

REQUEST FOR APPLICATIONS

Agriculture and Food Research Initiative Competitive Grants Program Foundational and Applied Science Program

This RFA has been modified from the original announcement. Changes are indicated using track changes and red font so the public/potential applicants can identify the changes within the solicitation.

MODIFICATIONS: 8/24/26 — Modifications are specific to the AFRI Commodity Board Co-funding Topics (A1811) program area priority. The Nebraska Corn Development, Utilization, and Marketing Board's topic 19 has been withdrawn. These edits appear on pages 96 and 97.

MODIFICATIONS: 8/18/26 — Modifications are specific to the AFRI Commodity Board Co-funding Topics (A1811) program area priority. American Egg Board topics 2, 3, 4, and 5 have been withdrawn. These edits appear on pages 92 and 93.

MODIFICATIONS: 7/30/26 — Modifications are specific to the following program area priorities: Rapid Response to Weather Events Across Food and Agricultural Systems (A1712), Rapid Response to Emerging and Re-emerging Pest and Disease Events Across Food and Agricultural Systems (A1713) and AFRI Commodity Board Co-funding Topics (A1811). These edits appear on pages 90-101 and 104.

MODIFICATIONS: 11/14/25 — The APPLICATION DEADLINE has been extended for various AFRI Program Area Priorities. Table 2 on page 5 provides a summary of all changes. Individual edits appear on pages: 6, 14, 16, 18, 20, 21, 23, 25, 28, 29, 31, 33, 35, 37, 39, 41, 43, 45, 49, 52, 54, 56, 59, 60, 62, 65, 68, 70, 71, 74, 75, 77, 79, 81, 84, 90-101, and 104.

FUNDING YEAR: Fiscal Year (FY) 2026

APPLICATION DEADLINE: Varies by Program Area (see [Part I § C](#))

ANTICIPATED FUNDING: \$300,000,000

FUNDING OPPORTUNITY NUMBER: USDA-NIFA-AFRI-011134

ASSISTANCE LISTING NUMBER: 10.310

LETTER OF INTENT DEADLINE: Varies by Program Area (see [Part I § C](#))

ANNOUNCEMENT

National Institute of Food and Agriculture
United States Department of Agriculture

Assistance Listing Number: The Agriculture and Food Research Initiative (AFRI) Competitive Grants Program Foundational and Applied Science (FAS) is listed in the Assistance Listings under number 10.310.

Table 1: Key Dates and Deadlines

Task Description	Deadline
Application:	5:00 P.M. Eastern Time, on the 2026 deadline dates indicated in Part I § C
Letter of Intent:	If applicable, 5:00 P.M. Eastern Time, on the LOI deadline dates indicated in Part I § C
Applicants Comments:	Within six months from the issuance of this notice (<i>NIFA may not consider comments received after the sixth month</i>)

The United States Department of Agriculture (USDA), to the extent permitted by law, will no longer make grants or otherwise fund programs or activities that improperly discriminate on the basis of race or sex, including discrimination in the name of Diversity, Equity, and Inclusion policies. Instead, USDA will prioritize merit and efficiency. USDA recognizes programs and initiatives will have the greatest impact when these programs and initiatives put American farmers, ranchers, and foresters first by:

- solving the most pressing challenges they face;
- protecting America's food, fuel, and fiber supply to enhance national security;
- supporting production of healthy and safe food for consumers;
- expanding and developing domestic markets;
- training the next generation of agriculturalists; and
- fueling innovation to keep American farmers at the forefront of productivity.

The National Institute of Food and Agriculture (NIFA) is committed to advancing these principles and encourages applicants to actively engage farmers, ranchers, and foresters when applying for funding opportunities to ensure relevancy and adherence to them. NIFA also encourages agricultural leaders to engage in the peer review panel process to ensure American producers are better served through research, education, and extension activities.

Stakeholder Input. NIFA seeks comments on all Request for Applications (RFA) so it can deliver programs efficiently, effectively, with integrity, and with a focus on customer service. NIFA considers comments to the extent possible when developing RFAs, and uses comments to help meet the requirements of Section 103(c)(2) of the Agricultural Research, Extension, and Education Reform Act of 1998 ([7 U.S.C. 7613\(c\)\(2\)](#)). Applicants may submit written comments to Policy@usda.gov. Please use the following subject line: Response to the AFRI FAS RFA.

Centers of Excellence. Applicants are welcome to visit the NIFA's [Centers of Excellence \(COE\)](#) for information on COE designation process, including COE criteria, and a list of

programs offering COE opportunities. [Recordings](#) of COE outreach and COE implementation webinars are also available.

Commodity Board Co-Funding Topics. NIFA solicits proposed topics from eligible state and national commodity boards on an ongoing basis for the [AFRI program](#). Topics must relate to the established AFRI six priority areas. Topics submitted by the commodity boards that align with NIFA priorities are chosen for inclusion in selected program areas of AFRI RFAs. Details on general information and topic submission resources for inclusion in future AFRI RFAs can be found at [NIFA's Commodity Board Provision website](#).

Applicants are welcome to view AFRI Commodity Board Co-funding Topics (A1811) in [Part I § C](#) for additional details on commodity board-specific priorities and submission of applications relevant to these priorities.

EXECUTIVE SUMMARY

This notice identifies the objectives for Agriculture and Food Research Initiative (AFRI) Foundational and Applied Science program projects, deadlines, funding information, eligibility criteria for projects and applicants, and application forms and associated instructions.

AFRI is America's flagship competitive grants program that provides funding for fundamental and applied research, education, and extension projects in the food and agricultural sciences. In this RFA, NIFA requests applications for the six AFRI priority areas through the FAS Program for FY 2026. The goal of this program is to invest in agricultural production research, education, and extension projects for more sustainable, productive, and economically-viable plant and animal production systems. It is imperative to develop innovative, safe, and sustainable management strategies for livestock (including poultry and aquaculture species), crops, and critical underlying resources.

In 2026, applications are sought in the following priority 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

The amount available for programs included in the FY 2026 AFRI FAS RFA is approximately \$300,000,000. Funding from FY 2026 appropriations will be used for the programs solicited in this RFA. Funding from FY2025 appropriations was provided to applications submitted to the FY24 AFRI FAS RFA published December 15, 2023. The amount available to support the AFRI program is anticipated to be approximately \$407,000,000, of which \$300 million will be used to support AFRI FAS programs.

In FY 2026, this RFA solicits Standard Grants, Workshop Grants, and Food and Agricultural Science Enhancement (FASE) Grants, whereas project types solicited in this RFA are Research, Extension, Education, and Integrated Research, Education, and/or Extension projects. Grant types and project types solicited vary by program area priority and not all grant types are solicited within each program area priority. See [Part I § C](#) (Program Area Descriptions) for grant and project types solicited by each specific program area priority, and [Part II § C](#) for a description of each individual grant type and project type.

Applications from and collaborations with institutions eligible for Strengthening Grants are welcome. More information is available on the [AFRI FASE and Established Program to Stimulate Competitive Research \(EPSCoR\) page](#).

Table 2: Program Area Priorities and Deadlines

The deadlines under this RFA are summarized as follows:

Program Area ¹	Program Code	Program Area Priority Name	2026 Review Cycle Deadlines ²
PHPPP	A1102	1a. Foundational Knowledge of Agricultural Production Systems	December 4, 2025
PHPPP	A1103	1b. Foundational Knowledge of Plant Products	December 4, 2025
PHPPP	A1112	1c. Pests and Beneficial Species in Agricultural Production Systems	December 18, 2025
PHPPP	A1152	1d. Physiology of Agricultural Plants	December 4, 2025
PHPPP	A1141	1e. Plant Breeding for Agricultural Production	December 4, 2025
PHPPP	A1113	1f. Pollinator Health: Research and Application	December 11, 2025
PHPPP	A1143	1g. Conventional Plant Breeding for Cultivar Development	December 11, 2025
AHPAP	A1211	2a. Animal Reproduction	December 18, 2025
AHPAP	A1231	2b. Animal Nutrition, Growth and Lactation	December 18, 2025
AHPAP	A1251	2c. Welfare of Agricultural Animals	December 18, 2025
AHPAP	A1221	2d. Diseases of Agricultural Animals	December 18, 2025
AHPAP	A1201	2e. Animal Breeding, Genetics, and Genomics	December 18, 2025
FSNH	A1332	3a. Food Safety and Defense	December 4, 2025
FSNH	A1364	3b. Innovations in Food Manufacturing Technologies	December 4, 2025
FSNH	A1344	3c. Diet, Nutrition, and the Prevention of Chronic Diseases	December 4, 2025
FSNH	A1343	3d. Food and Human Health	December 11, 2025
FSNH	A1366	3e. Mitigating Antimicrobial Resistance Across the Food Chain	December 11, 2025
BNRE	A1401	4a. Soil Health	December 4, 2025
BNRE	A1411	4b. Water Quantity and Quality	December 4, 2025
BNRE	A1414	4c. Bioeconomy and Biobased Products	December 4, 2025
BNRE	A1451	4d. Landscape-Scale Production Systems	December 4, 2025
AST	A1521	5a. Engineering for Agricultural Production and Processing	December 4, 2025
AST	A1531	5b. Biorefining and Biomanufacturing	December 4, 2025
AST	A1511	5c. Nanotechnology for Agricultural and Food Systems	December 11, 2025
AST	A1551	5d. Engineering for Precision Crop and Water Management	December 4, 2025
AERC	A1601	6a. Small and Medium-Sized Farms	December 11, 2025
AERC	A1641	6b. Economics, Markets and Trade	December 4, 2025
AERC	A1642	6c. Social Implications of Food and Agricultural Technologies	December 11, 2025
AERC	A1661	6d. Rural Economic Development	December 11, 2025
AERC	A1651	6e. Environmental and Natural Resource Economics	December 11, 2025

¹ PHPPP=Plant Health and Production and Plant Products, AHPAP=Animal Health and Production and Animal Products; FSNH=Food Safety, Nutrition, and Health; BNRE=Bioenergy, Natural Resources, and Environment; AST=Agriculture Systems and Technology; AERC=Agriculture Economics and Rural Communities; Crosscutting=Crosscutting Program Area Priorities

² All applications must be received by 5:00 p.m. Eastern Time on the deadline date.

Program Area¹	Program Code	Program Area Priority Name	2026 Review Cycle Deadlines²
Crosscutting	A1402	7a. Agricultural Microbiomes in Plant Systems and Natural Resources	December 11, 2025
Crosscutting	A1701	7b. Critical Agricultural Research and Extension (CARE)	December 18, 2025
Crosscutting	A1541	7c. Data Science for Food and Agricultural Systems (DSFAS)	December 18, 2025
Crosscutting	A1181	7d. Agricultural Biosecurity	December 18, 2025
Crosscutting	A1713	7e. Rapid Response to Emerging and Re-emerging Pest and Disease Events Across Food and Agricultural Systems	Accepted on a continuous basis after this RFA is published
Crosscutting	A1811	7f. AFRI Commodity Board Co-funding Topics	September 10, 2026
Crosscutting	A1712	7g. Rapid Response to Weather Events Across Food and Agricultural Systems	Accepted on a continuous basis after this RFA is published

¹ PHPPP=Plant Health and Production and Plant Products, AHPAP=Animal Health and Production and Animal Products; FSNH=Food Safety, Nutrition, and Health; BNRE=Bioenergy, Natural Resources, and Environment; AST=Agriculture Systems and Technology; AERC=Agriculture Economics and Rural Communities; Crosscutting=Crosscutting Program Area Priorities

² All applications must be received by 5:00 p.m. Eastern Time on the deadline date.

FY 2026 UPDATES

1. This RFA covers the FY 2026 grant application review cycle for which funding from the FY 2026 budget will be used.
2. All applicants who meet the eligibility requirement as a New Investigator (see [Part II § C](#)), will also be eligible to apply for a seed grant, as well as for a New Investigator standard grant unless they were awarded a seed grant previously, in which case they are eligible to apply for a New Investigator standard grant but are no longer eligible to apply for a New Investigator seed grant. While all seed grant applications submitted to a program area priority will be evaluated together, seed grant applications from New Investigators will not compete for funding with applications from strengthening-eligible (see [Part II § C](#)) institutions. More information about seed grants is in the “AFRI Grant Types” PDF in the attachments list on the [AFRI RFA Resources page](#).
3. Year-round Workshop grant applications are accepted after submission of the Letter of Intent; see [Part I § C](#) for more information on which programs accept Workshop grants. The LOI must be submitted at least 195 days before the start of the Workshop. The full Workshop Grant application must be submitted, at minimum, 150 days before the start of the Workshop.
4. A new cross-cutting program area priority in this RFA is “Rapid Response to Emerging and Re-emerging Pest and Disease Events Across Food and Agricultural Systems” (program code A1713)
5. **NEW IN FY 2026** – A Mentoring Plan is now required for all AFRI grant applications (excluding Workshop grants, equipment grants and sabbatical grants) for projects that involve any type of education, training or mentoring of students or other individuals including high school students, undergraduate students, graduate students, professional degree students, postdoctoral scholars, other professionals or any other individual receiving any type of formal, or non-formal training on the proposed project. For additional important details, see the “FY 2026 Foundational and Applied Science (FAS) RFA Additional Information for Part IV, C” on the [AFRI RFA Resources page](#).

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PART I. FUNDING OPPORTUNITY DESCRIPTION

A. Legislative Authority

Section 2(b) of the Competitive, Special, and Facilities Research Grant Act (hereafter referred to as the Act) ([7 U.S.C. 3157](#)), as amended, authorizes the Agriculture and Food Research Initiative (AFRI), a competitive grant program to provide funding for fundamental and applied research, education, and extension to address food and agricultural sciences in the following six priority areas:

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

To the maximum extent practicable, NIFA, in coordination with the Under Secretary for Research, Education, and Economics (REE), will make grants for high priority research, education, and extension, taking into consideration, when available, the determinations made by the National Agricultural Research, Extension, Education, and Economics Advisory Board (NAREEEAB) pursuant to the Competitive, Special, and Facilities Research Grant Act ([7 U.S.C. 3157](#)). The Secretary delegates the authority to the Under Secretary for Research, Education and Economics in [7 CFR 2.21](#), and the Under Secretary delegates that authority to NIFA.

B. Purpose and Priorities

The purpose of AFRI (listed in the Assistance Listings under number 10.310) is to support research, education, and extension projects that will help farmers, ranchers, foresters, and other agricultural producers address key problems of local, regional, and national importance in sustaining food and agricultural systems. These include farm and ranch production efficiency, profitability, and sustainability; bio-based products; forestry; aquaculture; rural communities and entrepreneurship; human nutrition; mitigating impacts of biotic and abiotic constraints on food production; food safety; physical and social sciences; rural human ecology; and genetic improvement of plants and animals. In addition, the economic sustainability of food systems is an overarching priority for the projects funded in response to this RFA; therefore, projects focusing on plant or animal species or commodities that are important to small- or medium-sized farms or ranches are also welcome. Through this support, AFRI advances knowledge in both fundamental and applied sciences important to agriculture. Additionally, AFRI supports work in education and extension activities that deliver science-based knowledge to end users, allowing them to make informed, practical decisions. This AFRI RFA provides funding for research-only, education-only, extension-only, and integrated research, education, and/or extension projects addressing six priorities identified in [Part I § A](#).

Background

AFRI is NIFA's flagship competitive grants portfolio for food and agricultural sciences, and funding is offered through the Foundational and Applied Science, Sustainable Agricultural Systems, and Education and Workforce Development Requests for Applications for addressing critical societal issues.

The Foundational and Applied Science RFA program areas address the following priorities, as well as all included subpriorities:

- A. Plant Health and Production and Plant Products;
- B. Animal Health and Production and Animal Products;
- C. Food Safety, Nutrition, and Health;
- D. Bioenergy, Natural Resources, and Environment;
- E. Agriculture Systems and Technology; and
- F. Agriculture Economics and Rural Communities

For a program informational webinar please visit the [NIFA calendar](#) for dates, event registration, and link. If you need a reasonable accommodation to participate in any of the informational webinars listed, please contact the event host listed no later than 10 days prior to the event.

C. Program Area Description

NIFA is soliciting applications under seven AFRI program areas. The program areas and their respective approximate available funding amounts include:

- 1. Plant health and production and plant products (\$61 million)
- 2. Animal health and production and animal products (\$56 million)
- 3. Food safety, nutrition, and health (\$38 million)
- 4. Bioenergy, natural resources, and environment (\$33 million)
- 5. Agriculture systems and technology (\$36 million)
- 6. Agriculture economics and rural communities (\$30 million)
- 7. Crosscutting programs (\$46 million)

Funding amounts indicated for program areas above include funding that may be allocated to interagency programs for which AFRI engages with other Federal funding agencies and for which applications are solicited through other Funding Opportunity Announcements.

1. Plant Health and Production and Plant Products

Background

Monumental gains in American crop productivity over the past 60 years are the result of innovations in agricultural production practices, plant breeding, and pest management. The goal of the Plant Health and Production and Plant Products (PHPPP) program area is to ensure continued production gains are achieved via break-through discoveries and the translation of these into improved plant production and protection practices. The outcomes of these projects are expected to increase production efficiencies and combat persistent threats and new challenges that limit the achievement of dependable yields.

Plant agriculture is changing with the introduction of new engineering, technology, and information tools. Further improvements to plant agriculture will require a greater understanding of complex, inter-related factors, across a wide range of scales. These include investigations of plant and pest biology at the molecular, cellular, whole-organism, and systems levels to increase performance and provide protection from biotic and abiotic stressors. New traits are being discovered and varieties developed using gene editing and other advanced breeding methods. Optimal integration of production system components is sought to ensure practices and products are safe for consumers and achieved with good stewardship of natural resources and efficient use

of human capital. By supporting extension programming, and training the next generation of scientists, new technologies will be made readily available to end-users and put into practice. This strategy will ensure that the United States continues to be a leader in the agricultural sciences and a reliable source for the expanding domestic demand for an abundant and secure supply of food, feed, natural fibers, wood, and other plant-based products.

In addition to the program area priorities described in this section, the **PHPPP** program area also supports the following program area priorities:

- Agricultural Microbiomes in Plant Systems and Natural Resources (A1402), Agricultural Biosecurity (A1181), and Critical Agriculture Research and Extension (A1701) program area priorities described in Crosscutting Programs.
- [Plant Biotic Interactions](#) will be offered through an interagency program with National Science Foundation (NSF); the NIFA program email is A1171@usda.gov. For NSF Dear Colleague Letter, see [Dear Colleague Letter: Advancing Plant Transformation \(nsf23019\) | NSF - National Science Foundation](#).

Total Program Funds: Approximately \$61 million

Key Information (Applicable to All Plant Health and Production and Plant Products Program Area Priorities):

- a. All applications must adhere to the requirements in [Part IV](#).
- b. Choice of plant species (including crops, trees, and weeds) and objectives must be justified in terms of importance to agricultural food, feed, fiber, ornamental plants (including turf), planted forest, or industrial crop production systems in the United States.
- c. Projects focusing on plant species and commodities that are important to small- or medium-sized farms are welcome.
- d. Applications that include collaborations with international partners may also be submitted. The [AFRI International Partnerships webpage](#) contains additional information on international partnerships.
- e. Applications with highly complex, large scale, transdisciplinary, and integrated research, education, and extension projects that incorporate foundational knowledge from this program area should be submitted to the [AFRI Sustainable Agricultural Systems \(SAS\) program](#) (A9201). Please check the NIFA website for when the [AFRI SAS RFA](#) will be available.
- f. An applicant may submit a Workshop Grant application anytime during the year. A Letter of Intent (LOI) is required for Workshop Grant applications. The LOI must be submitted at least **195 days** before the start of the Workshop. The full Workshop Grant application must be submitted, at minimum, **150 days** before the start of the Workshop.

Program Area Priorities – Each application must address at least **one of the seven** program area priorities listed below. Details about each of the PHPPP program area priorities are provided later in this section.

- 1a. Foundational Knowledge of Agricultural Production Systems
- 1b. Foundational Knowledge of Plant Products
- 1c. Pests and Beneficial Species in Agricultural Production Systems
- 1d. Physiology of Agricultural Plants
- 1e. Plant Breeding for Agricultural Production

- 1f. Pollinator Health: Research and Application
 1g. Conventional Plant Breeding for Cultivar Development

1a. Foundational Knowledge of Agricultural Production Systems

Table 3: Foundational Knowledge of Agricultural Production Systems Key Information

Title	Description
Program Code:	A1102
Program Code Name:	Foundational Knowledge of Agricultural Production Systems
Assistance Listing #	10.310
Project Type(s):	Research and Integrated Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 2 December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: Submitted after LOI decision response and a minimum of 150 days before the Workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Research Projects b. Including indirect costs: \$750,000 for Integrated Projects c. Including indirect costs: \$300,000 for all Seed Grants d. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1102@usda.gov

Program Area Priority:

The Foundational Knowledge of Agricultural Production Systems program area supports plant research to advance our knowledge for the wide range of agricultural production systems found across the rural-urban continuum, from conventional or organic open-fields to protected built environments. Research should address critical or process-limiting dynamics that occur among and within the various management components of a production system using experimental manipulations of system components, technological interventions, system analyses, or modeling. Results are expected to lead to the development of innovative sustainable solutions to challenges limiting or threatening the productivity, profitability, and human capital.

Applications must address one or more of the following (order does not indicate importance):

- a. Determine how production systems, can alter the structure of microbial communities associated with plants, soils, or other growing media; the ways alterations affect functions such as plant nutrient uptake/utilization efficiency; and resilience to weeds, insects, diseases, weather events, and other stressors that influence productivity and/or product quality (including nutritional quality);
- b. Investigate how changes to cropping systems, including diversification or intensification, affect crop performance, soil health, and other outcomes beneficial to cropping systems; or
- c. Conduct syntheses and meta-analyses of existing data or develop new or extend existing models to derive general principles about the function, properties, and performance of agricultural production systems.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms are welcome.
- d. Projects supported by Foundational Knowledge of Agricultural Production Systems program area priority can serve as building blocks needed for large inter- and trans-disciplinary projects funded by the [AFRI Sustainable Agricultural Systems program](#).
- e. Appropriate plant production systems for study include food, feed, fiber, ornamental plants (including turf), industrial crops; harvested forages; pastures; seaweeds; and planted forests. Conventional, organic, and protected systems (including hydroponics, aquaponics, aeroponics, vertical farming, and other controlled environment production systems) are appropriate for study.
- f. The production system studied could include key management components such as: integrated crop management, soil or other growing media fertility, soil health, agronomic practices, cover cropping, biodiversification, economics, integrated management of target pests (including arthropods, nematodes, pathogens, and weeds), automation, and worker well-being and safety.
- g. Development of innovative production systems to optimize the production of high-valued plant products are welcome. Plant products may include but are not limited to oil, fiber, nutra- and pharmaceuticals, nutrients, juices, fragrances, resins, and biopesticides.
- h. Applicants must ensure applications are submitted to the right program or program area priority, for instance:
 - 1) Applications to study management of pests or beneficial species may be more appropriate for the Pests and Beneficial Species in Agricultural Production Systems program area priority (A1112).
 - 2) Applications to study microbiome function may be more appropriate for the Agricultural Microbiomes in Plant Systems and Natural Resources program area priority (A1402 in Crosscutting Programs).
 - 3) Applications to study aquatic animals in aquaponics systems may be more appropriate for the Small and Medium-Sized Farms program area priority (A1601) or the Economics, Markets and Trade program area priority (A1641) described in the Agriculture Economics and Rural Communities program area of this RFA.

- i. The Foundational Knowledge of Agricultural Production Systems program does not support projects focused on livestock. Please refer to the Animal Health and Production and Animal Products program area, described elsewhere in this RFA.
- j. Applications focusing on integrated crop/livestock systems, rangelands, and forest management may be more appropriate for Landscape-scale Production Systems (A1451).
- k. Starting in 2027, priority c (Syntheses and meta data analyses) will not be offered. Applicants should consider submitting to the crosscutting program A1541 “Data Science for Food and Agricultural Systems”.

1b. Foundational Knowledge of Plant Products

Table 4: Foundational Knowledge of Plant Products Key Information

Title	Description
Program Code:	A1103
Program Code Name:	Foundational Knowledge of Plant Products
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 16December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the Workshop begins
Grant Duration:	a. 36-48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants a. Up to 24 months for all Seed Grants b. Up to 12 months for Sabbatical Grants c. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1103@usda.gov

Program Area Priority:

The Foundational Knowledge of Plant Products program supports projects to study the

biosynthesis of plant-derived, high-value biomolecules for use in foods, pharmaceuticals, and other products. Projects must focus on agriculturally-important plants, but the choice of plant species must be justified. Molecular, biochemical, synthetic biology, or eco-physiological approaches may be used to determine the biosynthetic pathways for industrially-important biomolecules. The intent of this program is for results to be translated into discoveries that help create or meet emerging and future markets and contribute towards long-term demand for agricultural-based products.

Applications must address one or more of the following (order does not indicate importance):

- a. Primary and/or secondary metabolic pathways regulating the biosynthesis of plant metabolites that improve the quality of food and/or feed;
- b. Biosynthetic pathways of metabolites with herbicidal or pesticidal activities;
- c. Improving the production (biosynthesis) of plant-based chemicals that have industrial and/or pharmaceutical relevance; or
- d. Macronutrient and/or micronutrient biosynthesis, accumulation, and/or availability that are beneficial to human health and nutrition.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms are welcome.
- d. Applications that address topics related to medicinal studies or human health are not appropriate for this program area priority.
- e. Applications that address plant physiology may be more appropriate for Physiology of Agricultural Plants (A1152).

1c. Pests and Beneficial Species in Agricultural Production Systems

Table 5: Pests and Beneficial Species in Agricultural Production Systems Key Information

Title	Description
Program Code:	A1112
Program Code Name:	Pests and Beneficial Species in Agricultural Production Systems
Assistance Listing #	10.310
Project Type(s):	Research and Integrated Projects (Research and Extension) <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.

Title	Description
Application Deadline(s)	a. 2026: Thursday, November 6 December 18, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the Workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	Including indirect costs: a. \$750,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants; \$900,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1112@usda.gov

Program Area Priority:

This program area priority supports basic and applied research that advances knowledge of invasive or established plant pests and associated beneficial species and directly leading to the development of innovative and biologically-based applied solutions to managing pests in U.S. agricultural systems. Appropriate plant agricultural production study systems include food and fiber crops, ornamental plants (including turf), managed grasslands, rangelands, and planted forests. Conventional, organic, and protected systems (including hydroponics, aquaponics, aeroponics, vertical farming, etc.) are appropriate. Pests may include invertebrates, plant pathogens or their vectors, nematodes and weeds. Beneficial species in this program are restricted to biological control agents and microbes that play a role in pest management. Molecular, organismal, population, and/or community approaches are appropriate to this program. Foundational projects must exhibit a clear link to U.S. agriculture and clearly illustrate how new knowledge generated will directly lead to, novel or improved bio-based, applied tools and approaches to managing plant pests.

Applications must address one or more of the following in the context of enabling the development and evaluation of innovative practices to improve the management of plant pests (order does not indicate importance):

- Biotic and abiotic factors, affecting the abundance or spread of agriculturally-important plant pests or beneficial species relevant to pest management; including other plant pests or beneficial species, plant compounds, pesticides, or toxins;
- Behavioral attributes of pests and beneficial species, including intra- or interspecies interactions and/or communication systems, relevant to pest management;
- Factors that contribute to invasiveness, including population genetics/genomic approaches or models to predict, prevent or manage outbreaks, or to pinpoint geographic distribution or origin;

- d. Movement or dispersal dynamics of pests (including vectors) or beneficial organisms; including epidemiological factors that influence disease spread, the influence of agronomic practices on weed populations, and research on aspects of weed biology that impact reproductive biology, seed bank dynamics, and other population-level aspects; or
- e. Mechanisms of pest resistance to pesticides (fungicides, herbicides, insecticides) or plant incorporated protectants (e.g., Bt toxin) and the development of strategies to mitigate resistance or crop failure.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms are welcome.
- d. Applicants must ensure applications are submitted to the right program or program area priority, for instance:
 - 1) Applications that address topics related to pollinators are not appropriate for this program area priority; consider submitting to the Pollinator Health: Research and Application (A1113).
 - 2) Studies involving molecular mechanisms that mediate interactions of plants with their biotic partners may be appropriate for the NSF-NIFA [Plant Biotic Interactions](#) program.
 - 3) Applications to study microbiome function may be more appropriate for the Agricultural Microbiomes in Plant Systems and Natural Resources program area priority (A1402 in Crosscutting Programs).
- e. Applications to study pests of livestock or humans (e.g., vectors of human diseases or nuisance pests such as flies, bed bugs, cockroaches, and termites) are not appropriate for this program area priority. Instead, consider submitting to the Animal Health and Production and Animal Products program area if you are studying pests of livestock, or to the [Crop Protection and Pest Management](#) RFA if your work is focused on nuisance pests in urban or rural systems.
- f. Applications for work on big data analytics and tool development to support the development of a data network and cyberinfrastructure for pests and beneficial species should be submitted to the Data Science for Food and Agriculture Systems (DSFAS) program area priority (A1541 in Crosscutting Programs).
- g. Projects associated with the initiative to sequence 5,000 arthropod genomes (i5K) are recommended to link with the [National Agricultural Library's i5k workspace](#).
- h. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Pests and Beneficial Species in Agricultural Production Systems program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”. **Note: Research applications submitted for U.S.-Ireland Tripartite Collaborative grants are ineligible for U.S. funding above the research program maximum of \$750,000.**

1d. Physiology of Agricultural Plants

Table 6: Physiology of Agricultural Plants Key Information

Title	Description
Program Code:	A1152
Program Code Name:	Physiology of Agricultural Plants
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 23 December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the Workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants ; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1152@usda.gov

Program Area Priority:

The Physiology of Agricultural Plants program will support projects to improve productivity or other performance factors of agriculturally-important plants (including weeds) using molecular, biochemical, whole-plant, agronomic, or eco-physiological approaches. The genetic basis of important traits identified through these studies are expected to inform breeding efforts towards improved yield or product quality, or growth resilience to adverse conditions.

This program area priority will support research in the following areas:

- Plant growth and developmental processes, including plant architecture and source-sink relationships;
- Mechanisms of plant response to abiotic stresses, including increased water use

- efficiency; or
- c. Nutrient uptake, assimilation, and/or utilization, particularly increased plant use efficiency for nitrogen, phosphorus, or other supplemental nutrients.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms are welcome.
- d. Relevance to agriculturally-important traits should be clearly justified and specific.
- e. For studies that involve microbes in plant nutrient utilization or abiotic stress tolerance, consider the Agricultural Microbiomes program area priority (in Crosscutting Programs) or the NSF-NIFA [Plant Biotic Interactions](#) program to determine the best fit for the project.

1e. Plant Breeding for Agricultural Production

Table 7: Plant Breeding for Agricultural Production Key Information

Title	Description
Program Code:	A1141
Program Code Name:	Plant Breeding for Agricultural Production
Assistance Listing #	10.310
Project Type(s):	Research and Integrated Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants only for Plant Breeding Projects b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 23December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the Workshop begins
Grant Duration:	a. 36-48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Plant Breeding Projects; \$800,000 with specific partnerships (see Part II, E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants

Title	Description
Program Area Priority Contact:	a. A1141@usda.gov

Program Area Priority:

The Plant Breeding for Agricultural Production program will support public breeding efforts to improve crop productivity, efficiency, quality, and performance; and address public breeding needs. Research topics that have strong potential to further support or improve rates of genetic gain through their direct bearing on components of the breeder's equation are welcome. This encompasses strategic and cost effective allocation of resources for: (1) generating and/or utilizing useful genetic diversity; (2) improving selection accuracy and intensity through direct or indirect phenotyping across relevant time scales and environments; (3) identifying, modeling, and exploiting, heritable epigenetic and genetic marks associated with desirable trait(s); (4) identifying, modeling, and implementing breeding methods that have potential to reduce the effective generation interval or timeline for cultivar release. The scope may include multiple taxa and may address any phase of the breeding development cycle not covered by other AFRI priorities including building genetic resources, pre-breeding, and improvement phases.

The Plant Breeding for Agricultural Production program encourages proposals that address the following:

- a. Advancing plant transformation to enhance U.S. agriculture. See [NSF 24-120](#) for further details. Application titles should be prefaced with "Plant Transform."
- b. Increased resistance or tolerance to economically damaging pests and disease.
- c. Improved tolerance to heat and water stress.
- d. Improved nutrient use efficiency.
- e. Leveraging plant genetic resources.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms are welcome.
- d. Choice of plant species and objectives must be justified in terms of importance to agricultural food, feed, fiber, ornamental plants (including turf), small and beginning farmers, or industrial crop production systems in the United States. Crops and germplasm relevant to tribal food systems are appropriate for this priority.
- e. Relevance to cultivar development should be clearly justified, demonstrable, and specific.
- f. Data management plan: The data management plan should delineate responsibilities and actions for managing and stewarding each data type anticipated by the project and should include budgeted plans to increase public access to results, datasets, and metadata consistent with USDA's [Public Access and Open Science Policy](#). Plans for data resulting from utilization of National Plant Germplasm System (NPGS) resources including ex-PVP and crop wild-relatives should include details on how these data shall be integrated into GRIN-Global through genebank staff. Release or distribution of plant germplasm and other plant materials: Researchers are advised to apply for Plant Variety Protection Certificates or Plant Patents when possible and to report these inventions on iEdison in

compliance with the Bayh-Dole Act. Researchers must also confer with the relevant crop curators and Crop Germplasm Committees early in the application development process regarding the desirability of submitting the preceding plant materials generated by NIFA funding into NPGS genebanks and stock centers.

- g. Applications proposing data science projects that leverage data sets across multiple disciplines and convert large amounts of data into knowledge and applications through computer analytics, modeling and simulations should submit applications to the DSFAS program area priority (A1541 in Crosscutting Programs).
- h. Applications focused on latter stages of cultivar development, building and strengthening field trial networks, or participatory breeding should be submitted to the Conventional Plant Breeding for Cultivar Development program area priority (A1143).

1f. **Pollinator Health: Research and Applications**

Table 8: Pollinator Health: Research and Applications Key Information

Title	Description
Program Code:	A1113
Program Code Name:	Pollinator Health: Research and Applications
Assistance Listing #	10.310
Project Type(s):	Research, Education or Extension and Integrated Projects (Research and Extension only) <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 9December 11, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the Workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$750,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants; \$900,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants

Title	Description
Program Area Priority Contact:	a. A1113@usda.gov

Program Area Priority:

The pollinator health program area priority supports novel hypothesis-driven research projects focused on improving our fundamental understanding of the factors and underlying mechanisms that drive pollinator declines and to develop innovative applied solutions that mitigate these factors and promote healthy populations of pollinators in agricultural systems. Studies involving ecological, behavioral, genomic, physiological, biophysical, sociological, and/or economic approaches will be considered for funding. Targeted multi-year monitoring of selected species in the context of hypothesis-driven research is also appropriate.

Applications must address one or more of the following (order does not indicate importance):

- a. Factors that influence the abundance, biodiversity, and health of pollinators, including biotic, abiotic as well as economic elements.
- b. Functions of the pollinator microbiome in promoting healthy pollinator populations and understanding the impact of changes in bee gut microbial communities on nutritional health or disease resistance.
- c. Use of cutting-edge technologies to develop and evaluate innovative tools and practices, including innovative genetic/genomic and breeding tools, diagnostic techniques, alternative chemicals such as new miticides to control *Varroa*, or biologically-based strategies to combat key pests of pollinators *that are likely to be adopted by stakeholders to ensure healthy pollinators*.
 - Development, implementation or evaluation of management practices of crop pests that also ensures protection of pollinators and other beneficial species (e.g., integrated pest and pollinator management). Involvement of extension leaders with engagement of various types of stakeholders (crop producers, consultants, agribusinesses, non-profit organizations, land managers, beekeepers, or others managing native pollinators) is strongly recommended.
 - Experience working with stakeholders to overcome barriers to adoption of integrated pest and pollinator management practices is also recommended.
 - Letters of support or collaboration with stakeholders should be included in the application.
- d. Extension only projects that include informal training, workshops or demonstration projects related to pollinators in agriculture and associated systems.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms are welcome.
- d. A broad range of plant systems are appropriate, such as fruit, vegetable, nut and oilseed crops, habitat in conservation reserve programs, cover crops, hedgerows, rangelands, horticultural crops, prairies, forests, agroforestry systems, etc. Rural, semi-rural and

urban systems are also appropriate.

- e. Proposals to establish a research coordination network must include a management plan that clearly delineates the specific roles and responsibilities of individuals, agencies or private industries or land managers (e.g., research coordination, leveraging additional funds or other resources, sharing data and information, or citizen engagement).

1g. Conventional Plant Breeding for Cultivar Development

Table 9: Conventional Plant Breeding for Cultivar Development Key Information

Title	Description
Program Code:	A1143
Program Code Name:	Conventional Plant Breeding for Cultivar Development
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard and FASE (Strengthening Standard, New Investigator, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline:	a. Not required.
Application Deadline(s):	a. 2026: Thursday, October 9 December 11, 2025 (5:00 p.m. Eastern Time)
Grant Duration:	a. 36-48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants
Maximum Award Amount(s):	a. Including indirect costs: \$500,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1143@usda.gov

Program Area Priority:

The Conventional Plant Breeding for Cultivar Development program will support public breeding efforts that provide farmers with greater access to locally and regionally adapted cultivars.

Applications for research must address later stages of cultivar development focused on data-driven evaluation of developed materials in established regional trials or cooperative networks with the primary goal of producing distinct, uniform, finished cultivars or heterogeneous-varieties for public release with benefits to either producers or consumers. Research proposals must include (1) how the cultivar will be released and marketed, (2) who owns the intellectual property, (3) letters of support from stakeholders, (4) how the research fits within the overall existing breeding program, and (5) how this support for later stages of cultivar development will

enhance and increase the availability of cultivars in the market place within the duration of the award. In addition to the research, proposals may include requests for modern plant breeding equipment (e.g., ranging from field to seed or processing to laboratory) to support plant breeding program infrastructure. Stand-alone equipment proposals are not acceptable. Relevance and need to enhance cultivar development must be clearly justified, demonstrable, and specific. Research that incorporates education of field-based plant breeders is strongly recommended.

The Conventional Plant Breeding for Cultivar Development Program welcomes applications that address the following:

- a. Involvement of producers, consumers, or other stakeholders in participatory breeding efforts;
- b. Strengthening multi-environment trials across programs or regions;
- c. Building cooperative networks that efficiently leverage resources across breeding programs to create value to the consumer; or
- d. Applications that will result in and increase the availability of cultivars in the marketplace within the duration of the award.

Program Area Priority Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms are welcome.
- d. Release or distribution of plant germplasm and other plant materials: Researchers are recommended to apply for Plant Variety Protection Certificates or Plant Patents when possible and to report these inventions on [iEdison](#) in compliance with the Bayh-Dole Act. Researchers must also confer with the relevant crop curators and Crop Germplasm Committees early in the application development process regarding the desirability of submitting the preceding plant materials generated by NIFA funding into National Plant Germplasm System (NPGS) genebanks and stock centers. More information is available on the [NPGS website](#).
- e. Applications whose primary focus is plant breeding discovery research, pre-breeding, breeding tools and methods, or genetic engineering should be submitted to the Plant Breeding for Agricultural Production program area priority (A1141).
- f. Applications proposing data science projects that leverage data sets across multiple disciplines and convert large amounts of data into knowledge and applications through computer analytics, modeling and simulations should submit applications to the DSFAS program area priority (A1541 in Crosscutting Programs).

2. Animal Health and Production and Animal Products

Background

Animal health and production play critical roles in the sustainability and competitiveness of U.S. agriculture. Livestock, poultry, equine, and aquaculture species contribute significantly to the nation's economy, food production, and food security. For U.S. agriculture to remain globally competitive, a better understanding of the critical biological and physiological mechanisms underlying nutrition, growth, reproduction, and health in these species is needed. Basic and

applied research at the genetic, genomic, molecular, cellular, microbiome, and organ systems levels are essential to control and prevent animal diseases, reduce animal health and production costs, and enhance nutritional quality of animal products. New knowledge gained from this research will lead to better management strategies for both conventional and organic food production systems to enhance production efficiency, improve animal health and welfare, and develop high quality animal products for human use. These strategies may include the application of biotechnology, conventional/classical breeding, and breed development. Recent advances in genome modification technologies, such as genome editing, hold promise as a novel tool for understanding the role of specific genes and gene products in animal biology, physiology, and production traits, as well as precision breeding. NIFA is soliciting applications using genome editing in the program areas below. Projects focusing on minor animal species, including but not limited to goats, farmed deer, elk, and bison, as well as animal species and commodities that are important to small- or medium-sized farms or ranches are welcome in all program areas listed below.

In addition to the program area priorities described in this section, the Animal Health and Production and Animal Products program area also supports the following program area priorities:

- a. Agricultural Biosecurity (A1181)
- b. Critical Agriculture Research and Extension (A1701).

Total program funds – Approximately \$56 million

Program Area Key Information applicable to ALL Animal Health and Production and Animal Products Program Area Priorities:

- a. All applications must adhere to the requirements in [Part IV](#).
- b. Applications that include collaborations with international partners may also be submitted. The [AFRI International Partnerships webpage](#) contains additional information on international partnerships.
- c. Applicants must justify the use of experimental model systems. Applications that primarily use non-agricultural or non-aquaculture species as models (*i.e.*, encompassing greater than 50% of the work proposed) will not be considered.
- d. Applicants must articulate and demonstrate direct benefit of their proposed project to animal agriculture or aquaculture productivity, economics, sustainability, or rural communities, in addition to identifying relevance to the program area priority.
- e. When appropriate, applicants must include statistical power analyses and describe the experimental design, experimental unit, replication and sample size for each experimental group.
- f. Applications with highly complex, large scale, transdisciplinary, and integrated research, education, and extension projects that incorporate foundational knowledge from this program area should be submitted to the [AFRI Sustainable Agricultural Systems program \(A9201\)](#) described in the [AFRI SAS RFA](#).
- g. An applicant may submit a Workshop Grant application anytime during the year. A Letter of Intent (LOI) is required for Workshop Grant applications. The LOI must be submitted at least 195 days before the start of the Workshop. The full Workshop Grant application must be submitted, at minimum, 150 days before the start of the Workshop.

Program Area Priorities – Each application must address at least one of the five program area priorities listed below. Details about each of the Animal Health and Production and Animal Products program area priorities are provided later in this section.

- 2a. Animal Reproduction
- 2b. Animal Nutrition, Growth and Lactation
- 2c. Welfare of Agricultural Animals
- 2d. Diseases of Agricultural Animals
- 2e. Animal Breeding, Genetics, and Genomics

2a. Animal Reproduction

Table 10: Animal Reproduction Key Information

Title	Description
Program Code:	A1211
Program Code Name:	Animal Reproduction
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, November 6December 18, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the Workshop begins.
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1211@usda.gov

Program Area Priority:

Cellular, molecular, genomic/genetic or whole-animal aspects of animal reproduction relevant to

improving reproductive efficiency or enhancing reproductive management, especially focusing on:

- a. Gonadal function (including production, function, and preservation of gametes);
- b. Hypothalamic-pituitary axis;
- c. Embryonic and fetal development (including interaction between the conceptus and its uterine environment); or
- d. Microbiome of the reproductive tract.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms or ranches are welcome.
- d. Applications to study effects of nutritional plane on reproductive performance are appropriate for this program area priority (A1211).
- e. Applications to study effects of nutritional plane during gestation on subsequent growth performance or lactation of the offspring should be submitted to the Animal Nutrition, Growth and Lactation program area priority (A1231).
- f. Applications to study effects of nutritional plane during gestation on immune function or susceptibility to disease of the dam or offspring should be submitted to the Diseases of Agricultural Animals program area priority (A1221).

2b. Animal Nutrition, Growth and Lactation

Table 11: Animal Nutrition, Growth and Lactation Key Information

Title	Description
Program Code:	A1231
Program Code Name:	Animal Nutrition, Growth and Lactation
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator Standard, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, November 6December 18, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the Workshop begins

Title	Description
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1231@usda.gov

Program Area Priority:

Cellular, molecular, genomic/genetic or whole-animal aspects of nutrition, growth and lactation, especially focusing on:

2. Nutrient utilization and efficiency. This may include the influence and impact of the gastrointestinal microbiome on nutrient utilization and efficiency of production;
3. Innovative approaches to feed formulation or use of novel alternative feedstuffs;
4. Improving the efficiency of production or quality of meat, milk, eggs, fish, and animal fiber; or
5. Metabolic disorders and nutritional deficiencies affecting production of meat, milk, eggs, fish, and animal fiber.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms or ranches are welcome.
- d. Applications focused on the effects of metabolic disorders (e.g., hepatic lipidosis, ketosis, post-parturient hypocalcemia, displaced abomasum, insulin resistance) and nutrient deficiencies on meat, milk and egg production are appropriate for this program area priority (A1231). Applications focused on the effects of metabolic disorders and nutrient deficiencies on immune function or susceptibility to disease should be submitted to the Diseases of Agricultural Animals program area priority (A1221).
- e. Applications to study effects of nutritional plane during gestation on subsequent growth performance or lactation of the offspring are appropriate for this program area priority (A1231).
- f. Applications focused on effects of nutritional plane on reproductive performance should be submitted to the Animal Reproduction program area priority (A1211).
- g. Applications to study effects of nutritional plane during gestation on immune function or susceptibility to disease of the dam or offspring should be submitted to the Diseases of Agricultural Animals program area priority (A1221).
- h. Applications focused exclusively on post-harvest treatments and their effect on our understanding of the chemical, physical, and biological properties of animal products or

methods to improve the safety, quality, shelf-life, convenience, nutrient profile or sensory attributes of animal products, should be submitted to the Innovations in Food Manufacturing Technologies program area priority (A1364).

- i. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Animal Nutrition, Growth and Lactation program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”.

2c. Welfare of Agricultural Animals

Table 12: Welfare of Agricultural Animals Key Information

Title	Description
Program Code:	A1251
Program Code Name:	Welfare of Agricultural Animals
Assistance Listing #	10.310
Project Type(s):	Research or Integrated Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, November 6December 18, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the Workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1251@usda.gov

Program Area Priority:

Evaluation (which should include assessment of animal welfare) of current animal agriculture production practices (including those used in aquaculture) and/or development of new or enhanced management approaches that safeguard animal welfare, including but not limited to:

- a. Advance objective measures of animal welfare, including the use of emerging methods and metrics for assessment (e.g., functional genomics; epidemiology; automated, noninvasive methods) for outcome based (health and behavior) welfare assessment criteria.
- b. Alternatives or improvements for painful management procedures; euthanasia and slaughter methods to decrease pain and distress; handling and transportation to decrease injury and distress (including thermal stress);
- c. Understanding the effect of the microbiome on animal welfare;
- d. Development of innovative alternatives to replace or reduce the use of animals in agricultural research.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms or ranches are welcome.
- d. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Welfare of Agricultural Animals program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”. **Note: Research applications submitted for U.S.-Ireland Tripartite Collaborative grants are ineligible for U.S. funding above the research program maximum of \$650,000.**
- e. Applications that address animal welfare with a significant engineering component such as the design, manufacture, and operation of structures, technologies, machines, processes, and/or systems should be submitted to the Agriculture Systems and Technology program area priority: Engineering for Agricultural Production and Processing (A1521).
- f. Applications that address animal welfare, but work exclusively on prevention, control, or treatment of animal diseases, should be submitted to the Diseases of Agricultural Animals program area priority (A1221).

2d. Diseases of Agricultural Animals**Table 13:** Diseases of Agricultural Animals Key Information

Title	Description
Program Code:	A1221
Program Code Name:	Diseases of Agricultural Animals
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>

Title	Description
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator Standard, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact) below.
Application Deadline(s)	a. 2026: Thursday, November 6December 18, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the Workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1221@usda.gov

Program Area Priority:

Application topics may include, but are not limited to, one or more of the following:

- a. Cellular, molecular, genomic/genetic or whole-animal aspects of animal health and disease, with emphasis on maintaining healthy agricultural animals to ensure a safe and adequate food supply.
- b. Maintenance of homeostasis, including immunologic responses.
- c. Disease prevention and control, **including** vaccinology; reverse vaccinology; breeding for disease resistance; and animal and farm management (including precision animal health management).
- d. Diagnostics for diseases endemic to the U.S.

NOTE: Diagnostics for transboundary/foreign and emerging/re-emerging diseases should be submitted to the Agricultural Biosecurity program area priority (A1181). For all diagnostic tests, applicants must provide a validation plan.

- e. Therapeutic interventions for disease reduction or treatment, including alternatives to antibiotics and minor use animal drugs.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.

- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms or ranches are welcome.
- d. Research that addresses animal health and disease (including zoonotic or vector-borne animal disease) with potential for adaptation to changing conditions is welcome. This program area priority also supports research on both endemic and foreign animal diseases that have the potential to impact U.S. agricultural animal production.
- e. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Diseases of Agricultural Animals program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”. **Note: Research applications submitted for U.S.-Ireland Tripartite Collaborative grants are ineligible for U.S. funding above the research program maximum of \$650,000.**
- f. Applications to study effects of nutritional plane during gestation on immune function or susceptibility to disease of the dam or offspring are appropriate for this program area priority (A1221).
- g. Applications focused on the effects of metabolic disorders (e.g., hepatic lipidosis, ketosis, post-parturient hypocalcemia, displaced abomasum, insulin resistance) and nutrient deficiencies on immune function or susceptibility to disease are appropriate for this program area priority (A1221).
- h. Applications focused on the effects of metabolic disorders and nutrient deficiencies on meat, milk and egg production should be submitted to the Animal Nutrition, Growth and Lactation program area priority (A1231).

2e. Animal Breeding, Genetics, and Genomics

Table 14: Animal Breeding, Genetics, and Genomics Key Information

Title	Description
Program Code:	A1201
Program Code Name:	Animal Breeding, Genetics, and Genomics
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator Standard, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants b. See Part II § C.2 for requirements specific to Workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the Workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.

Title	Description
Application Deadline(s)	a. 2025: Thursday, November 6December 18, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and Standard New Investigator Grants; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1201@usda.gov

Program Area Priority:

- a. Animal genomics research priorities were identified from stakeholder input and were compiled in the report: “[Genome to Phenome: Improving Animal Health, Production, and Well-Being: A new USDA Blueprint for Animal Genome Research 2018 – 2027](#)”.
Proposals that align with the animal genome blueprint goals are welcome to submit to this program area or other program areas within the RFA based on the best alignment with program area priority goals.
- b. Novel quantitative genetic methods including selection theory and modeling, implementing selection methods that use a systems approach using a combination of genomics, epigenomics, functional genomics, and microbiome data for simultaneous improvement of multiple traits.
- c. Development of national and regional breeding strategies to address biotic and abiotic stresses, genetic diversity, germplasm storage and characterization, or genome modifications.
- d. Development of new phenotypes for improving selection criteria and/or development of high-throughput methods for on-farm recording of traits for improving selection criteria.
- e. Exploring alternatives to control inbreeding, exploit crossbreeding, conduct selection experiments, or develop novel breeding programs.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms or ranches are welcome.
- d. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Animal Breeding, Genetics, and Genomics program area priority. For more information including

FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”. **Note: Research applications submitted for U.S.-Ireland Tripartite Collaborative grants are ineligible for U.S. funding above the research program maximum of \$650,000.**

- e. Applications proposing data science projects that leverage data sets across multiple disciplines and convert large amounts of data into knowledge and applications through computer analytics, modeling and simulations should submit applications to the DSFAS program area priority (A1541 in Crosscutting Programs).
- f. Applications that propose to use functional genomics and genome editing approaches for understanding animal health or production traits should be submitted to respective program area priorities (A1211 for Animal Reproduction; A1221 for Diseases of Agricultural Animals; A1231 for Animal Nutrition, Growth and Lactation; or A1251 for Welfare of Agricultural Animals).
- g. Applications focused on conventional/classical animal breeding, breed development, or applied quantitative genetics for one or multiple traits are appropriate to this program A1201 (e.g., selecting within a breed for a specific trait of interest).
- h. Projects should demonstrate strong community support and/or private-public partnerships, coordination with partners, and commodity groups and/or consortia.

3. Food Safety, Nutrition, and Health

Background

Safe, high quality, and nutritious foods are essential for human health and well-being, and their production is critical to the domestic and global competitiveness of American agricultural products, fostering consumer trust and the long-term sustainability of the U.S. agricultural industries. Consumers continue to demand foods that are nutritious and safe, including those that are locally and regionally produced, and those that have not been common in the typical American diet. Consumer interest in foods has risen, and to address this need, industry is responding with new technologies for engineering, manufacturing, packaging, and delivery of foods and food ingredients. Implementation strategies to address diet-related chronic diseases such as obesity, cardiovascular diseases, diabetes, and certain types of cancers include increasing physical activity, improving fruit and vegetable consumption, and strengthening policies, systems, and environmental supports that encourage healthy eating and activity behaviors. As the nation’s food systems become more global, vertically integrated and specialized, the use of data science approaches and advanced analytics will be critical to safeguard foods from intentional or accidental contamination. The Food Safety, Nutrition, and Health (FSNH) program area seeks to provide the scientific foundation for addressing public demands for safe, high quality, accessible and nutritious foods throughout the lifecycle, using a transdisciplinary approach, and to explore previously unrealized opportunities for improving food safety, quality and nutrition along the value chain.

Total Program Funds – Approximately \$38 million

Program Area Key Information applicable to ALL Food Safety, Nutrition, and Health

Program Area Priorities:

- a. All applications must adhere to the requirements in [Part IV](#).
- b. Applications that include partnerships with international partners may also be submitted. The [AFRI International Partnerships webpage](#) contains additional information on international partnerships.
- c. Use of transdisciplinary teams, including social and behavioral scientists and economists, is welcome, where appropriate.
- d. Applications with highly complex, large scale, transdisciplinary, and integrated research, education, and extension projects that incorporate foundational knowledge from this program area should be submitted to the [AFRI Sustainable Agricultural Systems program \(A9201\)](#) described in the [AFRI SAS RFA](#).
- e. An applicant may submit a Workshop Grant application anytime during the year. A Letter of Intent (LOI) is required for Workshop Grant applications. The LOI must be submitted at least 195 days before the start of the workshop. The full workshop Grant application must be submitted, at minimum, 150 days before the start of the workshop.

Program Area Priorities – Each application must address at least one of the five program area priorities listed below. Details about each of the Food Safety, Nutrition, and Health program area priorities are provided later in this section.

- 3a. Food Safety and Defense
- 3b. Innovations in Food Manufacturing Technologies
- 3c. Diet, Nutrition and the Prevention of Chronic Diseases
- 3d. Food and Human Health
- 3e. Mitigating Antimicrobial Resistance across the Food Chain

3a. Food Safety and Defense**Table 15:** Food Safety and Defense Key Information

Title	Description
Program Code:	A1332
Program Name:	Food Safety and Defense
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u> .
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u>. b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 16December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins.

Title	Description
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants. b. Up to 24 months for all Seed Grants. c. Up to 12 months for Sabbatical Grants. d. Up to 60 months for Workshop Grants.
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants ; \$800,000 with specific partnerships (see Part II § E). b. Including indirect costs: \$300,000 for all Seed Grants. c. \$50,000 for Workshop and Equipment Grants.
Program Area Priority Contact:	a. A1332@usda.gov

Program Area Priority:

NIFA invites proposals for basic and applied research that will reduce the risk of intentional or unintentional contamination of foods.

Applications must address one or more of the following (order does not indicate importance):

- a. Develop microbiological procedures designed to alleviate the need for enrichment in the detection of very small numbers of pathogens in large food samples collected to represent a food production lot;
- b. Develop methods for identifying, detecting, and/or enumerating pathogens of relatively high public health risk including persistence or virulence;
- c. Develop and validate advanced and innovative technologies or processes for food processing, manufacturing, packaging, cleaning, and sanitation to effectively reduce the presence of surviving enteric pathogens in food and processing facilities;
- d. Develop preharvest or postharvest methods to detect, reduce, and/or mitigate the intentional or unintentional contamination of foods with pathogens, allergens, physical or chemical (arsenic, lead, cadmium, or mercury) hazards, including specific reference to contextually appropriate approaches;
- e. Develop methods to identify, prevent, or reduce intentional contamination or adulteration of foods;
- f. Develop and validate novel strategies for the effective control of persistent reservoirs of foodborne pathogens; or
- g. Food safety projects that demonstrate an integrated approach to solving problems in applied food safety research, education, or extension.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. The project narrative must include discussion and justification of the foodborne contaminants to be studied as a food safety threat.
- d. The project narratives should include a discussion of how key economic, consumer, or regulatory issues will affect the ultimate utility and impact of the proposed research or

integrated project.

- e. Control strategies may include plant or animal breeding to improve food safety.
- f. Applications addressing antimicrobial resistance should be submitted to the Mitigating Antimicrobial Resistance across the Food Chain program area priority (A1366).
- g. Applications addressing Food Safety Modernization Act (FSMA) related education and outreach should be directed towards the [Food Safety Outreach Program](#).
- h. Projects focused on nanotechnology-enabled sensors for accurate, reliable and cost-effective early and rapid detection of pathogens, allergens, chemicals and contaminants in foods, plant and animal production systems, water and soil and the agricultural production environment should be submitted to the Nanotechnology for Agricultural and Food Systems program area priority (A1511).
- i. Applications to develop or improve advanced data analytical methods or tools for utilizing the emerging science of big data to aid food traceability, safety, quality and nutrition decision making should be submitted to the Data Science for Food and Agricultural Systems (DSFAS) program area priority (A1541 in Crosscutting Programs).

3b. Innovations in Food Manufacturing Technologies

Table 16: Innovations in Food Manufacturing Technologies Key Information

Title	Description
Program Code:	A1364
Program Name:	Innovations in Food Manufacturing Technologies
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications: The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 23December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants

Title	Description
Program Area Priority Contact:	a. A1364@usda.gov

Program Area Priority:

NIFA requests research proposals that develop risk-based approaches to ensure the quality, safety and nutrition of foods and food ingredients for sustainable food and nutrition security.

Applications must address one or more of the following (order does not indicate importance):

- Develop innovative manufacturing technologies that accelerate the use of automation or mechanization for labor-intensive tasks, increase productivity, improve food quality and/or nutritional value of foods and food ingredients that are more energy, water and resource efficient; or
- Advance sciences and develop technologies to improve shelf life throughout the food supply chain.

Additional Information:

- Requests exceeding budgetary guidelines will not be reviewed.
- Unless otherwise stated, grants are not renewable.
- Advanced food manufacturing encompasses engineering, processing and preservation technologies including precision fermentation, packaging, cleaning and sanitation, data science, robotics, high-speed automation, artificial intelligence, machine learning, biotechnology, nanotechnology, sensors, and quality/safety inspections of food and food products.
- Projects focusing on species and commodities that are important to small- or medium-sized farms or ranches are welcome.
- Projects that design contextually appropriate approaches and food products for indigenous communities are welcome.
- Applications with a primary research focus on data science, artificial intelligence, machine learning, or integrated or research Coordinated Innovation Networks (CIN) for advanced food manufacturing should be submitted to the Data Science for Food and Agricultural Systems (DSFAS) program area priority (A1541 in Crosscutting Programs).
- Proposed research with a primary focus on improving food safety should be submitted to Food Safety and Defense program area priority (A1332).
- Research on plant and animal production and breeding to improve food quality and nutritional traits should consult appropriate program area priorities in the Plant or Animal Health and Production and Plant or Animal Products area.

3c. Diet, Nutrition, and the Prevention of Chronic Diseases

Table 17: Diet, Nutrition and the Prevention of Chronic Diseases Key Information

Title	Description
Program Code:	A1344
Program Name:	Diet, Nutrition, and the Prevention of Chronic Diseases
Assistance Listing #	10.310

Title	Description
Project Type(s):	a. Integrated Projects <u>only</u> b. Research, Education, Extension, or Integrated Projects only allowed for Seed Grants and Workshop Grants
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 23December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$1,000,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants; \$1,150,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1344@usda.gov

Program Area Priority:

NIFA requests proposals for integrated projects that help prevent, and if needed control chronic disease across the lifecycle by supporting and encouraging, healthy dietary choices through data-driven, flexible, and person-focused approaches. Proposals must reflect understanding of the multifaceted and interactive nature of research, education, and extension-outreach. Project teams must reflect knowledge of having consistent access, availability, and affordability of foods and beverages that promote well-being and prevent diet-related chronic diseases.

Applications to improve and sustain health, prevent diseases before they start, or control diet-related chronic diseases, including cancer, must use whole food or biobased agricultural product methodology. Methods may include and are not limited to evaluating the effects of foods or biobased agricultural products on the patient experience or efficacy of treatment for the control, mitigation, secondary or tertiary prevention, or survival of diet-related chronic diseases.

This program area priority will fund at least one project that focuses specifically on the

Expanded Food and Nutrition Education Program (EFNEP). Project findings must include (1) research-tested and contextually appropriate results to inform future directions of EFNEP as well as (2) streamlined and statistically sound EFNEP national evaluation metrics. EFNEP project proposals must demonstrate respect for the context and continuity of the national nutrition education program. EFNEP Program Coordinator(s) must be integral members of the project team. Allocable time and effort of the EFNEP Coordinator(s) must be included in the proposal budget request. EFNEP peer educator(s) input regarding project planning, activities, and operations must be included. Applicants must demonstrate strong collaboration to catalyze integrated project efforts that advance EFNEP, including research and extension components, education component is optional. EFNEP proposals must use nutrition education as their Program Area Approach. Appropriate context may include multiple institutions, program sites, regions, and tiers. EFNEP proposals that focus on peer educator success, include workforce succession planning, capture economic return of training and professional development, and evaluate quality of life indicators, along with participant engagement and cultural relevance are encouraged.

Applicants must address at least one of the following Program Area Priorities:

- a. Develop, implement, and evaluate innovative research, educational, and outreach strategies to improve eating patterns that prevent and control diet-related chronic diseases;
- b. Investigate, assess, and recommend integrated food and human nutrition research and program implementation interventions, and/or program evaluation metrics with the goal to achieve food and nutrition security, improve and sustain health; or
- c. Improve nutritional health outcomes through an evidence-based approach to healthy eating and active living.

Program Area Priority Approaches:

Applicants must address at least one of the following Program Area Priority Approaches.

- a. Precision nutrition, also referred to as personalized nutrition, which focuses on individuals rather than a “one-size-fits-all” approach to dietary guidance, or tailored dietary needs rather than the general population;
- b. Nutrition education that disseminates and implements food and human nutrition interventions that motivate or facilitate voluntary adoption of food choices and other food and nutrition-related behaviors conducive to lifelong health and well-being particularly at the individual and/or family level(s);
- c. Policy, systems, and/or built environment change efforts supportive of healthy food and physical activity behaviors particularly at the community and/or population level(s); or
- d. Culturally and contextually appropriate approaches to tackle nutrition insecurity, prevent and control diet-related chronic diseases and corresponding disparities.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Applicants are strongly encouraged to submit Integrated Projects for Seed Grants and Workshop Grants to be well positioned for future Standard Grant applications.

- d. Leveraging artificial intelligence and data science methods not limited to data visualization, machine learning, natural language processing, or predictive decision making is welcome.
- e. NIFA welcomes projects to address the intersections between food systems and nutrition security including the role of precision nutrition, direct nutrition education and/or policy, systems, and community supports.
- f. Community outreach/extension project proposals for the delivery of fruit and vegetable incentives or produce prescriptions should be submitted to the corresponding Gus Schumacher Nutrition Incentive Program competitive grant program. For more information, see [NIFA's RFA List](#).
- g. NIFA welcomes applicants to consider educational components of integrated projects that (1) address training or retraining workforce for careers as nutrition educators, to support Food and Nutrition programs or (2) develop evidence-based program interventions and materials responsive to local and regional workforce needs while addressing barriers to career pathways including access to equipment, technology, broadband, instructors, mentors, childcare, eldercare, and transportation.
- h. NIFA encourages proposals that connect with or inform Federal programs that support nutrition security, such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) nutrition education, the Expanded Food and Nutrition Education Program (EFNEP).

3d. Food and Human Health

Table 18: Food and Human Health Key Information

Title	Description
Program Code:	A1343
Program Name:	Food and Human Health
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 30 December 11, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants

Title	Description
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants ; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1343@usda.gov

Program Area Priority:

Human health is a complex subject and requires transdisciplinary efforts including food scientists and nutrition scientists to collaboratively close knowledge gaps. Processed foods may mechanistically influence metabolic health beyond nutrient composition and diet quality. Additional research is needed in understanding digestive response (from absorption to excretion, bioavailability, gut hormones, and microbiota composition and function, etc.) and metabolic response (glycemic response; insulin sensitivity, endocrine response, vascular function, etc.) of processed foods compared to whole foods. For the purposes of this funding opportunity, a processed food is any food that has been physically, biologically, or chemically modified from its natural, raw state.

Project results should provide solid scientific evidence to inform the development of future iterations of the [Dietary Guidelines](#) for Americans to prevent, or address diet-related chronic diseases such as obesity, cardiovascular diseases, diabetes, and certain types of cancers or control chronic diseases. They should also help to promote precision nutrition; and where appropriate, personalized dietary needs.

This program has two priorities. Applicants should choose **one** of the two priorities (A or B) in which to focus.

- A. **Food and Gut Health** - Applicants responding to this priority must address at least one of the following:
 - a. Investigate effects of whole food, food ingredients, and bioactive compounds on the gut microbiota and their impacts on human health;
 - b. Determine the structure and functional outcomes of food matrices and/or metabolites of gut microbiome in human gastrointestinal tracts (GI);
 - c. Investigate the fate and transport of food contaminants or food process-induced compounds (e.g., acrylamide, advanced glycation end products) in the human GI tract and/or its impacts on gut microbiota.
- B. **Processed Food and Human Health** - Applicants responding to this priority must address at least one of the following:
 - a. Investigate metabolic mechanisms through which characteristics of processed foods may impact human health by influencing risk factors for cardiometabolic, obesity, or cancer, in children and adults. Characteristics may include but are not limited to food formulation, processes, matrix, etc.;
 - b. Investigate the biological mechanisms to explain how properties of processed foods

- (e.g. hedonic, sensory, hyper-palatability etc.) influence ingestive behavior; and their contribution to excess energy and nutrient intake in adults and children; and explore potential solutions to improve health outcomes; or
- c. Investigate impacts of processing on nutrient bioavailability, and how food structures (e.g. food matrix) impacts the digestive responses as whole food progresses along the continuum from minimally processed to highly processed. Research should use foods commonly consumed in the U.S. diet and explore possible innovative solutions that protect nutrients during processing to improve human health.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects that prioritize collaboration between food science and nutritional science disciplines are strongly encouraged.
- d. Justification must be provided for the hypothesized relationship of the bioactive component(s) to human health outcomes.
- e. Applications must use whole food or processed food. The enrichment and fortification of limiting nutrients through micro- and nano-encapsulation or other innovative technologies to improve efficacy of nutrient delivery in food is welcome.
- f. This program area priority does not support research on the development of dietary supplements, or for the establishment, expansion, or maintenance of dietary databases.

3e. Mitigating Antimicrobial Resistance Across the Food Chain

Table 19: Mitigating Antimicrobial Resistance Across the Food Chain Key Information

Title	Description
Program Code:	A1366
Program Name:	Mitigating Antimicrobial Resistance Across the Food Chain
Assistance Listing #	10.310
Project Type(s):	a. Integrated Projects <u>only</u> b. Research, Education, Extension, or Integrated Projects allowed for Seed Grants only
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 23December 11, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins

Title	Description
Grant Duration:	a. Up to 60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$1,000,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1366@usda.gov

Program Area Priority:

Innovative solutions to the complex problem of antimicrobial resistance (AMR) in food and agriculture are most effectively addressed by inter-disciplinary teams of experts using a systems approach. This systems-based integrated program will empower inter-disciplinary teams to develop, refine, and disseminate science-based knowledge about food and agricultural management and production practices that can mitigate or reduce the risk of antimicrobial resistance along the food chain. The goal is to ensure safe, nutritious and abundant food supply while conserving and protecting responsible use of antimicrobials across the food and agriculture domain.

Applications must address at least one of the following:

- a. Describe, quantify, assess, and educate on approaches to mitigate the risk to human health from the presence of AMR pathogens or genes persisting at various critical control points along the food chain from production through processing to retail, and human consumption;
- b. Investigate and assess important factors, such as fitness and virulence associated with foodborne AMR pathogens that contribute to AMR development and persistence leading to foodborne illness;
- c. Identify factors that impact increase of AMR development to mitigate risk from agriculture practices to the food chain;
- d. Identify risk associated with antimicrobial use and pathways to address increasing AMR impact on wastewater, livestock and crop systems, AMR development, and public health;
- e. Assess AMR in food and agriculture: challenges for small-scale producers to help mitigate the AMR in food, agricultural practices to increase food safety; or
- f. Determine improved best management practices and approaches in antibiotic stewardship and trusted resources for communicating and dispensing antibiotic stewardship information and guidance to stakeholders to mitigate AMR, increase food safety, and reduce AMR public health impact.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Proposals should include all three components of the integrated project, Research, Education and Extension, with the emphasis on the impact on mitigating AMR across the food chain.
- d. Applicants interested in identifying international partnerships for the AMR program may refer to the Joint Programming Initiative on Antimicrobial Resistance under additional opportunities for collaboration on [NIFA's Developing Global Partnerships page](#).
- e. While development of vaccines that prevent certain diseases can be one way to decrease antimicrobial resistance, the AMR program does not support research on the development of vaccines for controlling animal diseases. Applications that address vaccine development for animal diseases should be submitted to the Diseases of Agricultural Animals program area priority (A1221).
- f. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Mitigating Antimicrobial Resistance Across the Food Chain program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”.

4. Bioenergy, Natural Resources, and Environment

Background

The Bioenergy, Natural Resources, and Environment (BNRE) program area supports foundational and applied research and integrated projects to promote, improve, and maintain

healthy agroecosystems and the natural resources that are essential to the sustained long-term production of agricultural and forestry goods and services.

Management of forests and agroecosystems requires the maintenance of the supporting natural resources and ecosystem services. Ecosystem services, defined as the direct and indirect benefits people obtain from ecosystems, fall into four categories of supporting services, provisioning services, regulating services and cultural services, with examples that include genetic resources; water quality; air quality; pollinator, wildlife and fisheries habitats; and recreation.

USDA-supported agricultural and forest biomass production systems provide feedstocks to produce biopower, biofuels, chemicals, and other biobased products. These systems must be integrated into existing agricultural landscapes in ways that enhance or do not degrade the natural resource base or other production systems. Research, development, and outreach to producers, processors, consumers, and the public are needed to build a portfolio of agricultural and natural resource research and technologies integrated with biomass systems.

In addition to the program area priorities described in this section, the BNRE program area also supports the following program area priorities described in Crosscutting Programs:

- a. Agricultural Microbiomes in Plant Systems and Natural Resources (A1402)
- b. Critical Agriculture Research and Extension (A1701)
- c. Rapid Response to Weather Events Across Food and Agricultural Systems (A1712)

Total Program Funds – Approximately \$33 million

Program Area Key Information applicable to ALL Bioenergy, Natural Resources and Environment priority areas:

- a. All applications must adhere to the requirements in [Part IV](#).
- b. Applications that include collaborations with international partners may also be submitted. The [AFRI International Partnerships webpage](#) contains additional information on international partnerships.
- c. Applicants should consider the socioeconomic implications of their proposed projects, applications of foundational research, barriers and solutions to adoption of proposed management and technologies.
- d. Projects are encouraged to partner with research programs and institutions with existing networks and long-term research data such as the USDA Long-Term Agroecosystem Research Network (LTAR), NSF Long Term Ecological Research (LTER), USDA Forest Service Experimental Forests and Ranges, or others.
- e. Projects focused on data integration for policy and farm management decision making that include organizing and managing large data sets are encouraged to include source data from the [Standard Application Process](#), USDA Forest Service [USDA Forest Service Forest Inventory and Analysis](#) [USDA National Agricultural Library Ag Data Commons](#), and the [Federal Life Cycle Assessment \(LCA\) Commons](#).
- f. The BNRE program area priorities invite applications for workshops that consider the three pillars of sustainability and interactions among the components. An applicant may submit a Workshop Grant application anytime during the year. A Letter of Intent (LOI) is required for Workshop Grant applications. The LOI must be submitted at least 195 days

before the start of the workshop. The full Workshop Grant application must be submitted, at minimum, 150 days before the start of the workshop.

- g. Applications with highly complex, large scale, transdisciplinary, and integrated research, education, and extension projects that incorporate foundational knowledge from this program area should be submitted to the [AFRI Sustainable Agricultural Systems program \(A9201\)](#) described in the [AFRI SAS RFA](#).

Program Area Priorities – Each application must address at least one of the four program area priorities listed below. Details about each of the BNRE program area priorities are provided later in this section.

- 4a. Soil Health
- 4b. Water Quantity and Quality
- 4c. Bioeconomy and Biobased Products
- 4d. Landscape-Scale Production Systems

4a. Soil Health

Table 20: Soil Health Key Information

Title	Description
Program Code:	A1401
Program Code Name:	Soil Health
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 16December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants

Title	Description
Maximum Award Amount(s):	a. Including indirect costs: \$750,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants ; \$900,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1401@usda.gov

Program Area Priority:

Healthy soils function as living systems that support plant and animal productivity while delivering critical ecosystem services such as improving water and air quality, and enhancing the health of plants, animals, and humans. Soils are the foundation of a healthy ecosystem; therefore, it is imperative to enhance our understanding of the physical and biogeochemical interactions that determine how soils respond to management practices and amendments. This foundational knowledge will lead to development of tools, practices, techniques and innovations aimed at improving soil health, and strengthening the sustainability of agricultural production systems. Practices include soil-based enhancements for management of nutrient and water availability, and the application of amendments (such as fertilizers, manure, compost, lime, silicates, gypsum, and biochar). Additionally, practices such as integrated crop-livestock systems, rotational grazing, agroforestry, and traditional soil management techniques.

The goal of the Soil Health program area priority is to support research projects that will contribute to:

- a. Foundational and applied research to advance scientific understanding of soil physical and biogeochemical processes and interactions;
- b. Assessment, development and adoption of models, decision support tools and new management/conservation practices that will improve or maintain soil health and productivity; and
- c. Soil health solutions grounded in interactions between natural and human dimensions of agricultural systems focusing on effective economic management. Proposed projects that are primarily fundamental science must explain how a better understanding of the fundamental processes will lead to adoptable management strategies to enhance soil health, resilience, and sustainability of agricultural production systems.

Applications may address one or more of the following (order does not indicate importance):

- a. Evaluation of the effects of management practices on soil microbial community function and their contribution to healthy soils; or
- b. Assessment and/or development of innovative and/or appropriate approaches, practices, techniques, tools and technologies that improve the understanding and/or management of the physical and biogeochemical processes contributing to soil health.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.

- b. Unless otherwise stated, grants are not renewable.
- c. Applications that investigate how changes to cropping systems affect crop performance, soil health and other outcomes beneficial to system resilience should apply to the Foundational Knowledge of Agricultural Production Systems program area (A1102).
- d. Applications that involve the interactions between the host, environment, and microbiome with the end-goal of improving and sustaining agricultural productivity and quality in plant systems and associated natural resources should apply to the Agricultural Microbiomes in Plant Systems and Natural Resources program area priority (A1402 in Crosscutting Programs).
- e. Research projects interested in only soil microbiomes should apply to the Soil Health program area priority (A1401).
- f. Applications that will synthesize or analyze existing data and resources on soil health (e.g., microbiome data, soil health indicators, soil metrics, etc.) should apply to the Data Science for Food and Agricultural Systems (DSFAS) program area priority (A1541 in Crosscutting Programs).
- g. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Pests and Beneficial Species in Agricultural Production Systems program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”. **Note: Research applications submitted for U.S.-Ireland Tripartite Collaborative grants are ineligible for U.S. funding above the research program maximum of \$650,000.**

4b. Water Quantity and Quality

Table 21: Water Quantity and Quality Key Information

Title	Description
Program Code:	A1411
Program Code Name:	Water Quantity and Quality
Assistance Listing #	10.310
Project Type(s):	Research Projects or Integrated (research, and education and/or extension) Projects only
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.

Title	Description
Application Deadline(s)	a. 2026: Thursday, October 23December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for research projects only, and \$750,000 for integrated projects only for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants; \$800,000 for research only projects and \$900,000 for integrated projects with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1411@usda.gov

Program Area Priority:

USDA is committed to the proper management of agricultural water uses to protect water quality and increase water and food security. USDA-NIFA will provide competitive support to improve water and watershed science, management and technologies for agricultural systems, promote common data exchange formats and access to data for decision-making, improve forecasting and modeling of water in agriculture, and promote technology adoption by agricultural producers, land managers, and decision makers. USDA-NIFA seeks applications to:

- a. Reduce the freshwater demand (both groundwater and surface water) for agricultural irrigation and the nutrient demand for maximum crop production by substituting the use of innovative water use technologies, management practices, and/or other nontraditional water sources. Funded projects must strive to retain soil health (e.g., manage soil salinity, maintain adequate infiltration, eliminate accelerated soil erosion, and ensure the proper application and use of soil amendments).
- b. Protect water quality of surface and groundwater systems through improved nutrient and pest management.

Applications **MUST** address at least one of the following:

- a. Reduction of the use of freshwater and improvement of agricultural and forestry sustainability by innovative approaches, tools, practices and technologies.
- b. Evaluation of the physical and biogeochemical interactions, fluxes, fate and transport, transformation, and storage of single or multiple nutrients, or pathogens of a variety of sources *as it relates to agroecosystem productivity*.
- c. Mitigation of soil salinity from the use of lower quality nontraditional (e.g., recycled wastewater, agricultural return flow, industrial produced water, brackish groundwater) water sources in agriculture through: 1) The development, application, and transfer (integrated projects only) of novel technologies involving plants, animals, soil and water;

- and 2) Improve our knowledge of the benefits and costs of treating water sources for irrigation of crops and other water uses in agriculture.
- d. Conservation of surface and groundwater quantity through research of agroecosystems. How do we ensure the right crop in the right place with the right water? What are the key farming decisions that improve water use under irrigation?
- e. Mitigation and measurement of soil erodibility and erosion to sustain agroecosystems.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Applications focused on engineered technologies and tools for water and nutrient management should consider applying to the Engineering for Precision Crop and Water Management program area priority (A1551).
- d. Applications involving the development of nanotechnology solutions should consider applying to the Nanotechnology for Agriculture and Food Systems program area priority (A1511).
- e. Indicate the grant type chosen for your application: Integrated or Research Only.
- f. Integrated Research, Education, or Extension Projects: An Integrated Project includes at least two of the three functions of the agricultural knowledge system (i.e., research, education, and Extension) focused on a problem or issue. The functions should be interwoven throughout the life of the project and act to complement and reinforce one another. The functions should be interdependent and necessary for success with no more than two-thirds of the project's budget focused on any one single component.
- g. The proposed research component of an integrated project should address knowledge gaps that are critical to the development of practices and programs addressing the stated Water Quantity and Quality problem.
- h. The proposed education (teaching and teaching-related) component of an Integrated Project should develop human capital relevant to overall program goals for U.S. agriculture. An education or teaching activity is formal classroom instruction, laboratory instruction, and practicum experience in the food and agricultural sciences and other related matters such as faculty development, student recruitment and services, curriculum development, instructional materials and equipment, and innovative teaching methodologies.
- i. The proposed outreach/Extension component of an Integrated Project should conduct programs and activities that deliver science-based knowledge and informal educational programs to people, enabling them to make practical decisions. Program delivery may range from community-based to national audiences and use communication methods from face-to-face to electronic or combinations thereof. Extension Projects may also include related matters such as certification programs, in-service training, client recruitment and services, curriculum development, instructional materials and equipment, and innovative instructional methodologies appropriate to technology adoption and stakeholder behavior change.
- j. Integrated Project applicants are urged to review the [Example Integrated Sample](#) for additional information about integrated projects. Those interested in submitting Integrated Project applications are welcome to communicate with the Program Contact to discuss the anticipated project challenges and outcomes to ensure the application content is appropriate to program priorities. Projects should engage stakeholders to develop inclusive collaborative partnerships that foster innovation and adoption of beneficial,

novel water technologies.

4c. **Bioeconomy and Biobased Products**

Table 22: Bioeconomy and Biobased Products Key Information

Title	Description
Program Code:	A1414
Program Code Name:	Bioeconomy and Biobased Products
Assistance Listing #	10.310
Project Type(s):	Integrated (research, and education and/or extension) Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 9 December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. Up to 48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$1,000,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1414@usda.gov

Program Area Priority:

This program area priority focuses on improving biomass systems, bioeconomy, and related markets for biobased products and bioenergy. The improvements can include identification, development, and deployment of new products and efficient processes to generate new revenue streams and enhancing the resilience of the system of supply-chains in the bioeconomy. Enhancements can also include utilization of unused biomaterials or re-purposed co-products from an existing biomass supply-chain to create value-added biobased products, intermediate bio-chemicals, biofuels, or biopower that could become feedstocks for the same supply-chain or to other parallel supply-chains of the bioeconomy. The development of biobased products should not only improve the sustainability, resilience, and circularity of system of the bioeconomy

supply-chains, but it should also promote human health, economic prosperity, and domestic energy security. The development of biobased products can complement existing agricultural production systems and industrialized processes by creating opportunities to improve overall system profitability and productivity. Development of biomass systems also can entail development of co-products (e.g., lignin, biochar, etc.) so that circular economies are supported. Projects should address one or more of the following (order does not indicate priority of importance):

- a. Strategies to develop biobased products that improve product functionality, quality, increase potential revenues and reduce cost over incumbent products or engineer an innovative product that fills a niche in a market; and it also includes strategies to advance technologies to evaluate, produce, and scale-up innovative biobased products;
- b. Strategies and approaches for enhancing the scalability of biomass systems that address the efficiency, sustainability, circularity, and interactions among supply-chains of the bioeconomy; or
- c. Strategies to improve training and employment opportunities and understanding of consumers' biobased product preferences to inform development and production of existing and new biobased products that consumers demand, thereby strengthening rural economies.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. For the purposes of this Program Area Priority, development of biobased products is limited to non-food, non-feed applications.
- d. Applicants that are at the stage of establishing the fundamental science and engineering for biobased products should be submitted to Biorefining and Biomanufacturing (A1531).
- e. Applicants should identify and partner with industry, government, communities and non-government organizations critical for system deployment.
- f. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Bioeconomy and Biobased Products program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”.

4d. Landscape-Scale Production Systems

Table 23: Landscape-Scale Production Systems Key Information

Title	Description
Program Code:	A1451
Program Code Name:	Landscape-Scale Production Systems
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>

Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 16December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$750,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants; \$900,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1451@usda.gov

Program Area Priority:

This program area priority calls for research projects that increase output from landscape-scale production systems, including forestry and rangelands. Applied research must advance the scientific understanding of management practices and processes that impact the capacity of production outputs. Managed agricultural systems produce safe and affordable consumer products and commodities, as well as indirect production outputs. The full range of agricultural outputs and services are foundational to the longevity and stability of managed production systems. Preserving the quality of our farmland, rangeland, and forestry systems is essential to ensuring that farms remain for future generations. This program area priority directly benefits farmers, ranchers, and foresters by advancing real-world management practices beyond the laboratory or experimental plot scale that are employable in current regional and landscape-scale production systems.

Applications to this program area priority area should develop innovative management practices which may include decision-support tools, technologies, and mechanization. Project outcomes should expand or enhance actively managed landscape-scale agricultural systems to increase the suite of direct and indirect outputs of the production systems. All projects must address barriers to the scaled adoption of the proposed management practice.

To enable development and evaluation of innovative management practices that increase output from landscape-scale agricultural production systems, applications **must** address one of the following:

- a. Integrated crop and livestock production systems. Projects should employ novel approaches to maximize the output of plant (including forestry) systems that integrate or provide mutual benefit to livestock production systems.
- b. Rangelands management and grazing production systems. Projects should address issues unique to landscape-scale rangeland and grazing production systems, including management of public working lands in the western-U.S.
- c. Forestry production systems. Projects should support public and private forest land managers and owners to maximize production of forest products and indirect services.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Landscape-scale Productions Systems program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”. **Note: Research applications submitted for U.S.-Ireland Tripartite Collaborative grants are ineligible for U.S. funding above the research program maximum of \$750,000.**

5. Agriculture Systems and Technology

Background

The Agriculture Systems and Technology (AST) program area emphasizes the interrelationships between agricultural systems components to develop the next generation of engineered systems, products, processes, and technologies. AST blends biological, physical, and social sciences, thus, leading to sustainable, competitive, and innovative solutions for United States agriculture and food systems, encompassing both conventional and organic food production. To the extent possible, applicants are recommended to incorporate interdisciplinary sciences. By doing so, projects are more likely to incorporate varying dimensions of sustainability (economic, and social) and have a greater impact on agricultural problems. The broad list of topics encompassed by this program area includes, but is not limited to, new uses and products from traditional and nontraditional crops, animals, mixed animal and plant production systems, byproducts, and natural resources; robotics, automation, mechanization, precision and geospatial technologies, energy efficiency, computing, and expert systems; new hazard and risk assessment and mitigation measures; and water quality, irrigation, and management. Projects focusing on species and commodities that are important to small- or medium-sized farms or ranches are welcome.

Total Program Funds – Approximately \$36 million

Program Area Key Information applicable to ALL Agriculture Systems and Technology

priority areas:

- a. All applications must adhere to the requirements in [Part IV](#).
- b. Applications that include collaborations with international partners may also be submitted. The [AFRI International Partnerships webpage](#) contains additional information on international partnerships.
- c. Workshop applicants must describe the potential of the proposed work to support or achieve substantial gains in efficiencies of production; the probability that the application of technology will resolve constraints or result in positive impacts; and potential outcomes in terms of expected social and environmental benefits of research (see [Part I, B](#)). Both transformative and incremental solutions are welcome.
- d. Applicants also are welcome to consider the Cyber-Physical Systems (CPS) and [Foundational Research in Robotics](#) (FRR) interagency programs. USDA-NIFA's involvement in the interagency FRR program is in process.
- e. Applications with highly complex, large scale, transdisciplinary, and integrated research, education, and extension projects that incorporate foundational knowledge from this program area should be submitted to the [AFRI Sustainable Agricultural Systems program](#) (A9201) described in the [AFRI SAS RFA](#).
- f. An applicant may submit a Workshop Grant application anytime during the year. A Letter of Intent (LOI) is required for Workshop Grant applications. The LOI must be submitted at least 195 days before the start of the workshop. The full Workshop Grant application must be submitted, at minimum, 150 days before the start of the workshop.

Program Area Priorities – Each application must address at least one of the four program area priorities listed below. Details about each of the AST program area priorities are provided later in this section.

- 5a. Engineering for Agricultural Production and Processing
- 5b. Biorefining and Biomanufacturing
- 5c. Nanotechnology for Agricultural and Food Systems
- 5d. Engineering for Precision Crop and Water Management

5a. Engineering for Agricultural Production and Processing

Table 24: Engineering for Agricultural Production and Processing Key Information

Title	Description
Program Code:	A1521
Program Code Name:	Engineering for Agricultural Production and Processing
Assistance Listing #	10.310
Project Type(s):	Research Projects or Integrated (research, and education and/or extension) Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.

Title	Description
Letter of Intent Deadline	a. Required <u>only</u> for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 2December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1521@usda.gov

Program Area Priority:

This program area priority focuses on engineered devices, technologies, and tools to improve agriculturally relevant plant, animal, and forestry systems. This excludes precision crop and water management systems, which are included in A1551. See “additional information,” part (g.) below. Applications must have a significant engineering component. Engineering is defined as *the application of scientific and mathematical principles to practical ends such as the design, manufacture, and operation of efficient and sustainable structures, technologies, machines, processes, and systems*. Some broad emphasis areas include, but are not limited to:

- a. Develop systems or technology for sensing and mechanization of labor-intensive tasks in crop and animal production (including aquaculture, aquaponics, and hydroponics).
- b. Enable engineering, sensing, computing, modeling, automation, and information systems for: forestry, plant and animal production and protection (including aquaculture, aquaponics, and hydroponics); and post-harvest inspection, handling, processing, packaging, and distribution.
- c. Technologies for nutrient recovery from manure.
- d. Topics of water, nutrient, pest, or disease management not covered by program A1551.
- e. Explore the use or development of advanced computational or engineering methods and technologies for navigation, mining, management, visualization, understanding, and communication of agricultural systems data in production and processing systems.
- f. Develop and test risk assessment and mitigation measures applicable to agriculture (in particular, reduce hazards to agricultural workers that can include assistive technologies).
- g. Within potential topics presented herein, methods of breaking down technological barriers to adoption in **integrated projects** are welcomed, as are strategies to address

needs for connectivity and cybersecurity in agricultural engineering projects, including open-source and accessibility of data and tools developed for agricultural systems.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects that expand access of crop and animal production to broader markets and agricultural systems are welcome.
- d. Applications that deal with improving food quality, safety, or nutritional value should be submitted to the most relevant Food Safety, Nutrition, and Health program area priority described in this RFA.
- e. All applications dealing with nano-scale science and technology should be submitted to the Nanotechnology for Agricultural and Food Systems program area priority (A1511).
- f. Research-only project applications that focus on improvement of water use under irrigation and that focus on non-traditional water sources used for irrigation (wastewater, etc.) should consider applying to Water Quantity and Quality program area priority (A1411).
- g. Engineering project applications that focus on precision crop and orchard management technologies for targeted application of crop protection materials, and systems to improve efficiency of irrigation and nutrient use should consider applying for program area priority (A1551).

5b. Biorefining and Biomanufacturing

Table 25: Biorefining and Biomanufacturing Key Information

Title	Description
Program Code:	A1531
Program Code Name:	Biorefining and Biomanufacturing
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 9December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins

Title	Description
Grant Duration:	a. 36-48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1531@usda.gov

Program Area Priority:

A sustainable biorefinery is a system that integrates biomass conversion, processes, and equipment to manufacture biofuels, chemicals, and bioproducts. This program area priority focuses on converting, treating, processing, refining, or manufacturing products to utilize plant, animal, and woody biomass. Applications must have a significant engineering component. In the context of this program area priority, engineering is defined as *the application of engineering principles and tools to biological systems or materials to create usable, tangible, economically viable product and manufacturing technology or practices*. Some broad research areas include, but are not limited to:

- a. Improve or expand production efficiency and capacity of biomass, biofuels, intermediate chemical platforms, and bio-based products.
- b. Improve or expand utilization of waste and byproducts generated in agricultural and food systems. Post-consumer plastic is a suitable carbon source for biological conversion.
- c. Engineer and manufacture new or improved products and processes that utilize materials from agriculture or micro-organisms (including, but not limited to, bioplastics and biocomposites).

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Biorefining and Biomanufacturing program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in Collaborative” and their application title should begin as “TRIPARTITE: [full title]”. **Note: Research applications submitted for U.S.-Ireland Tripartite Collaborative grants are ineligible for U.S. funding above the research program maximum of \$650,000.**
- d. Applications that consider the whole bioeconomy and value chain for a product should be submitted to Bioeconomy and Biobased Products (A1414). A1414 only accepts

integrated projects that include an education and/or extension component in addition to research.

- e. Applications that deal with improving food quality, safety, or nutritional value should be submitted to the most relevant Food Safety, Nutrition, and Health program area priority in this RFA.
- f. Applications dealing with nano-scale science and technology should be submitted to the Nanotechnology for Agricultural and Food Systems program area priority (A1511).
- g. Technologies that address nutrient recovery from manure should be submitted to A1521 Engineering for Agricultural Production and Processing.
- h. Aquaculture and algal production systems for the purpose of producing food, feed or nutrients, with a significant engineering component, may fit into A1521. Algal production to generate feedstocks for bioproducts, biofuels, and intermediate chemical platforms may be submitted to this program priority (A1531).
- i. Applications dealing with improvements to plants for production of bioproducts, including ‘-omics’ approaches should be submitted to the Plant Health and Production and Plant Products program area of this RFA. Microbial approaches can be submitted to this program area priority (A1531).

5c. Nanotechnology for Agricultural and Food Systems

Table 26: Nanotechnology for Agricultural and Food Systems Key Information

Title	Description
Program Code:	A1511
Program Code Name:	Nanotechnology for Agricultural and Food Systems
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 30December 11, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants

Title	Description
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants ; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1511@usda.gov

Program Area Priority:

Nanoscale science, engineering, and technology embrace opportunities in a wide range of critical challenges facing agriculture and food systems. The program encourages applications with innovative ideas, connected to hypothesis-based fundamental sciences, to develop nanotechnology-enabled solutions for sustainable food and nutrition security, and circular bioeconomy through the following broad areas: improved productivity and product quality; improved nutritional value and efficiency of food and feed products; more effective therapies that significantly improve animal health and wellness; enhanced food safety and biosecurity; increased protection for natural resources, and agricultural ecosystems; and improved sustainability, health, safety and well-being. This program area priority includes, but is not limited to:

- a. Novel uses and high value-added products of nano-biomaterials from agricultural and forest origins for food and non-food applications.
- b. Precision delivery and efficacy of nanoscale agrochemicals and active agents in plants to improve crop production, and product quality.
- c. Nanotechnology-enabled smart sensors for accurate, reliable and cost-effective early and rapid detection of pathogens, allergens, insects, diseases, chemical toxins, and contaminants in foods, plant and animal production systems, water, soil and the agricultural production environment. Nanotechnology-enabled portable, field-deployable and affordable sensors and devices for real-time detection, screening and monitoring of agriculturally-important targets requiring no additional laboratory preparation and analyses are encouraged
- d. Environmental, health and safety assessments of engineered nanoparticles **used in food and agricultural systems**, including detection and quantification of engineered nanoparticles, characterization of hazards, exposure levels, transport and fate of the engineered nanoparticles or nanomaterials in foods, crops, soils (and soil biota), water, and livestock (including aquaculture species), or to agricultural and allied industry workers. This may also include animal feed formulations and processes that utilize novel nanomaterials or develop new nanostructured materials or nanoparticles that are bio-persistent in digestive pathways.
- e. Nanotechnology-enabled tools for studying physiological responses or biomarkers for optimal crop or animal productivity and health.
- f. Discovery and characterization of nanoscale phenomena, processes, and structures relevant and important to agriculture and food.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Nanotechnology is defined by the [National Nanotechnology Initiative](#) (NNI) as “...the understanding and control of matter at the nanoscale dimensions between approximately 1 and 100 nanometers, where unique phenomena enable applications.” Applications should contain a clear statement about how the work proposed uses nanotechnology as defined by the NNI.
- d. A proposed study working at the scale of atoms or molecules does not necessarily meet the criteria of nanotechnology. Rather, the work proposed should focus on one or more of the unique phenomena, properties, or processes that occur at the nanoscale. Functions important to the proposed technology and applications should be dependent on its dimensions. Materials used and/or proposed to be developed must be either synthetic or biological materials that are engineered to provide novel properties or modified functions due to their controlled assembly or synthesis at the nanoscale.
- e. This program area priority welcomes novel nanotechnology in higher order assembled systems that include the exploitation of bio-nano interfaces, hybrid bio-inorganic systems, systems biology, synthetic biology, and additive manufacturing technology.
- f. Applications involving the environmental, health and safety assessments of engineered nanoparticles used in food and agricultural systems are encouraged to consult Federal regulatory agencies for an evaluation of importance and relevance of the engineered nanoparticles in question for intended applications. An assessment letter from a regulatory office which documents the extent and nature of such a consultation is useful to aid the proposal reviews.
- g. Applications based on nanotechnology-enabled innovations that address impacts of weather events on agriculture and food systems are welcome. These applications should map to the National Nanotechnology Challenge Nano4Earth. Some common themes include: battery technology, catalysts leveraging new understandings of nanoscale materials and phenomena; and coatings and other material innovations are likely to increase the overall efficiency of nearly any industrial process.
- h. Cost-effective distributed sensing networks, in which the sensors are enabled by nanotechnology, for intelligent and precise application of agricultural inputs (e.g., fertilizer, water, and chemicals) with the Internet of Agricultural Things (i.e., cyber-physical systems) and the science and tools of big data.
- i. Applications, especially those with potential near-term commercial impact, are welcome to include socioeconomic analyses of anticipated benefits to agriculture, food, and society and to identify the factors that may contribute to, or hinder, adoption.
- j. Applications dealing with public deliberation, social acceptability, and risk perception, management, and communication about nanotechnology and nano-based food or non-food products by agricultural stakeholders (including consumers), using appropriate social science tools should be submitted to Social Implications of Food and Agricultural Technologies program area priority (A1642).

5d. Engineering for Precision Crop and Water Management

Table 27: Engineering for Precision Crop and Water Management Key Information

Title	Description
Program Code:	A1551
Program Code Name:	Engineering for Precision Crop and Water Management
Assistance Listing #	10.310
Project Type(s):	Research Projects or Integrated (research, and education and/or extension) Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 9 December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-48 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants ; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1551@usda.gov

Program Area Priority:

This program area priority focuses on engineered devices, technologies, sensors, and tools to provide precision crop and orchard management, technologies for targeted application of crop protection materials, and improve efficiency of irrigation and nutrient use in agricultural systems. Applications must have a significant engineering component. Engineering is defined as *the application of scientific and mathematical principles to practical ends such as the design, manufacture, and operation of efficient and sustainable structures, technologies, sensors, machines, processes, and systems*. Some broad emphasis areas include, but are not limited to:

- Develop systems or technology for sensing, automation and mechanization of labor-intensive tasks in precision crop and water management.

- b. Develop and test the implementation of tools and precision technologies for monitoring, measurement, and detection in agricultural systems that may incorporate both drone and uncrewed ground vehicle (UGV) technologies.
- c. Explore the use or development of advanced computational or engineering methods, simulation models, and technologies for navigation, mining, management, visualization, understanding, and communication of agricultural systems data pertaining to precision water and crop management.
- d. Develop and improve precision engineering technologies that apply nutrients; prevent disease spread/pathogens and invasive weeds in agricultural systems.
- e. Within potential topics presented herein, methods of breaking down technological barriers to adoption in **integrated projects** are welcomed.
- f. For **integrated projects** that provide engineering solutions for conservation of energy and water resources in irrigation, emphasis areas (that can be combined) include, but are not limited to:
 - 1) Packaged irrigation management solutions using smart sensing and model-based decision support systems that can be readily adopted by farmers on both small and large scales;
 - 2) Variable-rate and deficit irrigation management solutions that provide adaptive prescriptions and consider limitations of the water delivery system;
 - 3) Innovative sensing and control schemes for furrow irrigation;
 - 4) Combined water and nutrient management systems;
 - 5) Micro-irrigation designs and management practices that can be appropriately scaled to site-specific characteristics and end-user capabilities; and/or
 - 6) Decision support tools into easy-to-use irrigation mobile apps that integrate site-specific weather, sensor, soil, and/or model-based data for decision-making.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects that expand access of crop and animal production to broader markets and agricultural systems are welcome.
- d. Applications that deal with improving food quality, safety, or nutritional value should be submitted to the most relevant Food Safety, Nutrition, and Health program area priority described in this RFA.
- e. All applications dealing with nano-scale science and technology should be submitted to the Nanotechnology for Agricultural and Food Systems program area priority (A1511).
- f. Project applications that involve engineering, sensing, computing, modeling, automation, processing, and information systems for plant and animal systems exclusive of precision crop and water management should be submitted to Engineering for Agricultural Production and Processing (A1521).
- g. Research-only project applications that focus on improvement of water use under irrigation and that focus on non-traditional water sources used for irrigation (wastewater, etc.) should consider applying to Water Quantity and Quality (A1411) in the Bioenergy, Natural Resources, and Environment program area.

6. Agriculture Economics and Rural Communities

Background

The Agriculture Economics and Rural Communities (AERC) program area supports rigorous economic and social science research that informs decision making, policy design, and implementation to enhance the sustainability of agricultural production systems and natural resources, promote rural economic development and prosperity, enhance quality of life, and alleviate poverty. Topical issues include but are not limited to: examining agricultural markets and international trade; social implications of food and agricultural technology; commodity policy, crop insurance, and policy design and impact; market structure and performance in the food system and value chain; rural economic development and well-being; food and nutrition security; consumer preferences, behavior and market development; and decision-making under uncertainty. The AERC program area supports social and behavioral science disciplines. Interdisciplinary efforts involving social, biophysical, and natural science disciplines are also invited.

Total Program Funds: Approximately \$30 million for each review cycle

Program Area Key Information applicable to ALL Agriculture Economics and Rural Communities Program Area Priorities:

- a. All applications must adhere to the requirements in [Part IV](#).
- b. Applications that include collaborations with international partners may also be submitted. The [AFRI International Partnerships webpage](#) contains additional information on international partnerships.
- c. Applications must include a section providing a justification for the system studied relevant to improving economic, social, and environmental sustainability of agriculture or rural communities.
- d. Applications that propose to develop, test, and/or apply decision-support aids or tools are welcome.
- e. This program area funds the study of entrepreneurship and business development, but it will not fund the development of new business start-ups or the research and development of new technologies and tools for specific businesses to use. [The NIFA Small Business Innovation Research \(SBIR\) program](#) will entertain applications for new technologies and business development.
- f. Applications with highly complex, large scale, transdisciplinary, and integrated research, education, and extension projects that incorporate foundational knowledge from this program area should be submitted to the [AFRI Sustainable Agricultural Systems program](#) (A9201) described in the [AFRI SAS RFA](#).
- g. An applicant may submit a Workshop Grant application anytime during the year. A Letter of Intent (LOI) is required for Workshop Grant applications. The LOI must be submitted at least 195 days before the start of the workshop. The full Workshop Grant application must be submitted, at minimum, 150 days before the start of the workshop.

Program Area Priorities – Each application must address at least one of the five program area priorities listed below. Details about each of the AERC program areas are provided later in this section.

- 6a. Small and Medium-sized Farms

- 6b. Economics, Markets and Trade
- 6c. Social Implications of Food and Agricultural Technologies
- 6d. Rural Economic Development
- 6e. Environmental and Natural Resource Economics

6a. **Small and Medium-Sized Farms**

Table 28: Small and Medium-Sized Farms Key Information

Title	Description
Program Code:	A1601
Program Code Name:	Small and Medium-Sized Farms
Assistance Listing #	10.310
Project Type(s):	Research Projects or Integrated (research with education and/or extension) Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 9December 11, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1601@usda.gov

Program Area Priority:

This program area priority focuses on the development and/or adoption of new models to assist agricultural (farm, forest, or ranch) decision makers with strategies and technologies to enhance sustainability, economic efficiency, viability and competitiveness of small and medium-sized dairy, poultry, livestock, crop, forestry, aquaculture, and other operations. The scope of this program area priority includes, but is not limited to projects that:

- a. Develop effective strategies and tools through research, education, and extension or outreach programs to meet the needs of small and medium-sized farmers, ranchers, and forest landowners.
- b. Advance the production, profitability and post-harvest handling of specialty crops including high value-niche market crops, medicinal crops, aromatic crops, and crops grown for essential oils.
- c. Examine the feasibility of small to mid-scale processing for fresh fruits and vegetables, frozen fruits and vegetables, value added processing for institutional buyers, or small-scale meat processing. Such efforts could also include direct to consumer markets.
- d. Identify and develop effective physical or digital tools or equipment that improve production, labor management, and profitability for small and medium-sized operations.
- e. Develop strategies to improve health and quality of life for small and medium-sized farmers and farm workers.
- f. Create outreach efforts to address small and medium-sized farm viability for young, veteran, or next generation farmers and ranchers. Such efforts should address issues such as farm succession, transition, and management to ensure that small and medium-sized farmers have access to resources to operate their farms sustainably and profitably.
- g. Research and develop effective strategies to improve efficient local and regional food systems.
- h. Research and develop effective strategies and tools to assist small and medium-sized farmers in making decisions about livestock (including aquaculture) or crop production contracts.
- i. Evaluate and implement strategies to enhance access to new markets for small and medium-sized farms.
- j. Examine production diversification and sustainability; barriers to markets and effects of social media; farmer savings behavior, financial decision-making and retirement; farm family resource allocation; and intrafamily succession.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Applicants must address the Program Area Priority with a Research Project or an Integrated Project that integrates research with extension and/or education (NOTE: Refer to [Part II § C](#) and [Part III § A](#) for Integrated Project definitions and eligibility information).
- d. Proposals with a focus on farmer stress, mental health, and suicide prevention should consider applying to Farm and Ranch Stress Assistance Network program ([Farm and Ranch Stress Assistance Network | NIFA \(usda.gov\)](#)).

6b. Economics, Markets and Trade

Table 29: Economics, Markets and Trade Key Information

Title	Description
Program Code:	A1641
Program Code Name:	Economics, Markets and Trade
Assistance Listing #	10.310

Title	Description
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 2 December 4, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants ; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1641@usda.gov

Program Area Priority:

This program area priority supports research on development of theories, methods and applications of agricultural economics. It encourages applications in the following broad areas: agricultural market structure and performance; competitiveness in international trade and domestic markets; agricultural production and resource use; consumer behavior; farm labor and immigration and policy; agricultural policy design and impacts; technology development and adoption; and science and innovation policy.

The program area priority scope includes, but is not limited to:

- Examine the economics of agriculture and food policy, including changes in trade, immigration, crop insurance, price stabilization and income support.
- Factors addressing farm labor shortages, contributing to development and adoption of labor saving or substituting technology; implications for farmer and farm labor economic welfare. Address concerns of farmers and ranchers regarding technology adoption and decision-making challenges.
- Examine factors contributing to pest resistance in pesticide use (and other pest management approaches) and the adoption of pest resistance mitigation strategies.

- d. Economic and behavioral aspects of consumption or savings behavior, food retail, consumer Financial decision making; agricultural production and technology adoption, and the design and implementation of policy intended to affect those behaviors.
- e. Examine the causes and consequences of food and nutrition insecurity.
- f. Examine the economic implications of big data on agricultural markets, industry structure, and agricultural and food value chains, how big data informs decision making by agricultural producers, policy makers, and consumers and enhances market efficiency and performance. Development of innovative empirical methods for addressing economic analysis using big data, machine learning, and natural language processing techniques.
- g. Examine the economics of the bio-economy. Assess the economic impact of policies and regulations designed to advance the bioeconomy. Address issues of acceptance and perception by consumers and producers. Examine the economics and performance of the supply chains that emerge to implement new technologies, how they are affected by various policies, and their competitiveness and trade implications.
- h. Examine the impact of disasters on food supply chain resilience, agricultural production, and consumer behavior.

Program Area Priority Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects addressing topics related to environmental and natural resource economics should be submitted to Environmental and Natural Resource Economics (A1651).

6c. Social Implications of Food and Agricultural Technologies

Table 30: Social Implications of Food and Agricultural Technologies Key Information

Title	Description
Program Code:	A1642
Program Code Name:	Social Implications of Food and Agricultural Technologies
Assistance Listing #	10.310
Project Type(s):	Research Projects or Integrated (research with education and /or extension) Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 30 December 11, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins

Title	Description
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1642@usda.gov

Program Area Priority:

Examining the social implications of technology is a form of technology assessment that anticipates the unforeseen and unintended consequences of technological innovation, including cultural, health, welfare, and ethical impacts. A critical lesson learned from past experiences with the application of scientific discoveries and technological innovations to agricultural production is that public trust in science begins with and requires ongoing transparency and open deliberation. Technologies such as gene drives and genome editing, big data, nanotechnology, and autonomous technologies have tremendous capability in shaping the future of agriculture, requiring the scientific community to develop effective means of communicating and engaging with the public. The [National Academies of Sciences, Engineering, and Medicine](#) recommended that for these innovations to become applicable to agriculture, there should be a dialogue between scientists, legal scholars, bioethicists, social scientists, the public, and other stakeholders to assess the merits and risks of new technologies and scientific discoveries, and pursue open and participatory approaches to meaningfully engage with potentially impacted communities about these issues.

Research project applications must address the following:

- Assess the social, ethical, cultural, legal, and other potential impacts that a broad range of emerging and disruptive technologies, including breakthrough scientific discoveries, may pose for society, agricultural markets, agricultural communities and rural prosperity, food manufacturing industry, consumer preferences, and other domains and consider models for ameliorating challenge to the technologies; and
- Involve a range of individuals including scientists, legal scholars, bioethicists, social scientists, and researchers from the humanities, the public, and other stakeholders to assess the technology's merits and risks and/or examine issues and modes of communication that can result in open and participatory approaches to effectively involve the public and engage with communities potentially impacted by the technology in deliberations over these issues throughout the lifespan of the project.

Technologies and scientific advancements of interest include (order does not indicate importance):

- Development and implementation of technologies with regard to agriculture and forestry practices;

- b. Application of gene editing and gene drives in agricultural systems;
- c. Application of nanotechnology in agriculture and food systems;
- d. Analysis of big data, and tools and approaches for collecting big data from agricultural producers; privacy and security implications for the collection, storage, availability and sharing of big data on individuals, technologies, businesses, and/or communities;
- e. Implications of artificial intelligence, machine learning and predictive decision making to society and agriculture and food systems; and
- f. Implementation of autonomous technologies, the internet of things, artificial intelligence, and systems within the agricultural production, food manufacturing, and supply chains.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Workshop proposals are welcome under this program area priority.
- d. Projects must include trans/multi/interdisciplinary components and/or disciplinary specialists.
- e. Projects are welcome to develop new models of collaboration and idea generation to engage in active transdisciplinary exchange and efforts.
- f. Applications on the adoption and diffusion of agricultural technologies should be submitted to the Economics, Markets and Trade (A1641), Engineering for Agricultural Production and Processing (A1521 in Agriculture Systems and Technology), Engineering for Precision Crop and Water Management (A1551 in Agriculture Systems and Technology), or the Critical Agricultural Research and Extension (CARE, A1701 in Crosscutting Programs) program area priorities.

6d. Rural Economic Development

Table 31: Rural Economic Development Key Information

Title	Description
Program Code:	A1661
Program Code Name:	Rural Economic Development
Assistance Listing #	10.310
Project Type(s):	Research Projects or Integrated (research with education and/or extension) Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.

Title	Description
Application Deadline(s)	a. 2026: Thursday, October 30 December 11 , 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1661@usda.gov

Program Area Priority:

This program area priority supports rigorous theoretical and empirical efforts to create and examine innovative approaches for advancing economic opportunities for rural entrepreneurs and communities, with an aim to promote rural prosperity and well-being. The intent of the program area priority is to improve the understanding of the factors and conditions that enhance community-based economic opportunities for food, agricultural and rural businesses through tools and methods from the various social sciences, (i.e., sociology, demography, economics, geography, etc.).

Projects can be either integrated (to include Extension and/or education, along with research) or research only. Projects may evaluate the institutional, social, or economic factors affecting decision making and policy development to enhance the economic growth and well-being of rural communities.

This program area priority focuses on issues “beyond the farm gate” including entrepreneurs, small businesses, local-level employers and service providers and provide critical services and opportunities to rural communities.

The emphases of this program area priority include, but are not limited to:

- a. Examine and address the impacts of and response to a weather event on food and nutrition security; this includes but is not limited to the adaptations to production, processing, and distribution of a safe, nutritious food supply for institutional and retail markets and household accessibility.
- b. Explore place-making assets, opportunities for outdoor recreation economy, and impacts on rural livability, new resident attraction and retention, and community-based economic development and prosperity.
- c. Identify strategies for economic growth in regions of persistent extreme poverty that identify and address causes and solutions to public-health crises including physical and

mental health and persistent stress in farmers, farmworkers, entrepreneurs and their families.

- d. Examine the challenges, strategies, and impacts for expanding critical infrastructure in rural areas, not limited to broadband, physical and mental health services, educational opportunities, entrepreneurship and training and development.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Integrated project applications must include research and at least one other function (i.e., education, extension, or both).
- d. For projects that focus mainly on farms, see the Small and Medium-Sized Farms program area priority (A1601).

6e. Environmental and Natural Resource Economics

Table 32: Environmental and Natural Resource Economics Key Information

Title	Description
Program Code:	A1651
Program Code Name:	Environmental and Natural Resource Economics
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 16 December 11, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants

Title	Description
Program Area Priority Contact:	a. A1651@usda.gov

Program Area Priority:

This program area priority examines the interrelationship of natural resources and the environment with agriculture and rural communities. Research projects funded through this priority area will advance economic theories, methods, tools, analyses, and applications that contribute to understanding an ecological approach to agriculture (including forestry and aquaculture) to balance production and sustainable resource management. Research projects to advance efforts toward the development of standardized nonmarket valuation and benefits transfer methods will be welcomed in this solicitation.

Research funded through this priority area will inform policy efforts related to agriculture. The projects will expand existing datasets and advance innovative economic methods, models and econometric approaches.

Other research topics include, but are not limited to:

- a. Examine the relationship between agriculture, natural resource conservation, and the environment. Examine the economics of conservation and environmental policies and their impact on agriculture, ecosystem services, and rural communities.
- b. Development of metrics to assess changes in the value of ecosystem services resulting from the adoption of conservation management practices at various scales.
- c. Explore the economic efficiency impacts of alternative approaches for monitoring and enforcement of conservation compliance.
- d. Examine how changes in farm production and farm-related income related to weather affects farm households.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects that expand access of crop and animal production to broader markets and agricultural systems are welcome.

7. Crosscutting Programs

Background

Crosscutting programs address two or more of the following six priority areas:

- a. Plant health and production and plant products;
- b. Animal health and production and animal products;
- c. Food safety, nutrition, and health;
- d. Bioenergy, natural resources, and environment;
- e. Agriculture systems and technology; and
- f. Agriculture economics and rural communities.

Total program funds – Approximately **\$46** million for each review cycle

Program Area Key Information:

- a. For program area priorities soliciting Workshop Grant applications (i.e., A1181, A1402, and A1541 only), Workshop Grant applications may be submitted any time throughout the year. A Letter of Intent is required for a Workshop Grant application, and it must be submitted a minimum of 195 days before the workshop begins. The full Workshop Grant application must be submitted a minimum of 150 days before the workshop begins.

Program Area Priorities – Each application must address at least one of the seven program area priorities listed below. Details about each of the Crosscutting program area priorities are provided later in this section.

- 7a. Agricultural Microbiomes in Plant Systems and Natural Resources
- 7b. Critical Agricultural Research and Extension (CARE)
- 7c. Data Science for Food and Agriculture Systems (DSFAS)
- 7d. Agricultural Biosecurity
- 7e. Rapid Response to Emerging and Re-emerging Pest and Disease Events Across Food and Agricultural Systems
- 7f. AFRI Commodity Board Co-funding Topics
- 7g. Rapid Response to Weather Events Across Food and Agricultural Systems

7a. Agricultural Microbiomes in Plant Systems and Natural Resources**Table 33: Agricultural Microbiomes in Plant Systems and Natural Resources Key Information**

Title	Description
Program Code:	A1402
Program Code Name:	Agricultural Microbiomes in Plant Systems and Natural Resources
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> b. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, October 30 December 11, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. Up to 60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants

Title	Description
Maximum Award Amount(s):	a. Including indirect costs: \$850,000 for Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants b. Including indirect costs: \$300,000 for all Seed Grants c. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	a. A1402@usda.gov

Program Area Priority:

Microbiomes have profound impacts on agricultural production systems as well as human, animal, plant, and environmental health. Microbiome research is critical for improving agricultural productivity, sustainability of agricultural ecosystems, and the safety of the food supply. Understanding the multipartite interactions among the host, environment, and the microbiome is critical for improving and sustaining agricultural productivity and quality in plant systems, associated natural resources, human nutrition and health. Plant productivity includes biotic factors affecting plant health such as either pests, diseases or vectors as well as abiotic factors. Research supported by this program area priority will help fill major knowledge gaps in characterizing agricultural microbiomes and microbiome functions across agricultural production systems, and natural resources through crosscutting projects. Projects focusing on microbiomes associated with livestock, aquacultured animal species, or any animals other than vectors (e.g., insect or nematode) of plant-associated microbes are beyond the scope of this program area priority. Also, beyond the scope of this program are studies that do not have a strong focus on the community of microorganisms associated with the plant, such as studies of interactions between a single microbial species and its plant host. This research will capitalize on the convergence of low-cost sequencing and “omics” technologies, manipulation of microbiome composition and of phage and microbial genes (transposons, integrons), genome editing tools, and other novel tools for studying microbiota’s structure and function. Development of tools to expand the use of gene editing in agriculturally relevant microbes is welcome.

Applications must address one of the following:

- Characterize the molecular mechanisms and signal exchange involved in microbiome assembly and interactions across various environments or physiological states including stress conditions, diseases, or different growth stages.
- Functionally characterize agricultural microbiomes and their microbiome metabolites in conferring specific host under various abiotic stresses (such as drought, heat, flooding, soil salinity, and pH extremes), biotic stresses (such as pathogen resistance, pest suppression, and invasive species management), optimizing nutrient cycling, and elucidating host-microbiome interactions to enhance resilience, sustainability, and productivity in agricultural systems.
- Define the microbiological or genetic elements that shape the functional diversity, virulence, and resistance to sanitation and/or antimicrobial treatments of foodborne pathogens associated with the aim of developing effective mitigation strategies.
- Investigate how plant exudates impact the composition and functionality of soil and plant microbiomes, and to assess how changes in these microbial communities affect plant

health and growth.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on microbiomes associated with livestock or aquacultured food-fish should be submitted to the most relevant program area priority within the Animal Health and Production and Animal Products program area in this RFA.
- d. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Agricultural Microbiomes in Plant Systems and Natural Resources program area priority. For more information including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”.

7b. Critical Agricultural Research and Extension (CARE)

Table 34: Critical Agricultural Research and Extension (CARE) Key Information

Title	Description
Program Code:	A1701
Program Code Name:	Critical Agricultural Research and Extension (CARE)
Assistance Listing #	10.310
Project Type(s):	Integrated (research and extension) Projects <u>only</u>
Grant Type(s):	a. Standard and FASE (Strengthening Standard and New Investigator) Grants <u>only</u> b. See Part II § C.2 for requirements specific to FASE Grant applications.
Letter of Intent Deadline	Not applicable
Application Deadline(s)	a. 2026: Thursday, November 13 December 18 , 2025 (5:00 p.m. Eastern Time)
Grant Duration:	12-36 months
Maximum Award Amount(s):	Including indirect costs: \$300,000
Program Area Priority Contact:	a. A1701@usda.gov

Program Area Priority:

This program area addresses critical challenges and opportunities that research and extension, together, can address to improve our nation’s agricultural and food systems. Despite prior investments in basic and applied research, critical problems continue to impede the efficient production of agriculturally important plants and animals, for producing safe and nutritious foods. These problems may be local, regional, or national, and may call for work focused on one or more scientific disciplines. However, all need immediate attention to meet producer and consumer needs. Finding and implementing solutions to these critical problems require

partnership and close coordination among researchers, extension experts, and practitioners in food and agricultural enterprises. Funded projects are expected to produce results that lead to practices, tools, and technologies that are rapidly adopted by end-users.

This program area priority is designed to support integrated activities based on rigorous research combined with effective extension and involvement of stakeholders to develop and rapidly apply new knowledge or practices resulting in improved well-being of the people, communities, plants, and animals involved in, and affected by, agriculture and food-production systems.

The program area priority seeks applications that:

- a. Focus on a clear, time-sensitive, stakeholder-identified need or problem for agriculture.
- b. Explain the magnitude and rationale of this problem. For example, unexpected losses of income or employment, acres affected, estimated or actual economic costs to specified agricultural or food system, private industry, landowners, rural communities, risk of disease or illnesses.
- c. Describe a meaningful approach for blending research and extension expertise and other outreach and implementation approaches throughout the project to address principal objectives.
- d. Provide evidence that the project is aligned to priorities listed above.
- e. State expected solutions or improvements and how these will be assessed and measured.
- f. Address the potential cost of a proposed solution and describe how it can be scaled to be sustainable in the short-term and long-term.
- g. Explain how the project will strengthen agricultural and food-production systems and how results will be adopted or applied at a local, regional, or national level.

Each application must address two or more of the six priorities for AFRI:

- a. Plant health and Production and Plant Products;
- b. Animal Health and Production and Animal Products;
- c. Food Safety, Nutrition, and Health;
- d. Bioenergy, Natural Resources, and Environment;
- e. Agriculture Systems and Technology; and
- f. Agriculture Economics and Rural Communities.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on species and commodities that are important to small- or medium-sized farms or ranches are welcome.
- d. All applications must adhere to the requirements in [Part IV](#). If submitting an integrated Research and Extension application, please refer to specific content requirements for integrated applications. Applications that do not adhere to these requirements will not be reviewed.
- e. A justification of how the project addresses a critical stakeholder need must be included in the Project Narrative of the full application.
- f. Strict focus on short- to medium-term application of results is a requirement of this program area priority.

- g. Applications must demonstrate that outcomes of the project period can be implemented within 2 years after the grant ends.
- h. In the full application, a letter of support must be included from the stakeholder(s) which details their role and their degree of interest in implementing projected outcomes.

7c. **Data Science for Food and Agricultural Systems (DSFAS)**

Table 35: Data Science for Food and Agricultural Systems (DSFAS) Key Information

Title	Description
Program Code:	A1541
Program Code Name:	Data Science for Food and Agricultural Systems (DSFAS)
Assistance Listing #	10.310
Project Type(s):	Research Projects or Integrated (research, education and /or extension) Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> for regular DSFAS Projects b. Standard and FASE (Strengthening Standard) Grants <u>only</u> for all Coordinated Innovation Networks Projects c. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s)	a. 2026: Thursday, November 13 December 18, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for regular DSFAS Projects; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$1,000,000 for Coordinated Innovation Networks Projects; \$1,150,000 with specific partnerships (see Part II § E) c. Including indirect costs: \$1,000,000 for Coordinated Innovation Networks Food Supply Modeling Projects; \$1,150,000 with specific partnerships (see Part II § E) d. Including indirect costs: \$300,000 for all Seed Grants e. \$50,000 for Workshop and Equipment Grants
Program Area Priority Contact:	NIFA-DSFAS@usda.gov

Program Area Priority:

The A1541 DSFAS program area priority focuses on the intersections of data science or artificial intelligence (AI) with agriculture. The goal is to enable systems and communities to effectively utilize data, improve resource management, and integrate new technologies, automation, mechanization, and approaches to advance U.S. food and agricultural enterprises. The program welcomes university-based research as well as public and private partnerships.

Applications for research and integrated research projects must address at least one of the six AFRI priority areas [i.e., Agriculture Systems and Technology (AST); Agriculture Economics and Rural Communities (AERC), Bioenergy, Natural Resources, and Environment (BNRE); Food Safety, Nutrition, and Health (FSNH); Plant Health and Production and Plant Products (PHPP); Animal Health and Production and Animal Products (AHPAP)]. Projects that focus on the intersections of, or interactions among, A1541 DSFAS priorities and topics are welcome.

Within the project narrative, all applications must include;

- A sustainability plan explaining how project products and services will be accessible during and after the funding period.
- Any development of data resources must [use FAIR \(Findable, Accessible, Interoperable, and Reusable\) standards](#); long-term access and curation must be described in the sustainability plan. We also welcome use of the [CARE \(Collective Benefit, Authority to Control, Responsibility, Ethics\) data standards](#).

Data Science for Food and Agriculture applications must fall under one of the following types:

- a. Regular **DSFAS** applications with proposed budget requests not exceeding **\$650,000 total per project** (including indirect costs) for project periods of three to five years.
 - The title of the **DSFAS** project applications must begin with “**DSFAS:** [full title...]”.
- b. **DSFAS Coordinated Innovation Networks (CIN)** research or integrated applications with proposed budget requests not exceeding **\$1,000,000 total per project** (including indirect costs) for project periods of three to five years.

All CIN projects must address the following:

1. Synergy: There should be a demonstrable benefit to the existence of a multidisciplinary, multi-sector, or multifunctional CIN that would not otherwise be possible by the participating entities and individuals operating independently.
2. Contribution: Each participating individual or entity should have a unique, meaningful, and active contribution to the network that is critical to the network’s functioning, performance, and success in addressing bottlenecks in critical areas.
3. Continuity: There should be a sustainability plan for network persistence beyond the duration of initial grant support (e.g., identification of additional funding sources and/or more formal organizational arrangements).
4. Management: There should be a plan for coordination and oversight including, but not limited to, communication, leadership, advisory boards, milestones, and

evolution over time (e.g., new objectives or new participants).

- **DSFAS Coordinated Innovation Networks (CIN)** applications must meet the criteria in the DSFAS research priorities section and the additional CIN criteria above.
 - Applications should start their titles as “**DSFAS-CIN:** [full title...]”.
- c. **DSFAS Coordinated Innovation Networks Food Supply Modeling (CINFM)** applications in the special focus area of food supply chain modeling with proposed budget requests not exceeding **\$1,000,000 total per project** (including indirect costs) for periods of three to five years:
- Creative, novel projects that meet the overall goals of advancing modeling on examining transitions to robust, resilient, and cooperative food supply networks are welcome.
 - Applications should start their titles as “**DSFAS-CIN-FM:** [full title...]”.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed. Unless otherwise stated, grants are not renewable.
- b. For additional resources on DSFAS including frequently asked questions, see the [DSFAS webpage and DSFAS FAQs](#).
- c. The most competitive proposals will be equally well-grounded in (a) agricultural or food systems **and** in (b) data science or AI, clearly communicating the relevance and novelty of the proposed research in both (a) and (b).
- d. Projects that include the development of tools and platforms are welcome to build upon existing tools and platforms including, but not limited to, R/Python and the national cyberinfrastructure and data entities or catalogs (e.g., ACCESS databases, Science Gateways, [National Agricultural Library](#)).
- e. Proposals that include the development of tools and platforms should include details of software development practices such as testing and validation plans, and plans for governance, development and support of user and developer communities.
- f. Innovative and effective methods for participation of stakeholders in tools and platform development priority-setting and testing are strongly recommended.
- g. We encourage the use of the [CARE data standards](#) (collective benefit, authority to control, responsibility, ethics) as well as FAIR Principles (findable, accessible, interoperable, and reusable data that reduces barriers to collaboration, innovation, and transparency) in alignment with USDA’s Data Strategy.
- h. We encourage the use of data from federal statistical agencies accessible through the [Standard Application Process](#).
- i. Coordinated Innovation Networks (CINs) with multidisciplinary, multi-sector, or multifunctional benefits and applications are encouraged. Proposed CINs should include a plan for coordination and oversight including, but not limited to, communication, leadership, advisory boards, milestones, and evolution over time.
- j. NIFA is partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the Data Science for Food and Agricultural Systems (DSFAS) program area priority for regular projects. For more information including FAQs about this, visit the [NIFA, Ireland, and](#)

[Northern Ireland partnership page](#). Applicants submitting to this partnership must select “other” in the AFRI Project Type form and type in “Collaborative” and their application title should begin as “TRIPARTITE: [full title]”. **Note: Regular DSFAS applications submitted for U.S.-Ireland Tripartite Collaborative grants are ineligible for U.S. funding above the research program maximum of \$650,000; DSFAS-CIN and DSFAS-CIN-CM/FM projects are not eligible to apply under the tripartite opportunity.**

7d. Agricultural Biosecurity

Table 36: Agricultural Biosecurity Key Information

Title	Description
Program Code:	A1181
Program Code Name:	Agricultural Biosecurity
Assistance Listing #	10.310
Project Type(s):	Research, Extension, and Integrated Projects <u>only</u>
Grant Type(s):	a. Standard, Workshop, and FASE (Strengthening Standard, New Investigator, Strengthening Workshop, Seed, Equipment, and Sabbatical) Grants <u>only</u> for Agricultural Biosecurity Projects b. Standard and FASE (Strengthening Standard) Grants only for Agricultural Biosecurity Coordination Network Projects c. See Part II § C.2 for requirements specific to workshop and FASE Grant applications.
Letter of Intent Deadline:	a. Required only for Workshop Grant applications. The LOI must be submitted a minimum of 195 days before the workshop begins. b. LOIs must follow the instructions in Part IV, A and be emailed to the contact below.
Application Deadline(s):	a. 2026: Thursday, November 6December 18, 2025 (5:00 p.m. Eastern Time) b. Workshop Grants: submitted after LOI decision response and a minimum of 150 days before the workshop begins
Grant Duration:	a. 36-60 months for Standard Grants, Strengthening Standard Grants, Equipment and New Investigator Standard Grants b. Up to 24 months for all Seed Grants c. Up to 12 months for Sabbatical Grants d. Up to 60 months for Workshop Grants
Maximum Award Amount(s):	a. Including indirect costs: \$650,000 for single-function Agricultural Biosecurity projects; \$800,000 with specific partnerships (see Part II § E) b. Including indirect costs: \$1,000,000 for integrated Agricultural Biosecurity projects; \$1,150,000 with specific partnerships (see Part II § E) c. Including indirect costs: \$1,000,000 for Agricultural Biosecurity Coordination Network Projects d. Including indirect costs: \$300,000 for all Seed Grants e. \$50,000 for Workshop and Equipment Grants

Title	Description
Program Area Priority Contact:	a. A1181@usda.gov

Program Area Priority:

This program area priority focuses on increasing our national capacity to prevent, rapidly detect, and respond to biological threats to the U.S. agriculture and food supply. Supported activities will be aimed at increasing agricultural biosecurity at the regional and national levels, and across the public and private sectors. Addressing the vulnerabilities of our nation’s food and agricultural system requires a concerted effort, sustained investment, and a coordinated strategy that protects the U.S. food and agriculture system against threats from pests, diseases, contaminants, and disasters.

Within its project narrative, each application must include a sustainability plan explaining how tools or systems developed within the project will be accessible during and after the funding period. Detection and diagnostic development projects should include validation plans as well as transition plans to either commercial partners or national laboratory networks (i.e., National Animal Health Laboratory Network, National Plant Diagnostic Network). Projects that include development of software tools and platforms should include details of software development practices such as testing validation plans, and plans for governance, development and support of user and developer communities. Innovative and effective methods for participation of stakeholders in tools and platform development priority-setting and testing are welcome. Any development of data resources must use FAIR standards; long term access and curation must be described in the sustainability plan. We also welcome use of the CARE data standards.

Applications to the **Agricultural Biosecurity** program area priority must fall under one of the following two types:

- 1) **Agricultural Biosecurity.** Projects must address one or more of the following in transboundary, emerging, or re-emerging pests and diseases associated with animal production systems and/or transboundary, emerging, re-emerging, or invasive diseases, insects and weeds associated with plant production systems (order does not indicate importance):
 - a. Preparedness: biosecurity planning, organizing, training, exercising, and evaluating with the goal of ensuring coordination during an incident;
 - b. Prevention of introduction into the U.S. and/or its associated territories or transmission between farms, plots, or individual herds or animals;
 - c. Detection, diagnostics, surveillance, and/or forecasting. Non-traditional detection methodologies such as syndromic surveillance, predictive analysis of satellite imagery, etc. also will be considered;
 - d. Mitigation of the impact of pests and diseases (e.g. reduce the severity or seriousness, change in transmission dynamics); or
 - e. Rapid response to, and recovery from pests and diseases.
- 2) **Agricultural Biosecurity Coordination Network (ABCN)** applications for project periods of three to five years.
 - a. The title of the **Agricultural Biosecurity Coordination Network** project application must begin with “ABCN: [full title...]”

- b. **ABCN** projects must include a workplan that addresses all the following:
 - i. Engagement and Integration: include in the workplan details on how the PD will engage with and integrate the following entities in their coordination efforts
 - (1) new and existing Agricultural Biosecurity projects, programs, and networks,
 - (a) within NIFA;
 - (b) within the broader federal, state, local, tribal, and territorial governments; and
 - (c) across the plant and animal biosecurity communities.
 - ii. Coordination: include in the workplan details on how the PD will coordinate an annual Agricultural Biosecurity Symposium and coordinate and facilitate a hybrid Project Directors meeting for A1181 Agricultural Biosecurity awardees in conjunction with the Symposium in coordination with NIFA program staff as well as formalized coordination activities for the broader agricultural biosecurity community (e.g., annual meeting, quarterly meetings, listserv, community of practice etc.).
 - iii. Communication: include in the workplan details on how the PD will facilitate effective communication among these different groups and establish common mechanisms for joint prioritization of common research agendas.
 - iv. Management and Sustainability: include a plan for coordination, oversight, and long-term sustainability (beyond the term of the grant) including, but not limited to, communication, leadership, advisory boards, milestones, and evolution over time (e.g., new objectives or new participants).

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- c. Projects focusing on specific pests and/or diseases will be restricted to transboundary, emerging, or re-emerging pests and diseases associated with animal production systems and/or transboundary, emerging, re-emerging, or invasive diseases, insects and weeds associated with plant production systems.
- d. Developing early-stage research technologies, practices, or strategies to reduce the impact of pests and diseases that pose a biosecurity concern is welcome. Activities associated with the commercialization of patented research are not suitable for this program. Consider applying to the [Small Business Innovation Research \(SBIR\) program](#) if your project is focused on development or commercialization of instrumentation.
- e. Proposals must include metrics to justify the project's importance to agricultural biosecurity and identify at least one significant impact that could result from the work being proposed.
- f. Collaboration with existing national biosecurity framework components including diagnostic and biological containment laboratories such as the National Plant Diagnostic Network (NPDN) and the National Animal Health Laboratory Network (NAHLN); the Extension Disaster Education Network (EDEN); regional IPM centers; IR-4 laboratories;

regulatory agencies; and industry (livestock (including aquaculture species), biopharmaceuticals, and crop protection) is highly recommended.

- g. Proposals that address common threats to agricultural biosecurity in both animal and plant systems are encouraged.
- h. International collaborations that enhance our ability to manage threats and reduce losses to U.S. agriculture are welcome.
- i. Inclusion of experiential learning opportunities for students on applied aspects of agricultural biosecurity as part of the proposed extension or research activities is welcome.
- j. All applications must meet all other requirements in [Part IV](#). If submitting an integrated application, please refer to the specific eligibility requirements (see [Part III § A](#)) and specific content requirements for integrated applications. Applications that do not follow these requirements will not be reviewed.
- k. For Integrated Projects including education, the educational component should not constitute more than one-third of the project budget.
- l. Applications for projects on foodborne pathogen/contaminant detection should be submitted to the Food Safety and Defense program area priority (A1332).

7e. Rapid Response to Emerging and Re-emerging Pest and Disease Events Across Food and Agricultural Systems

Table 37: Rapid Response to Emerging and Re-emerging Pest and Disease Events Across Food and Agricultural Systems Key Information

Title	Description
Program Code:	A1713
Program Code Name:	Rapid Response to Emerging and Re-emerging Pest and Disease Events Across Food and Agricultural Systems
CFDA Number	10.310
Project Type(s):	a. Research, Extension or Integrated (extension and research) Projects <u>only</u>
Grant Type(s):	a. Standard and FASE (Strengthening Standard) Grants <u>only</u> b. See Part II § C.2 for requirements specific to FASE Grant applications.
Letter of Intent Deadline:	a. Not applicable
Application Deadline(s)	a. 2026: Standard Grants and FASE (Strengthening Standard) Grants: Continuous – Within 180 days of effects associated with the emergence or re-emergence of pests and/or disease in animal, food, and/or plant production systems, and/or environmental health and productivity within the nation or a specific region, state, area, or industry. See program area priority description for additional information. Following submission, to ensure your application is processed in a timely manner, notify the program area contacts by sending an email to A1713@usda.gov
Grant Duration:	a. 12-24 months for Standard Grants and FASE (Strengthening Standard) Grants

Maximum Award Amount(s):	a. Including indirect costs: \$500,000 for Standard Grants and FASE (Strengthening Standard) Grants
Program Area Priority Contact:	a. A1713@usda.gov

Program Area Priority:

Emerging and re-emerging pests and infectious diseases are a persistent threat to animal health, plant health, pollinator health, and ultimately the viability of U.S. agricultural production systems. Increasing plant, animal, and pollinator disease outbreaks are a threat to food security for many populations, including rural communities that support U.S. agricultural production. In addition, agricultural supply chains can also be adversely impacted by these disease emergence events at the production, processing, distribution, and consumption stages.

Innovative applied research, extension, and integrated efforts are needed to alleviate the impacts of emerging and re-emerging pests and diseases across the food and agricultural system. These strategies should provide rapid knowledge related to the origin of the pest/disease emergence, characteristics of the pest, disease, or strain, and provide information that assists individuals and communities in preventing the further spread of disease and/or mitigating the impacts of the emergence/re-emergence in ways that protect America's farming communities and continue to ensure the availability of an accessible, safe, nutritious, affordable, and abundant food supply. Funded projects are expected to implement applied research, extension, and/or integrated activities to provide solutions that may include rapid understanding of the ecology, epidemiology, immunology, and/or fate and transport of a new pest or pathogen; proof of concept or validation of detection methods, diagnostics, vaccines, therapeutics, and/or other control methods; trainings, communication strategies, tools and technologies; and development of best practices for prevention, mitigation, and/or management of disease. Proposals must clearly describe short-term activities and deliverables. One or more project activities or deliverables must be implemented or developed, respectively, within 6 months of award receipt and with other activities or deliverables completed by 12-24 months. These solution-driven projects can be rapidly adopted by various end-users. In addition, funded projects are expected to describe how the adoption potential of any proposed solutions will be measured.

Standard and FASE (Strengthening Standard) Grants

Proposals are welcome to integrate biological and social sciences and to leverage new and existing partnerships that support responsive research, extension, and integrated activities. Proposals that include community development and positive youth development and 4-H are suitable for this program area priority so long as they align with one or more emphasis areas (listed below). Multi-state proposals are suitable for this program area priority, and public-private partnerships are welcome. Projects focusing on species and commodities important to small- or medium-sized farms or ranches are welcome. Although multiple submissions from a single institution are accepted, applicants are encouraged to coordinate and collaborate where possible.

This program area priority is designed to rapidly deploy strategies and fill knowledge and information gaps to protect the nation's food and agricultural supply chains and the people who support them during and after the emergence or re-emergence of pests and diseases associated

with animal production systems and/or the emergence or re-emergence of invasive diseases, insects and weeds associated with plant production systems and/or toxins affecting the health of either plant, animal production systems. This includes emerging or re-emerging pests, pathogens, diseases, and/or toxins that may pose a threat to public health, either directly through interaction with affected animals, or indirectly through impacts to the food supply. Therefore, all submissions must address effects associated with the emergence or re-emergence of pests and/or disease in animal and/or plant production systems, impacting pollinator health or within the food supply within the nation or a specific region or state as described above and be submitted within 180 days of emergence or re-emergence within a relevant area. Applicants must include a statement about timing, relevance, and impact of the emergence or re-emergence incident that is being responded to. USDA Animal Plant and Health Inspection Service (APHIS), Veterinary Services (VS), USDA APHIS Plant Protection and Quarantine (PPQ), USDA Forest Service (FS), USDA Food Safety Inspection Service (FSIS), USDA Agricultural Research Service (ARS), HHS Food and Drug Administration (FDA), Department of Interior (DOI), DOI's National Invasive Species Council, National Invasive Species Information Center (NISIC), U.S. Fish and Wildlife Service, and state or local agencies and organizations may have information and/or data to justify a direct need for rapid response activities.

Standard and FASE (Strengthening Standard) grant applications must address one or more of the following emphasis areas (order does not indicate importance):

- a. **One Health.** Proposals may address but are not limited to:
 - 1) The emergence or re-emergence of a disease within animals or food that demonstrates the ability to infect humans; and or the emergence or re-emergence of a new or novel strain of a disease within humans that demonstrates the ability to infect animals or pollinators within agricultural production systems.
 - 2) Emerging/re-emerging plant pest or disease affecting animal health and/or U.S. food security.
 - 3) The emergence of new or novel mechanisms related to antimicrobial resistance that increasingly pose a threat to the food supply chain, human health, or health of agricultural animals or pollinators
 - 4) Incorporation of new technologies to enhance the resilience of agricultural production systems and food supply chains during and after the emergence or re-emergence of a pest or disease. This may include the implementation of technologies that use artificial intelligence, autonomy (e.g., uncrewed vehicles, drones, robotics, and connected sensors), and the internet of things.
- b. **Plant/Animal Health.** Proposals may address but are not limited to:
 - 1) Research into the characteristics and emergence of a new or novel strain/species of pest or pathogen of plants, agricultural animals or pollinators to inform efforts to prevent the spread or mitigate/manage impacts.
 - 2) Research to provide a rapid understanding of the ecology, epidemiology, immunology, and/or fate and transport of a new pest or pathogen.
 - 3) Proof of concept or validation of detection methods, diagnostics, vaccines, therapeutics, and/or other control methods.
 - 4) Development and implementation of plans to ensure the health and security of plants, agricultural animals, and pollinators during and after disease events (e.g.

disease response, management, and detection SOP's, decontamination protocols, humane depopulation procedures, disposal of infectious biomass).

c. **Ecosystem Health.** Proposals may address but are not limited to:

- 1) Research strategies to mitigate the impacts of emerging and/or re-emerging diseases or pests in plants, agricultural animals or pollinators on surrounding environments to preserve the health and productivity of land and water-based ecosystems. This includes mitigating impacts from environmental reservoirs of disease.

Applicants who have questions about the fit of their projects are welcome to contact program staff at A1713@usda.gov. Longer term research/extension projects focused on emerging/re-emerging plant and animal diseases and/or pests may be better suited for the AFRI Agricultural Biosecurity (A1181) or the Diseases of Agricultural Animals (A1221) program priority areas. Longer term research projects focused on food safety may be better suited for the AFRI Food Safety and Defense (A1332) program area priority. Projects that have a preparedness focus may be better suited for the AFRI Critical Agricultural Research and Extension (CARE) (A1701) or the A1181 program priority area.

Additional Information:

In addition to addressing emphasis area(s), grant applications must:

- a. **This program area priority limits applications to one per PD per funding cycle. If a PD submits more than one application to this program area priority the additional application(s) will be returned without review.**
- b. Describe the recent emergence or re-emergence event. Some events may be hyper-local, some may be widespread. Applicants must include a statement about timing, relevance, and impact of the emergence or re-emergence incident that is being responded to.
- c. Address effects associated with the emergence or re-emergence of pests and/or disease in animal, food, and/or plant production systems, and/or environmental health and/or pollinator health and productivity no more than 180 days prior to submission within the nation or a specific region, state, area, or industry.
- d. Focus on critical and urgent development or knowledge and/or solutions in rapid response to pest/disease emergence/re-emergence impacts on the food and agricultural systems and/or supply chains.
- e. Clearly describe short-term activities and deliverables. One or more project activities or deliverables must be implemented or developed, respectively, within 6 months of award receipt and with other activities or deliverables completed by 12-24 months.
- f. Requests exceeding budgetary guidelines will not be reviewed.
- g. Unless otherwise stated, grants are not renewable.
- h. The Project Narrative **must not exceed a total of 7 pages**.
- i. All applications must include a data management plan.
- j. A justification of how the project addresses a critical and urgent stakeholder need must be included in the Project Narrative.
- k. All applications must meet all other requirements in [Part IV](#). If submitting an integrated application, please refer to the specific eligibility requirements (see [Part III § A](#)) and specific content requirements for integrated applications. Applications that do not follow these requirements will not be reviewed.

- l. There must be a high likelihood that applied research, extension, and integrated activities of a proposed project will be implemented rapidly, within the first 6 months of the project.
- m. Application review and processing will be expedited to ensure timely project start-up.

7f. **AFRI Commodity Board Co-funding Topics**

Table 38: AFRI Commodity Board Co-funding Topics Key Information

Title	Description
Program Code:	A1811
Program Code Name:	AFRI Commodity Board Co-funding Topics
Assistance Listing #	10.310
Project Type(s):	Research Projects <u>only</u> (Integrated Projects only for USA Pulses: Co-funding topic 1)
Grant Type(s):	a. Standard and FASE (Strengthening Standard and New Investigator) Grants <u>only</u> b. See Part II § C.2 for requirements specific to FASE Grant applications.
Letter of Intent Deadline	Not applicable
Application Deadline(s)	a. 2026: Thursday, October 2 September 10, 2025 2026 (5:00 p.m. Eastern Time)
Grant Duration:	36-48 months or 36 24-60 months, see project period listed for the specific topic below
Maximum Award Amount(s):	Including indirect costs: must not exceed the amount listed for the specific topic below and are not renewable.
Program Area Priority Contact:	a. commodityboards@usda.gov

Program Area Priority:

NIFA and various commodity boards are seeking to co-fund research projects relevant to the respective commodity board. Each application must address one of the following topics for FY ~~2025~~2026. We recommend that applicants consult with the appropriate Commodity Board representative identified below regarding the suitability of the prospective project for submission to the relevant co-funding priority.

1. Root rot is a devastating disease for pulse crops and developing practical and effective crop management tools is a high priority in the US Pulse industry. Integrated (research and extension) project proposals should aim to develop predictive models that incorporate a profile of the pathogen complex, soil properties, cropping history, weather, and geospatial data. The decision-support tool(s) should be grower-friendly digital tool(s) that support on-farm decisions for crop rotation, planting dates, and crop protection strategies. This project should include a robust extension component woven throughout the life of the project to increase access to the decision-support tool(s), engage pulse growers and industry stakeholders, enable informed decision making, test new technologies at community-scale, support the continuous improvement of the tool(s)

through stakeholders' feedback, and lead to actions that protect and enhance the productivity of pulse crops.

- a. Projects covering this commodity board topic must not exceed \$1,340,000 total per project for research projects (including indirect costs) for project periods of three to five years.
- b. **USA Pulses** representative: **Yukiko Naruoka (208) 882-3023** or ynaruoka@usapulses.org

~~2. There is growing evidence that eating nutrient-rich eggs is linked to beneficial cognitive outcomes, and recent data from the Rush Memory and Aging Project found whole egg intake is associated with a lower risk of Alzheimer's dementia, a finding that was related to dietary choline. The American Egg Board requests proposals that will study the role of eggs in healthy dietary patterns that optimally support brain health across the lifespan.~~

- ~~a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.~~

- ~~b. **American Egg Board** representative: **Jen Houchins (224) 563-3719** or jhouchins@eggnutritioncenter.org~~

~~3. It is critical to understand the microbiology of Salmonella from recent outbreaks on egg-laying farms to ensure affordable, wholesome eggs for US consumers. The American Egg Board is seeking proposals that will use microbiology tools to determine if there have been shifts in whole genome sequencing for farms that test positive and evaluate if there are changes leading to more foodborne outbreaks. These data will provide a solid understanding of the current Salmonella situation and help ensure safe eggs for US consumers.~~

- ~~a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.~~

- ~~b. **American Egg Board** representative: **Jen Houchins (224) 563-3719** or jhouchins@eggnutritioncenter.org~~

~~4. Studies have inconsistently collected data on how newer GLP-1 medications impact diet. The American Egg Board is seeking proposals that will perform a retrospective analysis of existing dataset(s) or add additional dietary analysis to a larger/existing ongoing trial in order to examine dietary data before and after initiation of GLP-1 medication in American adults. Proposals must explore not only protein/macronutrients, but also vitamins and minerals and, if possible, phytonutrients, to enhance our understanding of the potential role of eggs in helping to meet nutrient requirements of adult GLP-1 users. The findings are intended to inform future studies that will evaluate how to best incorporate a variety of egg-based eating occasions into healthy dietary patterns that address the nutrition, portion size, sensory, and individual needs of GLP-1 users.~~

- ~~a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.~~

- ~~b. **American Egg Board** representative: **Jen Houchins (224) 563-3719** or~~

jhouchins@eggnutritioncenter.org

5. ~~Eggshells (outer shell and inner membrane), a natural byproduct of egg farming, are a largely untapped resource with potential uses to benefit US consumers, including calcium-rich supplements, biopolymer fillers, or antimicrobial agents. The American Egg Board seeks proposals to study the optimal use of eggshells as a natural component that can be used in food, nutraceuticals, and other consumer-facing products.~~
 - a. ~~Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.~~
 - b. ~~American Egg Board~~ representative: **Jen Houchins** (224) 563-3719 or jhouchins@eggnutritioncenter.org
6. Development of long-grain white rice varieties with high milling quality and low chalkiness to meet international buyer standards.
 - a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.
 - b. **Arkansas Rice Research and Promotion Board** representative: **Baylee Downey** (501) 951-4301 or baylee.downey@arkansas.gov ~~**Amy Lyman** (501) 410-4616 or amy.lyman@arkansas.gov~~
7. Pregnancy increases nutritional needs, yet adherence to dietary guidance remains low. Walnuts are a nutrient-dense food providing alpha-linolenic acid, which supports fetal development, and may impact maternal and infant health, including chronic disease risk, highlighting the need for a clinical trial evaluating the impact of walnut intake during pregnancy. Proposals submitted to this topic should be for a 36-month period of performance.
 - a. Projects covering this commodity board topic must not exceed \$500,000 total per project for research projects (including indirect costs) for project periods of three to four years.
 - b. **California Walnut Commission** representative: **Rachel Blaine** (805) 338-2558 or rblaine@walnuts.org
8. Insufficient sleep is common just prior to and during the menopausal transition and is linked to adverse mental and cardiometabolic health outcomes. Since walnuts contain sleep-related compounds such as tryptophan and melatonin—and emerging evidence suggests they may improve sleep quality—a clinical trial evaluating walnuts as a dietary strategy to support sleep health during this life stage is warranted. Proposals submitted to this topic should be for a 36-month period of performance.
 - a. Projects covering this commodity board topic must not exceed \$500,000 total per project for research projects (including indirect costs) for project periods of three to four years.
 - b. **California Walnut Commission** representative: **Rachel Blaine** (805) 338-2558 or rblaine@walnuts.org

9. Currently available walnut rootstocks are highly susceptible to root lesion nematode (*Pratylenchus vulnus*, RLN). Current pre-plant fumigant options will soon no longer be an option due to state regulations. The California Walnut Board seeks proposals to identify practical, effective, non-chemical alternative(s), especially research aimed at developing new RLN-resistant walnut rootstocks.
 - a. Projects covering this commodity board topic must not exceed \$400,000 total per project for research projects (including indirect costs) for project periods of two to three years.
 - b. **California Walnut Board** representative: **Billy Ng** (916) 932-7070 or bng@walnuts.org
10. Globally accepted non-chemical fumigation is the ultimate solution to market access for phytosanitary as well as export trade issues with maximum residue limits in the Walnut industry. The California Walnut Board is seeking proposals to (1) identify a source, a process or a storage condition to effectively eliminate pest to an acceptable level, (2) scientifically validate the kill step, (3) validate impact on agricultural lands, (4) perform a feasibility review on processor/supply chain adaptability, and (5) perform a regulatory compliance review among major walnut export markets for acceptability.
 - a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.
 - b. **California Walnut Board** representative: **Billy Ng** (916) 932-7070 or bng@walnuts.org
11. The Cotton Board is seeking proposals to use advanced breeding tools such as genomic selection, gene editing, and/or improved transformation to develop enhanced upland cotton germplasm.
 - a. Projects covering this commodity board topic must not exceed \$600,000 total per project for research projects (including indirect costs) for project periods of three to four years.
 - b. **The Cotton Board** representative: **Emily Wyonzek** (901) 271-1377 or ewyonzek@cottonboard.org
12. The Cotton Board is seeking proposals to develop and combine advanced technologies and management practices that increase cotton resiliency to abiotic yield limiting factors (e.g., heat and drought stress, and nutrient uptake) resulting in improved farm profitability. Proposals must leverage complimentary approaches and technologies, such as microbial manipulation, simulation models, soil health practices, novel agronomic practices, and germplasm improvement.
 - a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.
 - b. **The Cotton Board** representative: **Emily Wyonzek** (901) 271-1377 or ewyonzek@cottonboard.org
13. The Cotton Board is seeking proposals to develop advanced integrated pest management

technologies and/or strategies that will complement and preserve current crop protection technologies and products for managing key and/or invasive pests (e.g., pathogens, weeds, insects, nematodes, vertebrates) in cotton, while simultaneously reducing the reliance on and input costs of conventional pesticides. This topic also includes research that addresses the efficacy of biological and microbial tools and the mitigation of off-target pesticide movement.

- a. Projects covering this commodity board topic must not exceed \$600,000 total per project for research projects (including indirect costs) for project periods of three to four years.
- b. **The Cotton Board** representative: **Emily Wyonzek** (901) 271-1377 or ewyonzek@cottonboard.org

14. The Cotton Board is seeking proposals pursuing research that leads to enhanced U.S. cotton farm profitability by increasing the value and use of cotton byproducts, including biomass and cottonseed. Proposals must seek to expand commercial markets in durable materials, enhance farm efficiency, and strengthen economic stability for cotton producers and rural economies. Proposals may develop high-value applications of cotton biomass, byproducts, virgin fiber, and/or used cotton fiber in industrially relevant markets such as packaging, biochemicals and intermediates, agricultural inputs, energy production, biomass harvesting, and/or material innovation.

- a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.
- b. **The Cotton Board** representative: **Emily Wyonzek** (901) 271-1377 or ewyonzek@cottonboard.org

15. The Cotton Board is seeking proposals pursuing research to improve our understanding of the potential human health and nutrition benefits of cottonseed oil or its components/derivatives as part of a healthy and nutritious lifestyle. Project proposals should address the role of cottonseed oil and its components/derivatives in maintaining overall health, disease prevention, or biomarkers of disease risk (e.g., blood lipids, inflammation, etc.). Population of interest may be either healthy population or population at-risk for a diet-related disease. Whole food approaches, cooking practices, food ingredients, supplemental nutrients, supplemental bioactive components, or pharmaceutical relevance approaches are acceptable.

- a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.
- b. **The Cotton Board** representative: **Emily Wyonzek** (901) 271-1377 or ewyonzek@cottonboard.org

16. Evaluate precision dairy diet formulation strategies for phosphorus (P) and nitrogen (N) that reduce nutrient excretion while maintaining milk production, animal health, and farm profitability. This topic addresses the need for updated science on dietary P and N requirements for modern dairy cows. Proposals must assess the impact of precision feeding on input costs, water quality, milk production, and profit outcomes. Precision

feeding approaches must reassess recommended P and N concentrations relative to current NRC guidelines and determine whether prevailing feeding practices and formulation tools reflect today's genetics, feed efficiency, and management systems.

- a. Projects covering this commodity board topic must not exceed \$600,000 total per project for research projects (including indirect costs) for project periods of three to four years.
- b. **Dairy Management, Inc.** representative: **Tim Kurt** (970) 420-7126 or tim.kurt@dairy.org

17. Evaluate the environmental, economic, and agronomic benefits of replacing synthetic fertilizers with dairy manure-derived products on non-dairy crop farms. This topic addresses the need for nutrient management practices that use manure nutrients efficiently, reduce reliance on imported and synthetic fertilizers, enhance soil health, and mitigate localized manure surpluses. Proposals must: (1) quantify economic, environmental, and agronomic outcomes of replacing synthetic fertilizers with manure products; (2) develop scalable, practical guidelines and decision-support tools for connecting dairy and non-dairy farms for nutrient cycling; and (3) generate region-specific recommendations for manure product application on non-dairy farms.

- a. Projects covering this commodity board topic must not exceed \$600,000 total per project for research projects (including indirect costs) for project periods of three to four years.
- b. **Dairy Management, Inc.** representative: **Tim Kurt** (970) 420-7126 or tim.kurt@dairy.org

18. There is a lack of randomized clinical evidence on whether the source of dietary saturated fat matters when consumed within a balanced whole-food diet. Current guidelines treat all saturated fat similarly; this call seeks proposals to determine whether whole food animal-source saturated fat in a nutrient-dense, high-protein diet influences cardiovascular risk differently than saturated fat from ultra-processed foods. Proposals for a long-term randomized clinical trial comparing carbohydrate, protein and saturated fat matched, high-protein (1.2 g/kg/bw/day) eating patterns: a whole-food diet emphasizing fresh animal-source proteins (e.g., pork) and a diet composed of ultra-processed foods. Diets would be matched for macronutrients, including saturated fat, differing mainly in food formulation and food matrix, to assess whether saturated fat from minimally processed meats confers a different cardiovascular risk profile than saturated fat from ultra-processed sources.

- a. Projects covering this commodity board topic must not exceed \$600,000 total per project for research projects (including indirect costs) for project periods of three to four years.
- b. **National Pork Board** representative: **Kristen Hicks-Roof** (623) 640-4797 or [kroof@pork.org](mailto: kroof@pork.org)

19. ~~Proposals to this topic area will develop a panel of maize genotypes with distinct patterns of expression of arabinoxylan biosynthetic genes producing structurally distinct arabinoxylan in the bran fraction that can drive desirable outcomes in the human gut microbiome and human health. Proposals must combine breeding, carbohydrate~~

chemistry, microbiome fermentations, and human clinical trial methodologies to identify maize genotypes with potential for health-promoting fiber traits from a panel of maize having distinct patterns of gene expression in arabinoxylan biosynthetic genes.

a. Projects covering this commodity board topic must not exceed \$1,266,000 total per project for research projects (including indirect costs) for project periods of three to five years.

b. **Nebraska Corn Development, Utilization, and Marketing Board** representative: **Rachael Whitehair** (402) 471-2676 or rachael.whitehair@nebraska.gov

1. Determine consumer preferences for southern rice quality characteristics.

a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.

b. **Arkansas Rice Research and Promotion Board** representative: **Amy Lyman** (501) 410-4616 or amy.lyman@agriculture.arkansas.gov

2. Develop technologies that integrate aerial phenotyping, soil sensors, and advanced modeling to advance soybean production across multiple cropping systems and soil treatments.

a. Projects covering this commodity board topic must not exceed \$1,000,000 total per project for research projects (including indirect costs) for project periods of three to five years.

b. **United Soybean Board** representative: **Keenan McRoberts** (443) 469-0176 or kmcroberts@unitedsoybean.org

3. Evaluate sources and sinks of sediment, nitrogen and phosphorus exported in surface waters from tile drained agricultural catchments in the U.S. Corn Belt and quantify the effects of tile drainage on the processes driving sediment and nutrient fluxes from these sources. Sources and sinks evaluated must include present-day agricultural operations, streambank erosion, and streambed processes, and the approach must incorporate integrated monitoring across scales from uppermost headwater channels to catchment outlet. Proposed projects must quantify 1) nitrogen and phosphorus loads and forms, 2) potential exchange rates in streambank soils and streambed sediments, and 3) the effect of tile drainage on water and nutrient balances. Proposed projects should combine field-based measurements and process-based modeling to provide high-confidence source apportionment at studied catchments that could be subsequently used to generate reliable estimates of these processes and their effects on nutrient loading across the greater tile drained region. Finally, evaluations should be conducted in at least two different states to increase coverage of landscape types with a high proportion of tile drained acres.

a. Projects covering this commodity board topic must not exceed \$3,000,000 total per project for research projects (including indirect costs) for project periods of three to five years.

b. **United Soybean Board** representative: **Keenan McRoberts** (443) 469-0176 or kmcroberts@unitedsoybean.org

4. Develop a system for evaluating advanced breeding lines and new varieties that offer desirable end-use qualities for the food industry and agronomic benefits for growers. The proposed research should aim to conduct standardized multi-state and multi-year yield trials for advanced breeding lines or newly released varieties with multi-state interdisciplinary collaborations. Focus should be on quantifying genotype-by-environment GxE interaction;

- and its effects on ingredient characteristics including nutritional composition, processing
- traits for end-use applications, and conventional end-use characteristics according to visual
- standards. Additionally, essential agronomic data should be collected to characterize current
- and future pulse varieties to evaluate the adaptability and GXE. The research outcomes
- should be communicated with the industry's key stakeholders and set the foundation for
- future national variety trials, facilitating the integration of this system into the variety
- commercialization process.
- a. Projects covering this commodity board topic must not exceed \$760,000 total per project
- for research projects (including indirect costs) for project periods of three to four years.
- b. **USA Dry Pea and Lentil Council** representative: **Yukiko Naruoka** (208) 882-3023 or
- ynaruoka@usapulses.org

- 5. Identify universal phenotyping protocols across all four peanut types across multiple growing
- regions utilizing drones and AI or machine learning technologies.
- a. Projects covering this commodity board topic must not exceed \$500,000 total per project
- for research projects (including indirect costs) for project periods of three to four years.
- b. **National Peanut Board** representative: **DeMarquiné Houston** (678) 424-5757 or
- dehouston@nationalpeanutboard.org

- 6. Leverage genomics, genome editing, plant physiology, and field-based phenomics to
- identify, genetically map, and characterize novel traits in wild relative-derived germplasm
- with the aim of improving wheat adaptation and productivity under water-limiting
- conditions. Proposed projects incorporating pre-breeding germplasm development are
- welcome.
- a. Projects covering this commodity board topic must not exceed \$1,450,000 total per project
- for research projects (including indirect costs) for project periods of three to five years.
- b. **Kansas Wheat Commission, Colorado Wheat Administrative Committee and Texas**
- **Wheat Producers Board** representative: **William Zorrilla** (785) 341-5128 or
- wzorrilla@earthsharvest.org

- 7. Evaluate the demand for finished products made from pecan hull, shell, and/or kernel
- byproducts, including industrial and consumer demand for the potential products, available
- markets to sell the potential products, and the estimated profitable return to pecan growers
- and processors. Products analyzed could include currently available products that are not
- mass-produced (e.g., pecan oils or pecan shell cleaning abrasives) and new products that
- require innovation and production technology (e.g., wood materials, nutrient extractions,
- animal feed or biofuels).
- a. Projects covering this commodity board topic must not exceed \$300,000 total per project
- for research projects (including indirect costs) for project periods of two to three years.

- b. **American Pecan Promotion Board** representative: **Serena Schaffner** (817) 916-0020 or
- sschaffner@americanpecan.com

- 8. Develop prototypes of materials and products not currently mass-produced using pecan tree
- and nut byproducts, such as the hull, shell and/or kernel. This could include raw materials for
- industrial use, ingredients for consumer-packaged goods or finished consumable or non-

- ~~— consumable products.~~
- ~~— a. Projects covering this commodity board topic must not exceed \$300,000 total per project~~
- ~~— for research projects (including indirect costs) for project periods of two to three years.~~
- ~~— b. **American Pecan Promotion Board** representative: **Serena Schaffner** (817) 916-0020 or~~
- ~~— sschaffner@americanpecan.com~~

- 9. Conduct nutritional analysis of pecan byproducts, including currently available products such
- ~~— as oils and flours, and ingredients extracted from pecan hulls and shells, which could be used~~
- ~~— for human or animal consumption.~~
- ~~— a. Projects covering this commodity board topic must not exceed \$300,000 total per project~~
- ~~— for research projects (including indirect costs) for project periods of two to three years.~~
- ~~— b. **American Pecan Promotion Board** representative: **Serena Schaffner** (817) 916-0020 or~~
- ~~— sschaffner@americanpecan.com~~

- 10. Develop advanced integrated pest management technologies and/or strategies that will
- ~~— complement and preserve current crop protection technologies and products for managing~~
- ~~— pests (e.g., pathogens, weeds, insects, nematodes, vertebrates) in cotton, while~~
- ~~— simultaneously reducing the reliance on conventional pesticides. Consideration will also be~~
- ~~— given to projects that address the efficacy of biological and microbial tools and the~~
- ~~— mitigation of off target pesticide movement.~~
- ~~— a. Projects covering this commodity board topic must not exceed \$300,000 total per project~~
- ~~— for research projects (including indirect costs) for project periods of two to three years.~~
- ~~— b. **The Cotton Board** representative: **Emily Wyonzek** (901) 271-1377 or~~
- ~~— ewyonzek@cottonboard.org~~

- 11. Deliver improved transformation and somatic regeneration processes and/or support
- ~~— development of enhanced upland cotton germplasm through advanced breeding tools.~~
- ~~— a. Projects covering this commodity board topic must not exceed \$600,000 total per project~~
- ~~— for research projects (including indirect costs) for project periods of three to four years.~~
- ~~— b. **The Cotton Board** representative: **Emily Wyonzek** (901) 271-1377 or~~
- ~~— ewyonzek@cottonboard.org~~

- 12. Develop and integrate advanced technologies and management practices that increase overall
- ~~— cotton farm profitability under limited water and/or high temperature environments, with~~
- ~~— consideration for the entire management system (e.g., impact on weeds, insects, diseases,~~
- ~~— etc.). Preference will be given to systems approaches that integrate different technologies,~~
- ~~— such as variety development, soil microbial manipulation, soil health, and novel agronomic~~
- ~~— practices.~~
- ~~— a. Projects covering this commodity board topic must not exceed \$600,000 total per project~~
- ~~— for research projects (including indirect costs) for project periods of three to four years.~~
- ~~— b. **The Cotton Board** representative: **Emily Wyonzek** (901) 271-1377 or~~
- ~~— ewyonzek@cottonboard.org~~

- 13. Conduct research to enhance farm profitability and operational efficiency by optimizing soil
- ~~— productivity, improving management practices, and increasing the value and utilization of~~
- ~~— cotton biomass. Research may explore innovative market-driven uses of cotton byproducts to~~

~~— expand revenue opportunities and create new industrial applications that improve cotton's economic value. Projects may focus on increasing the efficiency and profitability of U.S. cotton farms by identifying new and expanding commercial uses for cotton biomass in durable materials. Additionally, research may investigate high value applications of cotton biomass, byproducts, virgin fiber, and used cotton fiber in industrially relevant markets such as packaging, agricultural inputs, energy production, and material innovation, contributing to greater market expansion and economic stability for cotton producers and rural economies.~~
~~a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.~~
~~b. **The Cotton Board** representative: **Emily Wyonzek** (901) 271-1377 or ewyonzek@cottonboard.org~~

14. Conduct a clinical study to evaluate the effects of daily fresh Hass avocado consumption on the health outcomes of postmenopausal females. Health outcomes, include, but are not limited to, hydration, skin health, chewing, or sleep in this population.
a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.
b. **Hass Avocado Board** representative: **Nikki Ford** (949) 341-3250 or nikki@hassavocadoboard.com

15. Conduct a study evaluating the impact of walnut consumption on snacking behavior and overall diet quality among adolescents.
a. Projects covering this commodity board topic must not exceed \$500,000 total per project for research projects (including indirect costs) for project periods of three to four years.
b. **California Walnut Commission** representative: **Rachel Blaine** (805) 338-2558 or rblaine@walnuts.org

16. Test and validate systems and technologies for creating value-added products from dairy separated manure solids and/or liquids while delivering notable environmental benefits. All projects must be accompanied by an economic analysis suitable for small, medium, and large-scale dairy farms nationwide.
a. Projects covering this commodity board topic must not exceed \$300,000 total per project for research projects (including indirect costs) for project periods of two to three years.
b. **Dairy Management, Inc.** representative: **Tim Kurt** (970) 420-7126 or tim.kurt@dairy.org

~~17. Develop new or adapt existing technology to improve labor efficiency. This could include
 — technology that leads to optimizing available labor, augmenting animal caretaker training,
 — improving employee retention, reducing the time or effort required for routine tasks,
 — enhancing employee output, reducing labor costs, or recruiting employees needed to fill
 — critical roles within pork production systems. Technologies that can be adopted at minimal
 — cost and disruption to business as normal are of particular interest.
 — a. Projects covering this commodity board topic must not exceed \$300,000 total per project
 — for research projects (including indirect costs) for project periods of two to three years.
 — b. **National Pork Board**, representative: **Chris Hostetler** (515) 223-2606 or
 — chostetler@pork.org~~

~~18. Develop and strengthen new and existing global sorghum research and development
 — partnerships to benefit U.S. sorghum food, feed and biofuel industries through shared
 — knowledge and expertise.
 — a. Projects covering this commodity board topic must not exceed \$300,000 total per project
 — for research projects (including indirect costs) for project periods of two to three years.
 — b. **United Sorghum Checkoff Program**, representative: **Brent Bean** (806) 674-0006 or
 — brentb@sorghumcheckoff.com~~

Applicants seeking funding through these commodity board co-funded priorities will be required to provide a letter of co-funding support from the commodity board directly to commodityboards@usda.gov within 60 calendar days after the application submission deadline ~~to be published subsequently.~~ **Failure to do so will result in the proposal being declined.** When seeking a letter of co-funding support, applicants must submit their entire application to the respective commodity board listed above and request a letter that **specifically indicates that the commodity board supports the application and will provide co-funding if the application is selected for funding after the peer-review process.** To obtain a letter of co-funding support or for further questions, please contact the respective commodity board representative listed above. Applicants **must state in the last sentence of their application's Project Summary section to which specific Priority Number** their proposal is addressing.

Additional Information:

- a. Requests exceeding budgetary guidelines will not be reviewed.
- b. Unless otherwise stated, grants are not renewable.
- ~~c. Applications must provide a letter of co-funding support from the appropriate commodity board as outlined above, either included in the application submission or emailed to commodityboards@usda.gov within 60 calendar days after the application deadline. Failure to do so will result in the proposal being declined.~~
- c. The last sentence of the Project Summary **must state the specific Topic Number that the application is addressing.**

7g. Rapid Response to Weather Events Across Food and Agricultural Systems

Table 39: Rapid Response to Weather Events Across Food and Agricultural Systems Key Information

Title	Description
Program Code:	A1712

Title	Description
Program Code Name:	Rapid Response to Weather Events Across Food and Agricultural Systems
Assistance Listing #	10.310
Project Type(s):	a. Extension or Integrated (extension and research) Projects <u>only</u>
Grant Type(s):	a. Standard and FASE (Strengthening Standard) <u>only</u> b. See Part II § C.2 for requirements specific to FASE Grant applications.
Letter of Intent Deadline	a. Not applicable
Application Deadline(s)	a. 2026: Standard Grants and FASE (Strengthening Standard) Grants: Must be submitted within 45 calendar days after a weather event or disaster. Proposals relating to events occurring between 1/20/2025 and the date of publication of this RFA must be submitted within 45 calendar days of the date of publication. Following submission, to ensure your application is processed in a timely manner, notify the program area contacts by sending an email to afri-rapidresponse@usda.gov
Grant Duration:	a. 12 months for Standard Grants and FASE (Strengthening Standard) Grants
Maximum Award Amount(s):	a. Including indirect costs: \$300,000 for Standard Grants and FASE (Strengthening Standard) Grants
Program Area Priority Contact(s):	a. afri-rapidresponse@usda.gov

Program Area Priority:

Weather-related disasters, caused by naturally occurring hazards such as heat, droughts, wildfires, tornados, floods, hurricanes, tropical storms, and blizzards, often disrupt agricultural, forestry, and rangeland production systems. In addition to land degradation, agricultural supply chains are often adversely impacted by these disasters at the production, processing, distribution, and consumption stages.

Innovative extension, applied research, and integrated efforts are needed to alleviate the impacts of these disasters across the food and agricultural system. These strategies should help individuals, families, and communities -including farmer, ranchers, and producers-buffer the effects of disasters and ensure the availability of an accessible, safe, nutritious, affordable, and abundant food supply. **Funded projects are expected to implement extension, and integrated (extension and applied research) activities to provide solutions** that may include: trainings, communication strategies, tools and technologies, management practices, and food supply and food safety logistics. These solution-driven projects can be rapidly adopted by various end-users. In addition, funded projects are expected to describe how the adoption potential of proposed solutions will be measured. Additional information about this program area priority is available on the [A1712 webpage](#), which includes fact sheets, Frequently Asked Questions, and videos. NIFA hosts quarterly A1712 Live FAQ sessions for applicants; information is available on the [NIFA Events Calendar](#).

Proposals are welcome to integrate biological and social sciences and to leverage new and existing partnerships that support responsive research, extension, and integrated activities. Proposals that include community development and positive youth development and 4-H are suitable for this program area priority so long as they align with one or more emphasis areas (listed below). Multi-state proposals, public-private partnerships and engagement are suitable for this program area priority. Projects focusing on species and commodities important to small- or medium-sized farms or ranches are also welcome. Although multiple submissions from a single institution may be accepted, applicants are encouraged to coordinate and collaborate where possible.

This program area priority is designed to rapidly deploy strategies and fill knowledge and information gaps to protect the nation's food and agricultural supply chains and the people who support them during and after weather-related disasters. Therefore, all submissions must directly address effects associated with a recent weather event or disaster. Some weather events or disasters may be prolonged. Applicants must include a statement about timing and relevance of the incident that requires response. The National Weather Service, National Integrated Heat Health Information System, USDA Farm Service Agency, USDA Natural Resources Conservation Service, USDA National Agricultural Statistics Service, Federal Emergency Management Agency, and other federal, state or local agencies and organizations may have information and/or data to justify a direct need for rapid response activities.

Standard and FASE (Strengthening Standard) grant applications must address one or more of the following emphasis areas (order does not indicate importance):

- a. **Agroecosystem Resilience.** Proposals may address but are not limited to:
 - 1) Efficacy assessments of how management practices minimize the impacts of disasters on agroecosystems.
 - 2) Methods to address contamination of ground and/or surface waters, air quality, or damage to soils caused by disasters.
 - 3) Incorporation of new technologies to enhance the resilience of agricultural production systems during and after disasters. This may include implementation of technologies that use artificial intelligence, autonomy (e.g., uncrewed vehicles, drones, robotics, and connected sensors), and the internet of things.
- b. **Food Safety, Food and Nutrition Security, and Agricultural Commodity Security.** Proposals may address but are not limited to:
 - 1) Development and implementation of plans to ensure the health and security of livestock during and after disasters (e.g., evacuation and humane depopulation procedures, access to shelter, clean water, uncontaminated feed, and veterinary services).
 - 2) Strategies to support the maintenance, salvage, processing, transport, and storage of agricultural commodities affected by disasters.
 - 3) Training programs to reduce potential contamination or dispersal of pathogens associated with contaminated food throughout the production system, including storage, processing, and transport.
 - 4) Strategies to ensure all children, youth, and adults have access to safe, nutritious, abundant, and affordable food during and after disasters.

- c. **Health, Well-Being, and Safety.** Proposals may address but are not limited to:
 - 1) Evaluation of increased risks and exposure to structural, electrical, biological, and chemical hazards associated with disasters and the development of mitigation strategies for agricultural production and food processing environments.
 - 2) Best practices and training to address safe operations and reentry protocols for agricultural workers, including any additional measures for youth and workers with disabilities.
 - 3) Strategies to address the health, well-being, and safety of children, youth, and adults affected by disasters.

In addition to addressing emphasis area(s), in the Project Narrative, applicants must:

- a. Describe the recent event or disaster. Some weather events or disasters may be prolonged. Applicants are strongly encouraged to create a section at the beginning of their Project Narrative that clearly and succinctly addresses the timeliness and relevance of the incident that requires response.
- b. Clearly define the geographic scope of the project as it relates to the recent weather event or disaster.
- c. Focus on critical and urgent solutions in rapid response to weather and disaster impacts on the food and agricultural systems.
- d. Clearly describe short-term activities and deliverables. One or more project activities or deliverables must be implemented or developed, respectively, within 90 days of award receipt and with other activities or deliverables completed by 12 months.

Applicants who have questions about the fit of their projects are welcome to contact program staff. Projects that have a preparedness, recovery, and/or mitigation focus may be better suited for the AFRI Critical Agricultural Research and Extension (CARE) (A1701) program area priority.

Program Area Priority Additional Information:

- a. This program area priority limits applications to one per PD per funding cycle. If a PD submits more than one application to this program area priority the additional application(s) will be returned without review.
- b. Requests exceeding budgetary guidelines will not be reviewed.
- c. Unless otherwise stated, grants are not renewable.
- d. The Project Narrative **must not exceed a total of 7 pages.**
- e. All applications must include a data management plan.
- f. A justification of how the project addresses a critical and urgent stakeholder need must be included in the Project Narrative.
- g. All applications must meet all other requirements in [Part IV](#). If submitting an integrated application, please refer to the specific eligibility requirements (see [Part III § A](#)) and specific content requirements for integrated applications. Applications that do not follow these requirements will not be reviewed.
- h. There must be a high likelihood that extension, or integrated (extension and applied research) activities of a proposed project will be immediately implemented.
- i. Application review and processing will be expedited to ensure timely project start-up.

PART II. AWARD INFORMATION

A. Available Funding

The amount available for programs included in the FY 2026 AFRI Foundational and Applied Science (FAS) RFA is approximately \$300,000,000. Funding from FY 2026 appropriations will be used for the programs solicited in this RFA. The amount available to support the AFRI program is anticipated to be approximately \$407,000,000, of which \$300 million will be used to support AFRI FAS programs.

Of the total amount available to make awards for the AFRI program, 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, no less than 60 percent will be directed 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 expected that no less than 15 percent of the 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 (see [Part II § C](#) for information about FASE Grants including Equipment Grants).

Of the anticipated approximately \$300 million total available from FY 2026 appropriations to support the program areas in this RFA, no less than 11.25% will be made available for Strengthening grant types under the FASE program.

The funds will be awarded through a grant for performance periods of up to five years. NIFA may choose to issue a grant on a continuation basis. A continuation award is an award instrument by which NIFA agrees to support a specified level of effort for a predetermined period of time with a statement of intention to provide additional support at a future date, provided that performance has been satisfactory, appropriations are available for this purpose, and continued support would be in the best interest of the federal government and the public. USDA is not committed to fund any particular application or to make a specific number of awards.

The [Automated Standard Application for Payments](#), operated by the Department of Treasury, Bureau of Fiscal Service, is the designated payment system for awards resulting from this RFA.

B. Application Restrictions

NIFA will evaluate applications using the criteria described in [Part V](#). Application for FY 2026 is limited to the following application types:

1. *New application*: New applications will be evaluated using the criteria described in [Part V](#) and are subject to the due dates herein (see [Appendix III](#) for definition).
2. *Resubmitted application*: Resubmitted applications must include the one-page “Response to Previous Review” (see [Part IV § C](#)), regardless of whether they are resubmitted in sequential years or to the same program area priority as submitted previously, and are subject to the same criteria and due dates herein. Resubmitted applicants must enter the NIFA-assigned proposal number of the previously submitted application in the *Federal Field (Field 4)* on the application form (see [Appendix III](#) for definition).
3. *Renewal application*. Renewal applications must contain the same information as required for new applications and must contain a *progress report*. The progress report

must include the implementation of the data management plan (DMP) of the previously funded project. Renewal applications are subject to the same criteria and due dates herein. Applicants submitting a renewal application must enter the NIFA-assigned proposal number of the previously approved application in the *Federal Field (Field 4)* on the application form (see [Appendix III](#) for definition).

C. Project and Grant Types

The following describes the types of *projects* or *grants* that are eligible for funding:

1. **Project Types.** Applicants must propose one of the AFRI project types specified within the relevant program area descriptions in [Part I § C](#). Only project types specifically solicited under each program area or program area priority described in [Part I § C](#) will be considered for review. A detailed description of the project types (Research, Education, Extension, and Integrated Research, Education and/or Extension) available across all AFRI RFAs is in the “AFRI Project Types” PDF in the attachments list on the [AFRI RFA Resources page](#).
2. **Grant Types.** Applicants must select the appropriate AFRI grant type specified within the relevant Program Area Descriptions in [Part I § C](#). Only grant types specifically solicited under each program area or program area priority described in [Part I § C](#) will be considered for review. A detailed description of the grant types, including Standard Grants, Coordinated Agricultural Projects (CAP), Workshop Grants, and FASE Grants (i.e., Strengthening Standard Grants, New Investigator Standard Grants, New Investigator Seed Grants, Strengthening Seed Grants, Sabbatical Grants, Equipment Grants, Strengthening Workshop Grants, and Strengthening CAP Grants) available across all AFRI RFAs is in the “AFRI Grant Types” PDF in the attachments list on the [AFRI RFA Resources page](#). Coordinated Agricultural Projects are not being solicited by this RFA in FY 2026.

D. Ethical Conduct of Funded Projects

In accordance with sections [2, 3, and 8 of 2 CFR Part 422](#), institutions that conduct USDA-funded extramural research must foster an atmosphere conducive to research integrity, bear primary responsibility for prevention and detection of research misconduct, and maintain and effectively communicate and train their staff regarding policies and procedures. In the event an application to NIFA results in an award, the Authorized Representative (AR) assures, through acceptance of the award that the institution will comply with the above requirements. Award recipients must, upon request, make available to NIFA the policies, procedures, and documentation to support the conduct of the training. See [Responsible and Ethical Conduct of Research](#) for further information.

E. Partnership Opportunities

Opportunity to request an additional \$150,000 for applications that include specific types of partnerships under the following program area priorities as specified in the key information tables in [Part I § C](#): A1103, A1112, A1113, A1141, A1152, A1181, A1201, A1221, A1251, A1332, A1343, A1344, A1364, A1401, A1411, A1451, A1511, A1521, A1531, A1541, A1551, A1641, and A1651. Only these program area priorities are offering this partnership opportunity. Partnership applications to other program area priorities not offering this opportunity will be considered to be exceeding the budget limitation. Applications exceeding the budget limitation will not be reviewed.

1. Applications that include significant collaboration with a) Strengthening Grant eligible institutions, and/or b) international partners will be funded up to \$150,000 above the listed budget maximum for non-partnership opportunity applications as specified in the key information table for the program area priority (e.g., up to \$800,000 for a \$650,000 listed regular application budget maximum). More information on Strengthening Grant eligibility is available on the [AFRI FASE and EPSCoR page](#).

Applications that include international partners must also include a description of how that international partnership will directly benefit improvements in and sustainability of U.S. agriculture and food systems described in this Request for Applications.

2. Applications that include such partnerships must begin their title as “**PARTNERSHIP:** [full title...]” If a program area priority has title requirements, PARTNERSHIP should be added to the end of the required phrase (i.e., DSFAS PARTNERSHIP: [full title...]). The partnership team **MUST BE** reflected among the listed Project Director and Co-Project Director(s). In the case of international partners, the partnership team **MUST BE** reflected among the listed Co-investigator(s).
3. A minimum of \$150,000 of the budget **MUST BE** allocated to the institution(s) included as eligible partner(s), as indicated in E.1 above.
4. Standard grant applications meeting these partnership criteria are eligible, as well as Strengthening Standard grant applications partnering with any organization (i.e., Strengthening eligible institutions may apply as the lead institution).

NIFA is also partnering with Ireland and Northern Ireland under the U.S.-Ireland Research and Development Partnership to solicit collaborative research applications in the following program area priorities: A1112, A1201, A1221, A1231, A1251, A1366, A1401, A1402, A1414, A1451, A1531, and A1541. For more information about U.S.-Ireland Tripartite Collaborative grants, including FAQs about this opportunity, visit the [NIFA, Ireland, and Northern Ireland partnership page](#).

Note: Applications submitted for U.S.-Ireland Tripartite Collaborative grants in A1112, A1201, A1221, A1251, A1401, A1451, A1531, and A1541 are ineligible for this partnership opportunity.

PART III. ELIGIBILITY INFORMATION

A. Eligibility Requirements

Applicants for AFRI must meet all the requirements discussed in this RFA. Failure to meet the eligibility criteria by the application deadline may result in exclusion from consideration or, preclude NIFA from making an award. For those new to Federal financial assistance, NIFA's [About Grants](#) provides highly recommended information about grants and other resources to help understand the Federal awards process.

Eligibility is linked to the project type as specified below.

1. Research, Education or Extension Projects

Eligible applicants for single-function Research, Education or Extension Projects include:

- a) State Agricultural Experiment Station;
- b) colleges and universities (including junior colleges offering associate degrees or higher);
- c) university research foundations;
- d) other research institutions and organizations;
- e) Federal agencies;
- f) national laboratories;
- g) private organizations or corporations;
- h) individuals who are U.S. citizens, nationals, or permanent residents; and
- i) any group consisting of two or more entities identified in a) through h).

Eligible institutions do not include foreign and international organizations.

2. Integrated Projects

Eligible applicants for Integrated Projects include:

- a) colleges and universities;
- b) 1994 Land-Grant Institutions; and
- c) Hispanic-serving agricultural colleges and universities (see [NIFA's Hispanic-Serving Agricultural Colleges and Universities page](#)).

For item a) under Integrated Projects, the terms "college" and "university" mean an educational institution in any state which

- a) 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;
- b) is legally authorized within such state to provide a program of education beyond secondary education;
- c) provides an educational program for which a bachelor's degree or any other higher degree is awarded;
- d) is a public or other nonprofit institution; and
- e) 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. Food and Agricultural Science Enhancement Grants

[Part II § C.2](#) contains the eligibility details for Food and Agricultural Science Enhancement (FASE) Grants. Note that under the FASE program, New Investigator Standard, New Investigator Seed, Strengthening Standard, Strengthening Workshop, Strengthening Seed, Equipment and Sabbatical Grants are solicited by specific program area priorities in this RFA. Not all grant types are solicited by every program area priority in this RFA and only grant types specifically solicited by each specific program area priority, as identified in the Program Area Descriptions of [Part I § C](#), will be considered for review.

Applicants must respond to the program area priorities and deadlines found in [Part I § C](#). Grant recipients may subcontract to organizations not eligible to apply provided such organizations are necessary for the conduct of the project. Failure to meet an eligibility criterion by the 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 (see [Part III § B](#)).

USDA **will not accept** competitive applications for grants and cooperative agreements submitted for due dates after June 20, 2025, and/or research and development (R&D) contract proposals submitted to solicitations issued after June 20, 2025, for dangerous gain-of-function research, as defined in [Section 8 of E.O. 14292](#).

Duplicate or Multiple Submissions – submission of duplicate or predominantly overlapping applications is not allowed. NIFA will disqualify both applications if an applicant submits multiple applications that are duplicative or substantially overlapping to NIFA programs within the same fiscal year.

B. Request for Determination of Status

1. Strengthening Grant Eligibility

If an institution is applying for a Strengthening Grant under the FASE program refer to the “AFRI Grant Types” PDF in the attachments list on the [AFRI RFA Resources page](#)).

2. Multi-Campus Institution

All institutions grouped under one main campus as listed in Table 1 following [Appendix III](#), unless located in an Established Program to Stimulate Competitive Research (EPSCoR) state (listed in [Part II § C.2](#)), are excluded from eligibility for all strengthening funds. However, if any campus within a multi-campus listing can provide information demonstrating that it is administratively independent or has an independent accreditation, then the institution may petition for an exemption to this rule and request eligibility for strengthening funds. The LOI (if required) and the application must include a letter indicating how the institution is independent of the main campus, either through accreditation or administration, how the institution is eligible for a Strengthening Grant, and total federal funds received for science and engineering research and development. The letter must be signed by the Authorized Representative (AR).

C. Cost Sharing or Matching

Applicants **MUST** provide matching contributions on a dollar-for-dollar basis for all Federal funds awarded under AFRI for applied research grants or equipment grants unless a waiver

applies. Matching funds requirements for AFRI programs included in this RFA may be found at [7 U.S.C. 3157 \(b\)\(9\) \(A-C\)](#).

For Applied Research Grants:

Match Required –If an applied Research (see [Appendix III](#)) or Integrated Project with an applied research component, is commodity-specific and not of national scope, the grant recipient is required to match the USDA funds awarded on a dollar-for-dollar basis from non-federal sources with cash and/or in-kind contributions. ([7 U.S.C. 3157\(9\)C](#))

- Match not required – If the applied research or integrated project with an applied research component is not commodity specific or is national in scope, then no match is required.

For Equipment Grants:

Match Required – The amount of Federal funds provided may not exceed 50 percent of the cost of the equipment acquired using funds from the grant, or \$50,000, whichever is less. Grantees are required to match 100 percent of Federal funds awarded from non-Federal sources.

- Match waiver - NIFA may waive all or part of the matching requirement if all three of the following criteria are met: first, application is from a college, university, or research foundation maintained by a college or university that ranks in the lowest one third of such colleges, universities, and research foundations on the basis of Federal research funds received (see “Table 2 Least Successful Institutions” in the attachments list on the [AFRI RFA Resources page](#)); second, the equipment to be acquired costs no more than \$25,000; and third, the equipment has multiple uses within a single research project or is usable in more than one research project. To be considered for this waiver, the budget justification (see [Part IV § C](#)) must include a letter signed by the institution’s AR addressing the noted criteria.

D. Centers of Excellence

Pursuant to [Section 7214 of the Agricultural Act of 2014 \(7 U.S.C 5926\)](#), NIFA will recognize and prioritize COE applicants that carry out research, extension, and education activities that relate to the food and agricultural sciences. A COE is composed of one or more of the following entities that provide financial or in-kind support to the COE.

1. State agricultural experiment stations.
2. Colleges and universities.
3. University research foundations.
4. Other research institutions and organizations.
5. Federal agencies.
6. National laboratories.
7. Private organizations, foundations, or corporations.
8. Individuals; or
9. Any group consisting of two or more of the entities described in (1) through (8).

COE designation is available only for the **standard grant** and the **Coordinated Agricultural Project (CAP) grant** applications submitted to the program areas or program area priorities in the Foundational and Applied Science and Sustainable Agricultural Systems RFAs.

Coordinated Agricultural Projects are not being solicited by this RFA in FY 2026. If applicable, [Part IV § C](#) contains additional requirements for COE consideration.

PART IV. APPLICATION AND SUBMISSION

A. Letter of Intent

Workshop grant applications within this RFA **requires** a Letter of Intent (LOI), then a LOI is a prerequisite for submission of an application. Refer to the Program Area Descriptions beginning in [Part I § C](#) for LOI deadlines for a specific program area or program area priority. For detailed guidance on LOI submission, see “AFRI Letter of Intent Instructions” in the attachments list on the [AFRI RFA Resources page](#).

B. Method of Application

Applicants must apply to this RFA electronically; no other method or response is accepted. The electronic application for this RFA and additional resources are available on [Grants.gov](#) and [Grants 101](#). **Table 41** provides instructions on how to obtain an electronic application. **Part III** of the NIFA Grants Application Guide contains detailed information regarding the [Grants.gov](#) registration process. The NIFA Grants Application Guide is contained in the specific funding opportunity package or a sample of the guide can be found [here](#). When applying for a NIFA award, it is important to reference the version of the guide that is included in the specific funding opportunity application package.

Table 41. Steps to Obtain Application Materials

Steps	Action
Step One: Register	<i>New Users</i> to Grants.gov must register early with Grants.gov prior to submitting an application.
Step Two: Download Adobe	Download and Install Adobe Reader (see Adobe Software Compatibility for basic system requirements).
Step Three: Find Application	Using this funding opportunity number USDA-NIFA-AFRI-011134 , search for application here: Opportunity Package .
Step Four: Assess Readiness	Contact an AR prior to starting an application to assess the organization’s readiness to submit an electronic application.

Table 42: Help and Resources

Grants.gov Support	NIFA Support
Grants.gov Online Support Telephone support: 800-518-4726 Toll-Free or 606-545-5035 Email support: support@grants.gov Self-service customer-based support: Grants.gov iPortal Customer service business Hours 24/7, except federal holidays .	Email: grantapplicationquestions@usda.gov Business hours: Monday thru Friday, 7a.m. – 5p.m. ET, except federal holidays

C. Content and Form of the Application

The [NIFA Grants Application Guide](#) is part of the corresponding application package for this RFA. The RFA overrides the [NIFA Grants Application Guide](#) if there is a discrepancy between the two documents. Applicants that do not meet the application requirements, to include partial

applications, risk being excluded from NIFA’s review. NIFA will assign a proposal number to all applications that meet the requirements of this RFA. Applicants must refer to the proposal number when corresponding with NIFA. **Table 43** outlines other key instructions for applicants.

Table 43: Key Application Instructions

Instruction	References (All references are to the Application Guide)
Attachments must be in a portable document format (PDF) format.	Part IV
Check the manifest of submitted files to verify attachments are in the correct format.	Part IV
Conduct an administrative review of the application before submission.	Part IV
Follow the submission instructions.	Part IV
Provide an accurate email address, where designated, on the SF-424 R&R.	Part V
Contact the Grants.gov helpdesk for technical support and keep a record of the correspondence.	N/A
Contact NIFA if applicant does not received correspondence from NIFA regarding an application within 30 days of the application deadline.	N/A

AFRI Specific Application Instructions. Application and submission information including page limits and narrative font sizes for AFRI Foundational and Applied Science RFA applications are available in the “FY 2026 Foundational and Applied Science RFA Additional Information for Part IV, C” PDF in the attachments list on the [AFRI RFA Resources page](#). Page limits and detailed eligibility restrictions for each specific grant type can also be found in the “Grant Types” PDF in the attachments list on the [AFRI RFA Resources page](#).

We recommend that you conduct an administrative review of the application before submission of it via Grants.gov to ensure that it complies with all preparation instructions. An application checklist is included in Part VII of the NIFA Grants.gov Application Guide to assist with this review.

You should check the application for completeness. The application should be checked for the following required items, which must include:

1. Project Summary/Abstract
2. Project Narrative
3. Bibliography & References Cited
4. Logic Model for Integrated Projects (if applicable)
5. Management Plan for Integrated Projects (if applicable)
6. Data Management Plan
7. Mentoring Plan

8. Facilities & Other Resources
9. Curriculum Vitae
10. Conflict of Interest Lists
11. Current and Pending Support
12. Budget
13. Budget Justification

This is not an exhaustive list of required items; it only serves to highlight items that may be overlooked. **Failure to include any of the three critical required documents of Project Summary/Abstract, Project Narrative, or Bibliography & References Cited sections as PDF attachment will result in the application not being reviewed or considered for funding by NIFA.**

We send email correspondence to the AR regarding the status of submitted applications. We strongly encourage you to provide accurate email addresses, where designated, on the SF-424 R&R Application for Federal Assistance.

If the AR has not received correspondence **from NIFA** regarding a submitted application within 30 days of the established deadline, contact the Program Contact identified in [Part I § C](#) 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, you should cite this number on all future correspondence.**

D. Funding Restrictions

Indirect costs are not permitted on Workshop Grant awards.

For all other award types,

Indirect Cost (IDC) is not to exceed 30 percent of the recipient's Total Federal Funds Awarded (TFFA). [7 U.S.C. 3310](#) limits the recovery of IDC for the overall award to 30 percent of the TFFA under a research, education, or extension project. The maximum allowable IDC amount recoverable under the award, including the IDC charged by the sub-awardee(s), if any, is the lesser of the following and is determined by calculating the amount of IDC using:

- a. the sum of an institution's negotiated indirect cost rate and the indirect cost rate charged by sub-awardees, if any; or
- b. 30 percent of TFFA.

If the result of number one is the lesser of the two amounts, the grant recipient is allowed to charge the negotiated IDC rate on the prime award and the sub-award(s), if any. Any sub-awards would be subject to the sub-awardee's negotiated IDC rate. The sub-awardee may charge its negotiated IDC rate on its portion of the award, provided the sum of the IDC amount charged under the award by the prime awardee and the sub-awardee(s) does not exceed 30 percent of the TFFA.

If the result of number two is the lesser of the two amounts, then the maximum IDC allowed for the overall award, including any sub-award(s), is limited to 30 percent of the

TFFA. That is, the IDC of the prime awardee plus the sum of the IDC charged by the sub-awardee(s), if any, may not exceed 30 percent of the TFFA.

In the event of an award, the prime awardee is responsible for ensuring the maximum indirect cost allowed for the award is not exceeded when combining IDC for the Federal portion (i.e., prime and sub-awardee(s)) and any applicable cost-sharing. Amounts exceeding the maximum allowable IDC are considered unallowable. See sections [408](#) and [410](#) of [2 CFR 200](#).

If the applicant does not have a negotiated rate and NIFA is the cognizant agency, the applicant may request an IDC rate. Applicants are not required to complete the IDC package during the application process and need only to calculate a rate to serve as a basis for requesting IDC. If awarded, the applicant will be required to submit a complete IDC proposal package to obtain a negotiated rate.

Organizations that do not have a current negotiated (including provisional) rate, may elect the de minimis rate ([2 CFR 200.414\(f\)](#)). The Uniform Guidance offers the option of electing to charge a de minimis rate of 15 percent of modified total indirect costs (MTDC) which may be used indefinitely. As described above and in [2 CFR 200.403](#), costs must be charged consistently as either indirect or direct costs but may not be double charged or inconsistently charged as both. If elected, this methodology must be used consistently for all Federal awards until such time as a recipient chooses to negotiate for a rate, which it may do at any time.

See [NIFA Indirect Costs](#) for information including [additional resources](#) and [NIFA Indirect Cost Guidance Chart](#).

Successful applicants must not use grant funds awarded under the authority of this RFA 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).

PART V. APPLICATION REVIEW REQUIREMENTS

A. NIFA's Evaluation Process

NIFA evaluates each application in a two-part process. First, we screen each application to ensure that it meets the administrative requirements set forth in this RFA. All administrative requirements must be met in order for the application to proceed to the next level of review. Second, a scientific peer-review process will be used to technically evaluate applications that have met the administrative requirements using a review panel (see [NIFA Peer Review Process](#)).

Scientific Peer Review Process:

NIFA selects reviewers for the review panel based upon their training and experience in relevant scientific, extension, or education fields, taking into account the following factors:

1. The level of relevant formal scientific, technical education, or extension experience of the individual, as well as the extent to which an individual is engaged in relevant research, education, or extension activities.
2. The need to include experts from various areas of specialization within relevant scientific, education, or extension fields.
3. The need to include other experts (e.g., agricultural producers, range or forest managers/operators, researchers, educators, evaluators, and consumers) who can assess relevance of the applications to targeted audiences and to program needs.
4. The need to include experts from a variety of organizational types (e.g., colleges, universities, industry, state and Federal agencies, and private profit and non-profit organizations) and geographic locations.
5. The need to maintain a balanced composition with regard to the reviewer's area of expertise, geographic area, and entity type, as appropriate.
6. The need to include reviewers who can judge the effective usefulness of each application to producers and the general public.

After each peer review panel has completed its deliberations, the responsible program staff of NIFA will recommend that your project is either approved for support from currently available funds or declined due to insufficient funds or unfavorable review.

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

After the review process has been completed, NIFA sends copies of reviews, *not* including the identity of reviewers, and a summary (if applicable) of the review panel comments to the PD.

Conflicts of interest. NIFA takes extreme care to prevent any actual or perceived conflicts of interest that may influence the review or evaluation (see [NIFA Peer Review Process for Competitive Grant Applications](#)).

B. Evaluation Criteria

NIFA will use the following criteria to evaluate applications to this program:

A reviewer's written evaluation entails two levels of assessment. First, the reviewer summarizes how well the application addressed each evaluation criterion. After the application has been assessed for strengths and weaknesses of each criterion, the reviewer then evaluates the overall likelihood that the project will have significant outcome and impact. The written reviews are used to begin panel discussions with other reviewers serving on the peer review panel. Through these discussions, peer review panelists come to consensus on the final ranking of the applications. A complete description of NIFA's peer review process can be found on the [NIFA Peer Review Process for Competitive Grant Applications page](#).

Detailed evaluation criteria for each project type, grant type, and centers of excellence are found in the "AFRI Review Criteria" PDF in the attachments list on the [AFRI RFA Resources page](#). We will use the appropriate evaluation criteria to review applications submitted in response to this RFA.

C. Centers of Excellence

In addition to evaluating applicants using the criterion listed in [Part V § B](#), NIFA will use the COE standards described in this RFA to evaluate applicants that rank highly meritorious and requested to be considered as a COE. In instances where applicants are found to be equally meritorious with the application of a non-COE applicant, NIFA will prioritize the COE applicant meeting the COE criteria. NIFA will effectively use the COE prioritization as a "tie breaker." Applicants that rank highly meritorious but who did not request consideration as a COE or who are not deemed to have met the COE standards may still receive funding.

Applicants that meet the COE requirements will have the COE designation in their notice of award. Entities recognized as COE will maintain that distinction for the duration of their period of performance or as identified in the terms and conditions of that award.

D. Organizational Management Information

Applicants must submit specific management information prior to an award and update the information as needed. Applicants may only need to provide an update if there was a change in previously provided information under this or another NIFA program. NIFA provides the requisite forms during the pre-award process. Although an applicant may be eligible for award under this program, 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, or a determination that an applicant is not responsible).

E. Application Disposition

Applicants may withdraw at any time before NIFA makes a final funding decision. NIFA will retain all applications, including withdrawn applications and unfunded applications.

PART VI. AWARD ADMINISTRATION

A. General

Within the limit of funds authorized, the NIFA awarding official will make grants to responsible and 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 must 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, 7 CFR Part 3430, subparts A through E](#).

Award Notice. The award document will provide pertinent instructions and information as described in [2 CFR 200.211](#) (see [NIFA's Terms and Conditions](#)).

B. Administrative and National Policy Requirements

Several federal statutes and regulations apply to grant applications and the projects outlined in this RFA (some are listed here: [Federal Regulations](#)). Unless specifically noted by statute or award-specific requirements, [NIFA Federal Assistance Policy Guide](#) applies to all NIFA awards.

C. Expected Program Outputs and Reporting Requirements

Output and reporting requirements are included in the [award terms and conditions](#). If there are any program or award-specific award terms, they will be identified in the Award Notice.

PART VII. OTHER INFORMATION

A. Use of Funds and Changes in Budget

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.

Changes in Budget or Project Plans. In accordance with [2 CFR 200.308](#), awardees must request prior approval from NIFA for the following program or budget-related reasons (the awardee is subject to the terms and conditions identified in the award):

1. Change in the scope or the objective of the project or program (even if there is no associated budget revision requiring prior written approval).
2. Change in key personnel (including employees and contractors) that are identified by name or position in the Federal award.
3. The disengagement from a project for more than three months, or a 25 percent reduction in time and effort devoted to the Federal award over the course of the period of performance, by the approved project director or principal investigator.
4. The inclusion, unless waived by the Federal agency, of costs that require prior approval in accordance with [2 CFR 200 Subpart E \(Cost Principles\)](#) as applicable.
5. The transfer of funds budgeted for participant support costs to other budget categories.
6. Subaward activities not proposed in the application and approved in the Federal award. This requirement does not apply to procurement transactions for goods and services.
7. Changes in the total approved cost-sharing amount.
8. The need arises for additional Federal funds to complete the project.
9. A no-cost extension (meaning, an extension of time that does not require the obligation of additional Federal funds) of the period of performance, other than any one-time extension authorized by the Federal agency in accordance with paragraph (g)(2). All requests for no-cost extensions should be submitted at least 10 calendar days before the conclusion of the period of performance. The Federal agency may approve multiple no-cost extensions under a Federal award if not prohibited by Federal statute or regulation.
10. Salary rates of pay exceeding an Executive Level IV salary range (see “Rates of Pay for the Executive Schedule” under the “Executive & Senior Level Employee Pay Tables” header at <https://www.opm.gov/policy-data-oversight/pay-leave/salaries-wages/>) require prior NIFA approval. This rate does not include any fringe benefits, general and administrative (G&A), overhead, or other expenses. Requests for approval must include the salary rate of pay and a justification for the rate and be sent to the Authorized Departmental Officer (ADO) to awards@usda.gov.
11. No more than 50 percent of the total dollars of this award may be subcontracted to another party(ies) without prior written approval of the ADO, except subcontracts to Federal agencies.

B. Confidential Aspects of Applications and Awards

When an application results in an award, it becomes a part of NIFA transaction records, which are available to the public. Information that the Secretary of Agriculture determines to be confidential, privileged, or proprietary in nature will be held in confidence to the extent permitted by law. Therefore, applicants should clearly mark any information within the application they wish to have considered as confidential, privileged, or proprietary. NIFA will

retain a copy of an application that does not result in an award for three years. Such an application will be released only with the consent of the applicant or to the extent required by law. An applicant may withdraw at any time prior to the final action thereon.

C. Regulatory Information

This program is not subject to the provisions of 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](#).

D. Language Access Services

NIFA offers language access services, such as interpretation and translation of vital information, free of charge. If you need interpretation or translation services, please visit [NIFA Language Access Services](#) or contact Lois Tuttle, Equal Opportunity Specialist, at Lois.Tuttle@usda.gov or (443) 386-9488.

APPENDIX I: AGENCY CONTACT

AFRI Program Office: E-mail: AFRI@usda.gov

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

Program Area Contacts

Program Area	Program Area Contacts
Plant Health and Production and Plant Products	A1102@usda.gov A1103@usda.gov A1112@usda.gov A1152@usda.gov A1141@usda.gov A1113@usda.gov A1143@usda.gov
Animal Health and Production and Animal Products	A1211@usda.gov A1231@usda.gov A1251@usda.gov A1221@usda.gov A1201@usda.gov
Food Safety, Nutrition, and Health	A1332@usda.gov A1364@usda.gov A1344@usda.gov A1343@usda.gov A1366@usda.gov
Bioenergy, Natural Resources, and Environment	A1401@usda.gov A1411@usda.gov A1414@usda.gov A1451@usda.gov
Agriculture Systems and Technology	A1521@usda.gov A1531@usda.gov A1511@usda.gov A1551@usda.gov
Agriculture Economics and Rural Communities	A1601@usda.gov A1641@usda.gov A1642@usda.gov A1661@usda.gov A1651@usda.gov

Program Area	Program Area Contacts
Crosscutting Programs	A1402@usda.gov A1701@usda.gov NIFA-DSFAS@usda.gov A1181@usda.gov commodityboards@usda.gov A1713@usda.gov afri-rapidresponse@usda.gov

For administrative questions related to

1. Grants.gov, see [Part IV](#)
2. Other RFA or application questions, please email grantapplicationquestions@usda.gov
3. Awards under this RFA, please email awards@usda.gov

U.S. Postal Mailing Address:

National Institute of Food and Agriculture
U.S. Department of Agriculture
P.O. Box 419205, MS 10000
Kansas City, MO 64141-6205

Courier/Package Delivery Address:

National Institute of Food and Agriculture
United States Department of Agriculture
2312 East Bannister Road, MS 10000
Kansas City, MO 64141-3061

APPENDIX II: GLOSSARY OF TERMS

Glossary of Terms

Agriculture and Food Research Initiative – AFRI
Assistance Listing Number – ALN
Authorized Departmental Officer – ADO
Authorized Representative - AR
Agricultural Research, Extension, and Education Reform Act of 1998 - AREERA
Coordinated Agricultural Project - CAP
Centers of Excellence - COE
Data Management Plan - DMP
Established Program to Stimulate Competitive Research - EPSCoR
Food and Agricultural Science Enhancement - FASE
Indirect Costs - IDC
National Institute of Food and Agriculture - NIFA
Request for Application - RFA
Research, Education, and Economics – REE
United States Department of Agriculture - USDA

APPENDIX III: DEFINITIONS

Refer to [7 CFR 3430 Competitive and Noncompetitive Non-formula Federal Assistance Programs – General Award Administrative Provisions](#) for additional definitions.

Terms	Definitions
Applied Research	Research that includes expansion of the findings of fundamental research to uncover practical ways in which new knowledge can be advanced to benefit individuals and society.
Continuation Award	An award instrument by which NIFA agrees to support a specified level of effort for a predetermined period of time with a statement of intention to provide additional support at a future date, provided that performance has been satisfactory, appropriations are available for this purpose, and continued support would be in the best interest of the federal government and the public.
Co-Project Director	Someone who could assume the project director's responsibilities if the project director steps out of that role prior to the completion of the project term. For those that do not meet these criteria they should use the terms co-investigator or co-collaborator.
Education Activity	Education activity or teaching activity means formal classroom instruction, laboratory instruction, and practicum experience in the food and agricultural sciences and other related matters such as faculty development, student recruitment and services, curriculum development, instructional materials and equipment, and innovative teaching methodologies.
Established Program to Stimulate Competitive Research	EPSCoR is a list of eligible states that are eligible for USDA EPSCoR funding which is determined every year by NIFA. This list includes states having a funding level no higher than the 38th percentile of all States based on a 3-year rolling average of AFRI funding levels, excluding FASE Strengthening funds. The current list is included in the "AFRI Grant Types" PDF in the attachments list on the AFRI RFA Resources page.
Extension Activity	Extension activity means an act or process that delivers science-based knowledge and informal educational programs to people, enabling them to make practical decisions.
Food and Agricultural Science Enhancement Grants	FASE Grants mean funding awarded to eligible applicants to strengthen science capabilities of Project Directors, to help institutions develop competitive scientific programs, and to attract new scientists into careers in high-priority areas of National need in agriculture, food, and environmental sciences. FASE awards may apply to any of the three agricultural knowledge components (i.e., research, education, and extension). FASE awards include Pre- and Postdoctoral Fellowships, New Investigator grants, and Strengthening grants.
Fundamental Research	Fundamental research means research that (i) increases knowledge or understanding of the fundamental aspects of phenomena and has the potential for broad application; and (ii) has an effect on agriculture, food, nutrition, or the environment.

Terms	Definitions
Limited Institutional Success	Limited institutional success means institutions that are not among the most successful universities and colleges for receiving Federal funds for science and engineering research. A list of successful institutions is provided in the “Table 2 Least Successful Institutions” PDF in the attachments list on the AFRI RFA Resources page .
Matching	The process through which a grant recipient match awarded USDA funds with cash and in-kind contributions on a dollar-for-dollar basis. The matching funds must derive from non-Federal sources.
Multidisciplinary Project	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.
New Application	An application not previously submitted to a program.
Nutrition Security	Nutrition security means having consistent access to healthy, safe, affordable foods essential to optimal health and well-being.
Precision Nutrition	Nutrition tailored to different population subgroups based on the integration of data for that subgroup from several sources. These sources include data on dietary intake and food composition, genetics, epigenetics, microbiomes (gut health), cultural factors, physical activity, and health status.
Processed Food	A processed food is any food that has been physically, biologically, or chemically modified from its natural, raw state.
Project Director	The principal from a NIFA-funded organization, who is responsible for managing a grant project.
Renewal Application	A project application that seeks additional funding for a project beyond the period that was approved in an original or amended award.
Resubmitted Application	A project application that was previously submitted to a program, but the application was not funded.
Resubmitted Renewal Application	A project application that requests additional funding for a project beyond the period that was approved in the original award. This is an application that had previously been submitted for renewal to but not funded.
Small and Mid-Sized Institutions	Academic institutions with a current total enrollment of 17,500 or less including graduate and undergraduate and full- and part-time students. An institution, in this instance, is an organization that possesses a significant degree of autonomy. Significant degree of autonomy is defined by being independently accredited as determined by reference to the current version of the Higher Education Directory, published by Higher Education Publications, Inc., 6400 Arlington Boulevard, Suite 648, Falls Church, Virginia 22042 (703-532-2300).
Strengthening Grants	Funds awarded to institutions eligible for FASE Grants to enhance institutional capacity, with the goal of leading to future funding in the project area, as well as strengthening the competitiveness of the investigator’s research, education, and/or extension activities. Strengthening grants consist of Standard, Coordinated Agricultural Project and Workshop Grant types as well as Seed Grants, Equipment Grants, and Sabbatical Grants.

Terms	Definitions
Transdisciplinary Team	A team composed of investigators from multiple disciplines that cross boundaries using holistic approaches to address complex challenges that cannot be solved using single-disciplinary approaches.
USDA Established Program to Stimulate Competitive Research States	EPSCoR States mean States which have been less successful in receiving funding from AFRI, having a funding level no higher than the 38th percentile of all States based on a 3-year average of AFRI funding levels, excluding FASE Strengthening funds. The most recent list of USDA EPSCoR States is provided in the “AFRI Grant Types” PDF in the attachments list on the AFRI RFA Resources page .

APPENDIX IV: OTHER AFRI RESOURCES

AFRI program information is available on the [NIFA AFRI website](#). The following are among the materials available:

1. [Requests for Applications](#)
2. [AFRI Annual Review](#)
3. [Frequently Asked Questions](#)
4. [Interagency Programs](#)
5. [AFRI RFA Resources](#)
 - a. ***Most Successful Universities and Colleges.*** Any institution listed on this list, Most Successful Universities and Colleges Receiving Federal Funds, is not eligible for Strengthening Grants from the FASE program unless they are located in an EPSCoR state. See “Table 1 Most Successful Institutions” in the attachments list.
 - b. ***Lowest One Third of Universities and Colleges Receiving Federal Funds.*** The lowest one third of universities and colleges receiving Federal funds is used to determine eligibility for possible waiver of matching funds requirement for Equipment Grants (see “Table 2 Least Successful Institutions” in the attachments list).
 - c. ***Flow Chart for Strengthening Grant Eligibility.*** The Flow Chart for Strengthening Grant Eligibility will help to determine your eligibility to apply for strengthening grants (see “FASE Strengthening Grant Eligibility Flow Chart” in the attachments list).
6. [AFRI Deadlines](#)