

Midwest Big Data Innovation Hub

Collaboration Cafe

June 2023



IOWA STATE
UNIVERSITY



supported by NSF [1916613](#)



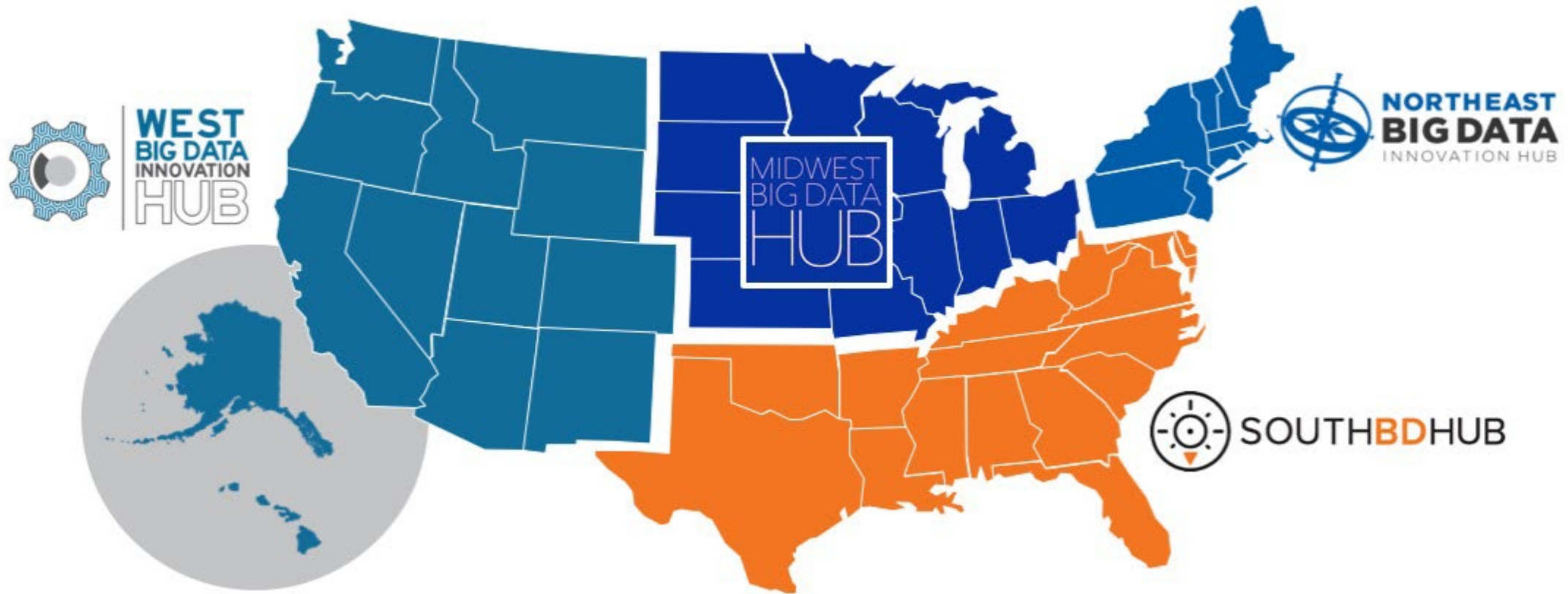
Welcome



- [Dr. Ann Stapleton](#) | Lead National Program Leader, DFAS; USDA NIFA
- [Dr. Luiz Brito](#) | Purdue University
 - DSFAS: Integrating Multiomics and High-throughput Phenotypic Datasets Through Machine Learning to Improve Animal Resilience and Welfare
- [Dr. Gustavo De-Sousa-E-Silva](#) | Iowa State University
 - CARE: Ongoing Automated Surveillance of Swine Livestock Productivity Data to Early Detect PRRSV Outbreaks
- [Dr. Nadia Shakoor](#) | Danforth Plant Science Center
 - NIFA FACT Workshop: Big Data Analytics in Plant Breeding and Genomics - A Digital Agriculture Symposium



Four Hubs, One Mission



What We Do

Engage communities, share resources, and build partnerships that harness data science to address societal and scientific challenges.



Priority Areas and Cross-cutting Themes

- Advanced Materials and Manufacturing
 - Big Data in Health
 - Digital Agriculture
 - Smart & Resilient Communities
 - Water Quality
-
- Data Science Education and Workforce Development
 - Cyberinfrastructure and Data Sharing

Collaboration Cafe webinar series

Goals:

- Building regional capacity for large-scale proposal response
- Growing a cross-disciplinary network of data science collaborators
- Elevating early career researchers
- Creating a more diverse data science community by actively engaging with non-R1 institutions, including minority-serving institutions (MSIs), tribal colleges and universities (TCUs), and predominantly undergraduate institutions (PUIs)
- Partnering with industry, government, nonprofits, and civic organizations to support translational research and transition-to-practice activities

Regular segments:

- Funding opportunity walkthroughs
- Lessons learned from prior awardees
- Researcher lightning talks
- Speed networking
- Small group discussions

Collaboration Cafe resources

- MBDH website
 - Web page with upcoming sessions
 - Short form for engagement
- Slack community
 - Networking
 - Input on future sessions
 - New solicitations
- Shared Google Drive
 - Running notes doc
 - Relevant prior awards to Midwest institutions
- YouTube playlist of webinar recordings

Cafe Ground Rules

- Multi-disciplinary team science is a core focus here - all proposal ideas are welcome for discussion
- Research proposals are competitive; some people may not be willing to discuss the details of their projects in this venue
- Private conversations in breakout rooms or Slack private messages are private
- Participating in Collaboration Cafe activities falls under our [NSF Code of Conduct](#)

MBDH engagement on proposals

There are multiple opportunities to have MBDH participate on proposals for this program, or other projects:

- Engagement partner: Communications, outreach, community assessments, participation in Hub events and activities
 - Non-exclusive Letter of Collaboration
 - Minimal to no funding to MBDH
- Collaborative partner: Engagement roles + involvement in developing and managing project activities
 - Non-exclusive Letter of Collaboration, subaward, co-PI roles, etc.
 - Funding to recover costs of MBDH staff time and other expenses
- **Note:** The MBDH is a neutral party and often provides non-exclusive Letters of Collaboration to multiple proposers to a solicitation

Context: NIFA Agriculture and Food Research Initiative (AFRI)

Sustainable Agricultural Systems (SAS)

Education and Workforce Development (EWD) program

→ Foundational and Applied Science (FAS) program

- 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
6. Agriculture economics and rural communities

- Crosscutting priority area programs

- 7a. Agricultural Microbiomes in Plant Systems and Natural Resources
- 7b. Critical Agricultural Research and Extension (CARE)
- **7c. Data Science for Food and Agricultural Systems (DSFAS)**
- 7d. Inter-Disciplinary Engagement in Animal Systems (IDEAS)
- 7e. Tactical Sciences for Agricultural Biosecurity
- 7f. Extension, Education & USDA Climate Hubs Partnership
- 7g. AFRI Commodity Board Co-Funding Topics
- 7h. Rapid Response to Extreme Weather Events Across Food and Agricultural Systems

→ RFA pg. 91



National Institute of Food and Agriculture

U.S. DEPARTMENT OF AGRICULTURE

BIOENERGY, CLIMATE, AND ENVIRONMENT
FOOD PRODUCTION AND SUSTAINABILITY
YOUTH, FAMILY, AND COMMUNITY
FOOD SAFETY AND NUTRITION
INTERNATIONAL PROGRAMS

NIFA

Spring 2023

INVESTING IN SCIENCE | SECURING OUR FUTURE | WWW.NIFA.USDA.GOV

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NIFA Agency Overview

HEADQUARTERS

Washington, D.C.

OPERATIONS

Kansas City, MO

CURRENTLY STAFFED AT 350+ EMPLOYEES

OUR TARGET → Diverse workforce of 390 employees



NIFA Priorities

IMPLEMENTING THE ADMINISTRATION'S PRIORITIES

- New USDA Science and Research Strategy now public

SUPPORTING PARTNERS IN ADDRESSING CRITICAL NEEDS

DRIVING FEDERAL EFFORTS TO ADVANCE AGRICULTURE-RELATED SCIENCES

- Leading innovation in research, teaching and Extension
- Partnering with stakeholders to deliver comprehensive program leadership and meet goals outlined in our Strategic Plan

A1541 Cross-Cutting Data Science for Food Agriculture (DSFAS) Purpose and Priorities

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- Focus on intersections between data science/artificial intelligence (AI) and agricultural areas to enable systems and communities to
 - effectively utilize data,
 - improve resource management, and
 - integrate new technologies and approaches to further U.S. food and agriculture enterprises.
- Applications for research and integrated research projects must address one of the six AFRI priority areas. We especially welcome proposals in the areas of climate-smart agriculture and forestry, food and nutrition security, environmental sustainability, economic revitalization, and justice; projects that focus on intersections between one or more of these areas are also welcome.
- The most competitive proposals will be equally well grounded in agricultural and food sciences and in data science; in addition, competitive proposals will **clearly communicate the relevance and novelty of the proposed research in both areas.**

Project and Grant Types

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Project Types

Research
Integrated

Grant Types

Standard
Strengthening
Conference

Application Details

RFA Page 91

- **Application Deadline:** 5 p.m. (Eastern Time) November 16, 2023
 - Submitted through Grants.gov
- Total funding available in FY 2024: ~\$7.5 million
- Program Code: A1541



Ann Stapleton

Lead National Program Leader

See RFA for co-lead-NPL contact information!

ann.stapleton@usda.gov

816-274-1942





Resources for new investigators:

<https://www.nifa.usda.gov/grants/programs/agriculture-food-research-initiative-afri/funding-opportunities-new-investigators-agriculture-food-research-initiative-afri>



Non-Discrimination Statement

<https://www.usda.gov/non-discrimination-statement>

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- Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.
- To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at How to File a Program Discrimination Complaint and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax (202) 690-7442; or (3) email: program.intake@usda.gov.
- USDA is an equal opportunity provider, employer and lender.



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Questions?



NIFA Funding Overview

FISCAL YEAR 2022:

More than 2,500 grants

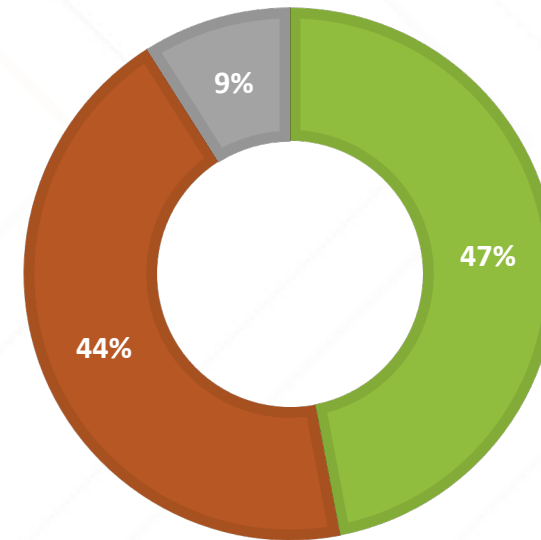
Approximately 70 programs

TOTAL FUNDING AMOUNT:

\$2.2 billion

NIFA PROGRAM TYPES

Competitive Capacity Noncompetitive Awards and Agreements





Programs Supported by Recent Legislation

AMERICAN RESCUE PLAN ACT

- Meat and Poultry Processing Agriculture Workforce Training (\$59M)
- Technical Assistance to Underserved Producers (\$100M+)
- Ag Career Development at Minority-Serving Institutions (NEXTGEN) (\$250M)
- GusNIP, Community Food Projects, WIC Workforce (\$62M)

BIPARTISAN INFRASTRUCTURE LAW

- Bioproduct Pilot Program

FY23 CONSOLIDATED APPROPRIATIONS ACT

- Institutes for Rural Partnerships



New and Current Requests for Applications (RFAs)

AFRI FOUNDATIONAL AND APPLIED SCIENCE

- A1461 Environmental Justice
- A1741 Center for Research, Behavioral Economics

AFRI SUSTAINABLE AGRICULTURAL SYSTEMS

- Enteric Methane

LAYING HEN AND TURKEY RESEARCH

Addressing the Needs of Partners



FUNDING collaborative projects that deliver solutions



LISTENING through input sessions



ENHANCING our portfolio of 4-H programs



FOCUSING on high-quality customer service



Realizing NIFA's Potential

- Fully staffed NIFA workforce
- Improving NIFA processes
- Re-engineering RFAs
- NIFA Reporting System



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Visit nifa.usda.gov/nifa-update



SIGN UP FOR NIFA UPDATE

June Solicitation: USDA NIFA AFRI DSFAS program



Due: November 16, 2023	Part I, §C 7c of the NIFA AFRI Foundational and Applied Science RFA
Program goals and tracks	<ul style="list-style-type: none"> • Goal: Focus on data science in food systems and communities • Grant types: Standard, Conference, and Food and Agricultural Science Enhancement (FASE) • Project types: Research projects; Coordinated Innovation Networks
Size and duration (max)	<p>\$650k total budget over 3-5 years for regular proposals (includes indirect costs)</p> <p>\$1m total budget over 3-5 years for Coordination Innovation Networks (CIN) projects</p> <p>\$3m total budget over 3-5 years for CIN Climate/Food Supply Modeling projects</p>
LOI/preproposal	<p>Standard and FAS proposals: No</p> <p>Conference and workshop proposals: Yes, due minimum of 195 days before the meeting is planned to begin</p>
Eligibility limits & other guidance	<p>Regular grants: a) State Agricultural Experiment Stations; 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) qualifying individuals</p> <p>Eligible applicants for Integrated Projects include: a) Colleges and universities; b) 1994 Land-Grant Institutions; and c) Hispanic-serving agricultural colleges and universities</p> <p>See also: https://nifa.usda.gov/resource/dsfas-faq</p>



USDA NIFA AFRI DSFAS program



Program goals:

- “Focuses on intersections between data science/artificial intelligence (AI) and agricultural areas in order to enable systems and communities to effectively utilize data, improve resource management, and integrate new technologies and approaches to further U.S. food and agriculture enterprises.”
- “DSFAS projects should be equally well grounded in agricultural sciences and in data science/AI, with high relevance and novelty in both areas.”
- “We especially welcome proposals in the areas of climate-smart agriculture and forestry, nutrition security, economic revitalization, and justice; projects that focus on intersections between one or more of these areas are also welcome.”



USDA NIFA AFRI DSFAS program

<https://nifa.usda.gov/program/dsfas>



DSFAS Coordinated Innovation Networks (CIN)

All CIN projects must address the following:

- **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.
- **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.
- **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).
- **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).

Coordinated Innovation Networks Climate/Food Supply Modeling (CIN-CM/FM)

- Applications in the special focus area of climate or food supply chain modeling. Creative, novel projects that meet the overall goals of advancing climate modeling and/or examining transitions to robust, resilient, and cooperative food supply networks, and with a focus on underserved communities are welcome.



USDA NIFA AFRI DSFAS program

Other important elements:

- [Data management plan](#) requirement for all proposals
- [Sustainability plan](#) requirement for all proposals
- A [logic model](#) is required for integrated project applications

Review criteria:

- See the separate [criteria document](#)
- “The most competitive proposals will be equally well grounded in agricultural and food sciences and in data science; in addition, competitive proposals will clearly communicate the relevance and novelty of the proposed research in both areas.” (AFRI RFA pg. 93)

Discussion

- Prior experiences with NIFA AFRI proposals?
 - What do you wish you had known? / What would you have done differently?
 - What should new proposers be mindful of?
 - How has your award impacted your institution and user community?
- Regional needs and opportunities
 - What unaddressed needs exist in the Midwest (and beyond) that collaborators could partner to address?
 - Who are the user communities that would be supported?
 - What activities are at the right level of readiness?
- Other topics

Get involved

- <https://midwestbigdatahub.org/cafe>
- info@midwestbigdatahub.org

July 19, 2023

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET

- Topic: Connecting Research and Teaching through the INCLUDES Network
- Solicitation: NSF Inclusion across the Nation of Communities of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES) (22-622)

August 16, 2023

3:00–4:00 p.m. CT / 4:00–5:00 p.m. ET :

- Topic: Data Science for Biomedical Discovery
- Solicitation: NIH NLM Research Grants in Biomedical Informatics and Data Science (R01)



Get Involved ▾

MBDH Collaboration Cafe

Community Development and Engagement Program

Community Advisory Panel

Midwest Carpentries Community

Data Science Student Community

Regional Activities

Event in a Box Tool Kit

Explore Funding Opportunities

Join a Working Group

