

Agriculture and Food Research Initiative Competitive Grants Program

Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative

2016 Request for Applications (RFA)

Predocctoral Fellowships

APPLICATION DEADLINE: February 11, 2016

Postdoctoral Fellowships

APPLICATION DEADLINE: February 11, 2016

Professional Development Opportunities for Secondary School Teachers

APPLICATION DEADLINE: March 18, 2016

Research and Extension Experiential Learning for Undergraduate (REEU) Fellowships

APPLICATION DEADLINE: March 24, 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, AGRICULTURE, NATURAL RESOURCES AND HUMAN SCIENCES EDUCATION AND LITERACY INITIATIVE (AFRI-ELI)

INITIAL ANNOUNCEMENT

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

DATES: There are individual application deadline dates of importance within the four programs within the Agriculture and Food Research Initiative Competitive Grants Program –Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative.

Applications for programs within the Agriculture and Food Research Initiative Competitive Grants Program – Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative must be received by **5:00 p.m. Eastern Time on February 11, 2016 (for the Predoctoral and Postdoctoral Fellowships Programs), March 18, 2016 (for the Professional Development Opportunities for Secondary School Teachers Programs) and March 24, 2016 (for the Research and Extension Experiential Learning for Undergraduate Fellowships)**. Applications received after deadlines will normally not be considered for funding (see Part IV, D. 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, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (AFRI ELI) Grant Program RFA. In fiscal year 2014, this program consisted of the predoctoral and postdoctoral fellowships only, and was called the AFRI NIFA Fellowships Grant Program.

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 may either accept or reject any proposed topic based on [established criteria](#).

NIFA received topics from eligible commodity boards until September 22, 2015 for incorporation into FY2016 RFAs. Selected topics that are considered appropriate for AFRI are incorporated into the relevant AFRI RFAs. None of the topics submitted by commodity boards were selected for inclusion in this RFA. 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>.

EXECUTIVE SUMMARY: The U.S. Department of Agriculture established the Agriculture and Food Research Initiative (AFRI) under which the Secretary of Agriculture may make competitive grants for fundamental and applied research, extension, and education to address food and agricultural sciences (as defined under section 1404 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (NARETPA) (7 U.S.C. 3103)), as amended, in six priority areas. The six priority areas include: 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.

NIFA requests applications for the AFRI's Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (ELI) for fiscal year (FY) **2016** to provide fellowships to undergraduate students, predoctoral candidates, postdoctoral scholars, and professional development opportunities for secondary school teachers and educational professionals. The anticipated amount available for grants in FY 2016 is approximately \$18.9 million. There is no commitment by USDA to fund any particular application or to make a specific number of awards.

The Program Goals are as follows:

- **Prepare the next generation of scientists through fellowships for doctoral candidates and post-doctoral scholars.**
- **Promote research and extension experiential learning for undergraduates such that upon graduation they may enter the agriculture workforce with exceptional skills.**
- **Provide immersive learning experiences for secondary school educators, enabling them to identify and replicate best practices to enhance student outcomes.**

Funded projects will encompass NIFA's AFRI Challenge Area and AFRI Foundational Programs, through well-developed and highly engaged mentoring and/or training activities. The AFRI Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (AFRI ELI) focuses on developing the following:

- technical and functional competence for predoctoral candidates; and the research independence and teaching credentials of postdoctoral scholars.

- opportunities for undergraduate students at colleges and universities, including those from underrepresented ethnicities and economically disadvantaged groups at minority-serving institutions, community colleges, and other universities to obtain hands-on research and extension experiences at land-grant and non-land-grant universities and USDA facilities/laboratories and obtain training to join the agricultural workforce or pursue graduate studies in food, agriculture, natural resources and the human sciences.
- the development of pathways, which will enhance collaboration among secondary schools and with non-governmental organizations, to identify and replicate best practices to engage youth in STEM fields within the food, agricultural, natural resources, and human sciences; with a focus on immersive learning experiences in non-formal educational programs to help secondary school teachers create and integrate best practices into their classes.

The amount available for support of this program in FY 2016 is approximately \$18.9 million.

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

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PART I—FUNDING OPPORTUNITY DESCRIPTION

A. Legislative Authority and Background

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

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

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

B. Purpose and Priorities

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

Supporting the many components of agriculture under the constraints of a growing population, pressure on natural resources, and the challenges of climate variability and change, requires research, education, extension, and integrated programs that increase agricultural and natural resource sustainability. The term "sustainable agriculture" (NARETPA, 7 U.S.C. 3103) means an integrated system of plant and animal production practices having a site-specific application that

will over the long-term achieve the following goals: 1) Satisfy human food and fiber needs; 2) Enhance environmental quality and the natural resource base upon which the agriculture economy depends; 3) Make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; 4) Sustain the economic viability of farm operations; and 5) Enhance the quality of life for farmers and society as a whole.

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

If international activities (*e.g.*, partnerships, exchanges, travel) are proposed, then applicants shall describe indicators that will be used to assess those activities. Appropriate indicators include but are not limited to those posted at the U.S. Government's Feed the Future Food Security initiative Web site (www.feedthefuture.gov/progress).

AFRI Stakeholder Input

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

For information on stakeholder input related to AFRI and the AFRI ELI program (formerly known as AFRI NIFA Fellowships Grant Program), please visit http://nifa.usda.gov/sites/default/files/resource/stakeholder_feedback_2015%20education_literacy.pdf.

Background

AFRI is one of NIFA's major programs through which critical societal issues are addressed. Leadership in the scientific community has been calling on multidisciplinary efforts, which integrate biological and social science work to help solve grand societal challenges. NIFA grant programs offer the unique capacity to integrate research, education, and extension in order to enhance the impact of scientific work. USDA science will support the following challenges:

1. Keep American agriculture competitive while ending world hunger;
2. Improve nutrition and end child obesity;

3. Improve food safety for all Americans;
4. Secure America's energy future; and
5. Mitigate and adapt to climate variability and change.

In FY 2016, AFRI is soliciting projects addressing the above challenges through separate challenge area RFAs. AFRI is also supporting Research and Integrated Project grants in the six AFRI priority areas to continue building a foundation of knowledge in fundamental and applied food and agricultural sciences critical for solving current and future societal challenges. These six foundational programs will be announced in a single, separate RFA. In this RFA, funding opportunities are provided for undergraduate students, predoctoral candidates, postdoctoral scholars, and secondary school teachers.

The Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (ELI):

The AFRI ELI has the following three goals:

- Develop pathways to identify and replicate best practices to engage youth in STEM fields within the food, agricultural, natural resources, and human sciences. This initiative will focus on immersive learning experiences in non-formal educational programs to help secondary school teachers identify and integrate successful lessons in their classes. Grants to develop pathways will enhance collaboration among secondary schools and with non-governmental organizations involved with agriculture in secondary education.
- Enhance capacity of institutions to produce graduates with skills needed to address the new challenges of the 21st Century in food, agricultural, natural resources, and human sciences. Priority will be placed on promoting applied technical and leadership skills (e.g., internships, practicums, experiential learning). Grant opportunities to enhance capacity will be offered to all educational institutions, including community colleges and those providing a 4-year degree in food, agricultural, natural resources, and human sciences by offering research and extension experiential learning opportunities for undergraduate students. The institutions may partner with others including state agencies, private agribusinesses, and other federal agencies.
- Advance science by supporting graduate and post-graduate education to address the current skills needed in the food, agricultural, natural resources, and human sciences disciplines. Data on current enrollment and degrees granted clearly indicate a continuing lag in the production of a sufficient number and quality of graduates. Grants to advance science are given directly to students to fund their education, research, and living expenses.

The AFRI Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative addresses the following AFRI Priority Areas within the 2014 Farm Bill: 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.

Project types supported by AFRI within this RFA include single-function Research, Education, and Extension Projects and multi-function Integrated Research, Education, and/or Extension Projects.

The Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (ELI) directly aligns with USDA Strategic Goal 1, Strategic Goal 2, Strategic Goal 3, and Strategic Goal 4 of the USDA Strategic Plan (2014 – 2018) (<http://www.usda.gov/documents/usda-strategic-plan-fy-2014-2018.pdf>). The ELI program aligns with the USDA Research, Education, and Economics Action Plan (<http://nifa.usda.gov/resource/ree-action-plan>), and specifically addresses Goal 6 – Education and Science Literacy, by recruiting, cultivating, and developing the next generation of scientists, leaders, and a highly-skilled workforce for food, agriculture, natural resources, forestry, environmental systems, and life sciences to ensure America’s global preeminence. The AFRI ELI program is also aligned with the NIFA Strategic Plan (2014-2018) (<http://nifa.usda.gov/resource/nifa-strategic-plan-fy2014-fy2018>), specifically addressing Strategic Goal No 1, (Science – Catalyze exemplary and relevant research, education, and extension programs); Subgoal 1.7 – (Ensure the development of human capital, communities, and a diverse workforce through research, education, extension and engagement programs in food and agricultural sciences to support a sustainable agriculture system).

The AFRI ELI Program, as a whole, anticipates funding projects that demonstrate the following output and outcome measures:

- Students directly supported
- Students who will complete internships and other experiential learning
- Students who will complete international experiences
- Number of publications, patents, workshops, curricula, academic programs, recruitment/retention programs, materials, experiential learning opportunities
- Collaborations developed between institutions
- The number of Secondary School Teachers and Educational Professionals who indirectly benefit from the projects
- Measured changes in student learning or engagement

All AFRI ELI projects are required to provide leadership skills opportunities. The development of leadership skills, knowledge and qualities are necessary for preparing students for agricultural related careers in private sector, government and academia. Projects must demonstrably incorporate a leadership development component to ensure that students are equipped with both technical and leadership abilities. Specific activities may include:

- Developing practical applications to increase understanding of leadership roles, including critical thinking, problem solving, and communication skills, ethics and professionalism, and working in teams;
- Connecting the academic classroom experience with daily leadership roles and organizational activities;

- Providing opportunities for mentoring and shadowing; and
- Organizing leadership academies, workshops, trainings, etc.

AFRI ELI supports social and behavioral science disciplines. Projects that integrate social and biological sciences to provide experiential learning opportunities for students in applied research, and related community development programs are encouraged. Incorporation of social and behavioral sciences is important for addressing many of the challenges facing agriculture and rural communities, such as increasing global demand for food production in the face of limited natural resources; improving health and reducing obesity by engaging in healthy diets; and alleviating poverty by fostering economic opportunity.

This will be accomplished by offering undergraduate, predoctoral, and postdoctoral fellowship opportunities, and professional development opportunities for secondary school teachers.

The Research and Extension Experiential Learning for Undergraduates (REEU) Fellowships promote research and extension experiential learning for undergraduates such that upon graduation they may enter the agriculture workforce with exceptional skills. The experiential learning initiative for undergraduates will provide fellowship opportunities for undergraduate students at colleges and universities, including those from underrepresented ethnicities and economically disadvantaged groups at minority-serving institutions, community colleges, and other universities to:

- obtain hands-on experience at land-grant and non-land-grant universities and USDA facilities;
- obtain training to acquire laboratory research and extension skills to join the agricultural workforce or pursue graduate studies in food, agriculture, natural resources and the human sciences; and
- provide undergraduate students with the strong mentoring and research and extension experiences required to be successful as upperclassmen and graduate students in the food, agriculture, natural resources and human sciences.
- gain experience by participating in extension projects or programs that deliver science-based knowledge and informal educational programs to people, enabling them to make practical decisions. Program delivery may range from community-based to national audiences and use communication methods from face-to-face to electronic or combinations thereof. Extension Projects may also include related matters such as certification programs, in-service training, client recruitment and services, curriculum development, instructional materials and equipment, and innovative instructional methodologies appropriate to informal educational programs.

This initiative aligns with the recommendations regarding the importance of undergraduates made in the December 2012 President's Council of Advisors on Science and Technology (PCAST) report to the President on [Agricultural Preparedness and the Agriculture Research Enterprise](#). The offering of undergraduate fellowships is also consistent with the National Research Council's 2009 report, [Transforming Agricultural Education for a Changing World](#),

which recommends that academic institutions should broaden the undergraduate student experience by integrating opportunities to participate in research, education, and extension. Furthermore, four-year colleges and universities should enhance connections with community colleges, Hispanic serving institutions, Alaska Native-Serving and Native Hawaiian-Serving Institutions, 1890 and 1994 land-grant institutions, and non-land grant colleges and universities of agriculture.

Predoctoral and postdoctoral fellowships serve as a conduit for new scientists and professionals to enter research, education, and extension fields within the food, agriculture, natural resources, and human sciences. The aim of these fellowships is to cultivate future leaders who are able to address and solve emerging agricultural challenges of the 21st century. These fellowships are consistent with the recommendations of the 2012 President's Council of Advisors on Science and Technology (PCAST) report, [Agricultural Preparedness and the Agriculture Research Enterprise](#).

The AFRI Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative also addresses projected shortfalls of qualified graduates in the agricultural, food, and renewable natural resources sectors of the U.S. economy (Employment Opportunities for College Graduates - <https://www.purdue.edu/usda/employment/>).

The Professional Development Opportunities for Secondary School Teachers Program is aligned with the December 2012 President's Council of Advisors on Science and Technology (PCAST) report to the President on Agricultural Preparedness and the Agriculture Research Enterprise. As noted in this report, the talent pipeline for the agriculture workforce begins well before college admission and a focus on secondary programs holds tremendous potential to increase not only the number, but the diversity, of students entering baccalaureate programs, a requisite for the innovation needed in the food, agricultural, natural resources, and human sciences. The full PCAST report is available at:

http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast_agriculture_20121207.pdf

Many of these concepts are identified in the National Research Council's publication: How People Learn, available at: http://books.nap.edu/catalog.php?record_id=9853. Projects funded under this category shall also focus on promoting faculty expertise and encourage widespread implementation of educational innovation at the secondary-school levels.

C. Program Area Description

Projects are expected to address one of the stated Program Area Priorities which collectively contribute to the achievement of the following objectives:

1. Strengthen the ability of the nation's research, education, and extension community to meet the current and future challenges facing agriculture, forestry and food systems.
2. Promote research and extension experiential learning for undergraduates such that upon graduation they may enter the agriculture workforce with exceptional skills.
3. Develop the technical and academic competence of doctoral candidates.
4. Develop the research independence and teaching credentials of postdoctoral scholars
5. Provide immersive learning experiences for secondary school educators, enabling them to identify and replicate best practices to enhance student outcomes in the FANH sciences.

In order to achieve these program objectives, the AFRI Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative (AFRI ELI) will make awards to applicants with:

- a) focused research, education, and extension objectives that are aligned with NIFA's Challenge and/or Foundational Program areas;
- b) well-developed academic experiences and global competencies;
- c) productive and interactive mentoring; and
- d) appropriate and applicable training activities.

Program Areas:

Predocctoral Fellowships

Program Code – A7101

Program Code Name - AFRI ELI Predocctoral Fellowships

Application Deadline – February 11, 2016 (5:00 p.m., ET)

Proposed Budget Requests –

- Predocctoral Fellowship applications must not exceed \$95,000 total (including institutional allowance) for project periods of up to 2 years. Predocctoral Fellowship Grants are not renewable and are limited to a total of \$47,500 per year, for:
 - Stipend - up to \$25,000 per year
 - Tuition, fees, fringe benefits, supplies, travel, workshops, and publications - up to \$19,500 per year
 - Institutional allowance (in lieu of indirect costs) – up to \$3,000 per year
 - Indirect costs are not permitted on Predocctoral Fellowship Grant awards.
 - With the exception of the stipend, awarded funds in other budget categories may be carried over from year 1 to year 2. The stipend is capped at \$25,000 per year, and cannot be carried over from year 1 to year 2.
- Applications with budget requests exceeding the budgetary guidelines will not be reviewed.

Requested Project Type – Research, Education, Extension, or Integrated Projects

Program Area Contact – Dr. Ray Ali; nifafellows@nifa.usda.gov

Program Area Priority – NIFA Predocctoral Fellowships will support Research, Education, Extension, or Integrated Projects that address one or more of the following issues:

A. Projects aligned with one of the six AFRI Challenge Areas:

- Agricultural and Natural Resources Science for Climate Variability and Change
- Childhood Obesity Prevention
- Food Safety
- Food Security
- Sustainable Bioenergy
- Water Resources

B. Projects aligned with one of the six AFRI Foundational areas.

- 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
- Agriculture economics and rural communities

Other Program Area Requirements:

- All applications must adhere to the requirements beginning in Part IV.
- The applicant must determine the functional focus of the fellowship (Research, Education, Extension, or Integrated) leading to a doctoral degree.
- The selection of which disciplines to combine to address an issue is to be determined by the prospective applicant in consultation with appropriate mentors.
- Evidence of scholastic achievement (*e.g.*, current doctoral transcript, Graduate Record Exam (GRE) scores, and other academic successes) must be demonstrated.
- Priority will be given to applications that show a novel and innovative approach that will advance knowledge in targeted discipline(s). Multidisciplinary and interdisciplinary approaches to address NIFA Challenge Areas are encouraged.
- Applications that involve industry participation (*e.g.*, through collaborating mentors) are encouraged.
- Fellows are expected to build the professional skills necessary for career agility; explore opportunities available in the academe, industry, government and other career paths; and forge mentorships with professional and business leaders and faculty.

Postdoctoral Fellowships

Program Code – A7201

Program Code Name – AFRI ELI Postdoctoral Fellowships

Application Deadline – February 11, 2016 (5:00 p.m., ET)

Proposed Budget Requests –

- Postdoctoral Fellowship applications must not exceed \$152,000 total (including institutional allowance) for project periods of up to 2 years. Applications with budget requests exceeding the budgetary guidelines will not be reviewed.
- Postdoctoral Fellowship Grants are limited to a total award of \$152,000 for a two-year duration and are not renewable.
 - Funds should be requested primarily for salary support, although other expenditures (*e.g.*, fringe benefits, supplies, travel, workshops, and publications) are allowable costs.
 - Expenditures other than salary support may not exceed \$30,000 per year and must be itemized and properly justified.
 - Institutional allowance, in lieu of indirect costs, not to exceed \$3,000 per year, may be requested within the \$152,000 maximum award limit. Indirect costs are not permitted on Postdoctoral Fellowship Grant awards.
- Applications with budget requests exceeding the budgetary guidelines will not be reviewed.

Requested Project Type – Research, Education, Extension, or Integrated Projects

Program Area Contact – Dr. Ray Ali (202) 720-2727; nifafellows@nifa.usda.gov

Program Area Priority – NIFA Postdoctoral Fellowships will support the same projects and issues as the NIFA Predoctoral Fellowships (see Section 1. above). Note that the Other Program Area Requirements identified in Section 1. apply to NIFA Postdoctoral Fellowships as well.

Although a proposed project may fit in the context of the mentor's existing scientific area, the **Postdoctoral Fellowship Grant should initiate an independent scientific program**, rather than serve as an extension of ongoing projects in the mentor's laboratory.

Research and Extension Experiential Learning for Undergraduates (REEU)

Program Code – A7401

Program Code Name - Research and Extension Experiential Learning for Undergraduates

Application Deadline – March 24, 2016

Proposed Budget Requests –

- Applications must not exceed \$300,000 total (including institutional allowance) for project periods of up to 4 years.
- An undergraduate fellowship may be provided for up to 2 years per student.
- Limit of one award per host institution
- Any single institution can submit a maximum of three proposals.
- Applications with budget requests exceeding the budgetary guidelines will not be reviewed.
- **Project costs must be predominantly for student support**, which usually includes such items as participant stipends, housing, meals, travel, and laboratory use fees.
- Costs in budget categories outside Participant Support must be modest and reasonable.
- Host fellowship locations/sites may not charge students an application fee. A host site may not charge students tuition, or include tuition in the proposal budget, as a requirement for participation (although it is permissible to offer students the option of earning academic credit for participation).
- Student stipends for summer locations/sites must not exceed \$500 per student per week. Other student costs include housing, meals, travel, and laboratory use fees usually vary depending on the location of the site. Amounts for academic-year sites should be comparable on a pro rata basis.
- Indirect costs are not permitted on Research and Extension Experiential Learning for Undergraduate Fellowships Grant awards.

Requested Project Type –Integrated Projects Only

Program Area Contact – Dr. Victoria LeBeaux, (202) 720-2067;
undergraduate@nifa.usda.gov)

Program Area Priority. The NIFA Research and Extension Experiential Learning for Undergraduate Fellowships will support Integrated Projects that address one or more of the following Challenge and Foundational Areas, **including Projects that contain**

associated elements of the human sciences (e.g. disciplines that address issues challenging individuals, youth, families, and communities):

a. Projects aligned with one of the six AFRI Challenge Areas:

- Agricultural and Natural Resources Science for Climate Variability and Change
- Childhood Obesity Prevention
- Food Safety
- Food Security
- Sustainable Bioenergy
- Water Resources

b. Projects aligned with one of the six AFRI Foundational areas.

- 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
- Agriculture economics and rural communities

Other Program Area Requirements:

- All applications must adhere to the requirements beginning in Part IV.
- Proposals should provide opportunities for undergraduate students at colleges and universities, including those from underrepresented ethnicities, first generation college students and economically disadvantaged groups/students at minority-serving institutions, community colleges and other universities to obtain hands-on experience at land-grant and non-land-grant universities and USDA laboratories and obtain training to join the agricultural workforce or pursue graduate studies in food, agriculture, natural resources and the human sciences.
- Projects are strongly encouraged to involve underrepresented students when designing recruitment plans.
- Projects are also encouraged to involve students at earlier stages in their college experience (e.g. first and second-year students).
- **At least 50% of the undergraduate fellows must come from outside the host institution or organization.**
- Non-exhaustive examples of experiential projects include: (a) research and extension apprenticeships, internships, or similar participatory learning within the six AFRI priority areas; (b) practicums in agricultural laboratories, farms or Cooperative Extension Programs; (c) externships in the private or public sector; and (d) study abroad focused on global food security issues to develop global competency skills.
- Participating fellows are expected to build their skills necessary for graduate studies; explore the opportunities available in the academe, business, government and other career paths; and forge mentorships with professional and business leaders and faculty.

- The review process will give preference to applications that involve new collaborations or enhance existing partnerships with community colleges, minority-serving institutions, and other institutions where research and extension opportunities in mission-relevant STEM fields are limited.
- Applications that involve industry participation (*e.g.*, through collaborating mentors) and/or that target an FANH science industry where there is a documented shortage of talent/lack of adequate skills preparation for the needs of the industry are encouraged.
- The review process will give preference to projects that will catalyze and result in the implementation of a self-sustaining model for increased/enhanced experiential learning for a diverse undergraduate student population at the host and partner institutions.

Professional Development for Secondary School Teachers and Educational Professionals (PD-STEP)

Program Code – A7501

Program Code Name - Professional Development for Secondary School Teachers and Educational Professionals (PD-STEP)

Application Deadline – March 18, 2016 (5:00 p.m., ET)

Proposed Budget Requests –

- Applications must not exceed \$150,000 total for project periods of up to 3 years.
- Funds requested may include, but are not limited to, support for: secondary school professional participant stipends and travel; costs of continuing education units; provider personnel salaries; software; and curricula.
- If an institution/organization’s official negotiated indirect cost rate exceeds the maximum allowed rate then the indirect costs are limited to 30% of the total Federal funds.
- Limit of one award per host institution.
- Any single institution can submit a maximum of three proposals.
- Applications with budget requests exceeding the budgetary guidelines will not be reviewed.

Requested Project Type – Integrated Projects Only

Program Area Contact – Dr. Victoria LeBeaux, (202) 720-2067; K-14@nifa.usda.gov)

Program Area Priority The PD-STEP program will support Integrated Projects that address one or more of the following Challenge and Foundational Areas, including Projects that contain associated elements of the human sciences (*e.g.* disciplines that address issues challenging individuals, youth, families, and communities):

- a. Projects aligned with one of the six AFRI Challenge Areas:
 - Agricultural and Natural Resources Science for Climate Variability and Change
 - Childhood Obesity Prevention
 - Food Safety
 - Food Security

- Sustainable Bioenergy
 - Water Resources
- b. Projects aligned with one of the six AFRI Foundational areas.
- 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
 - Agriculture economics and rural communities

Other Program Area Requirements:

- All applications must adhere to the requirements beginning in Part IV.
- **Projects should provide immersive learning experiences for secondary school teachers/educational professionals (counselors, administrators, etc.) to create and replicate best practices to improve student success outcomes within the food, agricultural, natural resources, and human (FANH) sciences.**
- Only professional development and continuing education activities for current secondary education professionals are allowed under this program.
- Non-exhaustive examples of professional development projects include:
 - Developing self-sustaining models for professional development that better prepare education professionals to provide outstanding teaching, guidance, institutional structures, etc. that enhance student outcomes in the FANH sciences.
 - Changing instructional approaches to effectively identify skill gaps and address conceptual areas particularly challenging to students.
 - Integrating innovations in science and pedagogy into existing professional development programs (e.g. through hands-on research and extension experiences with partner institutions and labs).
 - Exploring self-sustaining web-based approaches for professional development for education professionals.
 - Other methods to fill the existing gap of professional development in advanced FANH sciences for educational professionals at the secondary education level.
- Applications that involve participation from industry and nonprofit organizations (e.g., through collaborating mentors) and/or that better connect education professionals, particularly those from low-resource schools, to existing USDA/Federal resources (i.e. with Extension offices, federal labs, open data resources, etc.) to enhance student outcomes in the FANH sciences are encouraged.
- The funded projects are expected to increase the number of secondary school teachers and educational professionals trained in food, agriculture, natural resources and human (FANH) sciences. Participating teachers are expected to build their skills necessary for integrating FANH concepts in their classes; explore the opportunities available in the FANH career paths; and forge mentorships with professional and business leaders and faculty.

PART II—AWARD INFORMATION

A. Available Funding

The National Institute of Food and Agriculture anticipates the appropriated amount available for the AFRI program in FY 2016 will be approximately \$350 million. Adjustments will be made to program allocations once the FY 2016 appropriations are finalized. 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 Food, Conservation, and Energy Act of 2008 (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 10 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.

The anticipated amount available for grants in FY 2016 is approximately \$18.9 million. 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 https://www.fiscal.treasury.gov/fsservices/gov/pmt/asap/asap_homehtm.

B. Types of Applications

In FY 2016, you may submit applications to the **AFRI ELI** Program as one of the following two types of requests:

New application. This is a project application that has not been previously submitted to the **AFRI ELI** Program. We will review all new applications competitively using the selection process and evaluation criteria described in Part V—Application Review Requirements.

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

Unfunded applicants from the FY 2015 AFRI ELI Predoctoral, Postdoctoral, and Research and Extension Experiential Learning for Undergraduate Fellowships RFA may resubmit applications to the appropriate Fellowship Category within this RFA.

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/afri-request-applications/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.

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 the FY 2016 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, Education or Extension Projects

Eligible applicants for Research Education or Extension 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.

Approximately by February 2016, 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 addressed to Lisa DePaolo, Policy Analyst, by email at HSACU@nifa.usda.gov or phone at (202) 401-5061.

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.

Predoctoral and Postdoctoral Fellowships

We highly recommend that applications be submitted through the mentor's institution with the mentor institution listed as the applicant (see Part IV, B.1.).

The student applying for the fellowship may opt to submit the application on his/her own behalf. If such an application results in an award, the student, in accepting the grant award will be certifying that he/she will ensure stewardship of federal funds, will manage all aspects of the project in accordance with sound practices, and will comply with all applicable laws and regulations and the terms and conditions of the grant award.

The individual (i.e., student) seeking support via the application (whether as the applicant or through the mentor institution) must be a citizen, national, or permanent resident of the United States as defined in Part VIII (note that this does not preclude the individual from doing all or part of the proposed work at a non-United States organization). In addition, the following requirements apply as noted:

Predoctoral Student: The individual must have advanced to candidacy, as per institutional requirements, by **February 11, 2016 (as per CFR 3430.303)**, and provide documentation from the graduate advisor or the institution by the application deadline. **The intent of the NIFA**

Predocutorial Fellowship Program is to support current doctoral students who are at the stage of conducting dissertation research, ultimately leading to completion of the dissertation and respective terminal degree. Predocutorial students, inclusive of those with baccalaureate and/or masters degrees, who meet the aforementioned criteria, may apply.

Postdoctoral Student: All doctoral degree requirements must be satisfied no earlier than January 1, 2013 and no later than November 11, 2016 (as per CFR 3430.303), and provide documentation from the graduate advisor/graduate committee or the institution by the application deadline.

Research and Extension Experiential Learning for Undergraduate Fellowships

The project director seeking support via the application must be a citizen, national, or permanent resident of the United States as defined in Part VIII. The project director must be from the primary host institution.

Undergraduate Student: Undergraduate Research and Extension Experiential Learning Fellows supported with NIFA funds must be U.S. citizens, nationals, or permanent residents of the United States. Eligible Undergraduate Fellows must have completed at least one academic semester of full-time study at the associate's or bachelor's degree level.

Professional Development for Secondary School Teachers and Educational Professionals (PD-STEP)

The project director seeking support via the application must be a citizen, national, or permanent resident of the United States as defined in Part VIII. The project director must be from the primary host institution.

B. Cost Sharing or Matching for applications to all ELI Programs

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

PART IV—APPLICATION AND SUBMISSION INFORMATION

A. Electronic Application Package

Only electronic applications may be submitted via Grants.gov to NIFA in response to this AFRI ELI 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/grant-application-process.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/support/technical-support/software/adobe-reader-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/apply-for-grants.html>. Under Step 1 click on “Download a Grant Application Package,” and enter the funding opportunity number

Funding Opportunity Number: USDA-NIFA-AFRI-005576

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-resources.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.

B. Content and Form of Application Submission

Please note that the two programs described in this RFA require different content and form for application submission. The content and form for the Predoctoral and Postdoctoral Fellowships is discussed starting on page 31 of this section. The content and form for the Undergraduate Research and Extension Experiential Learning Fellowships is discussed starting on page 43 of this section.

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.

Predocctoral and Postdoctoral Fellowships

1. SF 424 R&R Cover Sheet

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

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

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

3. R&R Other Project Information Form

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

a. Field 7. Project Summary/Abstract. The summary should also include the relevance of the project to the goals of AFRI ELI. The following instructions are in addition to those included in section 4.7 of Part V of the NIFA Grants.gov Application Guide. Title the attachment as ‘Project Summary’ in the document header and save file as ‘ProjectSummary’.

The Project Summary **must** indicate the following:

- a) Names and institutions of the PD and Primary Mentor (more than one if Integrated project only);
- b) Predocctoral or Postdoctoral application
- c) Project type (education, extension, research, or integrated)
- d) The **primary and specific** FY 2016 Foundational Program Area(s) the proposed project addresses. Choose from one of the following.
 - 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;
 - Agriculture economics and rural communities
- e. If applicable, the FY 2016 Challenge Area(s) the proposed project addresses. Choose from one (or more) of the following.

- Agricultural and Natural Resources Science for Climate Variability and Change;
- Childhood Obesity Prevention;
- Food Safety;
- Food Security;
- Sustainable Bioenergy; and
- Water Resources.

The Project Summary should be a short, concise description of the research, education, and/or extension project to be pursued in the applicant's proposed doctoral problem to be studied or postdoctoral training. The summary should also include the relevance of the project to the goals of AFRI ELI Fellowships Grant Program.

b. Field 8. Project Narrative.

PDF Attachment. Title the attachment as ‘Project Narrative’ in the document header and save file as ‘ProjectNarrative’.

For **Predocutorial Grant** applications, the Project Narrative section may not exceed a total of **six** pages, including all figures and tables.

For **Postdoctoral Grant** applications, the Project Narrative section may not exceed a total of **ten** pages, including all figures and tables.

NOTE: ALL components of the project narrative (i.e. Response to Previous Review, if applicable; the Training/Career Development Plan; the Mentoring Plan; the Project Plan; and the Evaluation Plan) will be fully considered, in total, during the Peer Review Process. Applicants are strongly encouraged to address each component accordingly.

All applications must have 12-point font and line spacing not exceeding six lines of text per vertical inch.

To ensure fair and equitable competition, applications exceeding the applicable page limitation will not be reviewed.

For Predocutorial Fellowships and Postdoctoral Fellowships, 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 response to the previous review panel summary titled “Response to Previous Review” included as the first page of the attachment and 2) the 6- or 10-page Project Narrative, as required (see Part IV, C. 3. c above). The one-page Response to Previous Review does not count against the 6- or 10-page limit of the Project Narrative.

2) Project Narrative

a. Training/Career Development Plan

The Training/Career Development Plan is a description of all activities that applicant plans to perform and participate in that will enhance the pre- or postdoctoral training during the fellowship award period.

For Predoctoral Fellowship applicants, a Training/Career Development Plan should include their personal statement addressing future career directions or preparation for entering the workforce, overall career goals and objectives, as well as how, if awarded, the fellowship will allow them to accomplish their professional goals and objectives. Any other training objectives should be included. Predoctoral students may also include any extension and educational activities (e.g., teaching in formal or informal settings) to enhance their career development that will be undertaken during their doctoral training. For Postdoctoral Fellowship applicants, a Training/Career Development Plan includes plans for transition to career independence by development of professional skills that include teaching competencies; what those career and training goals are; and results of the postdoctoral fellow's previous and current research and scholarships that include publications, presentations, etc.

b. Mentoring Plan

The applicants are expected to engage their mentors and/or advisors in the development of their application. Thus, prior to submission of the application, prospective fellows should already identify a Primary mentor who will be willing to help them in their projects as well as professional development (note: more than one Primary Mentor is acceptable for Integrated Projects Only). If there are other collaborating mentors, their role and responsibilities to the project and development of the applicant's skills should be clearly described. For predoctoral applications, if the primary mentor is not the student's graduate advisor or laboratory sponsor, the relationship between advisor's work and the primary mentor's research should be clearly defined, and the contribution of each individual in the student's project as well as degree completion should be included. Because this is a very important component of the project, the commitment of the mentor(s) is included in the evaluation criteria as it pertains to project personnel. In describing the role of the mentor, the applicant should:

1. Briefly indicate how the mentoring and educational training will add to the skill sets of the NIFA Fellow.
2. Briefly explain the commitment of the primary mentor.
3. Briefly describe the role of collaborating mentors (if applicable).
4. With respect to the Primary Mentor, provide a list of former mentees and their current positions.

NOTE: The Primary Mentor shall submit a Letter of Commitment (as an attachment to Field 12, Other Attachments, of the Other Project Information form-see section g. below) explicitly indicating their respective responsibilities throughout the proposed project in relation to the Project Director.

5. Briefly list and explain the role of other non-primary mentors.

c. Project Plan

Predocctoral Applicants: It is expected that predoctoral students will be working with a primary mentor or advisor who has funded research and that the fellow may work on

another aspect of this research. Moreover, the mentor/advisor will already have the facilities, equipment, technologies and methodologies for the projects developed with the fellow. Experimental methods, especially if these are routinely or generally used, do not need detailed description. However, sufficient details on the experimental approach or strategy as well as pitfalls must be provided to allow assessment of feasibility of study. The Project scope should be within the 2-year timeframe of the fellowship.

Postdoctoral Applicants: The research should be totally independent of the mentor's. Proven techniques and technologies as part of the experimental approach, especially if these are routinely employed, don't have to be provided in detail. Experimental approaches or strategies including possible pitfalls and alternatives must be provided in order to assess the overall feasibility of the proposed study. Avoid open-ended screens or undefined outcomes. The scope of the project should be within the 2-year timeframe.

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

b) Rationale and Significance

- Concisely present the rationale behind the proposed project and how it will advance the current knowledge in the field;
- Clearly describe the specific relationship of the project's objectives to one of the Program Area Priorities. The Program Area Priority(ies) must be specifically identified ; and
- Describe how the proposed curricular activities (predoctoral) will support educational goals and project activities.

c) Approach

Provide a concise description of the proposed project and the problem(s) to be addressed. Clearly describe the approaches to be used. Specifically, this section must include:

- A description of the project details proposed and the sequence in which the activities are to be performed;
- Methods to be used in carrying out the proposed project and feasibility of the methods (detail only if a new and unproven method is to be used; if employing commonly used methods provide information on the expertise available);
- Expected outcomes and outcome measures;
- Means by which results will be analyzed, assessed, or interpreted;
- How results or products will be used;
- Pitfalls that may be encountered, and possible alternatives;
- Limitations to proposed procedures;

- 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;
- A timeline for attainment of objectives and for production of deliverables that includes annual milestones with specific, measurable outcomes; and
- Establishment of a profile on an established professional social networking site to document career progress during and beyond the term of the Fellowship.

d. Evaluation Plan

A plan for evaluating progress towards **objectives related to the training/career development plan, mentoring plan, and project plan**. The plan must include milestones, which signify the completion of a major deliverable, events, 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 will be measured to evaluate whether the education activities are successful in achieving project goals and contribute to the achievement of the stated program goals and outcomes; and a dissemination plan describing the methods that will be used to communicate findings and project accomplishments.

☀ For Education Project Applications – In addition to the Project Narrative requirements above, the proposed Education Project should clearly articulate:

- The potential for advancing the quality of education by addressing a specific problem or opportunity; and
- The target audience and the level of education addressed.

☀ For Extension Project Applications –

- In addition to the Project Narrative requirements above, the proposed Extension Project should give emphasis to scholarly principles of engagement and outreach that clearly articulate:
 - The importance of informal education to address a specific local problem or issue;
 - The theoretical basis of informal outreach methods used;
 - Development and/or implementation of a curriculum-based series of connected learning activities (including educational materials) that engage the public in practical problem solving;
 - A plan for evaluating progress toward achieving project objectives. 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 extension activities are successful in achieving project goals and in contributing to achievement of the stated program goals and outcomes; and

- A dissemination plan describing the methods that will be used to communicate findings and project accomplishments.

☀ For Integrated Project Applications –

- 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 (page 7); and
 - A dissemination plan describing the methods that will be used to communicate findings and project accomplishments.
- 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.

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’.

Provide documentation that arrangements have been made for the necessary equipment for conduct of the research. Items of nonexpendable equipment necessary to conduct and successfully complete the proposed project for which funds are requested to purchase should be listed in Field C. of the R&R Budget and described in the Budget Justification (see section 6. below).

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.

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

Clearly describe the roles and responsibilities of the PD, collaborator(s), mentor(s) *etc.* (biographical sketches for key personnel including mentor(s) should not be included here). If it will be necessary to enter into formal consulting or collaborative arrangements with others, such arrangements should be fully explained and justified. Evidence (letters of support) for this type of collaboration should be provided in the ‘Documentation of Collaboration’ attachment (see item 2) below).

Mentor Letter, Reference Letters, and Documentation of Collaboration – **PDF Attachment. No Page Limit.** Title the attachment as ‘Documentation of Collaboration’ in the document header and save file as ‘Collaboration’.

Primary Mentor Letter of Commitment – One Primary Mentor letter is required. If there is more than one Primary Mentor (Integrated Projects Only), a Primary mentor letter should be provided for each. The mentor letter(s) should indicate:

the quality of the applicant in regards to their ability to develop into a leader in agriculture;
the applicant’s oral and written communication skills and critical and analytical skills;
the applicant’s level of intellectual independence;
the role of the student and mentor in the development of the application;

their respective committed responsibilities throughout the proposed project in relation to the Project Director;

a statement that the research by the applicant is independent and not an extension of the mentor’s research (for postdoctoral applicants only); and
any other pertinent and relevant information to indicate the applicant is deserving of being awarded a prestigious AFRI ELI Fellowship.

Collaborating Mentor Letters – As applicable, the other mentor letter(s) should generally comment on items a) through d), f), and g) of the Primary Mentor Letter of Commitment noted above.

Reference Letter(s) – Three reference letters are required. Letters should not come from identified mentors, but must be obtained from other individuals who know the applicant well and can substantially speak towards the candidate’s academic and research accomplishments and ability to complete the doctoral degree program, or undertake an independent postdoctoral research, education, extension, or integrated project. Reference letters should be no longer than 1 page.

Academic Standing – For predoctoral applications, documentation from the graduate advisor/graduate committee or the institution indicating that the applicant has advanced to candidacy, as per institutional requirements, by **February 11, 2016**. For postdoctoral applications, documentation from the graduate advisor/graduate committee or the institution that all doctoral degree requirements were satisfied **no earlier than January 1, 2013 or will be satisfied no later than November 11, 2016**.

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.

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. To ensure fair and equitable competition, applications exceeding the applicable page limitation will not be reviewed. 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 of the PD, and the title of the application.

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.

Integrated project applications are required to include a logic model (PDF Attachment, 2-Page Limit) and a Management Plan (PDF Attachment, 3-Page Limit). Failure to include these components may result in the application not being accepted by the program for evaluation.

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

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

Project Role Field – Complete appropriately.

☼ For Predoctoral Fellowship Grant Applications – **The predoctoral student must be the sole PD listed on the application. The mentor should not be listed as a co-PD.** Select “Graduate Student” for the Predoctoral Fellowship applicant. Select “Other (Specify)” for the corresponding scientific mentor(s).

☼ For Postdoctoral Fellowship Grant Applications – **The postdoctoral student must be the sole PD listed on the application. The mentor should not be listed as a co-PD.** Select “Post

Doctoral” for the Postdoctoral Fellowship applicant. Select “Other (Specify)” for the corresponding scientific mentor(s).

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

Enter “Mentor” for corresponding scientific mentor(s).

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

The Biographical sketch of the applicant must include the following information: Activities that demonstrate scholastic achievement and excellence. These may include but are not limited to academic indicators, awards, honors, publications, presentations, professional society membership, etc. and other metrics that demonstrate scholastic achievement and excellence. Predoctoral applicants must include Grade Point Average (GPA) and Graduate Record Exam (GRE) scores. Postdoctoral applicants must include date of completion of the terminal degree.

The Biographical sketch of the Primary mentor (more than one Primary Mentor if integrated project only) should include the number of mentees mentored at least for the last 5 years.

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’.

Current and Pending Support for both the pre- or postdoctoral applicant and the scientific mentor(s) (as documentation of on-going work in the mentor's laboratory) must be completed.

Current and Pending Support information is only required for the PD (i.e., the student) and the primary mentor. **At the time of the award and release of funds from NIFA to sponsoring institution, Fellows are required to carry out their projects on a full-time basis (i.e. 100% effort), as specified by the sponsoring institution in accordance with its own policies.**

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.

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.

6. R&R Budget

Instructions related to this form are explained in detail in Part V, 7. of the NIFA Grants.gov Application Guide.

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

If a Fellowship Grant application is funded, the Project Director will be required to attend one AFRI NIFA Fellows Project Directors' meeting in Washington, DC during the performance period of the award. Reasonable travel expenses should be included as part of the project budget. As part of the fellows' professional development, attendance to other scientific or professional meetings is encouraged, but the fellows must attend at least one Project Directors' meeting during the time of support. Reasonable travel expenses should be included as part of the project budget.

See Part I C. for limitation of budget amounts, use of funds, and budget periods.

☼ For Extension Project Applications – Projects that include partnering with eXtension must include financial support for the Community of Practice core functions as well as project-specific activities.

☼ For Integrated Project Applications – Projects that include partnering with eXtension must include financial support for the Community of Practice core functions as well as project specific activities.

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 and a budget justification are required for each subcontract agreement. Refer to Part V, 8. of the NIFA Grants.gov Application Guide for instructions on completing this form.

Field H. Indirect Costs – Indirect costs are not allowed on AFRI ELI Fellowship Grants.

Field K. Budget Justification – PDF Attachment, No Page Limit. Title the attachment as ‘Budget Justification’ in the document header and save file as ‘BudgetJustification’.

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/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, B. 3. g.2) 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. Allowable expenditures must be appropriately discussed in the budget justification. 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.

Matching Funds. If you conclude that matching funds are not required as specified under Part III, B. 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, B., 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:

(a) 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.

(b) 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.

7. Supplemental Information Form

Instructions related to this form are explained in detail in Part VI, 1. of the NIFA Grants.gov Application Guide.

a. Field 2. Program to which you are applying – Enter the Program Code Name and the Program Code for the Program Area to which you are applying from the information provided in the Program Area Descriptions (see Part I, C). An application can only be submitted to one program. **It is extremely important that the Program Code Name and Program Code are spelled correctly and match the instructions in this RFA. Failure to do so may result in the application being omitted for review.**

b. Field 8. Conflict of Interest List – PDF Attachment. No Page Limit. Title the attachment as ‘Conflict of Interest’ in the document header and save file as ‘Conflict of Interest’.

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

Undergraduate Research and Extension Experiential Learning Fellowships

1. SF 424 R&R Cover Sheet

Instructions related to this form are explained in detail in Part V, 2. of the NIFA Grants.gov Application Guide.

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

Instructions related to this form are explained in detail in Part V, 3. of the NIFA Grants.gov Application Guide.

3. R&R Other Project Information

Instructions related to this form are explained in detail in Part V, 4. of the NIFA Grants.gov Application Guide.

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

The Project Summary must indicate the following:

- a) Project title
- b) Indicate the primary AFRI Foundational or Challenge area the project is tied to. Select one from the following:

Foundational Area

- 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.

Challenge Area

- 1) Agricultural and Natural Resources Science for Climate Variability and Change;
- 2) Childhood Obesity Prevention;
- 3) Food Safety;
- 4) Food Security;
- 5) Sustainable Bioenergy; and
- 6) Water Resources.

- c) Project duration
- d) Principal Investigator
- e) Submitting organization
- f) Other organizations involved in the project's operation
- g) Location(s) (universities, national labs, field stations, etc.) at which the proposed undergraduate research and/or extension will occur
- h) Main field(s) and sub-field(s) of the research and/or extension
- i) Number of mentors
- j) Mentor to participant ratio
- k) Number of undergraduate participants per year
- l) Percentage of undergraduate students from the host institution
- m) Summer site/location, or academic year site/location
- n) Number of weeks per year that the students will participate
- o) Does the project include an international component

In addition to the information requested above please provide a 250 word abstract. The abstract should briefly describe the project's objectives, activities, students to be recruited, and intended impact. The abstract should also include the relevance of the project to the goals of the AFRI ELI Fellowships Grant Program.

b. Field 8. Project Narrative – PDF Attachment. Title the attachment as ‘Project Narrative’ in the document header and save file as ‘ProjectNarrative’.

The Project Narrative section may not exceed a total of **twelve** pages, including all figures and tables.

All applications must have 12-point font and line spacing not exceeding six lines of text per vertical inch.

To ensure fair and equitable competition, applications exceeding the applicable page limitation will not be reviewed.

The Project Narrative must include all of the following:

- 1) Overview
 - a) Provide a brief description of the objectives of the proposed host site(s)/location(s), targeted student participants, intellectual focus, organizational structure, timetable, and participating organizations' commitment to the activity.
- 2) The Research, Education and/or Extension Environment
 - a) Describe the experience, and the record of the involvement with undergraduate students, of the PI, the faculty who may serve as mentors, and the institution(s) or organization(s) where the activities will occur. Include information on the record of faculty/mentors in publishing work involving undergraduate authors and in providing professional development opportunities for undergraduate students.

- b) Describe the environment of the host site(s), including, but not limited to, physical plan(s), accommodations for students with disabilities, accessibility, location(s) of proposed activities, etc.
- 3) Approach
- a) Student Recruitment, Selection, and Retention
 - 1) The recruitment plan should be described with as much specificity as possible, including the types and/or names of academic institutions where students will be recruited and the efforts that will be made to attract members of underrepresented groups.
 - 2) **At least 50% of the student participants must come from outside the host institution or organization.** The number of students per project should be appropriate to the institutional or organizational setting and to the manner in which research is conducted in the discipline.
 - 3) Indicate how undergraduate fellows, who terminate the program early, will be replaced.
 - b) Nature of Student Activities
 - 1) Proposals should address the approach to undergraduate research, education and/or extension training being taken and should provide detailed descriptions of the research, education and/or extension projects that the undergraduate students will pursue. This discussion should indicate the significance of the research, education and/or extension area(s) and, when appropriate, the underlying theoretical framework, hypotheses, and questions.
 - 2) Proposals must present plans that will ensure the development of student faculty interaction and student-student communication.
 - c) Mentoring Plan
 - 1) This subsection should discuss the diversity of the mentor pool; any training, mentoring, or monitoring that mentors have received or will receive to help them mentor students effectively during the research experience; and any plans by which mentoring relationships will be sustained after students leave the site where the experiential learning activities take place.
 - 2) In detail, describe the mentoring activities for the students. These should be clearly articulated, and inclusive of student-centered deliverables associated with the mentoring activities.
 - d) Institutional Support
 - 1) Fully describe the institutional climate for the proposed training. How does the proposed project align with the institutions goals for experiential learning? How does the proposed project contribute to achieving these goals?
 - 2) The review process will give preference to projects that will catalyze and result in the implementation of a **self-sustaining model** for increased/enhanced experiential learning for diverse undergraduate student populations at the host and partner institutions.

- 4) Project Evaluation and Reporting
 - a) Clearly define a plan with a timeline to extensively evaluate the project using formative and summative assessment tools that can help inform future implementations of experiential learning programs. Identify pitfalls and limitations to proposed approaches and how these will be addressed.
 - b) Define the approach for longitudinal tracking of the Fellows after completion of the Research and Extension Experiential Learning for Undergraduates Fellowships program; include strategies for tracking Fellows to their exit point from the institution; and if employed where and at what level, if graduate training then what institutions and in what level/areas of study; etc
 - c) Specifically describe the **student-centered learning outcomes** (e.g. skills or knowledge obtained, presentations and publications, graduation rates, students matriculating to graduate schools, etc.) and associated measures to evaluate outcomes
 - d) Describe how these outcome measures were chosen; and
 - e) Provide strategies to assess, at the project-level, management of the project for successful outcomes.

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’.

Provide documentation that arrangements have been made for the necessary equipment for conduct of the research. Items of nonexpendable equipment necessary to conduct and successfully complete the proposed project for which funds are requested to purchase should be listed in Field C. of the R&R Budget and described in the Budget Justification (see section 6. below).

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

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

Clearly describe the roles and responsibilities of the PD, collaborator(s), mentor(s) *etc.* (biographical sketches for key personnel including mentor(s) should not be included here). If it will be necessary to enter into formal consulting or collaborative arrangements with others, such arrangements should be fully explained and justified. Evidence (letters of support) for this type of collaboration should be provided in the ‘Documentation of Collaboration’ attachment (see item 2) below).

Mentor Letter(s), and Documentation of Collaboration – **PDF Attachment. No Page Limit.** Title the attachment as ‘Documentation of Collaboration’ in the document header and save file as ‘Collaboration’.

Primary Mentor Letter of Commitment – One Primary Mentor letter is required. If there is more than one Primary Mentor, a Primary mentor letter should be provided for each primary mentor. The mentor letter(s) should indicate:

a) A description of committed responsibilities and projected time with the undergraduate students throughout the proposed project.

Collaborating Mentor Letters – As applicable, other mentor letter(s) should clearly describe committed responsibilities and projected time with the undergraduate students throughout the proposed project.

Documentation of Collaboration – Evidence of collaboration and contributions amongst the host institution and other institutions from which the undergraduate Fellows will be recruited. Examples include Letters from the Deans and/or Department Heads of the respective schools. 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.

Expected Outcomes – PDF Attachment. Title the attachment “Expected Outcomes” in the document header and name the file to be saved as “ExpectedOutcomes”. Please use a format, similar to what is provided below, to submit expected impacts and attach it as the last page of the application.

Total expected student impact during entire grant period	Expected Number
Total number of students to be directly supported by grant (i.e., stipends)	
Number of underrepresented students to be supported during the grant period (i.e., stipends)	
Number of women students to be supported during the grant period (i.e., stipends)	
Number of students who will complete internships and other experiential learning during the grant-period	
Number of students who will complete international experiences during the grant-period	
Other relevant Impacts...	

Total expected overall impact during entire grant period	Expected Number
Number of products to be developed through grant funds (i.e., curricula, academic programs, recruitment/retention programs, materials, experiential learning opportunities)	
Number of collaborations to be developed between institutions	
Number of individuals who indirectly will benefit from the projects (i.e., using the curriculum/instrumentation, enrolled in the program, recruited or retained)	
Number of collaborations to be developed between institutions	
Number of projects that will measure changes in student learning or engagement	
Other relevant Impacts...	

Integrated project applications are required to include a logic model (PDF Attachment, 2-Page Limit) and a Management Plan (PDF Attachment, 3-Page Limit). Failure to include these components may result in the application not being accepted by the program for evaluation.

4. R&R Senior/Key Person Profile

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

Project Role Field – Complete appropriately.

☼ For Undergraduate Fellowship Grant Applications – **A member(s) of the host institution(s) must be listed as the PD(s) on the application.**

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

Enter “Mentor” for corresponding scientific mentor(s).

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

The Biographical sketch must include the following information:

- be no more than 2 pages in length, excluding lists of publications;
- include a presentation of academic, extension, and/or research credentials including, as applicable: earned degrees, teaching experience, employment history, professional activities, honors and awards, and grants received;
- indicate TOTAL number of undergraduate students directly mentored or trained through experiential learning activities during the past four (4) years; and
- include all relevant publications in refereed journals during the past four (4) years, including those in press.

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’.

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.

A 'Current and Pending Support' form (see NIFA Grants.gov Application Guide page 37, item 5.3, for guidelines and information format) for each senior/key person identified (PDF Format). Note: Even if no other funding is currently reported under the 'Active' section of this attachment, each senior/key person must list this grant application under the 'Pending' section of this attachment.

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.

5. R&R Personal Data

Instructions related to this form are explained in detail in Part V, 6. of the NIFA Grants.gov Application Guide.

6. R&R Budget

Instructions related to this form are explained in detail in Part V, 7. of the NIFA Grants.gov Application Guide.

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

If a Fellowship Grant application is funded, the Project Director will be required to attend one AFRI NIFA Fellows Project Directors' meeting in Washington, DC during the performance period of the award. Reasonable travel expenses should be included as part of the project budget.

See Part I C. for limitation of budget amounts, use of funds, and budget periods.

☼ Projects that include partnering with eXtension must include financial support for the Community of Practice core functions as well as project-specific activities.

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 and a budget justification are required for each subcontract agreement. Refer to Part V, 8. of the NIFA Grants.gov Application Guide for instructions on completing this form.

Field H. Indirect Costs – Indirect costs are not allowed on AFRI ELI Fellowship Grants.

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

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 (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 and other evidence should be provided in the Documentation of Collaboration (see Part IV, B. 3. g.2) 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. Allowable expenditures must be appropriately discussed in the budget justification. 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.

e. Matching

See Part III, C. for the matching requirements.

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

Instructions related to this form are explained in detail in Part VI, 1. of the NIFA Grants.gov Application Guide.

a. Field 2. Program to which you are applying – Enter the Program Code Name and the Program Code for the Program Area to which you are applying from the information provided in the Program Area Descriptions (see Part I, C). An application can only be submitted to one program. **It is extremely important that the Program Code Name and Program Code are spelled correctly and match the instructions in this RFA. Failure to do so may result in the application being omitted for review.**

b. Field 8. Conflict of Interest List – PDF Attachment. No Page Limit. Title the attachment as ‘Conflict of Interest’ in the document header and save file as ‘Conflict of Interest’.

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

Professional Development for Secondary School Teachers and Educational Professionals (PD-STEP)

1. SF 424 R&R Cover Sheet

Instructions related to this form are explained in detail in Part V, 2. of the NIFA Grants.gov Application Guide.

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

Instructions related to this form are explained in detail in Part V, 3. of the NIFA Grants.gov Application Guide.

3. R&R Other Project Information

Instructions related to this form are explained in detail in Part V, 4. of the NIFA Grants.gov Application Guide.

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

The Project Summary must indicate the following:

- a) Project title
- b) Indicate the primary AFRI Foundational or Challenge area the project is tied to. Select **one** from the following:

Foundational Area

- 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.

Challenge Area

- 1) Agricultural and Natural Resources Science for Climate Variability and Change;
- 2) Childhood Obesity Prevention;
- 3) Food Safety;
- 4) Food Security;
- 5) Sustainable Bioenergy; and
- 6) Water Resources.

- c) Project duration
- d) Principal Investigator
- e) Submitting organization
- f) Other organizations involved in the project's operation
- g) Location(s) (universities, national labs, field stations, etc.) at which the proposed professional development activities will occur
- h) Facilitator to participant ratio

- i) Number of participants per year
- j) Does the project include an international component

In addition to the information requested above please provide a 250 word abstract. The abstract should briefly describe the project's objectives, activities, educational professionals to be recruited, and intended impact. The abstract should also include the relevance of the project to the goals of the AFRI ELI Grant Program.

b. Field 8. Project Narrative – PDF Attachment. Title the attachment as ‘Project Narrative’ in the document header and save file as ‘ProjectNarrative’.

The Project Narrative shall not exceed 12 pages of written text including all tables and figures. Applicants must ensure that the page limit is not exceeded after converting to PDF format

All applications must have 12-point font and line spacing not exceeding six lines of text per vertical inch.

To ensure fair and equitable competition, applications exceeding the applicable page limitation will not be reviewed.

The Project Narrative must include all of the following:

- 1) Overview
 - a. Provide a brief description of the objectives of the PD-STEP program to be developed. What AFRI Foundation or Challenge area is being addressed; Who are the targeted participants; what skills gaps and/or academic challenges are being addressed; what student outcomes will be impacted;
- 2) The Research, Education and/or Extension Environment
 - a. Describe the experience of the of the key personnel in providing quality non-formal education for practicing educators and/or how the team will comprehensively provide both immersive research and extension experiences in the FANH sciences and provide training in the most effective pedagogical strategies for secondary education.
 - b. Describe the environment of the host site(s), including, but not limited to, physical plan(s), accommodations for participants with disabilities, accessibility, location(s) of proposed activities, etc.
- 3) Approach
 - a. Recruitment, Selection, and Continued Support for Secondary School Educators
 - 1) The recruitment plan should be described with as much specificity as possible, including the types and/or names of academic institutions where educational professionals will be recruited and the efforts that will be made to attract educators from low-resource schools
 - 2) What criteria will be used to select participants?

- 3) What additional support will be provided to participants after the close of the program?
- b. Nature of Participant Activities
 - 1) Proposals should provide detailed descriptions of the research, education and/or extension activities that the participants will pursue. This discussion should indicate how these experiences will lead to enhanced student outcomes when educators utilize skills learned back in their classrooms/at their schools.
- c. Institutional Support
 - 1) Fully describe the institutional climate for the proposed training. How does the proposed project align with the institutions goals for enhancing K-12 education in their community/state/region? How does the proposed project contribute to achieving these goals?
 - 2) The review process will give preference to projects that will catalyze and result in the implementation **self-sustaining models** for professional development that better prepare these current (i.e. not pre-service) education professionals to provide outstanding teaching, guidance, institutional structures, etc. that are needed to enhance student outcomes in FANH sciences.
- 4) Project Evaluation and Reporting
 - a. Clearly define a plan with a timeline to extensively evaluate the project using formative and summative assessment tools that can help inform future implementations of immersive learning based professional development programs. Identify pitfalls and limitations to proposed approaches and how these will be addressed.
 - b. Define the approach for evaluating student outcomes once educators return to their schools and implement the strategies and techniques learning during the PD-STEP program.

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’.

Provide documentation that arrangements have been made for the necessary equipment for conduct of the research. Items of nonexpendable equipment necessary to conduct and successfully complete the proposed project for which funds are requested to purchase should be listed in Field C. of the R&R Budget and described in the Budget Justification (see section 6. below).

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

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

Clearly describe the roles and responsibilities of the PD, collaborator(s), *etc.* (biographical sketches for key personnel should not be included here). If it will be necessary to enter into formal consulting or collaborative arrangements with others, such arrangements should be fully explained and justified. Evidence (letters of support) for this type of collaboration should be provided in the ‘Documentation of Collaboration’ attachment (see item 2) below).

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

Documentation of Collaboration – Evidence of collaboration and contributions amongst the host institution and other institutions from which the teacher participants will be recruited from. Examples include Letters from the Superintendents, Principals and/or Department Heads of the respective schools.

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.

Expected Outcomes – PDF Attachment. Title the attachment “Expected Outcomes” in the document header and name the file to be saved as “ExpectedOutcomes”. Please use a format, similar to what is provided below, to submit expected impacts and attach it as the last page of the application.

Total expected faculty impact during entire grant period	Expected Number
Number of secondary educators participating in professional development	
Number of secondary educators from low-resources schools	
Other relevant Impacts...	

Total expected overall impact during entire grant period	Expected Number
Number of products to be developed through grant funds (i.e., curricula, academic programs, recruitment/retention programs, materials, experiential learning opportunities)	
Number of collaborations to be developed between institutions	
Number of individuals who indirectly will benefit from the projects (i.e., using the curriculum/instrumentation, enrolled in the program, recruited or retained)	
Number of collaborations to be developed between institutions	
Number of projects that will measure changes in student learning or engagement	
Other relevant Impacts...	

Integrated project applications are required to include a logic model (PDF Attachment, 2-Page Limit) and a Management Plan (PDF Attachment, 3-Page Limit). Failure to include these components may result in the application not being accepted by the program for evaluation.

4. R&R Senior/Key Person Profile

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

Project Role Field – Complete appropriately.

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

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

- a. The Biographical sketch of the applicant must:
 - a. be no more than 2 pages in length, excluding lists of publications;
 - b. include a presentation of academic, extension, and/or research credentials including, as applicable: earned degrees, teaching experience, employment history, professional activities, honors and awards, and grants received;
 - c. indicate the number of continuing education courses developed and taught/the number of secondary school educators for which applicant has provided training; and
 - d. include all relevant publications in refereed journals during the past four (4) years, including those in press.

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’.

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.

A 'Current and Pending Support' form (see NIFA Grants.gov Application Guide page 37, item 5.3, for guidelines and information format) for each senior/key person identified (PDF Format). Note: Even if no other funding is currently reported under the 'Active' section of this attachment, each senior/key person must list this grant application under the 'Pending' section of this attachment.

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.

5. R&R Personal Data

Instructions related to this form are explained in detail in Part V, 6. of the NIFA Grants.gov Application Guide.

6. R&R Budget

Instructions related to this form are explained in detail in Part V, 7. of the NIFA Grants.gov Application Guide.

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

See Part I C. for limitation of budget amounts, use of funds, and budget periods.

☼ Projects that include partnering with eXtension must include financial support for the Community of Practice core functions as well as project-specific activities.

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 and a budget justification are required for each subcontract agreement. Refer to Part V, 8. of the NIFA Grants.gov Application Guide for instructions on completing this form.

Field H. Indirect Costs – See Part IV, D for more information.

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

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, 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 and other evidence should be provided in the Documentation of Collaboration (see Part IV, B. 3. g.2) 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. Allowable expenditures must be appropriately discussed in the budget

justification. 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.

Matching

See Part III, C. for the matching requirements.

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

Instructions related to this form are explained in detail in Part VI, 1. of the NIFA Grants.gov Application Guide.

a. Field 2. Program to which you are applying – Enter the Program Code Name and the Program Code for the Program Area to which you are applying from the information provided in the Program Area Descriptions (see Part I, C). An application can only be submitted to one program. **It is extremely important that the Program Code Name and Program Code are spelled correctly and match the instructions in this RFA. Failure to do so may result in the application being omitted for review.**

b. Field 8. Conflict of Interest List – PDF Attachment. No Page Limit. Title the attachment as ‘Conflict of Interest’ in the document header and save file as ‘Conflict of Interest’.

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

C. Submission Dates and Times

1. Application

Applications must be received via Grants.gov by 5:00 p.m. Eastern Time on:

- **February 11, 2016 for the Predoctoral and Postdoctoral Fellowships Program;**
- **March 18, 2016 for the Professional Development for Secondary School Teachers Program; and**
- **March 24, 2016 for the Research and Extension Experiential Learning for Undergraduate Fellowships Program**

- Applications received after the respective deadline will normally not be considered for funding.

For all of the AFRI ELI Programs, 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.**

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 (see Part IV. C.). Therefore, applicants are strongly encouraged to provide accurate e-mail addresses, where designated, on the SF-424 R&R Application for Federal Assistance.

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

D. Funding Restrictions

Indirect costs for AFRI ELI Predoctoral, Postdoctoral, and Research and Extension Experiential Learning for Undergraduates Fellowships Grant applications are **not allowed** in accordance with 7 CFR 3430, Competitive and Noncompetitive Non-formula Federal Assistance Programs--General Award Administrative Provisions.

Professional Development for Secondary School Teachers and Educational Professionals (PD-STEP)

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 all AFRI ELI programs shall not be used for the construction of a new building or facility or the acquisition, expansion, remodeling, or

alteration of an existing building or facility (including site grading and improvement, and architect fees).

E. Other Submission Requirements

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 Felony Convictions or Tax Delinquent Status

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 http://nifa.usda.gov/sites/default/files/asset/document/Review_Criteria_NIFA.docx.

More detailed evaluation criteria, specific to AFRI-ELI, follow below.

B. Evaluation Criteria

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

Predocctoral and Postdoctoral Fellowships

Projects supported under this program shall be designed, among other things, to accomplish one or more of the purposes of agriculture research, education, and extension, subject to the varying conditions and needs of States. Therefore, in carrying out its review, the peer review panel will take into account the following factors for the review of AFRI ELI Fellowship Grant applications.

Scientific Merit of the Application for Research, Education, and/or Extension

- a. Novelty, multidisciplinary innovation, uniqueness, originality, and advancing current knowledge;
- b. Conceptual adequacy of the research, education, and/or extension, as applicable;
- c. Project objectives and outcomes are clearly described and measurable, adequate, and appropriate;
- d. Proposed approach, procedures, or methodologies are appropriate, clearly described, suitable, and feasible;
- e. The predoctoral or postdoctoral fellow has documented achievement of high educational quality and excellence (*e.g.*, GRE score, GPA, list of scholarly activities, honors, professional society membership, *etc.*)
- f. Appropriate educational opportunities and curriculum plan for proposed area of study.
- g. Novelty and innovation in the training and career development plans supports the career trajectory of the Fellows and provides sufficient time to obtain teaching credentials or competencies in preparation for entering the professional workforce.

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

- a. Roles of the Fellow(s), mentor(s), and other key personnel are clearly defined;

- b. Assessment of predoctoral or postdoctoral applicants': critical thinking and analytical skills based on organization and details provided in the application; ability to develop into a leader in the food and agricultural sciences; level of maturity of thought, alignment between career goals and objectives and appropriate activities and opportunities presented to achieve those goals; documented achievement of high educational quality and excellence (*e.g.*, GPA, GRE, publications, presentations, awards); appropriate educational opportunities, mentoring, and curriculum plan for proposed area of study;
- c. Fellow(s), along with mentor(s) and other key personnel, have sufficient preparation/expertise to ensure successful completion of the proposed project, and where appropriate, partnerships with other relevant disciplines and institutions are established;
- d. Evidence provided that the proposed work is original and developed by the applicant in consultation with other key personnel;
- e. Evidence that the identified institution has capacity and competence in the proposed area of work and support personnel, facilities, and instrumentation are sufficient;
- f. A clear plan is articulated for project management, including time allocated for attainment of objectives, responsibilities for deliverables, and delivery of products;
- g. Appropriate mentor engagement and training in research, education, and/or extension is described.

Project Relevance

- a. Documentation that the proposed research, education, and/or extension activity is directed toward specific Program Area Priorities identified in this RFA;
- b. Plan and methods for evaluating success of project activities and documenting potential impact against measurable short and mid-term outcomes are suitable and feasible;
- c. Science-based knowledge, skills, and capabilities gained are related to the NIFA foundational programs and challenge areas and will enhance and sustain human capital beyond the life of the project; and
- d. Potential of the proposed project and training in serving as a good foundation for the applicant predoctoral or postdoctoral fellow to complete PhD degrees or provide the requisite, individualized and mentored experiences that will develop his/her research skills that help them become independent and productive scientists.

Research and Extension Experiential Learning for Undergraduates Fellowships

Scientific Merit of the Application for Research, Education, and/or Extension

- a. Novelty, multidisciplinary innovation, uniqueness, originality, and advancing current knowledge/practice in student learning;
- b. Project objectives and outcomes are clearly described and measurable, adequate, and appropriate;
- c. Proposed approach, procedures, or methodologies are appropriate, clearly described, suitable, and feasible;
- d. Elements considered include institutional long-range goals, identification of a problem or opportunity to be addressed, justification for the project, innovation, advancing educational equity, multidisciplinary and/or problem-based focus, and potential for adoption by other institutions/organizations.

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

- a. Roles of key personnel and mentors are clearly defined;
- b. Key personnel, have sufficient preparation/expertise to ensure successful completion of the proposed project, and where appropriate, partnerships with other relevant disciplines and institutions are established;
- c. Evidence provided that the proposed work is original and developed by the applicant in consultation with other key personnel;
- d. Evidence that the identified institution has capacity and competence in the proposed area of work and support personnel, facilities, and instrumentation are sufficient;
- e. A clear plan is articulated for project management, including time allocated for attainment of objectives, responsibilities for deliverables, and delivery of products;

Project Relevance

- a. Documentation that the proposed research, education, and/or extension activity is directed toward specific Program Area Priorities identified in this RFA;
- b. Plan and methods for evaluating success of project activities and documenting potential impact against measurable short and mid-term outcomes are suitable and feasible;
- c. Science-based knowledge, skills, and capabilities gained are related to the NIFA foundational programs and challenge areas and will enhance and sustain human capital beyond the life of the project;
- d. Any perceived pitfalls and alternative strategies or approaches are addressed.

**Professional Development for Secondary School Teachers and Educational Professionals
(PD-STEP)**

Pedagogical Merit of the Application

- a. Novelty, multidisciplinary innovation, uniqueness, originality, and advancing current knowledge/practice in K-12 FANH education;
- b. Project objectives and outcomes are clearly described and measurable, adequate, and appropriate;
- c. Proposed approach, procedures, or methodologies are appropriate, clearly described, suitable, and feasible;
- d. Elements considered include institutional long-range goals, identification of a problem or opportunity to be addressed, justification for the project, innovation, advancing educational equity, multidisciplinary and/or problem-based focus, and potential for adoption by other institutions/organizations.

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

- a. Roles of key personnel are clearly defined;
- b. Key personnel, have sufficient preparation/expertise to ensure successful completion of the proposed project, and where appropriate, partnerships with other relevant disciplines and institutions are established;
- c. Evidence provided that the proposed work is original and developed by the applicant in consultation with other key personnel;

- d. Evidence that the identified institution has capacity and competence in the proposed area of work and support personnel, facilities, and instrumentation are sufficient;
- e. A clear plan is articulated for project management, including time allocated for attainment of objectives, responsibilities for deliverables, and delivery of products;
- f. Appropriate participant engagement and training in research, education, and/or extension is described.

Project Relevance

- a. Documentation that the proposed research, education, and/or extension activity is directed toward specific Program Area Priorities identified in this RFA;
- b. Plan and methods for evaluating success of project activities and documenting potential impact against measurable short and mid-term outcomes are suitable and feasible;
- c. Science-based knowledge, skills, and capabilities gained are related to the NIFA foundational programs and challenge areas and will enhance and sustain human capital beyond the life of the project;
- d. Any perceived pitfalls and alternative strategies or approaches are addressed.

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.

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

D. Organizational Management Information

Specific management information relating to an applicant shall be submitted on a one time basis, with updates on an as needed basis. 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 by **AFRI ELI** 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>.

Responsible and Ethical Conduct of Research

Please refer to Part II, C. for more information.

D. Expected Program Outputs and Reporting Requirements

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

Reporting on Individual Student Beneficiaries for Predoctoral, Postdoctoral, and Undergraduate Fellowships only.

(i) Student Appointment - Project Directors are required to complete and submit, to the NIFA Fellows Program Office (nifafellows@nifa.usda.gov), a Fellowships/Scholarships Entry Form (OMB No. 0524-0039), [Page 1 of Form NIFA-2010, http://www.nifa.usda.gov/funding/all_forms.html] when students are appointed and approved as NIFA Fellows under an award.

(ii) Annual Student Progress in Training Program - Project Directors are required to complete and submit, to the NIFA Fellows Program Office (nifafellows@nifa.usda.gov), an Annual Update Form (OMB No. 0524-0039), [Page 2 of Form NIFA-2010, http://www.nifa.usda.gov/funding/all_forms.html] that provides information about academic accomplishments including products, recognitions, service learning, and professional mentoring outcomes, for each Fellow supported. This information is treated as confidential. The Annual Update is used to assess the continuing progress of Fellows through their program to meet the objectives of the funded training project.

(iii) Exit and/or Termination - Project Directors are required to complete and submit, to the NIFA Fellows Program Office, a Fellowships/Scholarships Exit Form (OMB No. 0524-0039), [Page 3 of Form NIFA-2010, http://www.nifa.usda.gov/funding/all_forms.html] as soon as the Fellow either (1)

graduates; (2) terminates from the Fellowship or the academic program due to academic or disciplinary action; (3) voluntarily withdraws from the Fellowship or academic program; or (4) obtains employment.

AFRI ELI Predoctoral or Postdoctoral Fellowship Project Directors are required to establish a LinkedIn account (www.linkedin.com) and connect to the “NIFA Fellows” LinkedIn site (http://www.linkedin.com/profile/view?id=110801460&locale=en_US&trk=tyah). This will provide the Project Director with a streamlined way to communicate with other Project Directors, and also allow the PD to access additional program information (e.g., Project Director conference updates).

If an AFRI ELI grant application is funded, the Project Director will be required to attend one NIFA AFRI ELI Project Directors’ meeting in Washington, DC during the performance period of the award. Reasonable travel expenses should be included as part of the project budget.

PART VII—AGENCY CONTACT

Applicants and other interested parties are encouraged to contact:

For general questions related to the Agriculture and Food Research Initiative (AFRI) Programs, applicants and other interested parties are encouraged to contact:

AFRI Program Office:

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

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

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

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

Telephone: (202) 401-5022

Fax: (202) 401-6488

E-mail: AFRI@nifa.usda.gov

Program Area Contacts –

Predocctoral and Postdoctoral Fellowships

Dr. Ray A. Ali, National Program Leader, Institute of Youth, Family, and Community

Dr. Joyce Parker, Education Program Specialist, Institute of Youth, Family, and Community

Telephone: (202) 720-2727

E-mail: nifafellows@nifa.usda.gov.

Research and Extension Experiential Learning for Undergraduate (REEU) Fellowships ; Professional Development for Secondary School Teachers and Educational Professionals (PD-STEP)

Dr. Victoria LeBeaux, National Program Leader, Institute of Youth, Family, and Community

Katrena Hanks, Program Specialist, Institute of Youth, Family, and Community

Telephone: (202) 720-2067

E-mail: undergraduate@nifa.usda.gov.

Administrative/Business Contact –

Rochelle McCrea, **Grants Specialist Team Leader, Office of Grants and Financial Management**

Telephone: (202) 401 – 5050

E-mail: rmcrae@nifa.usda.gov.

Sondra Watkins, **Grants Specialist Team Leader, Office of Grants and Financial Management**

Telephone: (202) 401 - 5050

E-mail: 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.

g. NIFA predoctoral and postdoctoral fellowships can be converted to standard grants in certain circumstances (e.g. if the Fellow were to obtain a faculty position). One of the latter is that the fellow have completed at least one year in the fellowship. The conversion process commences with a formal request by the Project Director (normally via e-mail) indicating objectives completed, monies remaining, timeline involved, etc. If initially agreed upon by the National Program Leader, then additional administrative processes would take place (e.g. submission of an application, revised budget, etc.). NIFA reserves the right to approve or deny the conversion request.

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 Federal Assistance Programs--General Award Administrative Provisions](#) for the applicable definitions for this NIFA Grant Program

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

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

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

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

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.

Human Sciences means the purposeful integration of disciplines that address complex issues challenging the well-being of individuals, families and communities.

Institutional Allowance (Predoctoral, Postdoctoral, and Undergraduate Fellowships): An institutional allowance is provided in lieu of indirect costs (indirect costs are unallowable). Institutions receive a per year institutional allowance for each Fellow supported by a respective training award. The Project Directors are required to reserve part of the institutional allowance to attend at least one NIFA-sponsored Project Directors and Beneficiaries Meeting, held during the performance period of the grant. The purpose of the NIFA-sponsored Project Directors' and Beneficiaries meeting will be to discuss project and grant management, opportunities for collaborative visioning for aligning training to NIFA education goals; forming new collaborations; providing stakeholder input into future directions for education reform, and opportunities to enhance dissemination of exemplary and innovative training programs along with products/results. Institutions may use the institutional allowance to defray program-related expenses including, but not limited to, program evaluation costs, travel to attend professional meetings, publications, or salaries of project personnel and/or to conduct research, laboratory fees and educational expenses (e.g., books and supplies).

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.