

RCA UPDATE

November 7, 2022

Lab tour: Personality and Trajectories to Health and Sleep

NDSU VPR Colleen Fitzgerald and Pharmaceutical Sciences Associate Professor Yagna Jarajapu recently toured NDSU Psychology Assistant Professor Kat Duggan's Personality and Trajectories to Health and Sleep (PATHS) Lab.

The PATHS lab studies personality and sleep and how both are dynamically intertwined and related to health across an individual's lifespan. With a special focus on cardiovascular disease-related outcomes, the lab's long term vision is to develop causal models of personality-health relationships that can be used to promote resilience and physical health (particularly in vulnerable populations).

The tour featured the lab's sleep study technology and facilities which include rooms where research participants can be studied while they sleep or are at rest.

Duggan and a team of her students also discussed the various research projects occurring in the lab including studies about sleep and stress in meat packing facilities; the impact of sleep and resilience from the COVID pandemic; how personality and sleep are related; how researchers can better assess dreams; and the impacts of neutral and stressful films on sleep.

Thanks to Kat Duggan and her students for an interesting and informative tour!



Interested in hosting a Lab Tour?

Sharing what you're doing in your research space is a good first step in initiating collaborations outside of your home unit. You are invited to host a lab tour for your NDSU colleagues and VPR Fitzgerald. Complete this [short questionnaire](#) to begin the process.

Announcing the Faculty Research Council

Consisting of members appointed by President Cook, the new Faculty Research Council has been

established to create priorities for a new, modest internal funding program that will result in proposals reviewed by the Council. These efforts will support President Cook's priority of maintaining our Carnegie R1 classification and help nurture a thriving and mature R1 research culture on campus.

The group will work with other campus stakeholders in creating a long-term overall vision for the council. Nominees were solicited from Deans, Faculty Senate, and other campus stakeholders and will serve a one-year term.

FACULTY MEMBER	DEPARTMENT	COLLEGE
Pan Lu	Transportation, Logistics and Finance	BUSINESS
Kyle Hackney	Heath, Nutrition, and Exercise Sciences	HSE
Catherine Kingsley Westerman	Communication	AHSS
Phil McClean	Plant Sciences	CAFSNR
Kelly Buettner-Schmidt	Nursing	HP
Dan Hsu	Management and Marketing	BUSINESS
Sathish Venkatachalem	Pharmaceutical Sciences	HP
Julie Pasche	Plant Pathology	CAFSNR
Mukund Sibi	Chemistry and Biochemistry	CSM
Mila Kryjevskaja	Physics	CSM
Christi McGeorge	Human Development and Family Science	HSE
Holly Hassel	English	AHSS
Zhibin Lin	Civil, Construction and Environmental Engineering	ENGINEERING
Juan (Jen) Li	Computer Science	ENGINEERING

Spotlight on Research Integrity & Compliance

Protecting the rights and welfare of human research participants – IRB Review

NDSU is committed to protecting the rights, safety and welfare of all individuals participating in research projects. Research with human subjects is conducted in accordance with regulations of the Dept. of Health & Human Services, Food and Drug Administration, and other applicable agencies ([NDSU Policy #345](#)).

These protections ensure that

- risks to participants are minimized
- risks are reasonable in relation to benefits
- recruitment procedures are fair
- subjects are sufficiently informed and able to make a voluntary choice
- privacy and confidentiality of participants are respected
- extra protections are in place for vulnerable groups

Review processes

All research involving human participants must receive approval prior to beginning the research. Protocol applications for proposed research projects are reviewed for adherence to federal regulations and NDSU policy. Once approved, protocols may be updated through amendments if alterations to approved research procedures are necessary.

More information on IRB review policies, and procedures can be found on the [IRB website](#). Questions? Contact Kristy Shirley, Research Integrity & Compliance Manager/IRB Administrator at Kristy.shirley@ndsu.edu or 701-231-8995

Changes to NSF Proposals – January 30, 2022

The National Science Foundation has issued a revised version of the [NSF Proposal & Award Policies & Procedures Guide](#) (PAPPG) (NSF 23-1), which will take effect January 30, 2022. Among the changes introduced with this new PAPPG are the following:

- Research.gov will fully replace FastLane for proposal preparation and submission.
- Biographical Sketch and Current and Pending Support formats will include certifications from the individual (as required by the 2021 National Defense Authorization Act, Section 223) regarding information being accurate, current, and complete.
- Required use of SciENcv for the Biographical Sketch and Current and Pending Support documents (PDF templates will no longer be an option).



View the [full list of changes](#).

STUDENT RESEARCH DAY

SAVE THE DATE: APRIL 18, 2023

NDSU Student Research Day is a collaboration among NDSU EXPLORE, Gamma Sigma Delta, and the Graduate Student Council. Join us for a one day celebration of undergraduate and graduate student

research and creative projects.

Please plan to join us on April 18, 2023 in the Memorial Union

Watch for more information on registration and event details in early 2023.



Graduate Student Opportunity: ND Water Resources Research Institute Fellowships

The 2023 ND Water Resources Research Institute fellowships are open to NDSU and UND graduate students conducting or planning thesis / dissertation research in areas related to water resources. Applications will be accepted for proposed projects of between three and twelve months in length. The funding period is anticipated to be 09/01/2023 - 08/31/2024. Fellowship stipends will be \$800-\$1,000 per month for M.S. students and \$1,000-\$1,400 per month for Ph.D. students, depending on funding availability.

[Learn more >>](#)

RCA Funding Opportunities

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

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

Research Development Funding Agency Visit Travel Awards help defray expenses for faculty traveling to meeting with Program Officers / Program Directors at funding agencies. This program requires a 1:1 match from the applicant's department and / or college.

More information and application instructions are posted on the [RCA website](#).

Upcoming Events

- **NSF Virtual Workshop: Building Resilience to Climate Driven Extreme Events with Computing Innovations**
Register by November 9 / [Learn more >>](#)
- **NIH Webinar: International Collaborations – Policies, Processes, & Partnerships**
November 9; 10am-2:30pm / [Learn more >>](#)
- **NSF Virtual Workshop: Using Institutional Data to Inform Your NSF S-STEM Proposal**
Apply by November 10 / [Learn more >>](#)
- **NIH Virtual Workshop: Human Subjects Research**
December 6-7, 2022; 11am-3pm Daily / [Learn more >>](#)
- **NIH Virtual Grants Conference**
February 1-2, 2023 / [Learn more >>](#)

FUNDING OPPORTUNITIES

- [Agricultural Genome to Phenome Initiative: Seed Grants](#)
- [Camille Dreyfus Teacher-Scholar Awards Program – LIMITED](#)
- [DARPA: Information Innovation Office](#)
- [DARPA: Young Faculty Award](#)
- [DOE RFIs: Cybersecurity and Energy in Rural Areas](#)
- [DOE: Innovative Technologies to Enable Low-Impact Hydropower and Pumped Storage Hydropower Growth](#)
- [HHMI: Investigator Program](#)
- [NEH: Cultural and Community Resilience](#)
- [NIH NOI: Biomedical-engineering Partnership with Industry](#)
- [NIH: Development of Resources and Technologies for Enhancing Rigor, Reproducibility, and Translatability of Animal Models in Biomedical Research](#)
- [NIH: Intersection of Sex and Gender Influences on Health and Disease](#)
- [NIH: Undergraduate Research Training Initiative for Student Enhancement - LIMITED](#)

- [NIH: Utilizing Telomere Status to Reveal Molecular Mechanisms Underlying Susceptibility and Resiliency in Response to Environmental Exposures](#)
- [NSF DCL: Advancing Plant Transformation](#)
- [NSF DCL: Cyberinfrastructure, Data and Computation Opportunities for CMMI](#)
- [NSF DCL: Reproducibility and Replicability in Science](#)
- [NSF: Biology Integration Institutes \(BII\)](#)
- [NSF: Improving Undergraduate STEM Education](#)
- [NSF: Mid-Career Advancement](#)
- [NSF: Using the Rules of Life to Address Societal Challenges](#)
- [Sanford Research Center for Biobehavioral Mechanisms of Eating Behavior: COBRE Pilot Projects](#)

Upcoming Limited Submission Program Deadlines

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

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

- [Camille Dreyfus Teacher-Scholar Awards Program](#)
Notification: 11/15/2022
- [NIH: Undergraduate Research Training Initiative for Student Enhancement \(U-RISE\)](#)
Notification: 01/26/2023

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: Louis Stokes Alliances for Minority Participation - STEM Pathways Implementation-Only](#)
Deadline: 11/18/2022
- [CDC: Developing a Public Health Tool to Predict the Virality of Vaccine Misinformation Narratives](#)
Letter of Intent deadline: 12/01/2022
- [DOE: Environmental System Science](#)
Pre-application deadline: 12/01/2022; 4pm
- [NSF: Quantum Sensing Challenges for Transformational Advances in Quantum Systems \(QuSeC-TAQS\)](#)
Deadline: 12/16/2022
- [NSF: Partnerships for Innovation](#)
Deadline: 01/11/2023

- [NSF: Training-based Workforce Development for Advanced Cyberinfrastructure](#)
Deadline: 01/19/2023
- [HRSA: Rural Communities Opioid Response Program-Evaluation](#)
Application deadline: January 27, 2023
- [NIH: Collaborative Program Grant for Multidisciplinary Teams](#)
Notification Deadline: 01/27/2023
- [NSF: Scholarships in STEM \(S-STEM\) Program](#)
Notification Deadline: 02/20/2023

Agricultural Genome to Phenome Initiative: Seed Grants

Agricultural Genome to Phenome Initiative ([AG2PI](#)) will be funding 6-8 seed grants that address challenges in genome-to-phenome research and promise to move the science and community forward. These awards are larger than previous AG2PI seed grants (up to \$250,000), and are intended to support new or “next step” research as well as community-focused endeavors. High-risk/high-reward proposals will be considered.

The anticipated start date for funded projects is March 1, 2023 and each project may be up to 12 months in duration. Further details regarding the [request for proposals](#), application and review process can be found on the AG2PI website. Note: Lead proposer(s) must be primarily affiliated with an institution or organization that is eligible for a USDA award.

Available resources:

- Previously funded seed grants (narratives & deliverables): <https://www.ag2pi.org/resources/ag2pi-funded-seed-grants/>
- Lightning talks on previously funded projects: <https://www.ag2pi.org/workshops-and-activities/field-day-2022-09-21/>
- Mini-conferences on previous seed grant RFPs (note: not all information provided in these mini-conferences is applicable to the current RFP): <https://www.ag2pi.org/workshops-and-activities/conference-2022-01-19/> or <https://www.ag2pi.org/workshops-and-activities/conference-2021-08-12/>

If you have any questions, please direct them to Nicole Scott at nmscott@iastate.edu.

Deadline: January 6, 2023

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Camille Dreyfus Teacher-Scholar Awards Program – Limited Submission Program

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

Teacher-Scholar Award : [Notify RCA](#) by **November 15, 5:00p.m.**, if you are interested in submitting to this program.

The [Camille Dreyfus Teacher-Scholar Awards Program](#) supports the research and teaching careers of talented young faculty in the chemical sciences. Based on institutional nominations, the program provides discretionary funding to faculty at an early stage in their careers. Criteria for selection include an independent body of scholarship attained in the early years of their appointment (see below), and a demonstrated commitment to education, signaling the promise of continuing outstanding contributions to both research and teaching. The Camille Dreyfus Teacher-Scholar Awards Program provides an unrestricted research grant of \$100,000.

The Camille Dreyfus Teacher-Scholar Awards Program is open to academic institutions in the States, Districts, and Territories of the United States of America that grant a bachelor's or higher degree in the chemical sciences, including biochemistry, materials chemistry, and chemical engineering. Nominees must hold a full-time tenure-track academic appointment, and are normally expected to have been appointed no earlier than mid-year 2017. Awardees are from Ph.D. granting departments in which scholarly research is a principal activity. Undergraduate education is an important component.

LIMITED SUBMISSION: Institutions may submit only one Camille Dreyfus nomination annually.

DARPA: Information Innovation Office

This Broad Agency Announcement (BAA) [[HR001123S0001](#)] seeks revolutionary research ideas for topics not being addressed by ongoing I2O programs or other published solicitations. Potential proposers are highly encouraged to review the current I2O [programs](#) and [solicitations](#) to avoid proposing efforts that duplicate existing activities or that are responsive to other published I2O solicitations. I2O thrust areas include:

- proficient AI,
- advantage in cyber operations,
- confidence in the information domain, and
- resilient, adaptable, and secure systems.

Abstracts are due no later than September 22, 2023 at 11am.

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DARPA: Young Faculty Award

The Defense Advanced Research Projects Agency (DARPA) Young Faculty Award (YFA) program [[DARPA-RA-23-01](#)] aims to identify and engage rising stars in junior research positions in academia and equivalent

positions at non-profit research institutions, particularly those without prior DARPA funding, to expose them to Department of Defense (DoD) needs and DARPA's mission to create and prevent technological surprise. The YFA program will provide high-impact funding to elite researchers early in their careers to develop innovative new research that enables transformative DoD capabilities. Ultimately, the YFA program is developing the next generations of researchers focused on national security issues.

DARPA is soliciting innovative research proposals in the areas of interest to DARPA's six technical offices: Biological Technologies Office (BTO), Defense Sciences Office (DSO), Information Innovation Office (I2O), Microsystems Technology Office (MTO), Strategic Technology Office (STO), and Tactical Technology Office (TTO). Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems.

Executive summary deadline: November 30, 2022; 3pm

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DOE RFIs: Cybersecurity and Energy in Rural Areas

The Department of Energy is requesting input on implementation of several programs:

- [Energy Improvements in Rural or Remote Areas](#)
Response deadline: 11/28/2022; 1pm
- [Improving Cybersecurity Posture of Rural and Municipal Utilities](#)
Response deadline: 12/19/2022

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DOE: Innovative Technologies to Enable Low-Impact Hydropower and Pumped Storage Hydropower Growth

The U.S. Department of Energy's (DOE) [Water Power Technologies Office](#) (WPTO) issued a \$14.5 million funding opportunity to further the sustainable development of hydropower and pumped storage hydropower (PSH). Advancing technologies to expand the hydropower and PSH fleet will enable increased deployments of other sources of renewable generation to support the goals of a carbon-free electricity sector by 2035 and a net-zero-emissions economy by 2050. This funding opportunity [\[DE-FOA-0002731\]](#) seeks applications to encourage:

- Innovative solutions to retrofit non-powered dams with environmentally sustainable hydropower at a reasonable cost.
- Development and testing of technologies that mitigate challenges to PSH deployment, including market and revenue uncertainty, development costs and financing, long development timelines, permitting challenges, construction risks, and environmental impacts.
- Emerging organizations to support hydropower research and development.

Concept paper deadline: December 1, 2022

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HHMI: Investigator Program

The Howard Hughes Medical Institute (HHMI) is announcing a national open competition to appoint approximately 25 new Investigators. This effort will expand HHMI's community of more than 260 Investigators who perform basic biological research at about 60 research institutions across the nation.

Each HHMI Investigator will receive roughly \$8 million over a seven-year term, which is renewable pending favorable scientific review. HHMI encourages Investigators to push their research fields into new areas of inquiry.

The [HHMI Investigator Program](#) competition is open to basic researchers and physician scientists from more than 300 eligible institutions (including NDSU) who catalyze research in basic and biomedical sciences, plant biology, evolutionary biology, biophysics, chemical biology, biomedical engineering, and computational biology.

In December 2022, the full application will become available at the same website. Applications must be received by March 21, 2023.

The Investigator Program is open to individuals who:

- Hold a PhD and / or MD (or the equivalent).
- Have a tenured or tenure-track position as an assistant professor or higher academic rank (or the equivalent) at an eligible US institution. Federal government employees are not eligible.
- Have more than five, but no more than 15, years of post-training, professional experience. To meet this requirement, the applicant's first post-training professional appointment must have begun no earlier than March 1, 2008, and no later than April 1, 2018.

Are the principal investigator on one or more active, national peer-reviewed research grants with an initial duration of at least three years as of April 1, 2023. Mentored awards and training grants do not qualify.

Multi-investigator grants may qualify.

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NEH: Cultural and Community Resilience

The [Cultural and Community Resilience](#) program supports community-based efforts to mitigate climate change and COVID-19 pandemic impacts, safeguard cultural resources, and foster cultural resilience through identifying, documenting, and / or collecting cultural heritage and community experience. The program prioritizes projects from disadvantaged communities in the United States or its jurisdictions, and NEH encourages applications that employ inclusive methodologies.

You can watch a pre-recorded webinar [here](#).

Optional draft due: December 1, 2023

Proposal deadline: January 12, 2023

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NIH NOI: Biomedical-engineering Partnership with Industry

The National Institute of Biomedical Imaging and Bioengineering (NIBIB), National Institute on Alcohol Abuse and Alcoholism (NIAAA), National Cancer Institute (NCI), National Eye Institute (NEI), National Institute on Aging (NIA), and National Institute of Environmental Health Sciences (NIEHS) intend to reissue modified versions of the Bioengineering Research Partnership Funding Opportunity Announcement (FOA) Bioengineering Research Partnerships (U01 Clinical Trial Not Allowed) and Bioengineering Research Partnerships (U01 Clinical Trial Required) with new FOAs entitled, Bioengineering Partnership with Industry (BPI), whose goal is to drive the development and speed the adoption of promising tools and technologies that can address important biomedical problems for which insufficient or no solutions exist. The use of engineering principles is encouraged to establish these tools and technologies as robust, well-characterized solutions that fulfill an unmet need. **A key change compared with prior Bioengineering Research Partnership FOAs is that BPI applications must include at least one academic and one industrial organization.** The purpose of the BPI FOA will be to encourage applications to: 1) establish a robust engineering solution to a problem in biomedical research or the practice of medicine; 2) develop a strategic alliance of multi-disciplinary partners based on a well-defined leadership plan; and 3) realize a specific endpoint within 5-10 years based on a detailed plan with a timeline and quantitative milestones. The areas of research encouraged in this initiative must be consistent with the missions of the ICs participating in the BPI funding opportunity. This Notice is being provided to allow potential applicants sufficient time to develop meaningful collaborations and responsive projects.

The FOA is expected to be published in February 2022 with an expected application due date in May 2022. This FOA will utilize the U01activity code.

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NIH: Development of Resources and Technologies for Enhancing Rigor, Reproducibility, and Translatability of Animal Models in Biomedical Research (R01)

The Office of Research Infrastructure Programs ([ORIP](#)) encourages research project grant applications aimed at developing and implementing broadly applicable technologies, tools, and resources for validating animal models and enhancing rigor, reproducibility, and translatability of animal research. Research projects submitted under this Funding Opportunity Announcement (FOA) [[PAR-23-040](#)] should be hypothesis driven with strong preliminary data. Proposed studies, models, resources, or technologies under this FOA must either address research interests of multiple NIH Institutes and Centers (ICs), explore multiple organ systems, or be applicable to diseases and processes that impact multiple organ systems in order to align with [ORIP's NIH-wide mission](#) and programs. Applications should aim to enhance the rigor, reproducibility, and translatability of animal research through the development and implementation of technologies, tools, and resources that have significant impact across a broad range of research areas using animal models. Applications must demonstrate how the proposed resources and technologies impact rigor and reproducibility of animal studies.

Upcoming deadlines: December 22, 2022; February 5, 2023; June 5, 2023

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NIH: The Intersection of Sex and Gender Influences on Health and Disease (R01 Clinical Trial Optional)

The purpose of this Funding Opportunity Announcement (FOA) [\[RFA-OD-22-028\]](#) is to invite R01 applications on the influence and intersection of sex and gender in health and disease, including: (1) research applications that examine sex and gender factors and their intersection in understanding health and disease; and (2) research that addresses one of the five objectives from Strategic Goal 1 of the 2019-2023 [Trans-NIH Strategic Plan for Women's Health Research](#) "Advancing Science for the Health of Women." The awards under this FOA will be administered by NIH ICs using funds that have been made available through the Office of Research on Women's Health (ORWH) and the scientific partnering Institutes and Centers across NIH.

Upcoming deadlines: December 19, 2022; November 22, 2023

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NIH: Undergraduate Research Training Initiative for Student Enhancement (U-RISE) (T34) – Limited Submission Program

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

NIH U-RISE : [Notify RCA](#) by January 26, 5:00p.m., if you are interested in submitting to this program.

The goal of the Undergraduate Research Training Initiative for Student Enhancement (U-RISE) program is to develop a diverse pool of undergraduates who complete their baccalaureate degree, and transition into and complete biomedical, research-focused higher degree programs (e.g., Ph.D. or M.D./Ph.D.). This funding opportunity announcement (FOA) [\[PAR-21-146\]](#) provides support to eligible, domestic institutions to develop and implement effective, evidence-informed approaches to biomedical training and mentoring that will keep pace with the rapid evolution of the research enterprise. NIGMS expects that the proposed research training programs will incorporate didactic, research, mentoring, and career development elements to prepare trainees for the completion of research-focused higher degree programs in biomedical fields. This program is limited to applications from training programs at baccalaureate degree-granting research-active institutions (i.e., those with an average of NIH Research Project Grant funding less than \$7.5 million total costs over the last 3 fiscal years).

FOA does not allow appointed trainees to lead an independent clinical trial but does allow them to obtain research experience in a clinical trial led by a mentor or co-mentor.

LIMITED SUBMISSION: Only one application per institution is allowed.

NIH: Utilizing Telomere Status to Reveal Molecular Mechanisms Underlying Susceptibility and Resiliency in Response to Environmental Exposures (R01 Clinical Trial Not Allowed)

The purpose of this funding opportunity announcement (FOA) [[RFA-ES-22-007](#)] is to solicit applications that further examine and characterize molecular underpinnings surrounding telomere status and accompanying biological pathways in response to environmental insults. Specifically, the intent is to further stimulate the field on how general telomere maintenance modulates downstream biological pathway(s) leading to cellular and organismal dysfunction. It is anticipated that proposed studies examining exposure affects at telomeric regions can actually potentiate early onset of age-related diseases. This FOA ultimately seeks to identify key mechanistic insights into telomere dynamics and how this could better dissect the interplay between environmental exposures at this vulnerable site contribute to disease (e.g., cancer, cardiovascular disease, and other age-related outcomes, such as neurodegeneration).

Deadline: February 14, 2023

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NSF DCL: Advancing Plant Transformation

With this Dear Colleague Letter (DCL) [[NSF 23-019](#)], existing programs in the National Science Foundation's (NSF) Directorate for Biological Sciences (BIO) and the United States Department of Agriculture's National Institute of Food and Agriculture (NIFA) Agriculture and Food Research Initiative (AFRI) highlight their interest in receiving proposals that advance the field of plant transformation, including proposals supporting basic research and protocol / tool development, and proposals of applications that emphasize the potential outcomes with benefits to society during fiscal years 2023 and 2024. The programs listed in this DCL welcome proposals for exploring novel transformation technology and substantially improving current transformation methodologies. Long-term studies, including inter-disciplinary or multi-disciplinary collaborative research, centered on understanding the fundamental aspects of cell totipotency, cell communication / interaction under different environmental conditions, cellular mechanisms in receiving and managing exogenous genetic components and plant transformation research of under-investigated species that are instructive to the fundamental understanding of evolution and crop domestication are also of interest.

Proposals with relevance to NSF-supported research may be submitted to one of the following NSF programs or clusters that are most aligned with the proposed research:

- The [Plant Genome Research Program](#) (PGRP) in the Division of Integrative Organismal Systems (IOS);
- The [Plant Biotic Interactions](#) (PBI) Program in IOS;
- The [Genetic Mechanisms](#) (GM) Cluster in the Division of Molecular and Cellular Biosciences (MCB); or
- The [Cellular Dynamics and Function](#) (CDF) Cluster in MCB.

Proposals with relevance to U.S. agriculture may be submitted to the following NIFA Program Area Priorities that are most aligned with the proposed research:

- Foundational Knowledge of Plant Products (AFRI A1103);

- Physiology of Agricultural Plants (AFRI A1152);
- Plant Breeding for Agricultural Production (AFRI A1141); or
- Emergency Citrus Disease Research and Extension Program ([ECDRE](#)).

The AFRI program's descriptions, deadlines, and points of contact are published in the current [AFRI Foundational and Applied Science Program Request for Applications](#).

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NSF DCL: Cyberinfrastructure, Data and Computation Opportunities for CMMI

This Dear Colleague Letter (DCL) [[NSF 23-017](#)] briefly summarizes three mutually supporting funding opportunities in the area of cyberinfrastructure that should be of interest to Division of Civil, Mechanical & Manufacturing Innovation (CMMI) researchers:

- [Computational and Data-Enabled Science and Engineering \(CDS&E\)](#)
- [Cyberinfrastructure for Sustained Scientific Innovation \(CSSI\)](#), and
- [Training-based Workforce Development for Advanced Cyberinfrastructure \(CyberTraining\)](#).

Interested readers should make sure to read the specific funding opportunities listed above for each program carefully and should contact a cognizant program officer to clarify any questions before submitting a proposal. Finally, a unified presentation of the NSF's vision for CI can be found at [Transforming Science Through Cyberinfrastructure: NSF's Blueprint for a National Cyberinfrastructure Ecosystem for Science and Engineering in the 21st Century](#), which we believe will be of interest to many CMMI researchers.

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NSF DCL: Reproducibility and Replicability in Science

Through this Dear Colleague Letter (DCL) [[NSF 23-018](#)], NSF reaffirms its commitment to advancing reproducibility and replicability in science. NSF is particularly interested in proposals addressing one or more of the following topics:

1. **Advancing the science of reproducibility and replicability.** Understanding current practices around reproducibility and replicability, including ways to measure reproducibility and replicability, what reproduction and replication means in practice, the right degree of replicability to target, quantitative measures of progress to understand the effectiveness of interventions to improve reproducibility and replicability, and exploration of reasons why studies may fail to replicate.
2. **Research infrastructure for reproducibility and replicability.** Developing and facilitating adoption of cyberinfrastructure tools and/or research methods that enable use of reproducible and replicable practices across one or more science and engineering communities.
3. **Educational efforts to build a scientific culture that supports reproducibility and replicability.** Enabling training in science and engineering communities to identify and encourage best practices for reproducibility and replicability, providing community-building and institutional support, and supporting broad public outreach about rigor, reproducibility, and replicability in science.

Investigators who wish to submit proposals on any of these topics, or others related to advancing reproducibility and replicability in research, are encouraged to reach out to programs and program officers to discuss the fit of their ideas to existing funding opportunities.

NSF: Biology Integration Institutes (BII)

The aim of this solicitation [[NSF 23-511](#)] is to bring researchers together around the common goal of understanding how the processes that sustain life and enable biological innovation operate and interact within and across different scales of organization, from molecules to cells, tissues to organisms, species, ecosystems, biomes and the entire Earth. The Biology Integration Institutes (BII) program supports collaborative teams of researchers investigating questions that span multiple disciplines within and beyond biology.

Integration across biological disciplines is essential if we hope to understand the diverse and ever-increasing data streams of modern biology and tackle emergent questions about living organisms and the environment. Of equal importance is the need for groundbreaking and sustainable training programs that prepare the next generations of scientists to navigate the breadth of biological sciences, training in multiple disciplines without sacrificing depth of learning or innovation. In addition, the biology community must continue to develop practices and adopt strategies that leverage rapid advances in cyberinfrastructure and other technologies to bridge and integrate across subdisciplines and make resources accessible, re-usable, and adaptable for unanticipated purposes. In these ways, Biology Integration Institutes will focus on biological themes that enable the discoveries of life's innovations. The outcomes from biological integration will inspire new biotechnologies and applications to drive our bioeconomy and provide solutions to societal challenges. While this solicitation focuses on the integration of biological subdisciplines, any field beyond biology may be included as needed to address the overarching biological theme.

Deadline: February 21, 2023

NSF: Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR)

The IUSE: EHR [[NSF 23-510](#)] is a core NSF STEM education program that seeks to promote novel, creative, and transformative approaches to generating and using new knowledge about STEM teaching and learning to improve STEM education for undergraduate students. The program is open to application from all institutions of higher education and associated organizations. NSF places high value on educating students to be leaders and innovators in emerging and rapidly changing STEM fields as well as educating a scientifically literate public. In pursuit of this goal, IUSE: EHR supports projects that seek to bring recent advances in STEM knowledge into undergraduate education, that adapt, improve, and incorporate evidence-based practices into STEM teaching and learning, and that lay the groundwork for institutional improvement in STEM education. In addition to innovative work at the frontier of STEM education, this program also encourages replication of research studies at different types of institutions and with different student bodies to produce deeper knowledge about the effectiveness and transferability of findings.

The IUSE: EHR program features two tracks: (1) Engaged Student Learning and (2) Institutional and Community Transformation.

Deadline: January 18, 2023

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NSF: Mid-Career Advancement (MCA)

The MCA program [[NSF 22-603](#)] offers an opportunity for scientists and engineers at the mid-career stage to substantively enhance and advance their research program and career trajectory. The MCA program provides protected time, resources, and the means to gain new skills through synergistic and mutually beneficial partnerships, typically at an institution other than the candidate's home institution. Partners from outside the Principal Investigator's (PI) own subdiscipline or discipline are encouraged, but not required, to enhance interdisciplinary networking and convergence across science and engineering fields. Research projects that envision new insights on existing problems or identify new problems made accessible with cutting-edge methodology or expertise from other fields are encouraged.

*A key component of a successful MCA will be the demonstration that the PI's current research program could substantively benefit from the protected time, mentored partnership(s), and resources provided through this program, such that **there is a substantial enhancement to the PI's research and career trajectory, enabling scientific and academic advancement not likely without this support.***

The MCA is the only cross-directorate NSF program specifically aimed at providing protected time and resources to established scientists and engineers targeted at the mid-career stage. Participating programs in the Directorates for Biological Sciences (BIO), Geosciences (GEO), Social, Behavioral and Economic Sciences (SBE), Education and Human Resources (EHR), and Technology, Innovation and Partnerships (TIP) will accept MCA proposals. To help identify the disciplinary program in which the MCA should be reviewed, PIs are urged to investigate the research areas supported by the different directorates and participating programs.

PIs are strongly encouraged to discuss the suitability of their MCA proposal with a [Program Officer](#) from the appropriate directorate. PIs from EPSCoR jurisdictions are especially encouraged to apply.

[FAQs](#) for the MCA program are also available.

Deadline: March 1, 2023

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NSF: Using the Rules of Life to Address Societal Challenges (URoL:ASC)

Using the Rules of Life to Address Societal Challenges (URoL:ASC) will support use-inspired research that builds on knowledge from previous investments in the NSF "Big Ideas", including in the Understanding the Rules of Life program. The Big Ideas were designed to position the Nation at the cutting edge of global science and engineering by bringing together diverse disciplinary perspectives to support convergent research (see details [here](#)). The goal of the *Understanding the Rules of Life Big Idea* was to develop predictive understanding of how key properties of living systems emerge from interactions of factors such as genomes, phenotypes, and evolving environments. Following from the fundamental

principles revealed from these and related projects, an important goal of the current solicitation [[NSF 23-512](#)] is to **use** the predictive capability of rules of life to address some of the greatest challenges we currently face as a society.

Through **use-inspired research** using [convergent, multidisciplinary approaches](#), URoL:ASC seeks to apply lessons learned from studying rules of life across a broad array of living systems to tackle pressing societal concerns. These concerns include but are not limited to: climate change and associated risks, including geohazards, extreme events, and loss of biodiversity; environmental degradation, including impacts on land and water resources; inequalities in availability of and access to essential natural assets; lack of sustainability, including for food, energy, and waste production; and threats from pandemic disease, among others.

This solicitation differs in key respects from previous solicitations associated with the Understanding the Rules of Life Big Idea.

First, rather than a focus on **discovering** rules of life, here we seek ideas about how such rules might be **used** for societal benefit.

Second, underscoring this shift in focus, proposals should begin with a description of the expected outcomes of the research, e.g., the broader impacts, followed by details on the intellectual underpinnings of the convergent research plan.

Third, proposers must adopt a co-production strategy that involves both producers and users of the research outcomes in all phases of the research [[1](#)] [[2](#)], e.g., in the design, implementation, evaluation, and dissemination of the research impacts (see [NSF Strategic Plan](#)).

Fourth, projects must integrate innovative education and training activities aimed at fostering convergent research.

Fifth, projects should actively promote diversity, equity, inclusion, and accessibility in all activities by involving members of underrepresented groups, such as the Missing Millions (see [National Science Board Vision 2030 Report](#)) and including women and members of groups who are underrepresented in science, technology, engineering, and mathematics (STEM), as PIs, co-PIs, postdoctoral researchers, students, and other personnel.

Deadline: February 15, 2023

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Sanford Research Center for Biobehavioral Mechanisms of Eating Behavior: COBRE Pilot Projects

The Sanford Research Center for Biobehavioral Mechanisms of Eating Behavior (CBM-EB) COBRE invites proposals for pilot projects to support promising research that fits well within the scientific theme of the Center. **The Center anticipates supporting 2-3 new pilot projects at an amount of \$50,000 total costs per**

year, for one year, with an anticipated start date of March 1, 2023. The Sanford Research CBM-EB COBRE Pilot Projects Program is open to full-time healthcare professionals or faculty of Sanford Health, Sanford Research, NDSU, UND and affiliated institutions (e.g., Imagenetics, USDA Human Nutrition Research Center). The goal of this program is to engage investigators in the research on eating disorders and eating behavior.

[Download the RFP >>](#)

Letter of Intent deadline: December 1, 2022

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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 ndsuh.researchdev@ndsuh.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.