanic-serving agricultural colleges and universities.

For Integrated Projects, 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.

3) Hispanic-serving Agricultural Colleges and Universities

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 2016 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.

A list of the institutions certified and therefore eligible to apply as HSACUs for grants under FY 2016 RFAs, including this RFA, will be made available at <http://nifa.usda.gov/resource/official-list-hispanic-serving-agricultural-colleges-and-universities-hsacu>. Institutions appearing on this list are granted HSACU certification by the Secretary for the period starting October 1, 2015, and ending September 30, 2016. Certifications are valid for FY 2016 only. Additional questions on HSACU eligibility can be emailed to hsacu@nifa.usda.gov.

4) Food and Agricultural Science Enhancement Grants

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

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 referenced in Part II, D), 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 and the application package, and must be received by NIFA by the applicable program area or program area priority deadline. The Secretary of Agriculture or designated individual will determine whether the group or groups identified by the institution qualify as a minority group for the purpose of receiving a Strengthening Grant under this program.

The Request for Determination as a minority-serving institution must be attached with the Letter of Intent 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 Experimental Program to Stimulate Competitive Research (EPSCoR) state (see Part II, D) 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 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 and the completed application.

C. Cost Sharing or Matching

If an applied **Research or Integrated Project** with an applied research component, 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. See Part VIII, E for the definition of applied research.

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.

D. Centers of Excellence

Pursuant to Section 7214 of the Agricultural Act of 2014 (Pub. L. 113-79), beginning in Fiscal Year 2015, for applicable competitive research and extension programs, NIFA will be recognizing and providing priority in the receipt of funding to applications from "centers of excellence" that have been established for purposes of carrying out research, extension, and education activities relating to the food and agricultural sciences. In July of 2014, NIFA held listening sessions and accepted written comments from stakeholders to inform NIFA's implementation of the centers of excellence provision. Information from the webinars and a summary of the input gathered are available on NIFA's website at <http://nifa.usda.gov/centers-excellence>.

A center of excellence is composed of 1 or more of the following entities that provide financial or in-kind support to the center of excellence. Therefore, an eligible applicant who wishes to be considered as a center of excellence must be one of the following entities that provides financial or in-kind support to the Center being proposed, as described in the grant application.

- (A) State agricultural experiment stations;
- (B) colleges and universities;
- (C) university research foundations;
- (D) other research institutions and organizations;
- (E) Federal agencies;
- (F) national laboratories;
- (G) private organizations, foundations, or corporations;
- (H) individuals; or
- (I) any group consisting of 2 or more of the entities described in (A) through (H).

Only standard grant and Coordinated Agriculture Project (CAP) grant applications may be considered for center of excellence designation. See Part IV, C. of this RFA for additional requirements that eligible applicants must meet to be considered for center of excellence.

PART IV—APPLICATION AND SUBMISSION INFORMATION

A. Letter of Intent (LOI) Instructions

None of the Program Areas within this RFA require a Letter of Intent and, therefore, submission of a Letter of Intent is not a prerequisite for submission of an application.

B. Electronic Application Package

Only electronic applications may be submitted via Grants.gov to NIFA in response to this RFA. We urge you to submit early to the Grants.gov system. For an overview of the Grants.gov application process see <http://www.grants.gov/web/grants/applicants/apply-for-grants.html>.

New Users of Grants.gov

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

Steps to Obtain Application Package Materials

To receive application materials:

1. You must download and install a version of Adobe Reader compatible with Grants.gov to access, complete, and submit applications. For basic system requirements and download instructions, see <http://www.grants.gov/web/grants/applicants/adobe-software-compatibility.html>. Grants.gov has a test package that will help you determine whether your current version of Adobe Reader is compatible.
2. To obtain the application package from Grants.gov, go to <http://www.grants.gov/web/grants/applicants/download-application-package.html> and enter the funding opportunity number

Funding Opportunity Number: USDA-NIFA-AFRI-005823

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.” 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 you require assistance to access the application package (e.g., downloading or navigating Adobe forms) **or submitting the application**, refer to resources available on the Grants.gov website (<http://www.grants.gov/web/grants/applicants/applicant-tools-and-tips.html>). Grants.gov assistance is also available at:

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

Grants.gov iPortal (see <https://grants-portal.psc.gov/Welcome.aspx?pt=Grants>):
Top 10 requested help topics (FAQs), Searchable knowledge base, self-service ticketing and ticket status, and live web chat (available 7 a.m. - 9 p.m. ET). Get help now!

Have the following information available when contacting Grants.gov:

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

See <http://www.nifa.usda.gov/funding/electronic.html> for additional resources for applying electronically.

C. Content and Form of Application Submission

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

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

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

- Email: electronic@nifa.usda.gov
- Phone: 202-401-5048
- Business hours: Monday through Friday, 7 a.m. – 5 p.m. ET, 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. See Section 2.18 of the NIFA Grants.gov Application Guide which provides that the applicant's electronic signature on the SF-424 affirms its agreement with Federal representations and assurances (e.g., Prohibition Against FY 16 Appropriations Act Funding Under Grants and Cooperative Agreements With Entities Requiring Certain Internal Confidentiality Agreements...).

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. Field 7. Project Summary/Abstract. The summary should also include the relevance of the project to the goals of the Program Area Priorities in this RFA. See Part V. 4.7 of NIFA Grants.gov Application Guide for further instructions and a link to the required form. If relevant, applicants also must state in the last sentence of their application's Project Summary section that the proposal is submitted in response to a specific commodity board topic.

b. Field 8. Project Narrative. For Standard, New Investigator, Coordinated Agricultural Project (CAP), Conference, Strengthening Standard, Strengthening CAP and Strengthening Conference 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.

Each Project Narrative is expected to be complete; however, preprints (see Part IV, C. 3. f. 6) 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.

Project Narrative Attachment must include all of the following:

(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 containing a) previous proposal number at the beginning and b) response to the previous review panel summary titled "Response to Previous Review" as the first page of the attachment and 2) the 7- or 18-page Project Narrative, as required (see Part IV, C. 3. b above). The one-page

“Response to Previous Review” does not count against the 7- or 18-page limit of the Project Narrative.

(2) Project Narrative

(a) 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).

(b) Rationale and Significance

1. Concisely present the rationale behind the proposed project;
2. Describe the specific relationship of the project’s objectives to one of the Program Area Priorities. Applications that do not address at least one Program Area Priority will not be reviewed; and
3. 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.

(c) Approach

1. A description of the activities proposed and the sequence in which the activities are to be performed;
2. Methods to be used in carrying out the proposed project, including the feasibility of the methods;
3. Expected outcomes;
4. Means by which results will be analyzed, assessed, or interpreted;
5. How results or products will be used;
6. Pitfalls that may be encountered;
7. Limitations to proposed procedures;
8. 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
9. A timeline for attainment of objectives and for production of deliverables that includes annual milestones with specific, measurable outcomes.

➤ *For Integrated Project Applications –*

- Integrated Project applications must 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. In some Program Area Priorities require all three functions of the agricultural knowledge system.
- Projects must budget sufficient resources to carry out the proposed set of research, education, and/or extension 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).
 - 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.
 - In addition to the Project Narrative requirements above, the proposed Integrated Project should 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.
 - NIFA encourages (but does not require) Integrated Projects that develop content suitable for delivery through eXtension (<https://extension.org/>).
 - 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 <http://www.4-h.org/> or contact your university Cooperative Extension headquarters and/or State 4-H Program Office.
- *For Conference Grant Applications* – In addition to the Project Narrative requirements above, substitute the following in the Approach section:
- 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* – In addition to the Project Narrative requirements above, substitute the following in the Approach section:

- A general description of the research, education, and/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 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* – In addition to the Project Narrative requirements above, 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, and/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 Project Director (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) Center of Excellence

Only standard grant and CAP grant application may be considered for center of excellence designation.

In addition to meeting the other requirements detailed in Part IV, C of this Request for Application (RFA), eligible applicants who wish to be considered as centers of excellence must provide a brief justification statement at the end of their Project Narratives and within the page limits provided for Project Narratives, describing how they meet the standards of a center of excellence, based on the following criteria:

- (A) The ability of the center of excellence to ensure coordination and cost effectiveness by reducing unnecessarily duplicative efforts regarding research, teaching, and extension in the implementation of the proposed research and/or extension activity outlined in this application;
- (B) In addition to any applicable matching requirements, the ability of the center of excellence to leverage available resources by using public-private partnerships among agricultural industry groups, institutions of higher education, and the Federal Government in the implementation of the proposed research and/or extension activity outlined in this application. Resources leveraged should be commensurate with the size of the award;
- (C) The planned scope and capability of the center of excellence to implement teaching initiatives to increase awareness and effectively disseminate solutions to target audiences through extension activities in the implementation of the proposed research and/or extension activity outlined in this application; and
- (D) The ability or capacity of the center of excellence to increase the economic returns to rural communities by identifying, attracting, and directing funds to high-priority agricultural issues in support of and as a result of the

implementation of the proposed research and/or extension activity outlined in this application.

Additionally, where practicable (not required), center of excellence applicants should describe proposed efforts to improve teaching capacity and infrastructure at colleges and universities (including land-grant colleges and universities, cooperating forestry schools, certified Non-Land Grant Colleges of Agriculture (NLGCA) (list of certified NLGCA is available at http://www.nifa.usda.gov/funding/pdfs/nlgca_colleges.pdf), and schools of veterinary medicine).

c. 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.

d. 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’.

e. 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 should be listed in Field C. of the R&R Budget and described in the Budget Justification (see Part IV, C. 6 below).

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

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

- 2) **Logic Model – PDF Attachment. Required for all Integrated Project applications. Encouraged 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.

- 3) Management Plan – **PDF Attachment**. Required for all Integrated Project Grants. Encouraged 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 termination of an award.

The management plan must 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.

- 4) Data Management Plan (DMP) - **PDF Attachment**. Required for all Research Projects and Integrated Project Grants. **2-Page Limit**. Title the attachment as ‘Data Management Plan’ and save file as ‘DataManagementPlan’.

The DMP should clearly articulate how the project director (PD) and co-PDs plan to manage and disseminate data generated by the project. NIFA and reviewers will consider the DMP during the merit review process. NIFA is aware of the need to provide flexibility in assessing DMPs. The DMP must not exceed the two-page limit and should contain the following components depending on the type of research being conducted.

a. Expected Data Type

Describe the type of data (e.g. digital, non-digital) and how they will be generated (lab work, field work, surveys, etc.). Are these primary or metadata?

b. Data Format

For scientific data to be readily accessible and usable it is critical to use an appropriate community-recognized standard and machine readable formats when they exist. The data should preferentially be stored in recognized public databases appropriate for the type of research conducted. Regardless of the format used (notebook, samples, images, spreadsheet, etc.), that data set should contain enough information to allow independent investigators to understand, validate, and use the data.

c. Data Storage and Preservation

Scientific data should be stored in a safe environment with adequate measures taken for its long-term preservation. Applicants should describe plans for storing

and preserving their data during and after the project and specify the data repositories, if they exist. They should outline strategies, tools, and contingency plans that will be used to avoid data loss, degradation, or damage.

d. Data Sharing and Public Access

Describe your data access and sharing procedures during and after the grant. Provide any restrictions such as copyright, confidentiality, patent, appropriate credit, disclaimers, or conditions for use of the data by other parties.

e. Roles and Responsibilities

Who will ensure DMP implementation? This is particularly important for multi-investigator and multi-institutional projects. Provide a contingency plan in case key personnel leave the project. Also, what resources will be needed for the DMP? If funds are needed, have they been added to the budget request and budget narrative? Projects must budget sufficient resources to develop and implement the proposed DMP.

- 5) 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. The applicant also will be required to provide additional information on consultants and collaborators in the budget portion of the application.

☀ *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.

- 6) 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.

7) Minority-Serving Institution Documentation – **PDF Attachment**. Title the attachment as ‘Minorityinfo’ in the document header and save file as ‘Minorityinfo’.

(a) Letter identifying percentage of applicable minority students.

(b) Request for Determination – see Part III, B.

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

Information related to the questions on this form is dealt with in detail in Part V, 5. of the NIFA Grants.gov Application Guide. This section of the Guide includes information about the people who require a Senior/Key Person Profile, and details about the Biographical Sketch and the Current and Pending Support, including a link to the required form for the Current and Pending Support.

A Senior/Key Person Profile should be completed for the PD and each co-PD, senior associate, and other professional personnel, including collaborators playing an active role in the project. Collaborators only providing services or materials should not be listed in the R&R Senior/Key Person Profile. Evidence (letters of support) for this type of collaboration should be provided in the Documentation of Collaboration (see Part IV, C. 3. f. 5).

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 qualifications 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) *Other Project Role Category Field* – Complete appropriately, if applicable.

c) *Attach Biographical Sketch Field* – **PDF Attachment. 2-Page Limit** (excluding publications listings) per PD, co-PD, senior associate, and other professional personnel. Title the attachment as ‘Biographical Sketch’ in the document header and save file as ‘BiographicalSketch’ followed by the last name of the PD or co-PD such that each biographical sketch file in the application has a distinct file name.

A biographical sketch (vitae) of the PD and each co-PD, senior associate, and other professional personnel should be included.

The Conflict of Interest list should not be included in the biographical sketch, but it must be provided as a separate document (see Part IV, C. 7. b for more information).

- *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.
- d) *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’.

A required form for the Current and Pending Support can be found at:

www.nifa.usda.gov/funding/templates/current_pending.doc.

Current and Pending Support information is only required for personnel with PD or co-PD indicated as their Project Role on the R&R Senior/Key Person Profile. All applications must contain a list of all Current and Pending Support detailing public or private support (including in-house support) to which personnel identified in the application have committed portions of their time, if the salary support for person(s) involved is included in the budget. Please note that the project being proposed should be included in the pending section of the form. Total project listed for each PD should be indicated as percent effort and not exceeds 100% for concurrent (Current and Pending) projects.

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 National Research Initiative or AFRI awards.

- *For Sabbatical Grant Applications* – Current and Pending Support for both the Sabbatical Grant applicant and the scientific host(s) (as documentation of on-going work in the host's laboratory) must be completed.
- *For Equipment Grant Applications* – Current and Pending Support for both the Equipment Grant applicant and other major users of the equipment must be completed. If the applicant has significant funding from other sources, a justification must be provided in the Project Narrative for how this equipment will strengthen the applicant’s research program or institution.

5. R&R Personal Data – As noted in Part V, 6. of the NIFA Grants.gov Application Guide, the submission of this information is voluntary and is not a precondition of award. However, NIFA strongly encourages applicants to provide the requested information to help NIFA identify and address any inequities based on gender, race, ethnicity, or disability of its proposed PDs/PIs and co-PDs/PIs. Information not submitted will seriously undermine the statistical validity, and therefore the usefulness, of information received from others. The information you submit will be

kept confidential and will be used only for tracking and statistical purposes necessary to meet the demands of the agency and will not be part of the review process.

6. R&R Budget

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. Matching.** If you conclude that matching funds are not required as specified under Part III, C., Cost Sharing or Matching, you must include a justification in the Budget Narrative. We will consider this justification when ascertaining final matching requirements or in determining if required matching can be waived. NIFA retains the right to make final determinations regarding matching requirements.

For grants that require matching funds as specified under Part III, C., the Budget Narrative should include written verification of commitments of matching support (including both cash and in-kind contributions) from third parties. The same level of details required to be provided for Federal funds should be provided for any required matching. Written verification means:

1. For any third party cash contributions, a separate pledge agreement for each donation, signed by the authorized representatives of the donor organization (and the applicant organization ONLY if provided after submission of the application), must include: (1) The donor's name, address, and telephone number; (2) the name of the applicant organization; (3) the title of the project; (4) the dollar amount of the cash donation (the budget narrative must describe how the cash donation will be used); (5) a statement that the donor will pay the cash contribution during the grant period; and (6) whether the applicant can designate cash as the applicant deems necessary or the cash contribution has been designated to a particular budget item.
2. For any third party in-kind contributions, a separate pledge agreement for each contribution, signed by the authorized representatives of the donor organization (and the applicant organization ONLY if provided after submission of the application), must include: (1) The donor's name, address, and telephone number; (2) the name of the applicant organization; (3) the title of the project; (4) a good faith estimate of the current fair market value of the third party in-kind contribution and a description of how the fair market value was determined; and (5) a statement that the donor will make the contribution during the grant period.

Summarize on a separate page the sources and amount of all matching support from outside the applicant institution and place that information in the proposal as part of the Budget Narrative. You must place all pledge agreements in the proposal immediately following the summary of matching support.

Establish the value of applicant contributions in accordance with applicable cost principles. 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.

- b. Budget Periods.** Applications must contain a budget for each budget period for the entire duration of the proposed project. Annual and cumulative budgets are required.

If a project is funded, beginning in the first year of funding, the Project Director will be required to attend annual investigator meetings for the duration of the award (excluding Conference, Sabbatical, and Equipment Grant applications). The project directors for 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.

- *For Integrated Project Applications* – Projects must budget sufficient resources to carry out the proposed set of research, education, and/or extension 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 Grant Applications* – The budget for the conference may include an appropriate amount for transportation and subsistence costs for participants and for other conference-related costs. Conference awards are not expected to exceed \$50,000 and are not renewable. Indirect costs are not permitted on Conference Grant awards. Include an itemized breakdown of all support requested from the AFRI in the Budget Justification (Field K. of the R&R Budget).
 - *For Sabbatical Grant Applications* – Limit to one year's salary and funds for travel and supplies.
 - *For Equipment Grant Applications* – Each request shall be limited to one major piece of equipment within the cost range of \$10,000-\$250,000. Equipment grants are not renewable. The amount of Federal funding requested shall not exceed 50 percent of the cost or \$50,000, whichever is less. Unless waived, it is the responsibility of the PD to secure the required matching funds with non-Federal funds (see Part III, C for more information). No installation, maintenance, warranty, or insurance expenses may be paid from these awards, nor may these costs be part of the matching funds. Indirect costs are not permitted on Equipment Grant awards.
 - *For Seed Grant Applications* – These awards will be limited to a total of \$150,000 (including indirect costs) for two years and are not renewable.
- c. 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 42.857 percent of the total direct costs of an award. See Part IV, E for additional information.
- d. Field K. Budget Justification – PDF Attachment. No Page Limit.** Title the attachment as ‘Budget Justification’ in the document header and save file as ‘BudgetJustification’.

All cumulative budget categories, with the exception of Indirect Costs, for which support is requested must be individually listed (with costs) in the same order as the cumulative budget.

NOTE: For continuation awards, all budget categories for year one must also be fully justified. If consulting, collaborative, or subcontractual arrangements are included in the application, these arrangements should be fully explained and justified. The rate of pay for any consultant must be included (the standard rate is \$77.00 per hour), if known at the time of application. Please include a cost breakdown for the consultant, including the number of days in service, travel, and per diem, as well as the rate of pay. Letters of consent or collaboration signed by the Authorized Representative and other evidence should be provided in the Documentation of Collaboration (see Part IV, C. 3. f. 5) to show that collaborators have agreed to participate. 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 Integrated Project Applications* – 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, education, and/or extension 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.
- *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. A letter signed by the institution’s AR stating that the necessary non-Federal matching funds will be made available from an institutional or other source is required. An institution that believes it is eligible for the waiver of the matching funds should include a letter stating and documenting the eligibility that is signed by the institution’s AR (see Table 2 following Part VIII for eligibility). A justification must be given for how this equipment will strengthen the applicant's research program or institution.

e. Subcontract Arrangements.

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, 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.

f. Matching

Equipment Grants requiring matching funds, as specified in Part III, C., must include a letter in the budget justification signed by the institution’s AR stating that the necessary non-Federal matching funds will be made available from the institution or other source. 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% of federal funds awarded from non-Federal sources. If the institution believes it is eligible for the waiver for matching funds (see Part III, C. for waiver eligibility), the budget justification must include a letter signed by the institution’s AR stating this information. NIFA will consider this justification when ascertaining final matching requirements or in

determining if required matching can be waived. NIFA retains the right to make final determinations regarding matching requirements.

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.

7. Supplemental Information Form

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 (Area Priority) Code Name and the Program (Area Priority) Code for the Program Area Priority to which you are applying from the information provided in the Program Area Descriptions beginning in Part I, C. An application can only be submitted to one program (Area Priority). It is extremely important that the Program (Area Priority) Code Name and Program (Area Priority) Code are spelled correctly and match this RFA. If you have a question about which topic area is appropriate for your application, please contact the Program Area Priority Contact.
- 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 the required form.

A Conflict of Interest List is required for all applications submitted to the AFRI. The Conflict of Interest List should be provided as a separate PDF attachment and not included in the vitae or resume. A Conflict of Interest List must be completed individually for all personnel who have submitted a Biographical Sketch in the R&R Senior/Key Personnel Profile. **Collate all individual Conflict of Interest lists into a single document file.** The lists can only be submitted as a single PDF attachment.

The required form for the Conflict of Interest List can be found at:
www.nifa.usda.gov/funding/templates/conflict_of_interest.doc.

D. Submission Dates and Times

Prior to electronic submission of the application via Grants.gov, it is strongly recommended that an administrative review be conducted to ensure that an application complies with all application preparation instructions. An application checklist is included in Part VII of the NIFA Grants.gov Application Guide to assist with this review.

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

1. Letter of Intent

The Letter of intent must be received at NIFA by **5:00 p.m. Eastern Time** on the dates indicated in the Program Area Descriptions beginning in Part I, C and in the format specified in Part IV, A.

2. Full Application

Applications must be received by Grants.gov by **5:00 p.m. Eastern Time on the dates indicated in the Program Area Descriptions beginning in Part I, C.** Applications received after this deadline will normally not be considered for funding.

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

We send email correspondence to the AR regarding the status of submitted applications. 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, contact the Agency 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.**

E. Funding Restrictions

Section 713 of the Consolidated Appropriations Act, 2016 (Pub. L. 114-113) limits indirect costs to 30 percent of the total Federal funds provided (or 42.857 percent of total direct costs) under each award. Therefore, when preparing budgets, you should limit your request for the recovery of indirect costs to the lesser of your institution's official negotiated indirect cost rate or the equivalent of 30 percent of total Federal funds awarded. See Part V section 7.9 of the NIFA Grants.gov Application Guide for further indirect cost information. See webpage at <http://nifa.usda.gov/indirect-costs> for indirect cost options.

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).

F. Other Submission Requirements

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

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

See Part V., Section 4.12. of the NIFA Grants.gov Application Guide (Field 12 on the Form) for instructions regarding mandatory Felony Convictions or Tax Delinquent Status.

Multiple submissions

In accordance with Part III, Section 5 of 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

We evaluate each application in a 2-part process. First, we screen each application to ensure that it meets the administrative requirements as set forth in this RFA. Second, a scientific peer review process technically evaluates applications that meet these requirements, using either a review panel or, for only three select program area priorities in the Foundational Program, the Distributed Peer Review process. Detailed application review requirements and description of the Distributed Peer Review process are outlined at [Review Criteria NIFA.docx](#).

B. Evaluation Criteria

Detailed evaluation criteria for each project types, grant types, and center of excellence are outlined at [Review Criteria NIFA.docx](#).

C. Conflicts of Interest and Confidentiality

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

D. 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. This requirement is 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. We will provide you 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 that may exclude an applicant from receiving federal financial and nonfinancial assistance and benefits under this program (e.g., debarment or suspension of an individual involved or a determination that an applicant is not responsible based on submitted organizational management information).

E. Application Disposition

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

PART VI—AWARD ADMINISTRATION

A. General

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

B. Award Notice

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

- (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 and the Federal Agency Identification Number assigned by NIFA;
- (5) Project period, specifying the amount of time NIFA intends to support the project without requiring recompetition for funds;
- (6) Total amount of financial assistance approved for the award;
- (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 may include, but are not limited to, the ones listed on the NIFA web page - <http://nifa.usda.gov/federal-regulations>.

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

D. Responsible and Ethical Conduct of Research

Please refer to Part II, E for more information.

E. Expected Program Outputs and Reporting Requirements

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

If a project is funded, beginning in the first year of funding, the PD will be required to attend annual investigator meetings (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.

PART VII—AGENCY CONTACTS

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

AFRI Program Office:

Dr. Parag Chitnis, Deputy Director, Institute of Food Production and Sustainability

Dr. Denise Eblen, Deputy Director, Institute of Food Safety and Nutrition

Dr. Muquarrab Qureshi, Deputy Director, Institute of Youth, Family, and Community

Dr. Louis Tupas, Deputy Director, Institute of Bioenergy, Climate, and Environment

Telephone: (202) 401-5022

Fax: (202) 401-6488

E-mail: AFRI@nifa.usda.gov

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

Program Area	Program Area Contact
New Frontiers in Pollinator Health: From Research to Application	Dr. Mary Purcell-Miramontes (202) 401-5168; mpurcell@nifa.usda.gov
Breeding and Phenomics of Food Crops and Animals	Dr. Ed Kaleikau (202) 401-1931: ekaleikau@nifa.usda.gov Dr. Lakshmi Kumar Matukumalli (202) 401-1766; lmatumalli@nifa.usda.gov

Administrative/Business Contacts:

Rochelle McCrea

Title: Team Leader

Unit: Awards Management Division, Branch I

Location: 2160 Waterfront Centre

[Full Address and Directions](#)

Phone: (202) 401-2880

Fax: (202) 401- 6271

Email: rmccrea@nifa.usda.gov

Sondra Watkins

Title: Team Leader

Unit: Awards Management Division, Branch II

Location: 2170 Waterfront Centre

[Full Address and Directions](#)

Phone: (202) 401- 4249

Fax: (202)-401-3237

Email: swatkins@nifa.usda.gov

PART VIII—OTHER INFORMATION

A. Access to Review Information

We will send copies of reviews, not including the identity of reviewers, and a summary of the panel comments 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, awardees may not in whole or in part delegate or transfer to another person, institution, or organization the responsibility for use or expenditure of award funds.

2. Changes in 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. The awardee must request, and the ADO must approve in writing, all changes in approved goals or objectives prior to effecting such changes. In no event shall requests be approved for changes that are outside the scope of the original approved project.

c. The awardee must request, and the ADO must approve in writing, all changes in approved project leadership or the replacement or reassignment of other key project personnel, prior to effecting such changes.

d. The awardee must request, and the ADO must approve in writing, all 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, prior to instituting such transfers, unless prescribed otherwise in the terms and conditions of the award.

e. The project period may be extended without additional financial support, for such additional period(s) 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. The terms and conditions of award include information about no-cost extensions of the award and when ADO's prior approval is necessary.

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 2 CFR part 415, subpart C, 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 Financial Assistance Programs--General Award 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 mean 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., 6400 Arlington Boulevard, Suite 648, Falls Church, Virginia 22042.

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., 6400 Arlington Boulevard, Suite 648, Falls Church, Virginia 22042 (703-532-2300).

Strengthening Grants mean 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 to Stimulate Competitive Research) means States which have been less successful in receiving funding from AFRI, having a funding level no higher than the 38th percentile of all States based on a 3-year average of AFRI 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 at <http://nifa.usda.gov/afri-request-applications/Grant Type - FY 2016 AFRI RFA.pdf>.

TABLE 1. Most Successful Universities and Colleges

Any institution listed in Table 1 ([Table 1 - Most Successful Institutions - FY 2016 AFRI RFAs.docx](#)) is not eligible for Strengthening Grants from the FASE program unless they are located in an EPSCoR state.

TABLE 2. Lowest One Third of Universities and Colleges Receiving Federal Funds

The lowest one third of universities and colleges receiving Federal funds used to determine eligibility for possible waiver of matching funds requirement for Equipment Grants ([Table 2 - Least Successful Institutions - FY 2016 AFRI RFAs.docx](#))

FIGURE 1. Flow Chart for Strengthening Grant Eligibility

Do you have an appointment at a State Agricultural Experiment Station or a degree granting institution?

