NDSU OFFICE OF RESEARCH AND CREATIVE ACTIVITY RCA UPDATE

October 10, 2022

NDSU education professor lands contract with US Air Force

NDSU was awarded a \$1M contract with the United States Air Force to continue support of the Quality Enhancement Plan (QEP) for Air University. Air University is a federal institution of higher education in the U.S. Department of the Air Force.

Laura Parson, Ph.D., NDSU assistant professor and program coordinator for the Educational and Organizational Leadership program, is conducting the work which involves identification of competencies of ethical leadership and the development of curriculum within Air University's 5-year Quality Enhancement Plan (QEP).



Air University's QEP focuses on the development of skills based on both conceptual and theoretical concepts and integrates ethical and strategic requirements in the development of leaders. The framework is used to create a deliberate and comprehensive program of study for Air University students.

The Air University QEP framework combines leadership skills with a specific focus on strategic capacities that analyze, evaluate, develop, and assess existing and future leadership development programs across the University.

QEPs are developed and approved during the reaffirmation of institutional accreditation every ten years. QEPs are executed and evaluated over five years to determine the plan's impact. Air University's QEP is assessing and evaluating institutional and student learning outcomes focused on improving ethical leadership.

After identifying competencies of an ethical leader through a surveying process, Parson identified 18 competencies of ethical leadership which were then mapped to current Air University curriculum. The results were three primary focus areas: ethical decision making, empathy, and fostering innovation. Parson is now designing curriculum and learning outcomes for engaging Air University students across these competencies.

"Through this US Air Force funding, Dr. Parson's work with Air University exemplifies how NDSU expertise supports our land-grant mission not only for North Dakota, but for all who serve," said NDSU vice president of research and creative activity Colleen Fitzgerald.

Meet NDSU's New Faculty Members

Febina Mathew, PhD

Plant Pathology What are your primary research and scholarly interests? Plant pathogens, Microbiology, big data.

Where are you from and where did you pursue your education? India and NDSU.

What excites you about NDSU? It's home.

What motivates you? The working environment.

If you could time travel, where would you go?

The day I joined NDSU as a student.

What was your first job? Technician

What does your very best day include? Networking

What's your favorite quote? "Live in the present moment, forget past and future."

YOU'RE INVITED: NSF I-Corps Hub

Announcement and Celebration

Friday, October 14, 2022; 8:00-9:00am Louise S. Barry Auditorium NDSU Barry Hall

Come celebrate a new \$14 million investment into ND entrepreneurs. You'll hear from NDSU President David Cook, ND State Senator Ron Sorvaag, NDSU professor and hub director David Grewell, NDSU associate professor Onnolee Nordstrom, and other



NSF I-CORPS HUB GREAT PLAINS REGION

special VIP guests about how NDSU's \$14 million grant from the National Science Foundation (NSF) will provide immersive, entrepreneurial training for scientists and engineers in the region.

Learn more about the Great Plains Hub and the NSF Innovation Corps Program.

Registration is not required.

National Endowment for the Humanities Proposal Writing Workshop

Wednesday, October 12, 2022; 12-1:30pm

Dr. Victoria Sams, NEH Division of Education Programs, and Dr. Geoff Burrows, NEH Division of Research Programs, will lead this virtual workshop on writing proposals to the National Endowment for the Humanities (NEH). As a follow-up to NDSU's February 2022 session on funding opportunities in NEH/NEA, this event will provide more in-depth information on what makes for a competitive NEH proposal. Examples of funded programs will be provided as well as tips for success with NEH funding.

Learn more and register >>

RCA Funding Opportunities

Pilot Programs: Growing USDA Success

The Research and Creative Activity Office is seeking to grow our success in USDA grant proposals. To this end, we seek expressions of interest in two pilot programs:

- Planning a proposal to USDA-AFRI? <u>Learn more about the USDA-AFRI</u> <u>Preproposal Review Pilot Program</u>.
- Recently served on a USDA Review Panel? <u>Volunteer to be part of the USDA</u> <u>Expert Bank at NDSU</u>.

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 <u>RCA website</u>.



FUNDING OPPORTUNITIES

- Bayer Crop Science: Opportunities in Agriculture
- DOE: Office of Science Solicitation
- High Plains Intermountain Center for Agricultural Health and Safety
- Naval Research Laboratory: Basic and Applied Research
- ND EPSCoR: STEM Research and Education
- ND NASA EPSCoR: Request for Pre-proposals FY2023 R3 CAN

- NEH: Dangers and Opportunities of Technology
- NIH NOSI: Circadian Regulation of Heart, Lung, Blood, and Sleep Disorders
- <u>NIH: Biological Basis for how Environmental Exposures Impact Risk for Psychiatric</u> <u>Disorders</u>
- <u>NIH: Immunity in Older Adults</u>
- North Central Integrated Pest Management Center
- <u>NSF: Advanced Chip Engineering Design and Fabrication</u>
- <u>NSF: Mid-Scale Research Infrastructure</u>
- <u>NSF: Racial Equity in STEM Education</u>
- USDA-NIFA: Biotechnology Risk Assessment Research Grants Program
- USDA-NIFA: Specialty Crop Research Initiative

Upcoming Limited Submission Program Deadlines

<u>Limited submission grant programs</u> 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 <u>ndsu.researchdev@ndsu.edu</u>.

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

- <u>NSF: Partnerships for Innovation</u> Notification Deadline: 10/20/2022
- <u>NSF: Training-based Workforce Development for Advanced</u>
 <u>Cyberinfrastructure</u>
 Natification Deadlines 10/20/2022

Notification Deadline: 10/20/2022

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

• NSF: INCLUDES Deadline: 10/25/2022

- USDA: Increasing Land, Capital, and Market Access Deadline: 10/28/2022
- <u>NSF: Louis Stokes Alliances for Minority Participation STEM Pathways</u> <u>Implementation-Only</u> Deadline: 11/18/2022
- NSF: Quantum Sensing Challenges for Transformational Advances in Quantum Systems (QuSeC-TAQS) Deadline: 12/16/2022
- <u>NIH: Collaborative Program Grant for Multidisciplinary Teams</u> Notification Deadline: 01/27/2023
- NSF: Scholarships in STEM (S-STEM) Program Notification Deadline: 02/20/2023

Bayer Crop Science: Opportunities in Agriculture

Bayer Crop Sciences has a number of open opportunities related to agriculture:

- Novel active microbial pesticides to improve soil health
- Grants4Ag: Improving resilience of local varieties through genome editing
- New macromolecules for the development of insect control traits in plants
- Innovative fungicide active ingredient search
- <u>Active compounds for managing resistance in Lepidoptera, hoppers, thrips, and</u> <u>mites</u>
- Harvest prediction for underground crops to help understand storability
- <u>Active ingredients for Fusarium disease control in soil</u>
- Fertigation model in tomato greenhouses
- Novel herbicide compounds to control grass selectively in major crops

The deadline for brief proposals is November 30, 2022.

To learn more about these opportunities, <u>register to attend</u> a webinar with Bayer on November 3 at 10am.

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DOE: Office of Science Solicitation

The Office of Science (SC) of the Department of Energy (DOE) hereby announces its continuing interest in receiving grant applications for support of work in the following program areas:

- Advanced Scientific Computing Research,
- Basic Energy Sciences,
- Biological and Environmental Research,
- Fusion Energy Sciences,
- High Energy Physics,
- Nuclear Physics,
- Isotope R&D and Production, and
- Accelerator R&D and Production.

This funding opportunity announcement (FOA) [<u>DE-FOA-0002844</u>] is SC's annual, broad, open solicitation that covers all research areas in SC and is open throughout the Fiscal Year. Any research within SC's Congressionally-authorized mission may be proposed under this FOA.

This FOA is open through September 2023

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High Plains Intermountain Center for Agricultural Health and Safety

The HICAHS Community-Initiated Grants Program provides funds to organizations to augment existing or create new worker health and safety programs. The <u>Request for</u> <u>Applications (RFA)</u> is targeted to organizations that serve people working in agricultural production or forestry: Extension, non-profits, health centers, commodity groups, and more.

Priority consideration is given to projects that directly impact the HICAHS region:

Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming. Grants have a maximum award amount of \$20,000 (including up to 8% indirect costs) with a project period of ~7 months.

Applications are due December 1, 2022.

Naval Research Laboratory: Basic and Applied Research

The Naval Research Laboratory is interested in receiving innovative proposals that offer potential for advancement and improvement in the technical topic areas listed in this Broad Agency Announcement [N00173-23-S-BA01], including:

- information management and decision architectures;
- high assurance engineering and computing;
- optical sciences R&D;
- electromagnetic techniques and technology;
- advanced machine learning methods for the radio frequency spectrum;
- power/energy source materials and systems;
- corrosion processes, control, mitigation, and technology;
- development of microsensors and microsystems for physical, chemical, and biochemical applications;
- materials performance, processing, and modeling; and
- research in bio / molecular science and engineering.

See BAA for full list.

This BAA will be open through September 2023

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ND EPSCoR: STEM Research and Education – NDSU specific

announcement

The ND EPSCoR State Office's mission is to support efforts of participating institutions of higher education across the state that result in increased STEM research capacity and competitiveness; a stronger STEM pathway that produces our next generation workforce, educators, and researchers; and an informed citizenry that values the STEM ecosystem and economy. Thus, the NDSU campus of ND EPSCoR is now accepting proposals to fund STEM activities. For details, see the <u>Request for Proposals</u>.

See all ND EPSCoR opportunities

Deadline: October 27, 2022; 12pm (noon)

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ND NASA EPSCoR: Request for Pre-proposals - FY2023 R3 CAN

In response to the FY 2023 <u>NASA Notice of Funding Opportunity (NOFO) EPSCoR Rapid</u> <u>Response Research (R3) Announcement Number: NNH23ZHA002C</u>, the <u>North Dakota</u> <u>NASA EPSCoR</u> (Established Program to Stimulate Competitive Research) is soliciting preproposals from faculty at <u>affiliate institutions</u> specifically designed to promote and expand NASA research in North Dakota.

The full RFP, online submission form, and budget sheet can be found on the ND NASA EPSCoR news page: <u>https://blogs.und.edu/jdosas/2022/09/nd-nasa-epscor-request-for-pre-proposals-fy2023-r3-can/</u>

Proposal Submission Timeline:

- Pre-Proposals due: Noon, Oct. 31, 2022
- Full Proposals due to ND NASA EPSCoR: Dec. 8, 2022
- Full Proposals due to NASA: Dec. 15, 2022

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NEH: Dangers and Opportunities of Technology

The <u>Dangers and Opportunities of Technology: Perspectives from the Humanities</u> (DOT) program supports humanistic research that examines the relationship between technology and society. NEH is particularly interested in projects that examine current social and cultural issues that are significantly shaped by technology.

Technology has had an enormous impact on modern society, affecting how we work, communicate, learn, engage in the political process, and live. The relationship between technology and culture continues to have dramatic impacts, both positive and negative, on our health, the environment, our social interactions, our government, cultural and educational institutions, the arts, and nearly all other aspects of life.

Deadline: February 2, 2023

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NIH NOSI: Circadian Regulation of Heart, Lung, Blood, and Sleep Disorders

This Notice of Special Interest (NOSI) [<u>NOT-HL-22-043</u>] aims to stimulate research on understanding how circadian rhythms regulate cell function and metabolism of peripheral

tissues, and to find new avenues for the investigation of heart, lung, and blood disease risk, pathogenesis, diagnosis, treatment, and prevention. Basic, translational, and clinical research applications to elucidate circadian-dependent mechanisms contributing to the pathophysiology of HLBS disorders are invited. This NOSI encourages multidisciplinary and multiple investigator teams of experts in heart, lung, and blood research fields to synergistically work with circadian biologists and sleep researchers to provide a comprehensive understanding of the circadian biology in relation to HLBS conditions. The purpose is to facilitate translational research to identify potential applications of circadian science to the diagnosis, prevention and treatment of HLBS conditions. Mechanism-based studies investigating the circadian rhythm dysregulation, clinical markers, and/or therapeutic targets of HLBS conditions are encouraged. Behavioral, physiological, pharmacological, molecular, and genomic studies aimed at elucidating the relationship between circadian-dependent mechanisms and disease are appropriate. Studies to delineate circadian-based mechanisms, therapeutic targets, epidemiological risk and clinical trials to assess therapeutic safety, efficacy, effectiveness, or implementation may be proposed.

This NOSI expires January 7, 2028

NIH: Biological Basis for how Environmental Exposures Impact Risk for Psychiatric Disorders

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The objective of this funding opportunity announcement (FOA) [RFA-ES-22-008] is to solicit applications that propose to better understand the biological basis by which environmental exposures alter brain and behavioral functioning to increase risk for psychiatric disorders with onset in late-childhood, adolescence, or early adulthood. Since basic and pre-clinical research is critical for the study of neurobiological mechanisms that drive complex behaviors including mental illness, the focus of this FOA is to encourage a range of mechanistic approaches, from in vitro systems to whole organism models, to examine the link between environmental chemicals and possible contribution to the pathogenesis of psychiatric abnormalities. Investigations that further advance our understanding of the joint contribution of genes and environment in the risk for psychiatric disorders are also welcomed. It is anticipated that knowledge gained from the research supported by this FOA will inform the development of improved intervention, prevention and/or therapeutic strategies.

This FOA will use the NIH Research Project Grant (R01) award mechanism and runs in parallel with the companion FOA, <u>RFA-ES-22-009</u>, which encourages applications under the R21 mechanism.

Deadline: February 22, 2023

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NIH: Immunity in Older Adults (U01 Clinical Trial Not Allowed)

The purpose of this Funding Opportunity Announcement (FOA) [<u>RFA-AI-22-060</u>] is to support studies that provide mechanistic insights into innate and adaptive immune changes that occur during the aging process. The main objective of the program is to define the contribution of age-related alterations in different components of the immune system and the functional consequences in relation to infections, vaccine responses, and chronic inflammatory conditions.

Deadline: February 14, 2023

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North Central Integrated Pest Management Center

Two annual requests for application (RFA) are now available from the North Central IPM Center. The Center funds efforts that support integrated pest management (IPM), including Critical Issue (research) projects and Working Group team-building projects. Download the RFAs from the <u>Grants page</u>.

Research efforts related to important pest concerns or management of these pests may receive funding through the Critical Issues program. Approximately \$100,000 is available for Critical Issues projects, with a maximum of \$50,000 per award. Approximately \$200,000 is available for Working Group projects with a maximum of \$20,000 per award.

New this year, applications are encouraged to include diversity, equity, inclusion and accessibility in the project plan. Strategies for incorporating benefits for underserved communities, women and / or people of color are all relevant additions.

Deadline: November 18, 2022

NSF: Advanced Chip Engineering Design and Fabrication (ACED Fab)

The Directorate for Engineering (ENG), Division of Electrical, Communications and Cyber Systems (ECCS), Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET), Division of Civil, Mechanical and Manufacturing Innovation (CMMI), Division of Engineering Education and Centers (EEC), and The Office of International Science and Engineering (OISE) of the National Science Foundation (NSF) and the Department of Engineering and Technologies (DET) of the Taiwan National Science and Technology Council (NSTC) are pleased to announce and launch an NSF-NSTC semiconductor collaboration program titled "Advanced Chip Engineering Design and Fabrication (ACED Fab)" [<u>NSF 22-636</u>]. This program aims to leverage the complementary academic talent and engineering strengths of semiconductor research in the U.S. and Taiwan to enable chip design and fabrication to advance semiconductor science, engineering, and education.

The ACED Fab supports innovative design and fabrication projects of semiconductor chips utilizing advanced technologies of Taiwan's semiconductor foundries. Proposals are encouraged to target emerging applications (but not limited to): High-performance, low-power circuits and systems; Edge-AI sensing, computing, and communication; Quantum computing and communication chips; and Emerging semiconductor heterogeneous integration.

An ACED Fab proposal must be an integrated collaborative effort between the U.S. and Taiwan researchers. The research project must aim to bring a specific innovation to integrated circuit prototypes that demonstrate advanced functionality and utilize advanced fabrication technology as differentiators. The scope of an ACED Fab proposal must include at least one semiconductor chip design for tape-out utilizing fabrication process technologies of Taiwan's semiconductor foundries via multi-project wafer runs within the duration of the project.

General and specific inquiries regarding this funding opportunity are directed to email: <u>nsf-acedfab@nsf.gov</u>.

NSF: Mid-Scale Research Infrastructure

NSF defines Research Infrastructure (RI) as any combination of facilities, equipment, instrumentation, or computational hardware or software, and the necessary human capital in support of the same. Major facilities and mid-scale projects are subsets of research infrastructure. The NSF Mid-scale Research Infrastructure-1 Program (Mid-scale RI-1) [NSF 22-637] supports either the design or implementation of unique and compelling RI projects. Mid-scale implementation projects may include any combination of equipment, instrumentation, cyberinfrastructure, broadly used large scale datasets and the personnel needed to successfully commission the project. Mid-scale RI-1 design projects include the design efforts intended to lead to eventual implementation of a midscale class RI project. Mid-scale RI-1 projects should involve the training of a diverse workforce engaged in the design and implementation of STEM research infrastructure.

Mid-scale RI-1 emphasizes strong scientific merit, a response to an identified need of the research community and / or fulfillment of a national need to enable U.S. researchers to be competitive in a global research environment. Well-conceived technical and management plans are essential for both design and implementation proposals, as are well-developed plans (e.g., mentoring and professional development) for student training and the involvement of a diverse STEM workforce in all aspects of mid-scale design and / or implementation activities. The inclusion of individual project participants who are women, early-career researchers, persons with disabilities and members of other underrepresented groups are especially encouraged at all levels of the project team.

Within Mid-scale RI-1, proposers may submit two types of projects, "Implementation" (e.g., acquisition and/or construction) or "Design". The "Design" track is intended to facilitate progress toward readiness for a mid-scale range implementation project. Both Implementation and Design projects may involve new or upgraded research infrastructure. Mid-scale RI-1 "Implementation" projects may have a total project cost ranging from \$4 million up to but not including \$20 million. Mid-scale RI-1 "Design" projects may request less than \$4 million, with a minimum request of \$400,000 and a maximum request up to but not including \$20 million, as appropriate, to prepare for a future mid-scale range implementation project. (Note: Successful award of a Mid-scale RI- 1 design project does not imply NSF commitment to the future implementation of the project being designed, nor is a Mid-scale RI-1 design award required for the submission of an implementation project.)

Pre-proposal deadline: January 5, 2023

NSF: Racial Equity in STEM Education

Collectively, proposals funded by this solicitation [NSF 22-634] will:

- substantively contribute to institutionalizing effective research-based practices, policies, and outcomes in STEM environments for those who experience inequities caused by systemic racism and the broader community;
- 2. advance scholarship and promote racial equity in STEM in ways that expand the array of epistemologies, perspectives, ideas, theoretical and methodological approaches that NSF funds; and

3. further diversify project leadership (PIs and co-PIs) and institutions funded by NSF. Each proposal should include a rigorous plan to generate knowledge and / or evidencebased practice via fundamental or applied research. Projects may focus on, but are not limited to:

- building theory; developing research, evaluation, and assessment methods; conducting pilot projects and feasibility studies;
- testing approaches and interventions;
- assessing the potential, efficacy, effectiveness, and scalability of approaches and interventions;
- changing institutional, organizational, and structural practices and policies;
- establishing, cultivating, and assessing authentic partnerships with communities impacted by systemic racism; conducting syntheses, meta-syntheses, metaanalyses, and systematic literature reviews;
- convening conferences that explore a theory, topic, method, or issue related to the program goals in order to drive research and practice forward; and / or
- focusing on affective, behavioral, cultural, social components, and implications. Prospective PIs are encouraged to send a one-page

concept paper to <u>EHRRacialEquity@nsf.gov</u> in advance of submitting a proposal.

Deadline: January 17, 2023

USDA-NIFA: Biotechnology Risk Assessment Research Grants Program

The purpose of the Biotechnology Risk Assessment Research Grants Program (BRAG) program is to support the generation of new information that will assist Federal regulatory agencies in making science-based decisions about the effects of introducing into the environment genetically engineered organisms (GE), including plants, microorganisms — such as fungi, bacteria, and viruses — arthropods, fish, birds, mammals and other animals excluding humans. Investigations of effects on both managed and natural environments are relevant. The BRAG program accomplishes its purpose by providing federal regulatory agencies with scientific information relevant to regulatory issues. See the <u>Request for Applications (RFA)</u> for details.

Deadline: January 19, 2023

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USDA-NIFA: Specialty Crop Research Initiative

The purpose of the <u>Specialty Crop Research Initiative</u> (SCRI) program is to address the critical needs of the specialty crop industry by awarding grants to support research and extension that address key challenges of national, regional, and multi-state importance in sustaining all components of food and agriculture, including conventional and organic food production systems. Projects must address at least one of five focus areas:

- Research in plant breeding, genetics, genomics, and other methods to improve crop characteristics;
- Efforts to identify and address threats from pests and diseases, including threats to specialty crop pollinators;
- Efforts to improve production efficiency, handling and processing, productivity, and profitability over the long term (including specialty crop policy and marketing);
- New innovations and technology, including improved mechanization and technologies that delay or inhibit ripening; and
- Methods to prevent, detect, monitor, control, and respond to potential food safety hazards in the production efficiency, handling and processing of specialty crops.

Pre-application deadline: January 12, 2023

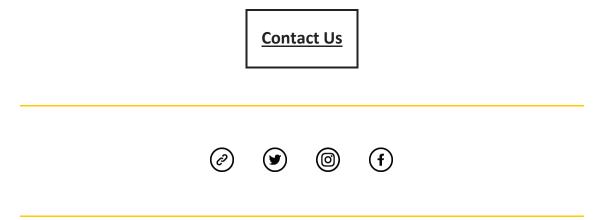
Looking for more funding opportunities?



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 <u>SPIN page</u> on the RCA website. If you have questions, please contact <u>ndsu.researchdev@ndsu.edu</u>.

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



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.

North Dakota State University does not discriminate on the basis of age, color, disability, gender expression/identity, genetic information, marital status, national origin, public assistance status, race, religion, sex, sexual orientation, or status as a U.S. veteran. Direct inquiries to: Equal Opportunity Specialist, Old Main 201, 701-231-7708 or Title IX/ADA Coordinator, Old Main 102, 701-231-6409. 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.