

RCA UPDATE

April 17, 2023

NDSU researcher looking for new ways to improve computer system efficiency

Sumitha George, NDSU assistant professor of electrical & computer engineering, recently received a National Science Foundation (NSF) grant to study how to increase efficiency of computer systems having multi-level cell (MLC) storage, which can store more than one bit of information in a single device. The study will investigate the incorporation of emerging technology based designs into existing computer system models. The award will provide \$175,000 to George over the next two years.



Student Mathan Karthick and Sumitha George work in her lab

The large amount of data we generate and consume has been rapidly increasing in recent years given the advent of new technologies like social media, artificial intelligence and the Internet of Things and our computer systems are struggling to keep up. Traditional computer systems are not equipped to handle this massive amount of data and as a result, new approaches to data storage and processing are needed to keep up with the demands of modern computing.

One of George's interests has been how to optimize memory.

"We have reached an interesting point in technology where we may not be able to continue shrinking our traditional transistors for increasing system performance," she said. "We're now operating at a nanoscale level and even though Moore's Law told us for decades that the number of transistors on a microchip would double every two years, it has become increasingly difficult to continue this rate due to physical limitations. This means that now we have to start looking for ways to increase the efficiency of computers by creating new forms of transistors and memory cells that function in different and exciting ways."

George is a specialist in very large-scale integration (VLSI) design and computer architecture at NDSU. VLSI design is the process of creating an integrated circuit by combining millions or billions of MOS transistors (the most basic element in the design of a large scale integrated circuits) onto a single chip. She joined the institution in 2020 after receiving a PhD in computer science and engineering at Penn State University. She also spent time at IBM as an R&D engineer and as a research intern at Intel. At NDSU, she teaches and works with students in her lab on ways to create new circuit and architecture designs for computers.

The way our current computing systems work is that data is stored in memory and then needs to be moved to processing units before it can be acted upon and then it goes back to memory for storage. All this action uses a lot of power and adds delay to processing. Compounding the issue is that each memory cell stores only one bit of data, which means that a large number of memory cells are required for a system.

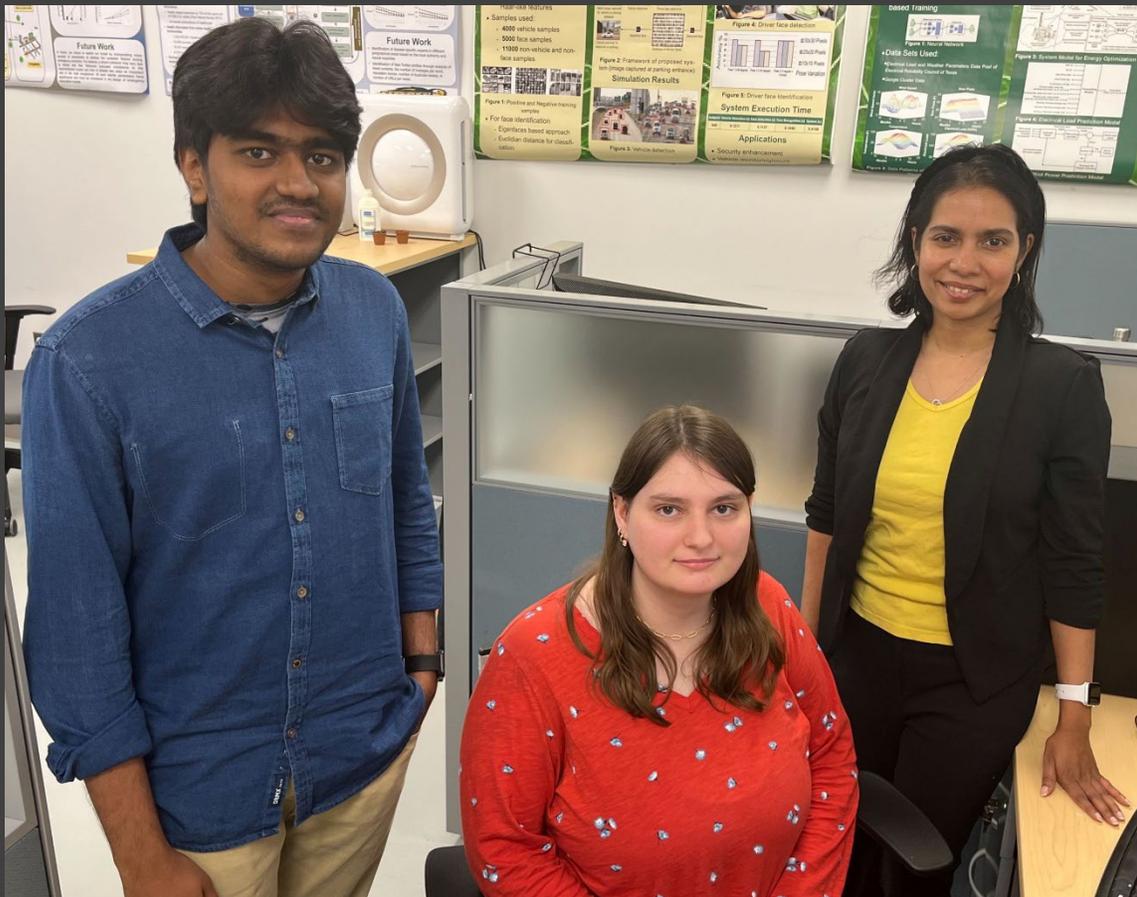
George's research will look for a new computing design that reduces the amount of data that needs to be moved between memory and processing by creating units that are multi-directional and have the ability to do some of the processing. These new memory units will have a flexible multi-level construction (MLC), which will allow them to function in different ways.

Memories with MLCs will be able to store multiple bits of information instead of just one bit, which means overall, more data will be able to be stored in a smaller area, which is a benefit when large amounts of data need to be stored where space is at a premium. And by giving memory units the opportunity to do some of the processing before moving the data, George also aims to create systems that are faster and more power efficient.

One limitation to MLCs is that converting their data into binary format requires complex circuits. George's project will use ferroelectric field-effect transistors (FeFETs) for this conversion. While not yet commonly used in commercial computing systems, there is much growing interest in the potential of FeFETs as an emerging technology because they are a type of transistor that can retain data without

needing power and they possess flexibility to program their threshold voltage -- both traits that make them useful in memory and logic applications. George believes that as FeFET technology continues to improve and mature, it will become more common in computing systems.

George's approach and work has the potential to greatly improve the efficiency and flexibility of computing systems, which will allow them to better handle the increasing amounts of data that we generate and process in our daily lives.



Students Mathan Karthick and Madison Ashbach with Sumitha George

With the award, she hopes to hire two graduate students for her lab. She has also been recruiting and adding undergraduate students to her program. "Given my industry experience, I try to bridge the gap between what students learn at school and what is needed and expected in the workforce," she said. "I also try to connect

my students with my colleagues in the field to ensure they are best prepared to succeed after graduation.”

“Preparing students to make contributions in important areas like computer architecture is one way in which the NDSU College of Engineering is building tomorrow’s workforce,” said NDSU President David Cook. “Faculty researchers with industry experience like Dr. George provide our students with unique perspectives that prepare them to succeed when they graduate.”

For more information about this award, see [CRII: FET: Ferroelectric FET based flexible circuits and system design](#)

New NSF FAQ

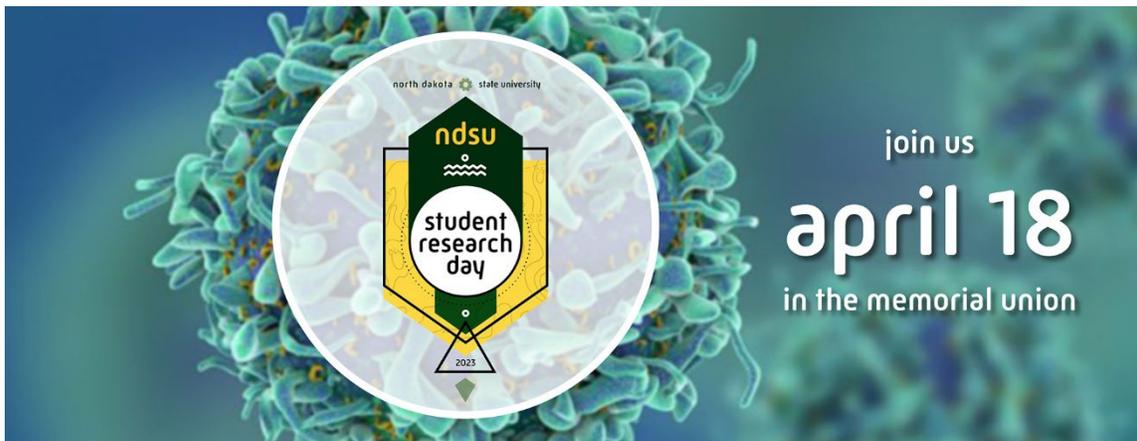
NSF has issued revised Frequently Asked Questions (FAQs) On Proposal Preparation and Award Administration Related to the NSF Proposal & Award Policies & Procedures Guide (PAPPG) ([NSF 23-1](#)).



You'll find the new FAQs [here](#) (.PDF format)

Questions should be directed to the Policy Office in the Division of Institution and Award Support at policy@nsf.gov.

Student Research Day is tomorrow!



8:00am Set up Undergraduate students; GSC Group 1

Session I
Undergraduate Student Poster Session
 9:30-11:30am **Undergraduate Student Oral Presentations**
Graduate Student Oral Presentations [Group 1]
 NDSU Explore, Gamma Sigma Delta undergraduate students, and Graduate Student Council / Group 1

11:45am - 12:45pm **Break / Set up** Graduate Students

Session II
Graduate Student Poster Session
 1:00-3:00pm **Graduate Student Oral Presentations [Group 2]**
 Gamma Sigma Delta graduate students and Graduate Student Council / Group 2

5:00pm **Social / Award Reception** Open to all

**Memorial Union Oceti
Sakowin Ballroom**

[Download the abstract book >>](#)

[More about Student Research Day >>](#)

We're hiring:

**WE'RE SEARCHING FOR OUR NEXT
ASSOCIATE VICE PRESIDENT FOR
RESEARCH AND FACULTY DEVELOPMENT**

This person will play a vital role in NDSU's efforts to increase faculty success in securing external funding through the design and implementation of programmatic approaches to building faculty success in all the disciplines across campus as well as in interdisciplinary and convergent efforts.

We are especially looking for candidates with a proven track record in operationalizing effective research development program to support early career faculty success and to grow research leadership among mid-career and even senior faculty.

[**https://tinyurl.com/ymr523fb**](https://tinyurl.com/ymr523fb)

NDSU | RESEARCH AND CREATIVE ACT

[Learn more >>](#)

WE'RE SEARCHING FOR OUR NEXT DIRECTOR OF RESEARCH COMPLIANCE AND SECURITY

This person will be responsible for the implementation, maintenance and assessment of all essential research integrity, compliance and security activities, as well as management of related issues/concern within the university that fall under the purview of the RCA Office.

The Director will also serve as the Research Integrity Officer and will have expansive knowledge of federal (and potentially state) laws governing research integrity, compliance and security.

<https://tinyurl.com/NDSU-RCS-DIRECTOR>

NDSU | RESEARCH AND CREATIVE ACTIVITIES

[Learn more >>](#)

NDSU is taking over StartupBrew



The poster features a blue and yellow background with a geometric pattern of arrows. At the top center is the StartupBrew Fargo logo, which consists of a blue circle with a white coffee cup icon and the text "StartupBREW FARGO". Below this, the word "NDSU" is written in large, bold, green letters. The main title "TAKEOVER DAY" is written in large, bold, yellow and green letters, with a stylized coffee cup icon integrated into the letter 'O'. The date and time "APR. 26 8-9:30 A.M." are displayed in bold black text, followed by the location "BREWHALLA" in smaller green text. At the bottom, the word "SPEAKERS" is written in green, followed by three speaker profiles, each with a small portrait photo and a text box containing their name, affiliation, and a brief bio.

StartupBREW
FARGO

NDSU

TAKEOVER DAY

APR. 26
8-9:30 A.M. | BREWHALLA

SPEAKERS

- BRITTANY DIEDERICH**
NDSU graduate
Founder of Better Deals and the Business Lesbian podcast
- CODY SHEVICH**
NDSU graduate
Founder of IC Outdoors
- JACK LINGLE**
NDSU student
Founder of Jack's Simple Syrup

Everyone is welcome at NDSU Takeover Day at StartupBrew on Wednesday, April 26.

Get ready to wear your green and yellow gear and connect with entrepreneurs and community members!

Two NDSU graduates and a current student will be talking about their businesses and there will be an artistic performance. Jack Lingle, founder of Jack's Simple Syrup will be joined by graduates Brittany Diederich, founder of Better Deeds and the Business Lesbian podcast and Cody Shevich, founder of IC Outdoors.

**8:00 a.m. coffee and conversation; 8:30 a.m. program
Brewhalla (1702 1st Ave N, Fargo)**

StartupBREW Fargo is a weekly event held at Brewhalla on Wednesday mornings from 8 a.m. to 9:30 a.m. This event's mission is to learn, support, and inspire. This morning meetup is for entrepreneurs, innovators, creatives, and community members alike to come together and explore the entrepreneurial journey.

[Learn more >>](#)

Upcoming Events at a Glance

- **Basic Energy Sciences Early Career Network presents: Funding Opportunities at the Department of Energy Office of Science for Early Career Scientist WEBINAR**
April 26, 1-2PM | [Register](#)
- **2023 NSF Engineering CAREER Proposal Workshop**
May 8, 12 PM – May 12 6PM, 2023 | [Learn More >>](#)
- **NSF Virtual Grants Conference**
June 5, 2PM - June 8, 4PM, 2023 | [Learn More >>](#)

OPEN HOUSE

CORROSION & COATINGS APPLIED RESEARCH LAB (CCARL)

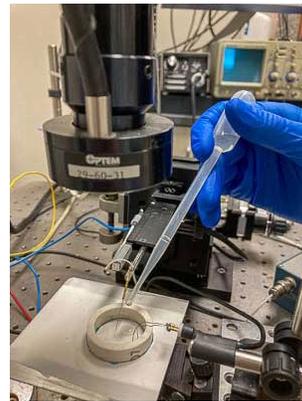
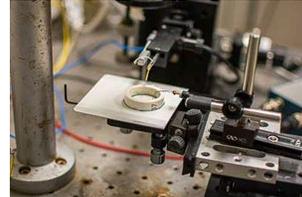
On May 4th, 2023, you are invited to an open house and lab tour at the NDSU Corrosion & Coatings Applied Research Lab (CCARL) in R1 (1735 NDSU Research Park Dr Fargo).

The CCARL research goals include understanding and advancing integrate corrosion coating formulation with applications in the following areas: corrosion prevention solutions, high-temperature materials, tough and strong coatings, healable and reversible coatings, and robust surfaces.

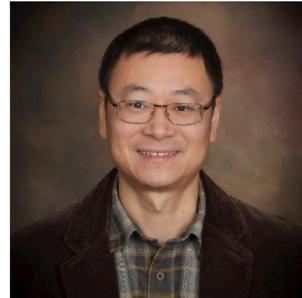
This is your opportunity to learn about the work of Dr. Qi and his undergraduate and graduate students.

Agenda

- 10:00 – 12:00: Open house
R1, Room 148/154 (with cookies and coffee)
- 11:00 – 12:00: Lab tours/demos
R1, Room 170/172



Xiaoning Qi is an assistant professor in NDSU Coatings and Polymeric Materials. As a principal investigator and materials scientist with more than 15 years of coating research and development experience, Xiaoning also has commercial experience with top companies in the coating industry. His current research interests include:



- Corrosion mitigation through anti-corrosive materials.
- Corrosion detection and material service life prediction.
- Application of 2D materials (graphene, MXene, etc.)
- Self-healing/healable coatings (micro-encapsulation and reversible chemistry).
- Coating for extreme conditions (high temperature, abrasion-resistant, and durable surfaces).



Advanced Research Projects Agency for Health (ARPA-H) Webinar

The [Advanced Research Projects Agency for Health \(ARPA-H\)](#) supports the development of high-impact research carried out by a wide variety of groups across the country, including everyone from academia, private industry to the government in order to drive biomedical and health breakthroughs to deliver transformative, sustainable, and equitable health solutions for everyone. ARPA-H's mission focuses on leveraging research advances with a scope spanning the molecular to societal for real world impacts.

One year after its initial launch, ARPA-H released its first [Open Broad Agency Announcement \(Open BAA\)](#). Modeled after the Defense Advanced Research Projects Agency (DARPA), ARPA-H is tasked with advancing high-risk, high-reward research with transformative potential to drive biomedical and health innovation.

On Wednesday April 26th from 12-1PM [Jack Goodman](#) (Senior Associate, Lewis-Burke Associates, LLC) will present a webinar on the ARPA-H program for the NDSU community. Topics to be covered include a background on ARPA-H's creation and mission, the topics and priorities in the BAA, and best practices for engaging/applying to ARPA-H.

If you'd like to learn more about the ARPA-H program and opportunities available to researchers, [please register](#).

Funding Opportunities

- [NEH: Archaeological and Ethnographic Field Research](#)
- [NIH: ARPA-H Broad Agency Announcement](#)
- [NIH: Developing Measures to Advance Quality in Mental Health Care Services](#)
- [NIH: Enhancing Science, Technology, Engineering, and math Educational Diversity Research Education Experiences – LIMITED](#)
- [NIH: Impacts of Climate Change Across the Cancer Control Continuum](#)
- [NIH: Prospective Observational or Biomarker Validation Study Cooperative Agreement](#)
- [NIH: Science Education Partnership Award](#)
- [NSF: Division of Chemical, Bioengineering, Environmental and Transport Systems Programs](#)
- [RWJF: Evidence for Action - Innovative Research to Advance Racial Equity](#)
- [RWJF: Pioneering Ideas - Exploring the Future to Build a Culture of Health](#)
- [SSRC: Women in Economics](#)
- [USDA: Agricultural Genome to Phenome Initiative](#)

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.

- [NIH: Enhancing Science, Technology, Engineering, and math Educational Diversity \(ESTEEMED\)](#) Research Education Experiences
Notification deadline: 04/26/2023
- [NEA: Grants for Arts](#)
Notification deadline: 04/26/2023
- [Mathers Foundation: Grant Program \(STEM\)](#)
Notification deadline: 05/17/2023
- [NIH: Director's Early Independence Awards \(DP5 Clinical Trial Optional\)](#)
Notification deadline: 06/07/2023

There are a number of limited submission grant programs with upcoming agency deadlines for which we did not receive any notifications of interest. 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.

- [NSF: Partnerships for Innovation](#)
Deadline: 05/02/2023
- [NSF: IUSE/ Professional Formation of Engineers: Revolutionizing Engineering Departments](#)
Deadline: 05/10/2023 (Two-Year track only)
- [NIH: Alzheimer's Disease Research Centers](#)
LOI deadline: 05/14/2023
- [NEH: Infrastructure and Capacity Building Challenge Grants](#)
Deadline: 05/17/2023

- [NIH: Collaborative Program Grant for Multidisciplinary Teams](#)
Deadline: 05/26/23 (LOI due 30 days prior to application due date)
- [NSF: Expanding AI Innovation through Capacity Building and Partnerships](#)
Deadline Window: 06/26/2023
- [NSF: Building the Prototype Open Knowledge Network \(Proto-OKN\)](#)

Notification deadline: 06/20/2023

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NEH: Archaeological and Ethnographic Field Research

The [Archaeological and Ethnographic Field Research](#) program makes awards to institutions and organizations conducting empirical field research to answer significant questions in the humanities. Archaeological methods may include field survey and field-based remote sensing, documentation or visualization, and/or excavations in support of answering research questions in all aspects of the human past, including but not limited to ancient studies, anthropology, art history, classical studies, regional studies, epigraphy, and other related disciplines. Ethnographic methods may include participant observation, surveys and interviews, and documentation or recording in pursuit of research questions in anthropology, sociology, ethnolinguistics, oral history, ethnomusicology, performance studies, folklore studies, and related disciplines.

Deadline: September 28, 2023

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NIH: ARPA-H Broad Agency Announcement

The Advanced Research Projects Agency for Health ([ARPA-H](#)) is issuing the ARPA-H Open Office Broad Agency Announcement (BAA). ARPA-H's mission is to accelerate better health outcomes for everyone by supporting the development of high-impact solutions to society's most challenging health problems. Awardees will develop groundbreaking new ways to tackle health-related challenges through high-potential, high-impact biomedical and health research. With a scope spanning the molecular to the societal, ARPA-H seeks proposals that aim to rapidly achieve better health outcomes across patient populations, communities, diseases, and health conditions, including in support of the Cancer Moonshot. Proposals are expected to use innovative approaches to enable revolutionary advances in science, technology, or systems.

The four initial focus areas are:

1. Health Science Futures
2. Scalable Solutions
3. Proactive Health
4. Resilient Systems

Deadline: March 14, 2024

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NIH: Developing Measures to Advance Quality in Mental Health Care Services (R01 Clinical Trial Not Allowed)

The goal of Developing Measures to Advance Quality in Mental Health Care Services [[RFA-MH-23-265](#)] is to support research to develop and validate outcome-focused quality measures for mental health conditions. Projects should aim to facilitate the development and validation of mental health measures that will be submitted to national governing bodies for endorsement.

Areas of interest include, but are not limited to:

- Development and testing of new outcome-focused measures of mental health care quality, based on existing standardized clinical measures (e.g., PHQ-9, GAD-7, PCL, other Patient Reported Outcome Measures).
- Development and testing of quality measures that focus on patient functioning, based on measurement of specific patient goals such as living independently, obtaining/retaining work or education, or other quality of life indicators germane to recovery and cure of mental illness. These outcome-focused measures might be based on existing patient-reported instruments such as the World Health Organization Disability Assessment Schedule (WHODAS), the Sheehan Disability Scale or other measures.

NIMH is committed to supporting research that reduces disparities and advances equity in mental health functioning, services and outcomes. Accordingly, this NOFO encourages research studies that ensure the development and validation of quality measures that are broadly relevant across populations; this can include individuals across the lifespan (children and/or adults), and can be used to identify and address health disparities across

racial and ethnic minority groups, individuals limited by language or cultural barriers, sexual and gender minorities, individuals living in rural areas, socioeconomically disadvantaged persons and other underserved groups.

Letter of Intent Deadline: May 9, 2023



NIH: Enhancing Science, Technology, Engineering, and math Educational Diversity (ESTEEMED) Research Education Experiences (R25 Clinical Trials Not Allowed) – 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.

Notify RCA by April 26, 2023, 5pm, if you are interested in submitting to this program.

The overarching goal of the ESTEEMED program [[PAR-23-114](#)] 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 FOA will support educational activities with a primary focus on:

- Courses for Skills Development
- Research Experiences

The ESTEEMED program is designed to foster the development of undergraduate freshmen and sophomores from diverse backgrounds to pursue further studies and careers in bioengineering or STEM fields relevant to NIBIB's scientific mission. Applications are encouraged to propose integrated educational activities that include 3 elements: a summer bridge program for incoming freshmen, and in the freshman and sophomore years, academic year activities and summer research

experiences. The ESTEEMED program is intended to expose students to bioengineering research early in their college careers while also providing students didactic, mentoring and career development opportunities. This will prepare students to join, in their junior and senior years, an honors program that promotes STEM and entrance into a Ph.D. program. The ultimate goal is for the participants to pursue a doctoral degree and a subsequent research career in bioengineering or NIBIB-relevant field.

LIMITED SUBMISSION: Applicant organizations may submit *one* proposal.

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NIH: Impacts of Climate Change Across the Cancer Control Continuum (R01 Clinical Trial Optional)

This Funding Opportunity Announcement (FOA) [[PAR-23-153](#)] aims to support innovative research relevant to advancing the understanding of the effects of climate change across the cancer control continuum, from cancer etiology and cancer risks through survivorship, and ways to prevent or mitigate negative health effects. This includes, but is not limited to, studies to improve knowledge of the impact of climate change related environmental effects on cancer risks, control and behaviors.

Applicants should propose multidisciplinary observational, intervention, and/or implementation research to understand and address impacts of climate change across the cancer control continuum. Research with consideration for populations that experience cancer health disparities and who are likely to experience a disproportionate burden of effects from a changing climate, is encouraged. Applicants should address how climate change is affecting (a) cancer risks and carcinogenic exposures; (b) cancer prevention behaviors such as dietary intake, physical activity, and ultraviolet radiation exposure; or (c) disruptions to healthcare systems and cancer care management. Research applications must include collaboration with a researcher with climate change expertise and are encouraged to integrate multiple disciplines because the direct and indirect impacts of climate change on cancer-related outcomes are complex, synergistic, and multilevel.

This FOA is for well-developed projects supported with preliminary data. There is a companion FOA [[PAR-23-152](#)] of identical scientific scope meant for pilot/exploratory

projects.

Upcoming Deadlines PAR-23-153: June 5, October 5...

Upcoming Deadlines PAR-23-152: June 16, October 16...



NIH: Prospective Observational or Biomarker Validation Study Cooperative Agreement (U01 Clinical Trial Not Allowed)

This Funding Opportunity Announcement (FOA) [[PAR-23-162](#)] will promote advanced analytic and/or clinical validation of strong candidate biomarkers and endpoints for diagnostic or prognostic utility to demonstrate that biomarker or endpoint change is reliably correlated with pathophysiology, clinical outcome, therapeutic target engagement or treatment response. It is assumed that a candidate biomarker has been identified and assay technology or method of detection has been developed. Specifically, it is expected that the initial discovery of the biomarker or assay will have been performed on a pre-existing set of human biospecimens with the same disease or condition as that in the proposed validation application. This biomarker validation FOA will support analytic validation studies that establish the accuracy, precision, sensitivity, specificity, reportable range of test results for the test system, reference intervals (normal values) with controls and calibrators; establish the desired magnitude and reliability of the association between the biomarker or endpoint and disease pathophysiology, clinical outcome, target engagement or treatment response; and demonstrate test reproducibility and harmonization of assays or equipment across testing sites. This FOA will also support clinical validation studies that validate the proposed biomarkers in a new, independent cohort to estimate the prevalence of the marker within patients for the intended clinical use; establish that the biomarker or endpoint acceptably identifies, measures, or predicts response for the disease or condition of interest; and establish an appropriate cut-off or threshold for a biomarker assay for the intended clinical context.

Upcoming Deadlines: June 5, October 5...



NIH: Science Education Partnership Award (SEPA) (R25 Clinical Trial Not Allowed)

The NIH Research Education Program (R25) supports research education activities that complement other formal training programs in the mission areas of the NIH. The overarching goal of SEPA [\[PAR-23-137\]](#) is to support educational activities that encourage pre-college students (pre K-12) from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies in science, technology, engineering, and mathematics (STEM).

SEPA supports two types of projects: (1) classroom-based projects for pre-kindergarten to grade 12 (pre-college) students and teachers and (2) informal science education (ISE) projects conducted in outside-the-classroom venues such as science centers, museums and libraries. Projects that support quantitative and computational skills development are strongly encouraged.

A SEPA project may focus on one or more of the following activities centered on any discipline of health research within NIH's mission:

- **Courses for Skills Development:** Courses in a specific discipline or research area that extend the STEM content normally taught in schools.
- **Research Experiences:** Hands-on exposure to research for pre-college students and teachers.
- **Mentoring Activities:** Provide participants with a perspective on the biomedical research training pathways and tools for overcoming challenges, navigating career transition points, and successfully transitioning into careers in the biomedical research workforce.
- **Curriculum or Methods Development:** STEM education resources to improve biomedical, behavioral or clinical science education, or develop novel instructional approaches or computer-based educational tools.
- **Outreach:** Dissemination of STEM education resources or biomedical, behavioral and clinical research findings to students, teachers and the general public.

Deadline: July 14, 2023

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NSF: Division of Chemical, Bioengineering, Environmental and Transport Systems Programs

The National Science Foundation (NSF) Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET) has a number of opportunities available.

CBET research and education investments contribute significantly to the knowledge base and to the development of a 21st century workforce for major components of the U.S. economy, including chemicals, pharmaceuticals, medical devices, forest products, metals, petroleum, natural gas, food, textiles, energy utilities, alternative energy sources, microelectronics, and other sectors. Support for environmental research encompasses pollution prevention and remediation as well as life-cycle analysis.

- [Biophotonics](#)
- [Electrochemical Systems](#)
- [Environmental Sustainability](#)
- [Interfacial Engineering](#)
- [Nanoscale Interactions](#)
- [Particulate and Multiphase Processes](#)
- [Thermal Transport Processes \(TTP\)](#)

*Deadline: Proposals Accepted **ANYTIME** for all Funding Opportunities above.*

For a full list of opportunities from the NSF CBET Division please visit: <https://www.nsf.gov/funding/programs.jsp?org=CBET>

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RWJF: Evidence for Action - Innovative Research to Advance Racial Equity

The Robert Wood Johnson Foundation (RWJF) [Evidence for Action](#) program prioritizes research to evaluate specific interventions (e.g., policies, programs, practices) that have the potential to counteract the harms of structural and systemic racism and improve health, well-being, and equity outcomes. RWJF's focus on racial equity means they are concerned both with the direct impacts of structural racism on the health and well-being of people and communities of color (e.g., Black, Latina/o/x, Indigenous, Asian, Pacific Islander, and other races and ethnicities), as well as the ways in which racism intersects with other forms of marginalization, such as having low income, being an immigrant, having a disability, or identifying as LGBTQ+ or a gender minority.

This funding is geared toward studies about "upstream" causes of health inequities, such as the systems, structures, laws, policies, norms, and practices that determine the distribution of resources and opportunities, which in turn influence individuals' options and behaviors. Research should center on the needs and experiences of communities

exhibiting the greatest health burdens and be motivated by real-world priorities. It should be able to inform a specific course of action and/or establish beneficial practices, not stop at characterizing or documenting the extent of a problem.

Deadline: Accepted on a rolling basis

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RWJF: Pioneering Ideas - Exploring the Future to Build a Culture of Health

The Robert Wood Johnson Foundation (RWJF) [seeks proposals](#) primed to impact health equity moving forward. RWJF is interested in ideas that address any of these four areas of focus: Future of Evidence; Future of Social Interaction; Future of Food; Future of Work. Additionally, they welcome 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.

Deadline: Accepted on a rolling basis

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SSRC: Women in Economics

The Social Science Research Council [Women in Economics](#) Research Consortium invites proposals to rigorously evaluate potentially scalable interventions designed to increase the numbers and success of women in the economics profession. They particularly encourage proposals that involve collaborations with implementing partners on college and university campuses. They also encourage replications of previously evaluated interventions, especially replications that evaluate the scalability and external validity of previously evaluated interventions.

Deadline: Accepted on a rolling basis

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USDA: Agricultural Genome to Phenome Initiative

The National Institute of Food and Agriculture's Agricultural Genome to Phenome Initiative [\[AG2PI\]](#) focuses on collaborative science engagement that intends to develop a community of researchers across both crops and animals that will lay the foundation for expanding knowledge concerning genomes and phenomes of importance to the

agriculture sector of the United States. Success of the initiative will inform approaches to understanding how variable weather, environments, and production systems interact with genetic diversity present in crops and animals to impact growth and productivity. This will provide greater accuracy in predicting crop and animal performance under variable conditions and more efficient selection of well-adapted, superior genotypes that farmers and ranchers can produce.

These goals require interdisciplinary approaches that combine technologies such as advanced computing, automated high throughput phenotyping and genotyping as well as climatic modelling to be successful. The initiative seeks to build on efforts such as the Plant Genome Research Project, the National Animal Genome Research Program, and other public initiatives. Key criteria include promoting fair access to data, software, germplasm, and other biological materials through open data sources, standards, and exchange of research materials. The initiative also seeks to connect animal sciences (e.g. animal physiology, meat science, animal nutrition, and veterinary science), plant sciences (e.g. agronomy, crop modeling, and plant physiology) and allied fields including genetics, genomics, artificial intelligence, informatics, statistics and engineering.

Match is required on a dollar-for-dollar basis

Deadline: June 1, 2023

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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?

[Contact Us](#)



The Office of Research and Creative Activity (RCA) sends weekly emails to NDSU faculty and staff to provide current information on various topics including funding opportunities, grant program changes, research resources, deadlines, notices, and training.

You are receiving this notification through the NDSU official employee listserv or sub-list. The official listserv refreshes after each pay period.

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We collectively acknowledge that we gather at NDSU, a land grant institution, on the traditional lands of the Oceti Sakowin (Dakota, Lakota, Nakoda) and Anishinaabe Peoples in addition to many diverse Indigenous Peoples still connected to these lands. We honor with gratitude Mother Earth and the Indigenous Peoples who have walked with her throughout generations. We will continue to learn how to live in unity with Mother Earth and build strong, mutually beneficial, trusting relationships with Indigenous Peoples of our region.