NDSU OFFICE OF RESEARCH AND CREATIVE ACTIVITY

# RCA UPDATE

October 18, 2021

# Funding Opportunity Edition

## R&D Priorities for FY2023 Federal Budget

The Office of Science and Technology Policy (OSTP) has released information on the FY2023 Research and Development (R&D) priorities. This memorandum outlines the Administration's multi-agency R&D priorities for the next budget cycle that give insight into where federal research funding dollars will be directed. Included in this list are the following:

- Pandemic readiness and prevention
- Tackling climate change
    - Climate science
    - Innovation in clean-energy technologies and infrastructure
    - Climate adaptation and resilience
    - Nature-based climate solutions for mitigation and adaptation
    - Monitoring and measurement
- Research and innovation in critical and emerging technologies
    - Artificial intelligence
    - Quantum information science
    - Advanced communications technologies, microelectronics, high-performance computing, biotechnology, robotics, and space technologies
- Innovation for equity

- National security and economic resilience
- STEM education and engagement

For the full text of the memorandum, visit the Office of Management and Budget website, or download the PDF.

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## FUNDING OPPORTUNITIES

- American Philosophical Society: Franklin Research Grants
- Bush Foundation: Community Innovation Grants
- DoD: ARL BAA for Basic and Applied Scientific Research
- DOE: Environmental System Science
- EREF: Sustainable Waste Management
- FFAR: Rapid Outcomes from Agricultural Research
- Gerber Foundation
- ND NASA EPSCoR Research and Travel / Connect with NASA Researchers
- NEH: Collaborative Research
- NIH: NIAID Research Education Program Advancing the Careers of a Diverse Research Workforce
- NIH: Outstanding New Environmental Scientist - **LIMITED**
- NSF: AI Research Institutes - **LIMITED**
- NSF: Building Research Capacity of New Faculty in BIO
- NSF: Human Networks and Data Science
- NSF: Launching Early-Career Academic Pathways in MPS
- NSF: Macrosystems Biology and NEON-Enabled Science
- NSF: Organismal Systems
- RWJF: Exploring the Future to Build a Culture of Health

## Upcoming Limited Submission Program Deadlines

Limited submission grant programs are those that indicate a limit on the number of proposals that may be submitted by an institution for a particular deadline. A selection process becomes necessary if more applicants express interest in applying than NDSU is allowed to submit to the grant program. Email notifications of interest to ndsu.researchdev@ndsu.edu.

If you identify a limited submission opportunity that is not on the list below, please notify ndsu.researchdev@ndsu.edu.

- NSF: Partnerships for Innovation
  *Notification Deadline: 10/20/2021*
- NSF: AI Research Institutes
  *Notification Deadline: 11/09/2021*
- NIH: Outstanding New Environmental Scientist
  *Notification Deadline: 11/17/2021*

There are a number of limited submission grant programs with upcoming agency deadlines for which we did not receive any notifications of interest. A full list of those programs is available on the Limited Submissions page. For these programs, marked "First to Notify," approval to move forward with a full proposal submission to the funder will be given on a first come, first served basis. Email notifications of interest to ndsu.researchdev@ndsu.edu.

- USDA-NRCS: Conservation Outreach - Racial Equity and Justice Conservation
  *Deadline: 10/25/2021*
- NIH R25: Genome Research Experiences to Attract Talented Undergraduates into the Genomics Field to Enhance Diversity
  *Deadline: 12/1/2021*
- NIH: Modern Equipment for Shared-use Biomedical Research Facilities
  *Deadline: 12/1/2021*
- Retirement Research Foundation
  *Deadline: 12/1/2021*
- NIH: Centers of Biomedical Research Excellence
  *Deadline: 12/27/2021*
- NSF: Innovations in Graduate Education
  *Deadline: 3/25/2022*

## Looking for more funding opportunities?

RCA subscribes to SPIN by InfoEd Global, a database of more than 40,000 funding opportunities. Through this subscription, SPIN is free for current NDSU faculty, staff, and students.

For more information and to access this database, visit the SPIN page on the RCA website. If you have questions, please contact ndsu.researchdev@ndsu.edu.

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## American Philosophical Society: Franklin Research Grants

Franklin Research Grants are designed to help meet the costs of travel to libraries and archives for research purposes; the purchase of microfilm, photocopies, or equivalent research materials; costs associated with fieldwork; or laboratory research expenses. PhD candidates are not eligible to apply, but the society is interested in supporting the work of young scholars who have recently received their doctorate.

These awards are not intended to meet the expenses of attending conferences or the costs of publication. Applications require two letters of support.

For complete program guidelines, FAQs, and application instructions, see the American Philosophical Society website.

*Deadline: December 1, 2021*

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## Bush Foundation: Community Innovation Grants

Community Innovation Grants invest in great ideas and the people who power them. The grants support organizations coming together to solve community challenges. The Bush Foundation provides Community Innovation grants of $10,000 to $200,000. Grants under $20,000 are available from intermediary partner organizations. The grants are flexible, and can be used to develop new ideas, test ideas already imagined, or spread proven

ideas for more impact.

The Foundation is open to considering ideas on a range of issues, with an eye toward whether they could have truly transformative impact. They are looking for the ideas with the greatest potential to make the region better for everyone. The idea can be big in scale from the start or one that is starting small and could grow and spread. They are interested in ideas that inspire, equip, and connect people to lead change.

The Foundation prioritizes ideas that will make the region more equitable in opportunities and outcomes, especially for Black people, Indigenous people, people of color and / or people from rural communities. They are interested in proposals that address the conversations around racism and equality and / or the needs related to COVID-19.

*Applications accepted year-round.*

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## DoD: Army Research Laboratory Broad Agency Announcement (BAA) for Basic and Applied Scientific Research

This BAA [W911NF-17-S-0003] sets forth basic and applied scientific research areas of interest of the Army Research Laboratory, including:

- Computational Sciences,
- Materials Research,
- Sciences for Maneuver,
- Information Sciences,
- Human Sciences,
- Analysis and Assessment, and
- Artificial Intelligence.

*This BAA is open through March 31, 2022.*

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## DOE: Environmental System Science – Limited Submission Program

The Department of Energy (DOE) Office of Science (SC) program in Biological and Environmental Research (BER) is soliciting applications for research in Environmental System Science (ESS). This Funding Opportunity Announcement (FOA) [DE-FOA-0002584] will consider applications that focus on measurements, experiments, field data, and modeling to provide improved understanding and representation of ecosystems and watersheds in ways that advance the sophistication and capabilities of models that span from individual processes to Earth system scales. This FOA will encompass three Science Research Areas:

1. investigation of ecosystem and watershed responses to plant-mediated ecohydrologic processes, through their influence on biogeochemical cycling, hydrologic dynamics, and / or land-atmosphere exchange;
2. understanding the influence of wildfire and flood disturbances on hydro-biogeochemical processes and system function; and
3. the role of fungal networks in shaping ecosystem function through coordination of ecohydrological or biogeochemical response to stress, ephemeral soil resources, or transient environmental factors.

*Pre-application deadline: November 17, 2021*

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## EREF: Sustainable Waste Management

The Environmental Research and Education Fund (EREF) is accepting pre-proposals related to sustainable solid waste management practices and pertaining to the following topic areas:

1. Waste minimization;
2. Recycling;
3. Waste conversion to energy, biofuels, chemicals or other useful products. This includes, but is not limited to, the following technologies:
    - Waste-to-energy;
    - Anaerobic digestion;
    - Composting;
    - Other thermal or biological conversion technologies;
4. Strategies to promote diversion to higher and better uses (e.g. organics diversion, market analysis, optimized material management, logistics, etc.); and
5. Landfilling.

Desirable aspects of the above topics, in addition to or as part of hypothesis driven applied research, also include: economic or cost / benefit analyses, feasibility studies for untested technologies or management strategies, life cycle analysis or inventory, and analyses of policies that relate to the above.

Note that EREF defines solid waste to include:

- municipal solid waste (e.g. residential, commercial, institutional);
- construction and demolition debris;
- certain industrial wastes (e.g. exploration & production waste, coal ash); and
- other wastes typically managed by the solid waste industry or generated by the public not included in the above items (e.g. electronic waste, disaster debris, etc).

Agricultural wastes (that aren't handled by the waste industry), nuclear waste, and land applied wastewater treatment sludge are generally not included in this definition.

*Pre-proposal deadlines: December 1, 2021 and May 1, 2022*

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## FFAR: Rapid Outcomes from Agricultural Research

The Foundation for Food and Agriculture Research (FFAR) Rapid Outcomes from Agricultural Research (ROAR) program deploys urgent funding to support research and outreach in response to emerging or unanticipated threats to the nation's food supply or agricultural systems.

Plant and animal pests and pathogens can strike quickly, devastating crops, livestock and livelihoods. To address these outbreaks quickly, FFAR makes rapid grants through ROAR for research related to response, prevention or mitigation of new pests and pathogens. ROAR's one-year funding fills urgent research gaps until traditional, longer-term funding can be secured.

**This program requires matching funds.**

*The ROAR program is open year-round.*

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## Gerber Foundation: Research on Well-being of Infants and Toddlers

The Gerber Foundation works to provide support for innovative research focused on the nutrition, care, and development of infants and toddlers, from the first year before birth to 3 years of age.

In particular, the Foundation is interested in fresh approaches to solving common, everyday problems or emerging issues within its defined focus area. Projects should focus on issues faced by care providers that, when implemented, will improve the health, nutrition and / or developmental outcomes of infants and young children. The board also is looking for practical solutions that can be easily and rapidly implemented on a broad scale with a predictable time frame to clinical application.

To that end, the Foundation is inviting concept papers for its 2022 research awards. Grants of up to $350,000 will be awarded in support of medical research in children's health that is conducted by researchers based in the United States. Many research topics are eligible, as the fund does not focus on a particular disease but instead on children's health and nutrition, broadly defined, including effects of environmental hazards on this population.

Novice research grants of no more than $20,000 are also available.
Applicants may be from a number of medical or ancillary fields and must be based at an institution within the United States. Novice research applicants must have a mentor and may be in or no longer than a year after completing their training program at the time of concept paper submission.

*Concept paper deadline: November 15, 2022*

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## ND NASA EPSCoR Research and Travel RFP

North Dakota NASA EPSCoR (the Established Program to Simulate Competitive Research) is soliciting research proposals from faculty at affiliate institutions for Research Seed Grant funding and Travel Grant Funding. Funding must contribute to the completion of NASA-relevant research designed to promote and expand particular NASA research subdisciplines in North Dakota.

More information, including NASA priorities, the full Request for Proposals (RFP), online submission form, and budget sheet can be found in the RFP announcement on the ND NASA EPSCoR website.

*Deadline: November 9, 2021*

**NASA EPSCoR Presents Virtual Research Discussions (ViReD) is a new series of bimonthly, virtual meetings (held on the second and fourth Wednesday of each month at 3 p.m.) designed to introduce university researchers in the 28 EPSCoR jurisdictions to researchers at NASA.** The major objectives of these meetings are to:

1. ensure NASA EPSCoR researchers around the country are familiar with the research priorities and active projects at NASA,
2. confirm that NASA researchers are familiar with the opportunities NASA EPSCoR funding can offer to their research enterprises,
3. provide a forum for jurisdiction researchers to ask questions regarding potential areas of interest to NASA, and
4. result in high quality collaborative opportunities for both NASA and EPSCoR jurisdiction researchers.

The next session is scheduled for **Wednesday, October 27** at **3pm**, and will be focused on the Physical Sciences Program. Featured speakers will be Dr. Fran Chiaramonte, Program Scientist for Physical Sciences in the Biological and Physical Sciences Division of NASA's Science Mission Directorate, and Dr. Brad Carpenter, Program Scientist for Fundamental Physics in the Biological and Physical Sciences Division. The moderator is Gerardo Morell, the NASA EPSCoR Director from Puerto Rico.

**To join the meeting:**
Zoom Meeting
Link: https://lsu.zoom.us/j/99600679976?pwd=R0JLWnRDR3hvc3F4MGZwWllwMlFUQT09
Meeting ID: 996 0067 9976
Password: 148672

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## NEH: Collaborative Research

The Collaborative Research program aims to advance humanistic knowledge through sustained collaboration between two or more scholars. Collaborators may be drawn from a single institution or several institutions across the United States; up to half of the collaborators may be based outside of the U.S. The program encourages projects that propose diverse approaches to topics, incorporate multiple points of view, and explore new avenues of inquiry in the humanities.

The program allows projects that propose research in a single field of study, as well as interdisciplinary work. Projects that include partnerships with researchers from the natural and social sciences are encouraged but must employ a humanistic research agenda. Partnerships among different types of institutions are welcome as well as new collaborations with international partners.

Proposed projects must aim to result in tangible and sustainable outcomes, for example, co-authored or multi-authored books; born-digital publications; themed issues of peer-reviewed journals; a series of peer-reviewed articles; and open-access scholarly digital resources. All project outcomes must incorporate interpretive work and collaboration to address significant humanities research questions.

The 2021 application guidelines will be available October 1, 2021. The 2020 application guidelines are currently available for planning purposes.

*Deadline: December 1, 2021*

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## NIH: NIAID Research Education Program Advancing the Careers of a Diverse Research Workforce (R25 Clinical Trial Not Allowed)

The mission of the National Institute of Allergy and Infectious Diseases (NIAID) is to conduct and support basic and applied research to better understand, treat, and ultimately prevent infectious, immunologic, and allergic diseases. In addition, NIAID has a unique mandate which requires the Institute to respond to emerging public health threats. Furthermore, the mission includes educational activities that complement the training of the next generation of scientists in NIAID-related research areas. NIAID is committed to the development of a biomedical research workforce that is reflective of the diversity in the U.S. Thus, NIAID seeks to promote diversity in all of its training and research programs and to increase the participation of underrepresented groups in order

to develop a highly competent and diverse scientific workforce capable of conducting state-of-the-art research in NIAID mission areas.

The NIH Research Education Program (R25) supports research education activities in the mission areas of the NIH. The overarching goal of this R25 program is to support educational activities that encourage individuals from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies or careers in research. To accomplish the stated over-arching goal, this funding opportunity announcement [PAR-21-258] will support creative educational activities with a primary focus on:

- Courses for Skills Development
- Research Experiences
- Mentoring Activities

*Deadline: January 25, 2022*

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## NIH: Outstanding New Environmental Scientist – Limited Submission Program

Limited submission grant programs are those that indicate a limit on the number of proposals that may be submitted by an institution for a particular deadline. A selection process becomes necessary if more applicants express interest in applying than NDSU is allowed to submit to the grant program.

**NIH ONES :** Notify RCA **by 11/17/2021, 5:00 p.m. if you are interested in submitting to this program.**
The Outstanding New Environmental Scientist (ONES) Award [RFA-ES-21-001] is intended to identify the most talented Early Stage Investigators (ESIs) who intend to make a long-term commitment to research in the Environmental Health Sciences and assist them in launching an innovative research program focused on understanding the effects of environmental exposure on people's health.

**LIMITED SUBMISSION**: Only one application per School or College within a University is allowed.

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## NSF: Artificial Intelligence Research Institutes – Limited Submission Program

Limited submission grant programs are those that indicate a limit on the number of proposals that may be submitted by an institution for a particular deadline. A selection process becomes necessary if more applicants express interest in applying than NDSU is allowed to submit to the grant program.

**NSF AIRI : Notify RCA by 11/09/2021, 5:00 p.m. if you are interested in submitting to this program. Notifications should include a list of collaborators and a brief summary of the scope of the proposed research activities.**

The 2019 update to the National Artificial Intelligence Research and Development Strategic Plan, informed by visioning activities in the scientific community as well as interaction with the public, identifies as its first strategic objective the need to make long-term investments in AI research in areas with the potential for long-term payoffs in AI. The National AI Research Institutes program [NSF 22-502] enables longer-term research and U.S. leadership in AI through the creation of AI Research Institutes.

This program is a joint government effort between the National Science Foundation (NSF), U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA), U.S. Department of Education (ED) Institute of Education Sciences (IES), U.S. Department of Homeland Security (DHS) Science & Technology Directorate (S&T), National Institute of Standards and Technology (NIST), Department of Defense (DOD) Office of the Under Secretary of Defense for Research and Engineering (OUSD (R&E)), and IBM Corporation (IBM).

This program solicitation expands upon the nationwide network established by the first 18 AI Research Institutes to pursue transformational advances in a range of economic sectors, and science and engineering fields. In this round, the program

invites proposals for institutes that have a principal focus in one of the following themes, detailed in the Program Description:

- Theme 1: Intelligent Agents for Next-Generation Cybersecurity
- Theme 2: Neural and Cognitive Foundations of Artificial Intelligence
- Theme 3: AI for Climate-Smart Agriculture and Forestry
- Theme 4: AI for Decision making
- Theme 5: Trustworthy AI
- Theme 6: AI-Augmented Learning to Expand Education Opportunities and Improve Outcomes

**LIMITED SUBMISSION**: An organization may submit no more than two preliminary proposals to this solicitation as lead institution.

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## NSF: Building Research Capacity of New Faculty in Biology

The Building Research Capacity of New Faculty in Biology (BRC-BIO) call [NSF 22-500] has a focus on enhancing research capacity and broadening participation of new faculty of biology at institutions that are not among the nation's most research-intensive institutions, including Carnegie Research 2 (R2) universities. The BRC-BIO program aims to a) broaden participation by expanding the types of institutions that submit proposals to BIO, and b) expand opportunities to groups underrepresented in the biological sciences. Awards will provide the means for new faculty to initiate and build independent research programs by enhancing their research capacity. These projects might also include biology-focused research collaborations among faculty within the same institution, across peer-, or research-intensive institutions, or partnerships with industry or other non-academic partners that advance the candidate's research program. By providing this funding opportunity, BIO recognizes the national urgency to broaden, strengthen, and diversify the science, technology, engineering, and mathematics (STEM) workforce.

*Upcoming proposal windows: January 3-31, 2022; June 1-30, 2022*

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## NSF: Human Networks and Data Science

The Human Networks and Data Science (HNDS) program [NSF 22-505] supports research that enhances understanding of human behavior by leveraging data and network science research across a broad range of topics. HNDS research will identify ways in which dynamic, distributed, and heterogeneous data can provide novel answers to fundamental questions about individual and group behavior. HNDS is especially interested in proposals that provide data-rich insights about human networks to support improved health, prosperity, and security.

HNDS has two tracks:

**Human Networks and Data Science – Infrastructure (HNDS-I)**. Infrastructure proposals will address the development of data resources and relevant analytic techniques that support fundamental Social, Behavioral and Economic (SBE) research.
*Deadline: February 3, 2022*

**Human Networks and Data Science – Core Research (HNDS-R)**. Core research proposals will advance theory in a core SBE discipline by the application of data and network science methods.
*Deadline: January 13, 2022*

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## NSF: Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences

The Launching Early-Career Academic Pathways in the Mathematical and Physical Sciences (LEAPS-MPS) call [NSF 22-503] aims to help launch the careers of pre-tenure faculty in Mathematical and Physical Sciences (MPS) fields at institutions that do not traditionally receive significant amounts of NSF-MPS funding, including Carnegie Research 2 (R2) universities. LEAPS-MPS also aims to broaden participation to include members from groups underrepresented in MPS.

These grants are intended to support MPS principal investigators for whom LEAPS funding would enable the PI to submit a subsequent successful proposal to a traditional, already-existing NSF funding opportunity, such as individual investigator programs, CAREER competitions, etc. Awards are for 24 months and are up to $250,000 total costs (direct

plus indirect). Principal Investigators must be U.S. citizens or lawfully admitted U.S. permanent residents at the time of proposal submission; other visa-holders are not eligible.

*Deadline: January 7, 2022*

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## NSF: Macrosystems Biology and NEON-Enabled Science

The *Macrosystems Biology and NEON-Enabled Science (MSB-NES): Research on Biological Systems at Regional to Continental Scales* program [NSF 22-504] will support quantitative, interdisciplinary, systems-oriented research on biosphere processes and their complex interactions with climate, land use, and changes in species distribution at regional to continental scales as well as training activities to broaden participation of researchers in Macrosystems Biology and NEON-Enabled Science.

MSB-NES projects that use data and / or resources from the National Ecological Observatory Network (NEON) are encouraged. Substantive NEON-enabled projects rely on data and / or samples collected by NEON and / or co-locate research activities at NEON sites. Projects may develop tools that will explicitly enhance the processing, use, and / or analysis of NEON data or collections, in the context of addressing a specific research question or hypothesis. However, proposals primarily focused on tool development that can be used for a broad class of research questions or for topics that meet the needs of a community of researchers should be directed toward the Infrastructure Innovation for Biological Research (Innovation) or Infrastructure Capacity for Biological Research (Capacity) programs in the Division of Biological Infrastructure.

*Deadline: January 10, 2022*

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## NSF: Organismal Systems

The Division of Integrative Organismal Systems (IOS) Core Programs [NSF 21-506] support research aimed at understanding why organisms are structured the way they are and function as they do. Proposals are welcomed in all of the core scientific program areas supported by the Division of Integrative Organismal Systems (IOS). Areas of inquiry include, but are not limited to:

- developmental biology and the evolution of developmental processes;
- nervous system development, structure, modification, function, and evolution;
- biomechanics and functional morphology;
- physiological processes;
- symbioses and microbial interactions;
- interactions of organisms with biotic and abiotic environments;
- plant and animal genomics; and
- animal behavior.

Proposals should focus on organisms as a fundamental unit of biological organization. Principal Investigators are encouraged to apply systems approaches that will lead to conceptual and theoretical insights and predictions about emergent organismal properties.

*Full Proposals accepted anytime.*

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## RWJF: Exploring the Future to Build a Culture of Health

The Robert Wood Johnson Foundation (RWJF) program "Pioneering Ideas: Exploring the Future to Build a Culture of Health" seeks proposals that are primed to influence health equity in the future. The Foundation is interested in ideas that address any of these four areas of focus:

1. Future of Evidence;
2. Future of Social Interaction;
3. Future of Food;
4. Future of Work.

Additionally, the Foundation welcomes ideas that might fall outside of these four focus areas, but which offer unique approaches to advancing health equity and progress toward a Culture of Health.

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Have questions, ideas, or suggestions for the RCA Update?

**Contact Us**

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