USDA-FFAR Innovation Challenge:
"Nourishing Next Generation Agrifood Breakthroughs"
2024 Request for Applications (RFA)

Match is Encouraged for This Funding Opportunity

Key Dates

Full Application Open: June 11, 2024

Informational Webinar: June 13, 2024

Q&A Session for Prospective Applicants: July 10, 2024

Full Applications Due: July 29, 2024, by 5:00 PM ET

Award Notification: September 30, 2024

BACKGROUND

The U.S. Department of Agriculture (USDA) and the Foundation for Food & Agriculture Research (FFAR) announce a challenge to drive innovations at the Intersection of Nutrition, Health, and Climate-Smart Agriculture to Advance Justice, Equity, and Opportunity to address the societal challenge of Nutrition Security. The challenge will fund early-career scientists to lead interdisciplinary teams to conduct innovative high-risk, high-reward projects. The challenge seeks to identify and support teams who demonstrate strong potential to be sources of disruptive ideas and energy in agricultural science. This opportunity will foster the development of transdisciplinary teams to pursue unconventional ideas that have the potential to produce major breakthroughs for nutrition security as it relates to human health, climate change, and social equity. Successful applicants will propose a compelling vision of the significant breakthroughs in real-world nutrition security their project will enable and will convincingly articulate why their team is poised to bring about these major leaps forward.

PROGRAM DESCRIPTION

The "Nourishing Next Generation Agrifood Breakthroughs" Innovation Challenge will award $1 million to $2 million dollars total from the USDA and private sector partners to (1) identify and support dynamic and disruptive technologies in nutrition security that align with USDA SCIENCE AND RESEARCH STRATEGY, 2023 - 2026: Cultivating Scientific Innovation (USDA's S&RS), (2)

stimulate new professional interdisciplinary and transdisciplinary relationships and connections in service to agricultural innovation aligned with nutrition security, (3) integrate themes of human health, climate-smart agriculture, and social equity, justice, and opportunity and (4) leverage existing, currently unconnected resources in novel and creative ways. The funding USDA is providing for this opportunity comes from the $2.5 million total Congress appropriated to the Office of the Chief Scientist for Fiscal Years 2022, 2023, and 2024.

This Innovation Challenge seeks to fund research projects and teams that will, in accordance with USDA's S&RS, drive U.S. agricultural science successfully and cooperatively forward into the next generation of sustainable, resilient, and healthy food systems. With a focus on the next generation of research, this opportunity emphasizes providing resources to support highly creative and highly promising early-career researchers.

Proposals will undergo an administrative review followed by a technical peer review. Top proposals will then be shared with the Innovation Challenge Steering Committee. Based on the technical peer review and the Innovation Challenge Steering Committee review, proposals will be recommended for funding, based on the applicant's ability to conduct the proposed research; integrate the themes of human health, climate-smart agriculture, and social equity, justice, and opportunity; and articulate innovative ideas for high-risk, high-reward research to improve nutrition security.

Funding will be provided for up to four (4) awards of between $350,000 and $500,000 each. The performance period for awards will be two years. In addition to funding, awardees will gain access to collaboration and networking opportunities with USDA and FFAR scientists and leaders.

Program Priorities and Requirements

This opportunity seeks projects that both foster disruptive innovation and clearly integrate the following three topic areas from USDA's S&RS. See [USDA's S&RS](#) for additional detail about these topics.

Proposed projects **must simultaneously integrate** the following three themes:

1. Driving Climate-Smart Solutions

Climate-smart solutions are crucial for ensuring nutrition security in the face of climate change. As the planet warms, weather patterns become more unpredictable, resulting in more frequent and more extreme weather events like droughts, floods, and storms, affecting crop yields, livestock, and fisheries. Incorporating innovative, accessible, and affordable climate smart technologies and practices can help mitigate the impact of climate change on nutrition security. Projects addressing agroforestry, conservation agriculture, drought-tolerant crops, water management, livestock management, climate-informed decision making, and food loss and waste would be appropriate.

2. Bolstering Nutrition Security & Human Health

Nutrition security, food security, and human health are intrinsically linked. Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe, and nutritious foods that are culturally appropriate and meet their dietary needs to lead an active and healthy life. Building on and complementing food security, nutrition security means all people have consistent and equitable access to healthy, safe, affordable foods essential to optimal health and well-being. Multifaceted approaches that integrate the development of novel nutrient-dense, safe, and high-quality foods, aligned with innovative technologies that support nutrition education and target health messaging are necessary to bolster nutrition security and health. Projects addressing the development and availability of novel nutrient-rich foods (i.e., proteins, carbohydrates, lipids), palatable foods free from chemical, biological, and physical hazards with increased shelf life, and research on innovative and novel policy and programs that ensure equitable access to safe, affordable, and nutritious food are encouraged. Innovative technologies integrating wearable tech supporting precision health and nutrition for diverse communities are also appropriate.

3. Advancing Racial Justice, Equity & Opportunity

Advancing racial justice, equity, and opportunity in nutrition security requires knowledge and understanding of the systematic inequalities that exist and innovative tools, educational platforms, and data technologies that support the underserved communities that are disproportionately affected by these inequities. Projects that prioritize research on innovative and novel policies and programs addressing food deserts, supporting minority producers and processors, promoting food sovereignty, providing culturally relevant and accessible food safety and nutrition education, addressing economic barriers to access, and incorporating community leadership and engagement would be appropriate.

This challenge is open to relevant innovations of all types. A few examples of areas of innovation that integrate these three themes follow below. These examples are not intended to limit or constrain topic areas proposed.

- Innovations to dramatically optimize nutrition security through food production and distribution systems such that agriculture has net positive effects on climate adaptation and/or mitigation and simultaneously increases equitable and sustainable access to affordable, nutritious food.
- Innovations in unconventional food sources that have high nutritional value and are resilient to a changing climate, with high potential to support healthy diets and increase equitable and affordable access to high-quality food.
- Innovations in stabilizing access to nutrient-dense foods in the face of extreme weather events and other societal disruptors, and which account for relevant interactions with social and economic factors such as poverty, inequality, and poor nutrition and health outcomes.
- Innovations to optimize nutrition security through providing real-time data to consumers, producers, processors, and food supply chain systems to significantly address deficiencies

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that currently exist in precision agriculture, livestock monitoring, supply chain transparency and reporting, consumer health tracking and precision nutrition, food waste reduction, climate adaptation, and labor efficiency.

A significant component of the Innovation Challenge is collaboration, which is integral to innovation and transformative applications of knowledge. Therefore, successful applicants will describe their plans for one or more convenings or other stakeholder engagement methods to involve a wide range of people and communities in informing and disseminating their work.

Proposed projects that also demonstrate the following characteristics will receive preference:

1. Contribute to one or more of the following goals:
- To develop and deploy advanced solutions to prevent, prepare, and protect against unintentional and intentional threats to agriculture and food in the United States;
- To overcome barriers in the development of agricultural technologies, research tools, and qualified products and projects that enhance export competitiveness, environmental sustainability, and resilience to extreme weather;
- To ensure that the United States maintains and enhances its position as a leader in developing and deploying agricultural technologies, research tools, and qualified projects and products that increase economic opportunities and security for farmers, ranchers, and rural communities (2018 Farm Bill, H.R. 2, p. 308)

2. Accelerate disruptive innovation that is aligned with USDA's S&RS. For this request for applications (RFA), disruptive innovation may take one or more of the following forms:
- Radical Innovation (i.e., disruption): Development of new technologies, algorithms, methodology, or products with the potential to transform agricultural systems.
- Applied Innovation: Application and validation of new or emerging technologies, processes, or management strategies to address significant challenges in food and agriculture systems.
- Re-imagined Innovation (i.e., unique combinations and applications): Adaptation of existing technologies, processes, or management strategies for entirely new agricultural applications.

3. Be consistent with FFAR's Priority Areas.

ELIGIBILITY

Applications are welcome from all domestic and international higher education institutions, non-profit and for-profit organizations, and government-affiliated research agencies.

Eligible Institutions

Any individual(s) with the skills, knowledge, and resources necessary to perform the proposed research as Program Director(s)/Principal Investigator(s) may apply through their home institution or organization.

The primary applicant (i.e., team lead/principal investigator) must be an early-career scientist. For the purposes of this award, early-career scientist is defined as an individual who has received their Ph.D. within the last 10 years.

In keeping with goals to reach a diverse and broad range of institutions and individuals who participate in its programs, the following types of higher education institutions are highly encouraged to apply:
- Hispanic-serving Institutions
- 1890s Land Grant Institutions and other Historically Black Colleges and Universities
- Tribal Colleges and Universities
- Alaska Native and Native Hawaiian Serving Institutions
- Asian American and Native American Pacific Islander Serving Institutions

II. **Eligible Individuals**

Team leads/principal investigators must be near the onset of their independent research career (i.e., within ten (10) years of receiving a Ph.D. or equivalent degree).

Recognizing that agriculture and food sciences are highly complex, requiring individuals from a variety of disciplines to realize the potential in each field or research area. Collaborators are essential for success, particularly for early-career researchers.

As this challenge places priority on fostering new professional interdisciplinary and transdisciplinary relationships and connections in service to agricultural innovation, applications must also describe the membership of the research team that will be funded. Successful teams will both conduct proposed projects and develop and explore innovative conceptual models to discover and articulate high-risk, high-reward future research opportunities to improve nutrition security.

While this award will be made to an outstanding early-career scientist as the team lead/principal investigator, applicants should include information regarding team members and any essential collaborators and include letters of support from those team members and collaborators. In these letters, the team members and collaborators should comment on the potential of the team lead/principal investigator to achieve success.

AWARD INFORMATION

Up to four (4) awards of US $350,000 to $500,000 will be granted under this funding opportunity. Regarding budget narrative, applicants must describe how they would use the award funds to produce innovations for nutrition security by simultaneously addressing nutrition and health, climate-smart agriculture, and social equity. The performance period for completing the proposed work will be two years.

Matching funds are encouraged for this funding opportunity. The funded applicant will receive annual disbursements contingent upon meeting reporting requirements (see Post Award Management below).

A budget justification is required for this funding opportunity. Applicants are encouraged to contact [FFAR's Grant Team](#) to discuss any questions or concerns.

Topics Not Supported Under this Challenge
Not applicable. No topics meeting this challenge's criteria are excluded.

SUBMISSION REQUIREMENTS

Applicants must submit the application for funding using FFAR'S Grant Management System. All application materials provided will be treated as confidential, **except for** the 3-minute pre-recorded, narrated slide presentation requested below. These narrated abstracts may be shared with the public and should not contain confidential information. All applications will be evaluated according to the criteria below. The most promising applicants will be invited to make a presentation and participate in an interview via video teleconference with the Innovation Challenge Steering Committee. **Only applicants who submit a full application and are then invited to do so will be presenting to the Innovation Challenge Steering Committee.**

Full Application Components

Required Components:
- Project title (*up to 250 characters*)
- Program Director or Principal Investigator (name, affiliation, contact information)
- Key project personnel – name(s), affiliation, expertise, project role
- Location/s of performance
- Abstract (3 minutes or less) presented as a pre-recorded, narrated slide presentation consisting of three slides that (1) describe the project and the challenges it addresses, (2) propose disruptive solutions, and (3) expound on the potential impact if successful.

- Goals and Objectives (up to 500 words)
  - Year 1 Milestones (up to 500 words
  - Year 2 Milestones, if applicable (up to 500 words)
- *Project Description and Approach (up to 1, 500 words)*
  - What challenge or existing paradigm is the project addressing?
  - What are the underlying research hypotheses?
  - How do the proposed innovative conceptual models discover and articulate high-risk, high-reward future research opportunities to improve nutrition security?
  - How does the proposed project or conceptual model incorporate themes of nutrition and health, climate-smart agriculture, and social equity, justice, and opportunity?
  - How will the project support disruptive innovative research? How will the project solve challenges to food supply, optimized nutrition, or sustainable agriculture?
  - How does this project leverage existing resources that are currently unconnected in novel and creative ways?
  - How do you plan to design a convening that will inform your project and/or disseminate your findings?
  - List any committed or potential partners; Applications must describe the membership of the research team that will be funded.
- Data management plan (*up to 250 words*)
- Organization Assurances
- Budget narrative: Provide a brief overview of how the funds will be used to develop innovations in nutrition security that integrate human health, climate, and equity. (*up to 500 words*)
- Budget justification by year *(up to 250 words)*

Required Attachments: Failure to provide these attachments will result in the application's disqualification.
- Pre-recorded, narrated three-slide summary or description of the project.
- Current and Pending Support Form: complete for everyone listed as P.I. or Key personnel on the project.
- References Cited, which will not count toward total word limit.
- [P.I. and Key Personnel Bio sketch](): five-page limit per individual listed as P.I. or key personnel in the project.
- Supporting figures, tables, graphics, or equations, which will not count towards the total word limit.
- Letters of Support from Partners

Optional Attachments:

- Additional Key Personnel
- Matching Fund Verification Letter(s) (if applicable)

HOW TO APPLY

Full proposals must be submitted by the deadline date through FFAR's online application Grant Management System. Applications submitted outside of this System will not be considered.

To start a **new** application, please click here. If you are a new user, register for an account by clicking "Create Account" button located under the email address field on the left side of the home page. Once you log in, you may begin working on your application. Please be sure to save your work often by clicking on "Save and Finish Later." To access a saved application, please do so through your Grant Management Account.

Only submissions received by the deadline through FFAR's Grant Management System will be accepted and considered eligible for evaluation. To be fair to all applicants, FFAR will not grant extensions to applicants who missed the deadlines posted in the Key Dates section.

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ADDITIONAL INFORMATION

Review Process

Submitted applications undergo an internal review by a technical peer review team comprised of federal and non-federal subject matter experts to assess if the project is relevant to the RFA and demonstrates the potential to meet the evaluation criteria. ***Applicants must be invited and submit an application to be eligible for an invitation to present to the Innovation Challenge Steering Committee.***

All Innovation Challenge Steering Committee members and any external reviewers who may be invited to participate in the review process must agree and adhere to the terms outlined in FFAR's Conflict of Interest Policy and Non-Disclosure Agreement. FFAR makes reasonable efforts to ensure that applications are not assigned to reviewers with a real or apparent conflict with the applicant, institution, or project personnel. Reviewers with a conflict of interest are recused from evaluating or participating in related discussions. Each stage of the review is conducted confidentially, and as such, FFAR and the Innovation Challenge Steering Committee are responsible for protecting the confidentiality of the contents of the applications, except for the pre-recorded, narrated slide presentation abstracts/3-slide presentations which may be shared publicly.

Evaluation Criteria

All proposals will be screened for relevance, accuracy, completeness, and compliance with FFAR policies and the guidelines stated in this RFA. Applications must demonstrate the potential to meet the criteria to be eligible for an invitation to interview with the selection committee.

Applications will be evaluated according to the following criteria:

Novelty, Innovation, and Originality (40%)
- Does the proposed project innovatively address in an integrated manner the three USDA research priority areas?
- Does the proposal challenge an existing paradigm(s) in food and agriculture science and propose a disruptive solution?

Impacts and Outcomes (30%)
- Does the proposal adequately describe its potential, significant impact and applied relevance to U.S food and agriculture systems, with far-reaching, global impacts?
- Will the investigators be able to apply their results beyond the study location and domain?
- Does the proposal present a plan for disseminating the project outcomes?
- How will the designed convening add value to the overall work?
- Will results have relevance and reach to underrepresented and diverse communities of agricultural producers?

Technical Merit and Feasibility (20%)
- Does the proposal clearly outline the goals, objectives, and a workplan to evaluate explicitly stated hypotheses?
- Does the proposal include appropriately thorough and feasible methods?
- Does the proposal present a tractable timeline and budget narrative?
- Does the proposal include adequate risk evaluation and a mitigation plan?
- Does the proposal include an adequate data management plan with a commitment to public access?
- Is the research team qualified and have access to the appropriate field and laboratory facilities?

Partnerships and Team (10%)
- Does the project present a compelling and novel partnership opportunity?
- Is the team interdisciplinary and/or transdisciplinary and does it leverage diverse backgrounds and skill sets?
- Does the proposal include adequate ***confirmation of partner commitment(s)?***

Award Administration

Selection Notice: Following the full application review process, the Principal Investigator/Program Director and the authorized organization representative (AOR) listed on the project will be officially notified by email of the status of the application. If an application is selected for funding, the Innovation Challenge Steering Committee reserves the right to request additional or clarifying information for any reason deemed necessary. Potential grantees are free to accept or reject the Grant Agreement as offered.

Intent to Fund Notification: FFAR notifies applicants of their awards by email. The notice does not constitute an award or obligatory funding from FFAR until there is a fully executed Grant Agreement. FFAR encourages applicants to review a [sample Grant Agreement](#) before applying to ensure they know the terms under which grants are offered.

Grant Terms and Conditions
FFAR expects applicants to have reviewed the [Sample Grant Agreement](#) before applying to ensure that the applicants are aware of the applicable terms under which the grant is offered. Successful applicants are strongly encouraged to sign the Grant Agreement as presented.

Requirement to Demonstrate Matching Funds: **Matching funds are encouraged for this funding opportunity.** If the applicant provides matching funds, the applicant agrees to identify and certify matching funds annually before disbursement of award funds. The match share is intended to supplement, not supplant existing funding for the principal investigator (PI). The applicant will abide by FFAR's [Matching Funds Guidelines](#) to meet FFAR's matching requirements. To constitute a valid match, all matching funds on a FFAR grant must be expended during the grant period.

Post-award Management

Interim Reports: The grantee must provide a six-month update on activities and project accomplishments to date.

Annual Reporting Requirements: The grantee must provide annual scientific and financial update progress reports. The annual reports should include activities performed with award funding, highlighting project accomplishments. The report format will be communicated closer to the due date.

Final Report Requirements: Within 90 days of completing the project, the grantee shall provide a final project report. This report should address the project objectives outlined in the original grant application, describe any modifications to the project objectives and scope, describe the

final project accomplishments, and include a final project accounting of all grant funds. Publication and data-sharing should be addressed as outlined in the RFA.

Scientific Integrity: FFAR strives to advance knowledge and the application of science to address challenges related to sustainable agriculture. FFAR's ability to pursue its objective depends on the integrity of the funded science projects. All FFAR grants must be conducted with the highest standards of scientific integrity.

CONTACT INFORMATION

For questions related to the online submission system, please contact FFAR's Grant Management team at grants@foundationfar.org.

For other questions related to the "Nourishing Next Generation Agrifood Breakthroughs" Innovation Challenge, please email Dr. LaKisha Odom lodom@foundationfar.org (and/or Dr. John Rothlisberger at john.rothlisberger@usda.gov). We only accept scientific or programmatic and grants inquiries by email.

FFAR strives to respond to inquiries within two business days, but our response time depends on the volume of questions received and the complexity of the questions asked. Please note that we do not monitor mailboxes on evenings, weekends, or federal holidays.