NDSU RESEARCH AND CREATIVE ACTIVITY

RCA UPDATE

August 15, 2022

With the beginning of the 2022-2023 academic year next week, I want to take a moment to extend a welcome from the entire team in the Office of Research and Creative Activity.

Summer is often a time of renewal for us academics, with a sense of excitement as school starts and students return to campus. It's been a busy summer for NDSU researchers, and I want to thank all of you who have presented your ideas and obtained funding.

My own summer was a busy one, with the highlight being the two week, 2,000+ miles trip I took across the state with President Cook and my colleagues on his leadership team: VP Greg Lardy, Athletics Director Matt Larson, and the NDSU Foundation President and CEO John Glover.

It was a trip of a lifetime! We got to see firsthand how deeply engrained and meaningful our land grant mission is to North Dakota, and we spent some quality time with our colleagues and with people from across the state. As a linguist, my own scholarship has involved supporting language reclamation and documentation efforts through collaboration with tribal nations. The time we spent with two of the state's tribal nations was powerful. We visited Standing Rock Reservation, Sitting Bull College, and the Mandan, Hidatsa and Arikara Nation's Nueta Hidatsa Sahnish College.

Whether it was during my trips across the state or whenever I visit with Bison alum and

friends, I like to tell people about NDSU's research culture. The central themes of these conversations are:

- what the Carnegie R1 classification means to NDSU.
- how important agriculture is to our research enterprise, how it generates roughly half of our research expenditures and how we want to leverage it to strengthen research across campus by targeting areas like the food-water-energy nexus.
- how NDSU research is as diverse as the 42 different crops produced in North Dakota and how it's bringing in exciting new federal funding in areas like cancer, aging, and more.

Understanding and serving the mission of NDSU is very important to me. As a land-grant research university, in a rural state, with tribal nations and veterans, there are many different challenges facing the nation that NDSU researchers will help solve. Keep in mind that these aren't just North Dakota challenges-they are national and even global challenges.

While NDSU researchers are working on big ideas, everyone in the Office of Research and Creative Activity is working right alongside them to help break down siloes on campus, to support large multi- and transdisciplinary teams and to strengthen the culture of research. Together, we will create the next version of the connected NDSU that will deliver solutions that truly benefit the people in our state, our country, and the world.

YOU'RE INVITED TO A LAB TOUR

Interested in learning more about research at NDSU and finding people with whom you can collaborate? VPR Fitzgerald will be visiting selected NDSU labs and you are invited to submit your name to join a tour with her. Date and time is still to be determined, but please indicate if you have interest in attending.

- ePower Hubs lab - Omid Beik, NDSU assistant professor (electrical and computer engineering)
- Duggan lab - Kat Duggan, NDSU assistant professor (psychology)

SIGN UP

Lab tour spots are limited.

NOVELUTION IBC MODULE NOW LIVE

All new Institutional Biosafety Committee (IBC) protocols will need to be submitted in the Novelution IBC module as of September 1, 2022.

As the module is available now, you are highly encouraged to begin using it for your protocol submissions. See the Novelution webpage or contact Amanda Wilkinson (701-231-8908) for more information.

RCA Funding Opportunities

Research Development Travel and Conference Support Awards help defray expenses for faculty presenting at national conferences (virtual or on-site) or for supporting travel to visit archives or special collections. As this pool of funding is limited, please consider allowing individuals who do not have other sources of travel funding to apply for this opportunity.

Research Support Services Awards help defray the costs of support services required for research, creative, or scholarly activity. For example, funds may be used in one of the NDSU Core Facilities, another recharge / service center, or for transcription services.

Research Development Funding Agency Visit Travel Awards help defray expenses

for faculty traveling to meeting with Program Officers / Program Directors at funding agencies. This program requires a 1:1 match from the applicant's department and / or college.

More information and application instructions are posted on the RCA website.

Additional RCA Opportunities

- Apply or nominate a colleague for the RCA leadership professional development program. Up to 12 mid-career faculty members will be selected for an 8-session research leadership course led by AtKisson Training Group (ATG). Deadline is 8/26/22.
- Planning a proposal to USDA-AFRI? Learn more about the USDA-AFRI Preproposal Review Pilot Program.
- Recently served on a USDA Review Panel? Volunteer to be part of the USDA Expert Bank at NDSU.
- Share what you're doing in your research space by hosting a lab tour for your NDSU colleagues and Vice President Fitzgerald.

Upcoming Events

- **Webinar: Understanding the New NIH Data Management and Sharing Policy**
  August 11, 2022; 12:30-2:30pm / *Learn more >>*
- **NIH Grant Writing Webinar Series for Institutions Building Research and Research Training Capacity**
  August 16, September 26, and November 1; 1-2:15pm / *Learn more >>*
- **REGISTRATION OPEN: DARPA Forward Regional Events on National Security Innovation**
  August-December, 2022 / *Learn more >>*
- **Webinar: Diving Deeper into the New NIH Data Management and Sharing Policy**
  September 22, 2022; 12:30-2:30pm / *Learn more >>*

FUNDING OPPORTUNITIES

1. [CDC: National Institute for Occupational Safety and Health Exploratory / Developmental Grant Program](#)
2. [NEA: Translation Projects](#)
3. [NEH: Collaborative Research](#)
4. [NIH: Helping to End Addiction Long-term](#)
5. [NIH: Innovative Programs to Enhance Research Training](#)
6. [NSF / NIH / USDA: Ecology and Evolution of Infectious Diseases](#)
7. [NSF / USDA: Plant Biotic Interactions](#)
8. [NSF: Advanced Manufacturing](#)
9. [NSF: Civil Infrastructure Systems](#)
10. [NSF: Human Networks and Data Science](#)
11. [PepsiCo: Research Funding Opportunities](#)
12. [Simons Foundation: Targeted Grants in Mathematical and Physical Sciences](#)

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 by close of business on the notification deadline.

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

- [NSF: INCLUDES](#)
  Notification Deadline: 08/16/2022
- [NSF: Major Research Instrumentation](#)
  Notification Deadline: 09/01/2022
- [NIH: Collaborative Program Grant for Multidisciplinary Teams](#)
  Notification Deadline: 09/15/2022
- [NSF: Scholarships in STEM (S-STEM) Program](#)
  Notification Deadline: 09/15/2022

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.

- NIH: Director's Early Independence Award
  Deadline: 09/02/2022
- HRSA: Strengthen Evidence for Maternal and Child Health Programs
  Notification Deadline: 09/08/2022
- NIH: Bridges to the Baccalaureate
  Deadline: 09/26/2022
- NIH: Bridges to the Doctorate
  Deadline: 09/27/2022
- NEH: Infrastructure and Capacity Building Challenge Grants
  Deadline: 09/27/2022
- Johnson & Johnson: Women in STEM2D
  Deadline: 09/30/2022
- LOC: Connecting Communities Digital Initiative
  Deadline: 09/30/2022
- NSF: Louis Stokes Alliances for Minority Participation - STEM Pathways Implementation-Only
  Deadline: 11/18/2022

NSF: Major Research Instrumentation – 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 MRI : Notify RCA by 09/01/2022, 5pm, if you are interested in submitting to

this program. Notifications of interest should include the intended 'track' (see definitions below).

The National Science Foundation **Major Research Instrumentation (MRI) Program** serves to increase access to multi-user scientific and engineering instrumentation for research and research training in our Nation's institutions of higher education and not-for-profit scientific / engineering research organizations. An MRI award supports the acquisition or development of a multi-user research instrument that is, in general, too costly and / or not appropriate for support through other NSF programs. **Cost sharing of precisely 30% of the total project cost is required.**

Based on the NSF 18-513 solicitation, an MRI proposal may request support for either the acquisition or development of a research instrument.

- Track 1: Track 1 MRI proposals are those that request funds from NSF greater than or equal to $100,000 and less than $1,000,000. Two proposal submissions are allowed per organization.
- Track 2: Track 2 MRI proposals are those that request funds from NSF greater than or equal to $1,000,000 up to and including $4,000,000. One proposal submission is allowed per organization.

Note: There is a possibility that a new solicitation will be published for this program. If this happens, interested individuals will be notified of any significant changes to the program.

LIMITED SUBMISSION: The MRI program requires that an MRI-eligible organization may, as a performing organization, submit or be included as a significantly funded subawardee in *no more than three MRI proposals*. Each performing organization is limited to a maximum of three proposals in the "Tracks" as defined above, with no more than two submissions in Track 1 and no more than one submission in Track 2.

Looking for more funding opportunities?

CDC: National Institute for Occupational Safety and Health Exploratory / Developmental Grant Program (R21)

The purpose of this R21 grant program [PAR-18-798] is (1) to develop an understanding of the risks and conditions associated with occupational diseases and injuries, (2) to explore methods for reducing risks and preventing or minimizing exposure to hazardous conditions in the workplace, and (3) to translate significant scientific findings into prevention practices and products that will effectively reduce work-related illnesses and injuries.

NIOSH supports exploratory and developmental research projects (R21) that identify and address novel scientific ideas or new model systems, tools, or technologies with the potential for significant impact on occupational safety and health.

Applicants must concisely describe the occupational health burden addressed in their proposals and must link the need for the proposed research activities to planned outputs that will help alleviate this burden. Applicants should clearly articulate the anticipated impacts of the proposed research, both during the project period and beyond.

Deadlines: October 16, 2022; February 16, 2023

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NEA: Translation Projects

Through [fellowships](#) to published translators, the National Endowment for the Arts supports projects for the translation of specific works of **prose**, **poetry**, or **drama** from other languages into English.

Grants are up to $25,000. Award amounts are determined by the National Endowment for the Arts.

Deadline: January 12, 2023

NEH: Collaborative Research

The National Endowment for the Humanities (NEH) [Collaborative Research program](#) aims to advance humanistic knowledge by fostering rich scholarship that a single researcher could not accomplish working alone. The program supports sustained collaboration by teams of two or more scholars. Teams may propose research in a single field of study or interdisciplinary work. NEH encourages projects that incorporate multiple points of view and pursue new avenues of inquiry in the humanities.

Collaborators may come from one or more institutions. NEH encourages partnerships with researchers from the natural and social sciences, but projects must address humanistic questions and employ humanistic methods. International collaboration is welcome, but scholars at U.S. institutions must contribute significantly to the project. Collaboration among different types of institutions is welcome.

Proposed projects must aim to result in tangible and sustainable outcomes, such as a co-authored or multi-authored book; a themed issue of a peer-reviewed journal; a series of peer-reviewed articles; a born-digital publication; or an open-access website or other digital resource. All project outcomes must incorporate collaboration and interpretation to address significant humanities research questions.

The program includes four project categories:
1. Planning International Collaboration,
2. Convening,
3. Manuscript Preparation, and
4. Scholarly Digital Projects.

The categories support different project types or stages and have different performance

periods and award ceilings. Applicants must specify only one project category for support.

Optional draft deadline: September 15, 2022
Deadline: November 30, 2022

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NIH: Helping to End Addiction Long-term (HEAL) Initiative

The NIH HEAL Initiative, is an aggressive, trans-agency effort to speed scientific solutions to stem the national opioid public health crisis. Almost every NIH Institute and Center is accelerating research to address this public health emergency from all angles. Researchers are taking a variety of approaches to tackle the opioid epidemic through:

- understanding, managing, and treating pain, and
- improving prevention and treatment for opioid misuse and addiction.

The HEAL Initiative currently has a number of open opportunities, including:

- Interdisciplinary Team Science to Uncover the Mechanisms of Pain Relief by Medical Devices [RFA-NS-23-003]
- Workforce Interventions to Improve Addiction Care Quality and Patient Outcomes [NOT-DA-23-008]
- Opioid Use Disorder Care Pathways for Individuals with Histories of Exposure to Violence [NOT-DA-23-007]
- Translating Research to Practice to End the Overdose Crisis [RFA-DA-23-053; RFA-DA-23-054]

See the full list of opportunities >>

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NIH: Innovative Programs to Enhance Research Training (IPERT) (R25)

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 complement and / or enhance the training of a workforce to meet the nation's biomedical, behavioral and clinical research needs.

To accomplish the stated over-arching goal, this Funding Opportunity Announcement (FOA) [PAR-21-196] will support creative educational activities with a primary focus on *Courses for Skills Development* and *Mentoring Activities.*

The National Institute of General Medical Sciences (NIGMS) will support creative educational activities designed to equip a diverse cohort of participants with the technical, operational, and professional skills required for careers in the biomedical research workforce. Funded programs are expected to have robust evaluation, outreach, dissemination, and sustainability plans.

Deadline: October 14, 2022

NSF / NIH / USDA: Ecology and Evolution of Infectious Diseases

The multi-agency Ecology and Evolution of Infectious Diseases program [NSF 22-260] supports research on the ecological, evolutionary, organismal, and social drivers that influence the transmission dynamics of infectious diseases. The central theme of submitted projects must be the quantitative, mathematical, or computational understanding of pathogen transmission dynamics. The intent is discovery of principles of infectious disease (re)emergence and transmission and testing mathematical or computational models that elucidate infectious disease systems. Projects should be broad, interdisciplinary efforts that go beyond the scope of typical studies. They should focus on the determinants and interactions of (re)emergence and transmission among any host species, including but not limited to humans, non-human animals, and/or plants. This includes, for example, the spread of pathogens; the influence of environmental factors such as climate; the population dynamics and genetics of vectors and reservoir species or hosts; how the physiology or behavior of the pathogen, vector, or host species biology affects transmission dynamics; the feedback between ecological transmission and evolutionary dynamics; and the cultural, social, behavioral, and economic dimensions of pathogen transmission and disease. Research may be on zoonotic, environmentally-borne, vector-borne, enteric, or respiratory pathogens of either terrestrial or aquatic systems and organisms, including diseases of animals and plants, at any scale from specific pathogens to inclusive environmental systems. Proposals for research on disease systems of public health concern to Low- or Middle-Income Countries (LMICs) are strongly encouraged, as are disease systems of concern in agricultural systems. Investigators are encouraged to develop the appropriate multidisciplinary team, including for example, anthropologists, modelers, ecologists, bioinformaticians, genomics researchers, social scientists, economists, oceanographers, mathematical scientists, behaviorists, epidemiologists, evolutionary biologists, entomologists, immunologists, parasitologists, microbiologists, bacteriologists, virologists, pathologists or veterinarians, with the goal of integrating knowledge across disciplines to enhance our ability to predict and control

infectious diseases.

Deadline: November 16, 2022

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NSF / USDA: Plant Biotic Interactions

The Plant Biotic Interactions (PBI) program [NSF 20-576] supports research on the processes that mediate beneficial and antagonistic interactions between plants and their viral, bacterial, oomycete, fungal, plant, and invertebrate symbionts, pathogens and pests. This joint NSF / NIFA program supports projects focused on current and emerging model and non-model systems, and agriculturally relevant plants. The program's scope extends from fundamental mechanisms to translational efforts, with the latter seeking to put into agricultural practice insights gained from basic research on the mechanisms that govern plant biotic interactions. Projects must be strongly justified in terms of fundamental biological processes and / or relevance to agriculture and may be purely fundamental or applied or include aspects of both perspectives. All types of symbiosis are appropriate, including commensalism, mutualism, parasitism, and host-pathogen interactions. Research may focus on the biology of the plant host, its pathogens, pests or symbionts, interactions among these, or on the function of plant-associated microbiomes. The program welcomes proposals on the dynamics of initiation, transmission, maintenance and outcome of these complex associations, including studies of metabolic interactions, immune recognition and signaling, host-symbiont regulation, reciprocal responses among interacting species and mechanisms associated with self / non-self recognition such as those in pollen-pistil interactions. Explanatory frameworks should include molecular, genomic, metabolic, cellular, network and organismal processes, with projects guided by hypothesis and / or discovery driven experimental approaches. Strictly ecological projects that do not address underlying mechanisms are not appropriate for this program. Quantitative modeling in concert with experimental work is encouraged. Overall, the program seeks to support research that will deepen our understanding of the fundamental processes that mediate interactions between plants and the organisms with which they intimately associate and advance the application of that knowledge to benefit agriculture.

Proposals accepted anytime.

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NSF: Advanced Manufacturing

The Advanced Manufacturing (AM) program [PD 19-088Y] supports the fundamental research needed to revitalize American manufacturing to grow the national prosperity and workforce, and to reshape our strategic industries. The AM program accelerates advances in manufacturing technologies with emphasis on multidisciplinary research that fundamentally alters and transforms manufacturing capabilities, methods and practices. Advanced manufacturing research proposals should address issues related to national prosperity and security, and advancing knowledge to sustain global leadership.

Areas of research, for example, include manufacturing systems; materials processing; manufacturing machines; methodologies; and manufacturing across the length scales. Researchers working in the areas of cybermanufacturing systems, manufacturing machines and equipment, materials engineering and processing, and nanomanufacturing are encouraged to transcend and cross domain boundaries. Interdisciplinary, convergent proposals are welcome that bring manufacturing to new application areas, and that incorporate challenges and approaches outside the customary manufacturing portfolio to broaden the impact of America's advanced manufacturing research.

Proposals accepted anytime

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NSF: Civil Infrastructure Systems

The Civil Infrastructure Systems (CIS) program [PD 19-1631] supports fundamental and innovative research in the design, operation and management of civil infrastructure that contributes to creating smart, sustainable and resilient communities at local, national and international scales. This program focuses on civil infrastructure as a system in which interactions between spatially- and functionally- distributed components and intersystem connections exist. All critical civil infrastructure systems are of interest, including transportation, power, water, pipelines and others.

The CIS program encourages potentially disruptive ideas that will open new frontiers and significantly broaden and transform relevant research communities. The program particularly welcomes research that addresses novel system and service design, system integration, big data analytics, and socio-technological-infrastructure connections. The program values diverse theoretical, scientific, mathematical, or computational contributions from a broad set of disciplines.

While component-level, subject-matter knowledge may be crucial in many research

efforts, the program does not support research with a primary contribution pertaining to individual infrastructure components such as materials, sensor technology, extreme event analysis, human factors, climate modeling, structural, geotechnical, hydrologic or environmental engineering.

Proposals accepted anytime.

NSF: Human Networks and Data Science

The Human Networks and Data Science program (HNDS) [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. Successful proposals will, within the financial resources provided by the award, construct user-friendly large-scale next-generation data resources and relevant analytic techniques and produce a finished product that will enable new types of data-intensive research. The databases or techniques should have significant impacts, either across multiple fields or within broad disciplinary areas, by enabling new types of data-intensive research in the SBE sciences.

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. This includes the leveraging of large data sets with diverse spatio-temporal scales of measurement and linked qualitative and quantitative approaches, as well as multi-scale, multi-level network data and techniques of network analysis. Supported projects are expected to yield results that will enhance, expand, and transform theory and methods, and that generate novel understandings of human behavior – particularly understandings that can improve the outcomes of significant societal opportunities and challenges. HNDS-R encourages core research proposals that

make innovative use of NSF-supported data networks, data bases, centers, and other forms of scientific infrastructure including those developed by HNDS-I (formerly RIDIR) projects.

Deadlines vary.

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PepsiCo: Research Funding Opportunities

PepsiCo has several open funding opportunities for research projects:

- Natural colors for food and beverages
- Novel sugar reduction solutions
- Solution for minimizing absorption of oil in food and non-food products
- Postbiotics from plant-based fermentation

Deadline: September 30, 2022

PepsiCo and Halo are hosting a webinar to discuss these opportunities on August 25, 2022, at 9:30am. *Register to attend >>*

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Simons Foundation: Targeted Grants in Mathematical and Physical Sciences

The Simons Foundation's Mathematics and Physical Sciences (MPS) division invites applications for its Targeted Grants in MPS program. The foundation strongly encourages applications from scientists from underrepresented groups.

The program is intended to support high-risk theoretical mathematics, physics and computer science projects of exceptional promise and scientific importance on a case-by-case basis.

The Targeted Grant in MPS program provides funding for up to five years. The funding level and duration is flexible and should be appropriate based on the type of support requested in the proposal. There is no recommended or assumed funding level for this program.

Deadlines are rolling.

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

Contact Us