NDSU OFFICE OF RESEARCH AND CREATIVE ACTIVITY

RCA UPDATE

October 30, 2023

Everyone's invited to BisonSpark Talks
The final session for this year's Talks is today!

BisonSpark TALKS

October 30

3-4:30 p.m.

Short talks about NDSU research to ignite conversation

Join emcee Jenna Mueller (executive director of The FMWF Chamber Foundation and graduate of the NDSU CAS Communication department) and our presenters for today's BisonSpark Talks!

- **Barney A. Geddes**
- **Elisabetta Liverani**

- **Elizabeth Skoy**
- **Eric Berg**

We're also happy to welcome two external speakers:

- **Cameron Battagler (Microsoft)**
- **Tami Norgard (Vogel Law Firm)**

BisonSpark Talks will be held from 3:00 to 4:30 in the Oceti Sakowin Ballroom in the Memorial Union at NDSU. Everyone is welcome to attend.

Learn more >>

NDSU researchers aim to understand how a virus inhibits natural cell processes

The work of a team of North Dakota State University researchers, led by Sangita

Sinha, NDSU Jordan A. Engberg professor of chemistry and biochemistry, has been featured as a cover story of Volume 62, Issue 20 of Biochemistry (an American Chemical Society publication). The research is funded by Sinha's recent National Institutes of Health (NIH) R15 award and it investigates how a protein from a specific virus can interfere with a natural cellular cleaning process, which might be a key factor in how the virus can cause diseases like cancer.

The research focuses on the Epstein-Barr virus (EBV), which is a widespread human virus that infects a large portion of the global population. EBV has been associated with various health issues including infectious mononucleosis, multiple sclerosis, and several types of cancers.

The study shows that a specific protein produced by EBV called BHRF1 blocks autophagy, a fundamental natural process that helps cells maintain their health by breaking down damaged organelles and proteins or harmful pathogens that have infected the cell. This helps EBV survive in infected human cells. The study reveals that BHRF1 blocks autophagy by binding to a key protein involved in autophagy called BECN1. Additionally, it describes the structural details of the interaction between BHRF1 and BECN1, explaining how BHRF1 blocks autophagy in cells infected by EBV. The study also demonstrates that it is possible to develop cell-permeable inhibitors that prevent BHRF1 from binding to BECN1 in cells, thereby restoring autophagy to normal levels.

The study shows an important mechanism by which EBV proteins may manipulate a host cell's processes which in turn contributes to the development of EBV-associated diseases, and provides detailed information that may guide the development of inhibitors that target these EBV proteins, allowing normal cellular immune defenses to destroy the virus.

Other NDSU researchers that contributed to this study include graduate students Samuel Wyatt, Karen Glover and Srinivasalu Dasanna, undergraduate student Monica Lewison, and Christopher Colbert, professor of chemistry and biochemistry.

"This study is a nice example of the potential applications of basic scientific research to solve real world health problems," commented Sinha.

Colleen Fitzgerald, NDSU vice president for research and creative activity noted the importance of the research to NDSU students. "NIH R15 awards are meant to support meritorious research that exposes students to new areas of research," she said. "Dr. Sinha's work is a great example of how an R15 award can drive new discoveries in a field while incorporating student learning directly in the work."

About Biochemistry
The ACS journal is an international forum for publishing exceptional, rigorous, high-impact research across all of biological chemistry. This broad scope includes studies on the chemical, physical, mechanistic, and/or structural basis of biological or cell function, and encompasses the fields of chemical biology, synthetic biology, disease biology, cell biology, nucleic acid biology, neuroscience, structural biology, and biophysics.

Read complete article >>

New Functionality for Research Awards and RCA Public Data Report

On a monthly basis, Research and Creative Activity publishes data on awards received. This report and others may be found here: **RCA Reports and Data - Awards Received Report**

The data behind the report comes from the PeopleSoft Awards Received query and the report is updated monthly. Since PeopleSoft is updated daily, this report is a snapshot in time so it may not always match the current Awards Received query.

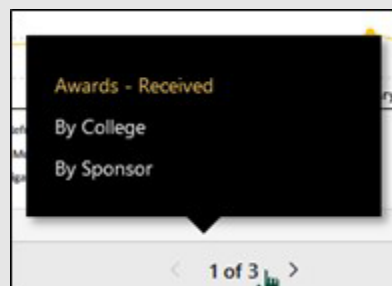The last updated date can be found at the bottom of the report:

Current & 5 Previous Fiscal Years * Refreshed Monthly to Reflect Data Updates

Data Reported by Month - Last Update - Tuesday, October 10, 2023

College categories are determined by the principal investigator's department only; co-PI's departments are not reflected

Starting in FY 2019 only New and Supplemental Proposals are reported

The report contains three pages. They show the same data on each but from a different perspective. To get to the other pages, click at the bottom of the report (shown below) and chose the page you'd like to view.

Awards - Received

By College

By Sponsor

< 1 of 3 >

The new functionality that has been added to the Awards Received Report is a filter that identifies the "purpose type" for the awards.

Awards Received Summary

Grant & Contract Awards Received

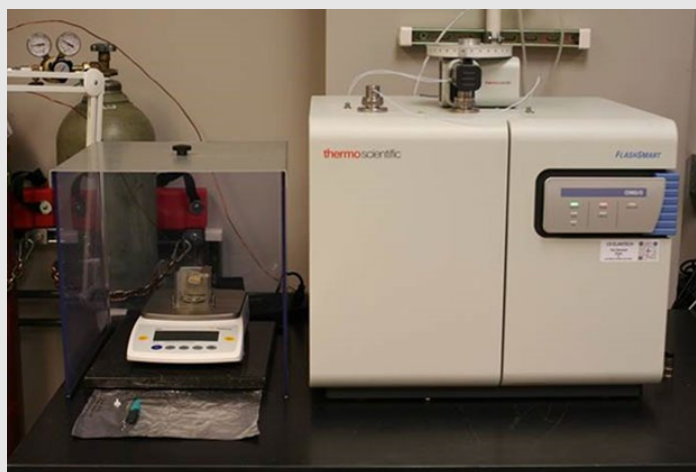| Primary Sponsor Category	Commodities		Federal		Foundation Non-Profit		Other		Other Gov't Agencies		Private		State		Total	
FY	#	$	#	$	#	$	#	$	#	$	#	$	#	$	#	$
2019	228	$7,854,062	291	$48,587,047	84	$2,955,834	8	$151,568	9	$661,182	65	$3,437,209	40	$3,729,991	725	$67,376,893

Questions may be sent to Christy Gallagher-Lein (christy.gallagher-lein@ndsu.edu or 701-231-8573).

RCA Research Operations Core announces new instrument: Thermo Scientific Flash*Smart* Elemental Analyzer

The RCA Research Operations core is pleased to announce its newest instrument: the Thermo Scientific Flash*Smart* Elemental Analyzer. The Flash*Smart* allows

quantitative determination of carbon, nitrogen, hydrogen, and sulfur by dynamic combustion and oxygen determination by pyrolysis, both followed by gas chromatography. With pretreatment, total organic carbon can be distinguished from total carbon.

This reliable, user-friendly device can handle solid, liquid, viscous, volatile, and gaseous samples with high throughput. Sample target size is 2 mg. Accurate and reproducible results make it useful for materials characterization in diverse fields including chemistry, polymers and plastics, pharmaceuticals, environmental waste, agronomy, and foods and feeds.

The Flash*Smart* replaces the LECO CHNS-932/VTF-900 Elemental Analyzer.

The Thermo Scientific Flash*Smart* Elemental Analyzer is available now in Building R2 lab 112 and may be reserved for use through BookitLab.

Contact Fred Haring, Research Operations core lab service team, for training or more information (Frederik.Haring@ndsu.edu or 701-231-5336).

Foreign talent recruitment programs

Research and Creative Activity has recently been made aware of emails directed to NDSU faculty members which are recruiting involvement in a foreign talent program. Because this specific foreign talent program in based in China, it is considered by the CHIPS and Science Act of 2022 to be a malign foreign talent

recruitment program.

NDSU's research successes have made its faculty targets for recruitment into such programs. If you have received this email or similar offers, please forward the email/offer to the Export Control Office (ndsuexportcontrols@ndsu.edu). Questions about foreign talent programs can be directed to the Export Control Administrator Sharon.May@ndsu.edu.

REMEMBER YOUR OBLIGATIONS AS A RESEARCHER
If you participate in a foreign talent recruitment program you must disclose such participation or foreign appointment, including any compensation, in-kind or funded research support, or resource provided by the foreign entity. This required disclosure would be made both as an external professional activity and included on appropriate federal forms -typically Current and Pending/Other Support, and/or on a Biosketch.

*NOTE: as early as 2024, you will **not** be able to receive or apply for federal funding if you are engaged with a malign foreign talent recruitment program.*

We are looking for North Dakota Water Resource Research Institute (NDWRRI) Faculty Fellows

The Office of Research and Creative Activity (RCA) is currently accepting applications for two Faculty Fellows to work within the North Dakota Water Resource Research Institute (NDWRRI). The program seeks to appoint one or two Faculty Fellows for a term of up to two years. These Faculty Fellows will be expected to dedicate approximately four hours per week to crafting and executing a plan aimed at achieving specific outcomes.

While applicants from any discipline at NDSU are welcome, a demonstrated interest in some aspect of water research, such as science, technology, applications, water quality, modeling, policy, or related areas, is essential. While prior direct experience

is not mandatory, candidates with limited background in this field should elucidate in their cover letters how they plan to rapidly acquire the necessary knowledge. Candidates of any rank level (assistant/associate/full professor) are encouraged to apply. RCA will provide a $10,000 supplement over a one-year term. Social Scientists are encouraged to apply!

To apply, forward the following documents to ndsu.rcasearch@ndsu.edu	1. Cover letter (1-2 pages): This should elaborate on your relevant experience and express your keen interest in the position, highlighting how it has equipped you to undertake the proposed work. 2. Statement of Intent: Outline what you aim to accomplish in the role of Water Research Faculty Fellow. 3. Abbreviated Curriculum Vitae (3 pages): Present a concise summary of your professional background, emphasizing key accomplishment and qualifications. 4. Reference Contact: Provide a reference who can affirm your potential to excel in this role.

The application deadline is November 8, 2023 by 5:00 pm. Selections will be finalized by December 1, 2023, with the Faculty Fellow assuming duties on January 1, 2024.

You can get updates about this search on the *NDWRRI Faculty Fellows page >>*

Research Development and Grant Writing News

The Research and Creative Activity office holds a subscription to Research Development and Grant Writing News, a monthly newsletter full of helpful tips and information about funding agencies and writing successful grant proposals.

Here are some articles you will find in the September and October 2023 editions:

- **Conservation Innovation Grants, a Niche Funding Program by USDA**
- **Overview: Defense Sciences Office 2024 BAA**
- **Checking in with ARPA-H**
- **NSF's Research Infrastructure in the Social and Behavioral Sciences Program**
- **Editing the Proposal Introduction: What, Why, & How**
- **Don't Let Your Proposal Wear a Disguise on Halloween**
- **How a Good Website Can Help Faculty Win Grants**
- **The Institute for Museum and Library Services Is Now Accepting Proposals, November 15 Deadline**
- **Biotechnology at USDA/NIFA in FY2024 Budget**
- **Overview: Bioenergy Technologies Office at DOE**
- **Understanding NSF For NIH PIs**
- **Multi-Agency R&D Priorities for the FY 2025 budget**
- **Proposal Writing in the Humanities**
- **Significance of Your Proposed Humanities Project?**
- **What Is Your Great Idea and Why Is It Important?**

Access these and many more articles (requires NDSU log-in) >>

Grants.gov Updates

Grants.gov site update

Grants.gov will be updated with a new look and feel following October maintenance. Grants.gov will be unavailable during the scheduled downtime maintenance period of October 28-31, but will return November 1 with:

- **a new interface for an enhanced user experience;**
- **accessibility on most devices;**
- **enhanced security; and**
- **alignment with federal standard - the United States Web Design System (USWDS) - to provide accessible and mobile-friendly websites to all users.**

Learn more >>

Adjustments to NIH Grant Application Due Dates on or Between October 28, 2023 and October 31, 2023

This notice informs the community of NIH application due date adjustments to accommodate scheduled Grants.gov downtime (see above).

The following Notices of Funding Opportunities (NOFOs) are impacted. The original due dates fall on or between October 28 and October 31, 2023. Therefore, the new due date is November 1, 2023.

- PAR-21-044
- PAR-21-306
- PAR-23-236
- PAR-23-237

- [RFA-AG-24-031](#)
- [RFA-AG-24-047](#)
- [RFA-AG-24-050](#)
- [RFA-DA-24-068](#)
- [RFA-DA-24-069](#)
- [RFA-OD-23-018](#)
- [RFA-RM-23-012](#)

Any NOFOs not specifically mentioned above with a due date on or between October 28 and October 31, 2023, will also be due November 1, 2023.

[Learn more >>](#)

Changes to NIH Review Framework

The National Institutes of Health (NIH) announced that a Simplified Review Framework will be implemented for grant receipt deadlines beginning January 25, 2025.

The Simplified Framework is expected to better focus peer reviewers on the key questions needed to assess the scientific and technical merit of proposed research projects: "Can and should the proposed research project be conducted?" To achieve this, the five current review criteria (Significance, Innovation, Approach, Investigator, and Environment) are being reorganized into three broader factors to help reviewers focus on crucial questions that determine scientific merit.

- **Factor 1: Importance of the Research** (Significance and Innovation), factor score 1-9
- **Factor 2: Rigor and Feasibility** (Approach), factor score 1-9,

- **Factor 3: Expertise and Resources** (Investigator and Environment), either rated as sufficient for the proposed research or not (in which case reviewers must provide an explanation)

This Simplified Framework is being adopted to address concerns about the potential for researcher reputation to have an undue influence on application review, and to reduce reviewer burden by redirecting administrative responsibilities related to the Additional Review Considerations of Applications from Foreign Organizations, Select Agents, and Resource Sharing Plans to NIH Staff.

Learn more >>

NSF Career Awards

If you are planning to submit an NSF Career Award for the July 2024 deadline, please notify the Research Development office (ndsu.researchdev@ndsu.edu) by November 30, 2023.

The Research Development team will be supporting a cohort of junior faculty intending to submit in July 2024 through workshops, seminars and writing support as needed.

NSF biosketch workshops

As of Monday, October 23, 2023, every PI, Co-PI and faculty/staff named as Senior Personnel on an NSF proposal must use SciENcv to create their biosketch. The Research Development team, led by Heidi Grunwald, will assist researchers in preparing their biosketches.

We will host two SciENcv workshops in anticipation of the upcoming NSF December and January deadlines. Please share this email with your faculty.

- **Thursday, November 9, 2023 8:00am-9:30am**
- **Thursday, December 7, 2023 8:00am-9:30am**

Both workshops will follow the same format: first 45 minutes will be a step-by-step tutorial and the remaining time will be to assist with questions. Faculty are asked to bring their laptop as well as a hard copy of their CV.

Registration is required and researchers can attend either in-person (Memorial Union – Nueta Room) or via Zoom (Zoom link will be emailed to registrants prior to the workshop).The recordings will be posted to our website as a future resource. Coffee and breakfast will be available at both workshops.

Register >>.

Build and Broaden Program workshop on November 2

The [Build and Broaden Program](#) in the Directorate of Social, Behavioral and Economic Sciences will host its second annual program symposium on November 2 from 11:00 am to 5:00 pm EST.

Build and Broaden aims to broaden participation in the social, behavioral and economic sciences through support for research, training and research infrastructure at minority-serving institutions, including partnerships with and among those institutions.

The event will provide information about the program funding, best practices, proposal preparation and budgets. In addition, a diverse group of principal investigators will discuss how NSF funding supports the implementation of their projects. Finally, there will be a conversation about additional funding opportunities throughout the Foundation.

- [Minority Serving Institutions Program | U.S. Department of the Interior (doi.gov)](#)
- [OCR: Accredited Postsecondary Minority Institutions](#)
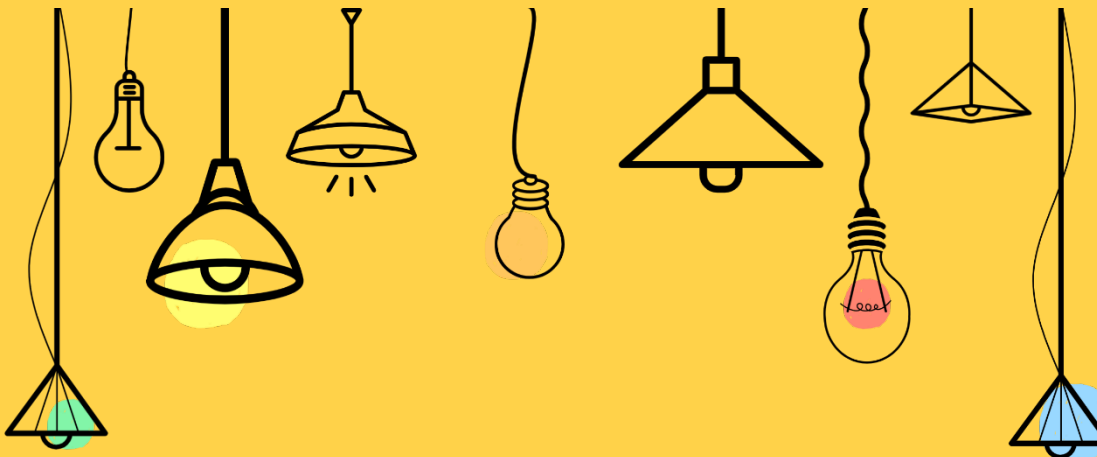
[More information >>](#)

Fall 2023 NSF Virtual Grants Conference

Join the National Science Foundation (NSF) for the Fall 2023 NSF Virtual Grants Conference, to be held during the week of December 4–7, 2023. Registration will be free of charge and opens on Wednesday, November 8 at 12 pm ET.

Check [nsfpolicyoutreach.com](#) for the most up-to-date information and view

recordings of sessions from previous conferences. You may also view the Spring 2023 Virtual Grants Conference recordings on NSF's YouTube page. For those who cannot attend the live conference, all recorded conference sessions will be available on-demand shortly after the event and posted on our website and our YouTube page.

Any logistical questions about this virtual conference should be directed to grants_conference@nsf.gov

Have a big, bright idea about research at NDSU?

It's important that we continually challenge each other to come up with ambitious, big ideas in our research endeavors at NDSU. So we'd like to hear your ideas, and the bigger they are, the better.

While we can't promise all of them will succeed, we welcome you to share them - from an early concept or thought all the way to developed ideas that may just need some collaboration - send us an email (**bigideas@ndsu.edu**) and get the process started.

Upcoming Events at a Glance

- **BisonSpark Talks**
  October 30 | Learn More >>

- **NSF: Track 2 Office Hours**
  November 29 at 1:30pm
  December 20 at 1pm
  Learn More and Register Here >>
  Note – the 2024 internal competition is closed. However, if you are interested in the program for 2025, it is highly encouraged that you attend one of these sessions

- **I-Corps Updates Meeting**
  November 2, December 7 | Learn More >>

- **Specialized Centers of Research Excellence on Sex Differences (SCORE) 2023 Annual Meeting Keynote Address**
  November 3, 2023 | Learn More >>

- **NSF Biosketch Workshops**
  November 9, 2023 8:00am-9:30am | Register >>
  December 7, 2023 8:00am-9:30am | Register >>

- **Partnerships for Innovation (PFI) Q&A Webinar**
  December 2 | Learn More >>

- **Building Interdisciplinary Research Careers in Women's Health (BIRCWH) 2023 Annual Meeting**
  December 5, 2023 | Learn More >>

Funding Opportunities

- [American Philosophical Society: Phillips Fund for Native American Research](#)
- [Colgate University: Creative Writing Fellowship](#)
- [HRSA: Rural Health Network Development Planning Program](#)
- [NEH: Humanities Research Centers on Artificial Intelligence - **LIMITED**](#)
- [NEH: Landmarks of American History and Culture for K-12 Educators](#)
- [NIH: Cancer Research Education Grants Program - Research Experiences](#)
- [NIH: Early-Stage Biomedical Data Repositories and Knowledgebases](#)
- [NIH: Intervention Research to Improve Native American Health](#)
- [NIH: Microphysiological Systems to Advance Precision Medicine for AD/ADRD Treatment and Prevention](#)
- [NSF: DCL - Advancing Microelectronics Education](#)
- [NSF: DCL - Aligning Fundamental Research and Education in Advanced Manufacturing with the Objectives of the Manufacturing USA Institutes](#)
- [NSF: DCL - STEM Access for Persons with Disabilities](#)
- [NSF: Developmental Sciences](#)
- [NSF: Division of Materials Research: Topical Materials Research Programs](#)
- [NSF: EPSCoR Research Infrastructure Improvement Track-4: EPSCoR Research Fellows – **LIMITED**](#)
- [NSF: Human-Environmental and Geographical Sciences Program](#)
- [NSF: Innovative Technology Experiences for Students and Teachers Resource Center](#)
- [NSF: Law & Science](#)
- [NSF: NSF/CASIS Collaboration on Tissue Engineering and Mechanobiology on the International Space Station to Benefit Life on Earth](#)
- [NSF: Research Infrastructure in the Social and Behavioral Sciences](#)
- [NSF: Research on the Science and Technology Enterprise: Indicators, Statistics and Methods](#)
- [NSF: Security and Preparedness](#)

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 date.

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: October 30, 2023
- DOE: Building EPSCoR-State/National Laboratory Partnerships
  Notification Deadline: November 1, 2023
- NSF: Scholarships in STEM (S-STEM)
  Notification Deadline: November 10, 2023 Track 2 and 3
  Notification Deadline: December 18, 2023 Track 1
- NSF: EPSCoR Research Infrastructure Improvement Track-4: EPSCoR Research
  Notification Deadline: November 16, 2023
- NEH: Humanities Research Centers on Artificial Intelligence
  Notification Deadline: November 17, 2023
- FFAR: New Innovator in Food and Agriculture Research
  Notification Deadline: December 21, 2023

The below limited submission grant programs did not receive notification of interest, so they are considered "**First to Notify**". Those who notify are given approval to move forward with a full proposal submission on a first come, first served basis.

- W.M. Keck Foundation: Phase I
  Deadline: November 1, 2023
- DOE: Innovative Designs for High-Performance Low-Cost HVDC Converters
  Deadline: November 14, 2023; 4pm
- HRSA: National Rural Health, Policy, Community and Collaboration Program
  Deadline: November 30, 2023

- [Mathers Foundation: Grant Program (STEM)](#)
  Deadline: LOI December 1, 2023
- [HRSA: Supporting Healthy Start Performance Project](#)
  Deadline: December 29, 2023
- [NIH: Leading Equity and Diversity in the Medical Scientist Training Program](#)
  Deadline: January 25, 2024

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American Philosophical Society: Phillips Fund for Native American Research

[The Phillips Fund of the American Philosophical Society](#) provides grants for research in Native American linguistics, ethnohistory, and the history of studies of Native Americans, in the continental United States and Canada.

The grants are intended for such costs as travel, audio and video recordings, and consultants' fees. Grants are not made for projects in archaeology, ethnography, or psycholinguistics; for the purchase of permanent equipment; or for the preparation of pedagogical materials. The committee distinguishes ethnohistory from contemporary ethnography as the study of cultures and cultural change through time. The committee prefers to support the work of younger scholars who have received the doctorate. Applicants conducting research with Indigenous communities should provide information on appropriate contacts and the current state of consultation or arrangements made with those communities on any issues of research approval and ethical access that pertain to the proposed research.

Deadline: March 1, 2024

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Colgate University: Creative Writing Fellowship

This annual [Creative Writing Fellowship](#) is designed to support writers completing their first books. It provides a generous stipend, office space, and an intellectual community for

the recipients, who spend one academic year at Colgate. In return, each fellow teaches one creative writing workshop per semester and gives a public reading of their work. Writers who have recently completed an MFA, MA, or PhD in creative writing, and who need a year to complete their first book, are encouraged to apply. The selected writers will spend the academic year (late August 2023 to early May 2024) at Colgate University in Hamilton, New York. The fellows will teach one creative writing course each semester and will give a public reading from the work in progress. The fellowship includes a $55,000 stipend, travel expenses and health and life insurance.

Deadline: January 5, 2024

HRSA: Rural Health Network Development Planning Program

The purpose the Rural Health Network Development Planning Program [HRSA-24-007] ("Network Planning Program") is to plan and develop integrated health care networks that collaborate to address the following legislative aims: (i) achieve efficiencies; (ii) expand access to and improve the quality of basic health care services and health outcomes; and (iii) strengthen the rural health care system. This program supports one year of planning and brings together members of the health care delivery system, particularly those entities that may not have collaborated in the past, to establish and/or improve local capacity in order to strengthen rural community health interventions and enhance care coordination.

The Network Planning program uses the concept of developing networks as a strategy toward linking rural health care network members together to address local challenges, and help rural stakeholders achieve greater collective capacity to overcome challenges related to limited economies of scale for individual hospitals, clinics, or other key rural health care stakeholders.

Deadline: January 26, 2024

NEH: Humanities Research Centers on Artificial Intelligence – LIMITED

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 date.

Notify RCA by November 17, 2023, 5pm if you are interested in submitting to this program.

The Humanities Research Centers on Artificial Intelligence program aims to support a more holistic understanding of artificial intelligence (AI) in the modern world through the creation of new humanities research centers on artificial intelligence at eligible institutions. Centers must focus their scholarly activities on exploring the ethical, legal, or societal implications of AI.

A Center is a sustained collaboration among scholars focused on exploring a specific topic. Successful applicants will examine the humanities implications of AI through two or more related scholarly activities. Centers must be led by scholars in the humanities or humanistic social sciences, but should include scholars from multiple disciplines. Scholars may come from one or more institutions. NEH welcomes international collaboration, but scholars at U.S. institutions must contribute significantly to the project. In addition to the establishment of a sustainable Center, your project should engage in at least two activities that support research into the ethical, legal, or societal implications of AI. Appropriate activities may include but are not limited to: collaborative research and writing efforts; workshops or lecture series; education and mentoring; and the creation of digital tools to increase or advance scholarly discourse about AI.

LIMITED SUBMISSION: Only four applications per Institution.

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NEH: Landmarks of American History and Culture for K-12 Educators

[Landmarks of American History and Culture](#) programs for K-12 educators situate the study of topics and themes in the humanities within sites, areas, or regions of historic and cultural significance to expand participants' knowledge of and approaches to teaching diverse histories, cultures, and perspectives in the United States and its jurisdictions.

Deadlines
Optional Draft – January 5, 2024
Final Draft – February 14, 2024

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NIH: Cancer Research Education Grants Program - Research Experiences (R25 Clinical Trial Not Allowed)

The over-arching goal of this National Cancer Institute (NCI) R25 [[PAR-23-277](#)] 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. Applications are encouraged that propose innovative, state-of-the-art programs that address the cause, diagnosis, prevention, or treatment of cancer, rehabilitation from cancer, or the continuing care of cancer patients and the families of cancer patients, in order to advance the NCI mission. To accomplish the stated over-arching goal, this Funding Opportunity will support creative educational activities with a primary focus on:

- Research Experiences: Proposed research experiences should involve an innovative approach to provide hands-on exposure to cancer research for a full-time (40 hours per week) period of 8 to 15 weeks in order to stimulate the interest and advance the knowledge base of participants to consider further education and training for future careers as cancer researchers. Ideally, the research experiences should provide opportunities for the participants to present their work at professional venues and/or earn co-authorship on peer-reviewed publications.
- Complementary educational activities, such as seminars, journal clubs, grand rounds, field trips, career development presentations, etc., are encouraged as part

of the research experiences program, but should not exceed more than 8 hours per week (20% of the full-time effort) on average.

- The proposed programs should provide research experiences and related educational activities that are not available through formal NIH training mechanisms.
- It is expected that each participant will be integrated into the research setting of his/her assigned faculty mentor who will have direct oversight responsibility for the participant, which will include regular, in-person interaction.
- R25 programs that propose at least 8 weeks, but fewer than 15 weeks, of full-time research experiences are allowed to request continued part-time support for some or all of the participants to continue to work on their research projects, up to the equivalent of 15 weeks of full-time participation, as long as the entire research experience is completed within a 12-month period.
- It is expected that most individuals will only receive support one time to participate in the R25 research experiences program. However, at the discretion of the PD(s)/PI(s), up to 20% of the participants may receive support to participate a second time, if they play a peer-to-peer mentor role for the new participants.

Deadline: January 25, 2024

NIH: Early-Stage Biomedical Data Repositories and Knowledgebases (R24 Clinical Trail Not Allowed)

This Funding Opportunity (FO) [PAR-23-236] supports the development of early-stage or new data repositories or knowledgebases that could be valuable for the biomedical research community. The overall goal is to support pilot activities that demonstrate the need and potential impact of the data resource. The FO will also support transitioning resources that are currently supported as investigator-initiated research efforts into quality controlled, standards-based resources that address governance, and efficiency of operations. Efforts to consolidate existing data repositories or independent knowledgebases are also in scope for this FO.

Each resource must: (a) deliver scientific impact to the communities served; (b) employ and promote good data management practices and efficient operations for quality and

services; (c) engage with the user community and continuously address their needs; and (d) support a process for data life-cycle analysis, long-term preservation, and trustworthy governance.

Both the data repository and the knowledgebase should provide publicly available documentation on the services offered; be responsible for providing quality services; demonstrate the utility of the data and offered services; demonstrate usage and utility; must commit to community engagement and needs, trustworthiness of stewardship, and governance.
[Companion Funding Opportunity – Enhancement and Management of Established Biomedical Data Repositories and Knowledgebases PAR-23-237*]*

Deadline: January 25, 2024

NIH: Intervention Research to Improve Native American Health (R01 Clinical Trial Optional)

The purpose of this Funding Opportunity (FO) [PAR-23-298] is to support research on interventions to improve health in Native American populations. This includes 1) etiologic research that will directly inform intervention development or adaptations, 2) research that develops, adapts, or tests interventions for health promotion, prevention, treatment, or recovery, and 3) where a sufficient body of knowledge on intervention efficacy exists, research on dissemination and implementation that develops and tests strategies to overcome barriers to the adoption, integration, scale-up, and sustainability of effective interventions. Through this initiative, intervention and related research is sought to build upon community knowledge, resources, and resilience to identify and rigorously test culturally appropriate solutions to reduce morbidity and mortality. The inclusion of Native American investigators serving on the study teams or as the PD(s)/PI(s) is strongly encouraged.

Deadline: October 21, 2024

NIH: Microphysiological Systems to Advance Precision Medicine for AD/ADRD Treatment and Prevention (U54 Clinical Trial Not Allowed)

The overarching objective of this initiative [RFA-AG-24-040] is to create Alzheimer's Disease and AD-Related Dementias (AD/ADRD) Microphysiological Systems (MPS) Translational Centers focused on establishing an infrastructure to develop standardized and deeply phenotyped 2D and 3D MPS models, establishing the translational validity of these MPS models to recapitulate the molecular and network perturbations identified in AD/ADRD, and ensuring rapid and broad distribution of the MPS models, data, and analytical methods for use in basic research and therapy development.

The AD/ADRD 2D and 3D MPS models are expected to express critical aspects of human physiology and provide a measurable output for the representative systems. In developing AD/ADRD disease models that more accurately represent human physiology and pathology, investigators are strongly encouraged to take advantage of recent advances with iPSCs. Essential characteristics of the disease models should include all or some of the following features:

- Recapitulate the complexity of the human brain;
- Recreate the neurodegenerative microenvironment;
- Reflect the heterogeneity and complexity of the disease;
- Accurately predict therapy efficacy and safety in humans; and
- Enable rigorous preclinical efficacy and safety testing.

Ideally, the platform used should be compatible with high content screening platforms that include multiple molecular read-outs, such as gene expression, proteomic, metabolomic, or epigenomic analyses. The bioengineered platform should also provide spatial and temporal control of the cellular microenvironment, while enabling continuous monitoring (sensing), probing (direct in-cell measurements), and sampling (testing and continuous data collection and analysis) of the system.

Deadline: Letter of Intent – January 15, 2024

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NSF: DCL - Advancing Microelectronics Education

NSF is accepting proposals [NSF 23-115] to conduct education-related research and development to prepare a diverse microelectronics workforce beginning with the early preparation of K-12 students in and outside of school settings and extending through undergraduate, graduate and other levels of adult learning. This DCL encourages proposals that will inspire, study and support learners' interest and motivation to pursue education pathways and careers in microelectronics. Successful projects should engage students and learners in activities that will build knowledge and skills in science, technology, engineering, and mathematics (STEM) needed for the microelectronics workforce of the future. The Directorate for STEM Education (EDU) encourages the education research community to respond to this challenge through existing funding opportunities in EDU listed at the end of this DCL.

As appropriate, proposals may address learning in formal and informal environments, including but not limited to research and development of microelectronics curricula, exhibits and programs at science centers, educational approaches to expand equity and opportunity, student internships, graduate traineeships, and educator professional development. The needs of important stakeholders, such as industry professionals and professional societies may also be addressed. It is imperative that the microelectronics industry of the future be founded on principles of inclusivity that ensure equitable access to new careers. Thus, this DCL encourages all proposals to include educational approaches designed to broaden participation in microelectronics and related careers. Proposals can build from the perspectives and strengths of talent pools that have not yet been fully tapped. The program encourages the participation of the full spectrum of diverse talents in STEM.

NSF: DCL - Aligning Fundamental Research and Education in Advanced Manufacturing with the Objectives of the Manufacturing USA Institutes

Manufacturing USA Institutes cover a wide range of topical areas that span the challenging and high-tech world of advanced manufacturing, from biopharmaceutical production and tissue printing to robotics and cybersecurity. NSF is interested in receiving

proposals addressing critical fundamental research on and workforce development needs for advanced manufacturing that enable innovations in the technical focus areas of one or more of the Manufacturing USA Institutes.

This DCL [NSF 24-014] encourages the submission of research and educational proposals that align with the technical focus areas of the Manufacturing USA Institutes to established NSF programs in the Directorates for Engineering (ENG), STEM Education (EDU), and Technology Innovation and Partnerships (TIP). Proposal submissions should detail explicit collaborations with Institutes to facilitate the transition of promising research results and educational programs to them, leverage the programs, facilities, infrastructure, expertise, and member companies of one or more Institutes, and/or provide experiential learning opportunities for students. Proposal submissions that include internship opportunities for student researchers in the institutes and their member companies are strongly encouraged.

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NSF: DCL - STEM Access for Persons with Disabilities (STEM-APWD)

With this Dear Colleague Letter (DCL) [NSF 23-160], the National Science Foundation (NSF) wishes to notify the research community of a new initiative called STEM Access for Persons with Disabilities (STEM-APWD) that seeks to increase the engagement of persons with disabilities (PWD) in science, technology, engineering and mathematics (STEM) fields across seven directorates at NSF:

- Biological Sciences (BIO)
- Computer and Information Science and Engineering (CISE)
- Engineering (ENG)
- Geosciences (GEO)
- Mathematical and Physical Sciences (MPS)
- Social, Behavioral and Economic Sciences (SBE)
- Technology, Innovation and Partnerships (TIP)

Proposals and supplemental funding requests are sought that address intersections between disability and fundamental science and generalizable research that addresses

pathways from theory to application and use. Conferences and requests for supplements are expected to be wide-ranging, across topics and actions to support access to and engagement in STEM research, training and employment activities for persons with disabilities.

Deadline: The 2023 target date for proposal submissions of both types is 5 p.m. submitter's local time on December 7, 2023. The target date in 2024 and annually thereafter will be 5 p.m. submitter's local time on the second Thursday in November.

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NSF: Developmental Sciences (DS)

Developmental Sciences (DS) [PD 08-1698] supports basic research that increases our understanding of cognitive, linguistic, social, cultural and biological processes related to human development across the lifespan. Research supported by this program will add to our knowledge of the underlying developmental processes that support social, cognitive and behavioral functioning, thereby illuminating ways for individuals to live productive lives as members of society.

DS supports research that addresses developmental processes within the domains of cognitive, social, emotional and motor development across the lifespan by working with any appropriate populations for the topics of interest including infants, children, adolescents, adults and non-human animals. The program also supports research investigating factors that affect developmental change, including family, peers, school, community, culture, media, physical, genetic and epigenetic influences. Additional priorities include research that incorporates multidisciplinary, multi-method, microgenetic and longitudinal approaches; develops new methods, models and theories for studying development; includes participants from a range of ethnicities, socioeconomic backgrounds and cultures; and integrates different processes (e.g., memory, emotion, perception, cognition), levels of analysis (e.g., behavioral, social, neural) and time scales.

Deadline: January 30, 2024

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NSF: Division of Materials Research: Topical Materials Research Programs (DMR-TMRP)

Research supported by the Division of Materials Research (DMR) [NSF 23-612] focuses on advancing the fundamental understanding of materials, materials discovery, design, synthesis, characterization, properties, and materials-related phenomena. DMR awards enable understanding of the electronic, atomic, and molecular structures, mechanisms, and processes that govern nanoscale to macroscale morphology and properties; manipulation and control of these properties; discovery of emerging phenomena of matter and materials; and creation of novel design, synthesis, and processing strategies that lead to new materials with unique characteristics. These discoveries and advancements transcend traditional scientific and engineering disciplines. Projects supported by DMR are not only essential for the development of future technologies and industries that address societal needs, but also for the preparation of the next generation of materials researchers.

Deadline: Proposals accepted ANYTIME

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NSF: EPSCoR Research Infrastructure Improvement Track-4: EPSCoR Research Fellows – LIMITED

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 date.

Notify RCA by November 16, 2023, 5pm if you are interested in submitting to this program.

EPSCoR RII Track-4: EPSCoR Research Fellows [NSF 23-535] provides awards to build research capacity in institutions and transform the career trajectories of investigators and further develop their individual research potential through collaborations with investigators from the nation's premier private, governmental, or academic research centers. The fellowship provides opportunities to establish strong collaborations through extended or periodic collaborative visits to a selected host site. Through collaborative research activities with the host site, Fellows will be able to learn new techniques, develop new collaborations, advance existing partnerships, benefit from access to unique equipment and facilities, and/or shift their research toward potentially transformative new directions. The experiences gained through the fellowships are intended to have lasting impacts that will enhance the Fellows' research trajectories well beyond the award period. The benefits to the Fellows are also expected to improve the research capacity of their institutions and jurisdictions more broadly.

Note: In this solicitation, NSF updated the eligibility criteria. This program is now open to **tenured or non-tenured faculty** at the **assistant or *associate professor*** rank or equivalent positions.

NDSU is not eligible for the NASA track.

LIMITED SUBMISSION: Only four applications per Institution.

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NSF: Human-Environmental and Geographical Sciences Program (HEGS)

The objective of the Human-Environment and Geographical Sciences Program (HEGS) [NSF 21-623] is to support basic scientific research about the nature, causes and/or consequences of the spatial distribution of human activity and/or environmental processes across a range of scales. Contemporary geographical research is an arena in which diverse research traditions and methodologies are valid. Recognizing the breadth of the field's contributions to science, the HEGS Program welcomes proposals for empirically grounded, theoretically engaged, and methodologically sophisticated, generalizable

research in all sub-fields of geographical and spatial sciences. HEGS welcomes proposals that creatively integrate scientific and critical approaches, and that engage rigorous quantitative, qualitative, or mixed methods in novel ways. HEGS supported projects are expected to yield results that will enhance, expand, and transform fundamental geographical theory and methods, and that will have positive broader impacts that benefit society. A proposal to the HEGS Program must also articulate how the results are generalizable beyond the case study.

Deadline: January 16, 2024

NSF: Innovative Technology Experiences for Students and Teachers (ITEST) Resource Center

The Innovative Technology Experiences for Students and Teachers (ITEST) [NSF 24-500] program is an applied research and development program that seeks to actualize a diverse future science, technology, engineering, and mathematics (STEM) and information and communication technologies (ICT) workforce that is prepared to meet pressing local, societal, and global challenges. Because STEM and ICT careers increasingly rely on technologies and computing, the ITEST program funds projects that engage youth, from pre-kindergarten through high school, and pre-K-12 educators in equitable, innovative technology learning and education experiences within and across STEM disciplines in formal or informal settings. These projects build youths' interest and knowledge in STEM careers, and they prioritize the full inclusion of all groups to include those that have been underrepresented, under-served, or excluded from STEM educational opportunities. This ensures that NSF is better postured to leverage the full spectrum of diverse talent across the country.

This solicitation calls for a Resource Center for the ITEST program. The Resource Center will support diverse, multi-sector stakeholders in actualizing the three pillars of ITEST: (1) strategies for equity in STEM education, (2) partnerships for career and workforce preparation, and (3) innovative use of technologies in teaching and learning. It is expected that this Resource Center will facilitate individual and collective dialogue, reflection, and action relative to these pillars, while supporting stakeholders in the conceptualization, actualization, and communication of ITEST projects.

Deadline: January 22, 2024

NSF: Law & Science (LS)

The Law & Science Program [PD 21-128Y] considers proposals that address social scientific studies of law and law-like systems of rules, as well as studies of how science and technology are applied in legal contexts. The Program is inherently interdisciplinary and multi-methodological. Successful proposals describe research that advances scientific theory and understanding of the connections between human behavior and law, legal institutions, or legal processes; or the interactions of law and basic sciences, including biology, computer and information sciences, STEM education, engineering, geosciences, and math and physical sciences. Scientific studies of law often approach law as dynamic, interacting with multiple arenas, and with the participation of multiple actors.

LS supports the following types of proposals:

- Standard Research Grants and Grants for Collaborative Research
- Conference Awards

Deadline: January 15, 2024

NSF: NSF/CASIS Collaboration on Tissue Engineering and Mechanobiology on the International Space Station (ISS) to Benefit Life on Earth

The unique high quality and long duration micro-gravity environment on the ISS National Lab provides an extraordinary research platform for experiments in the biological and medical sciences [NSF 24-502]. Micro-gravity induces a vast array of changes in individual cells and model organisms ranging from viruses and microorganisms to humans, including global alterations in gene expression and 3-dimensional aggregation of cells into biofilms or tissue-like architectures that recapitulate the structure and function of organs.

Moreover, studies reveal a variety of space flight-induced health conditions, many of which may serve as accelerated models of ground-based ailments such as aging and trauma. Research into these and other effects of the space environment may advance our fundamental understanding of cell and tissue function, effective disease diagnosis and /or treatment, or improved health care delivery.

Ideal proposals will describe a commercial, civil, or academic project to achieve research or technology development objectives that will directly impact fundamental studies on cellular engineering, tissue engineering, and models of physiological systems, including (but not limited to):

- Scaffolds/matrices
- Cell-cell, cell-matrix interactions
- Cellular immunotherapies
- Tissue biomanufacturing
- Hybrid systems for modeling of physiological or pathophysiological processes
- Computational models of physiological or pathophysiological systems that are validated based on experiments conducted on the ISS
- Mechanobiology related to phenotype expression

Deadline: Feasibility Review Form January 15, 2024

NSF: Research Infrastructure in the Social and Behavioral Sciences (RISBS)

The Research Infrastructure in the Social and Behavioral Sciences Program (RISBS) [PD 23-277Y] supports projects that create computational tools and data to facilitate basic research in the social and behavioral sciences that can lead to improved health, prosperity and security.

Projects should be aimed at creating computational tools and data to enable research by social scientists. Examples include, but are not limited to, data collection or assembly efforts that result in new resources for a community of researchers or software platforms that facilitate data collection efforts by others. RISBS does not support research by PIs

except in service of creation of the infrastructure. Innovation is especially encouraged.

Deadline: Proposals accepted ANYTIME

NSF: Research on the Science and Technology Enterprise: Indicators, Statistics and Methods (NCSES S&T)

The National Center for Science and Engineering Statistics (NCSES) would like to enhance its efforts to support analytic and methodological research in support of its surveys as well as promote the education and training of researchers in the use of large-scale nationally representative datasets. NCSES welcomes efforts by the research community to use NCSES or other data to conduct research on the S&T enterprise [NSF 21-627], develop improved survey methodologies that could benefit NCSES surveys, explore alternate data sources that could supplement NCSES data, create and improve indicators of S&T activities and resources, strengthen methodologies to analyze S&T statistical data, and explore innovative ways to communicate S&T statistics. To that end, NCSES invites proposals for individual or multi-investigator research projects, doctoral dissertation improvement awards, conferences, experimental research, survey research and data collection, and dissemination projects under its program for Research on the Science and Technology Enterprise: Indicators, Statistics, and Methods (NCSES S&T).

Deadline: January 16, 2024

NSF: Security and Preparedness (SAP)

The Security and Preparedness (SAP) Program [PD 19-118Y] supports basic scientific research that advances knowledge and understanding of issues broadly related to global and national security. Research proposals are evaluated on the criteria of intellectual merit and broader impacts; the proposed projects are expected to be theoretically motivated, conceptually precise, methodologically rigorous, and empirically oriented. Substantive areas include (but are not limited to) international relations, global and national security, human security, political violence, state stability, conflict processes,

regime transition, international and comparative political economy, and peace science. Moreover, the Program supports research experiences for undergraduate students and infrastructural activities, including methodological innovations.

Deadline: January 15, 2024

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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.

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

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