ND EPSCoR
Established Program to Stimulate Competitive Research

NDSU EPSCoR Request for Proposals
STEM Research and Education

Issued: August 25, 2022
Deadline: Noon, October 27, 2022
Award Start Date: November 30, 2022

2022 NDSU EPSCoR 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 in the following areas:

A. Proposal Categories

1. Equipment (Research and Education). Proposals will be accepted for pieces of equipment (up to $40,000) that help advance scientific inquiry, R&D, and education. Preference will be given to proposals that: 1) show collaborative use across multiple colleges/departments; 2) request equipment not currently available on the NDSU campus; and 3) engage a large number of undergraduate and graduate students in research and education. Proposals must contain: 1) introduction, justification, and description of the equipment to be purchased; 2) users (i.e., colleges, departments, etc.) of the equipment including an approximate number of students who would be trained per year; 3) statement of whether this equipment is redundant with other pieces of equipment on campus; 4) discussion of how this equipment would lead to more proposals to federal funding agencies and/or a higher retention of students in STEM programs; and, 5) a quotation for the purchase. An allowable budget does not include non-capitalized equipment (<$5,000) or consumable supplies (even if they are required for the operation of the equipment).

2. Equipment repair (Research only). Researchers are often limited in performing certain experiments/analyses due to faulty/broken equipment. Many times, small investments in the repair of equipment is all that is needed. Proposals will be accepted from faculty researchers for the repair of equipment (up to $5,000) currently located in research laboratories. Preference will be given to proposals that demonstrate a high usage rate of the piece of equipment to be repaired. Proposals must contain: 1) introduction, justification, and description of the equipment to be repaired; 2) users (i.e., colleges, departments, etc.) of the equipment including an approximate number of students who would be trained per year if the equipment worked; and, 3) discussion of how this equipment would lead to more proposals to federal funding agencies and/or a higher retention of students in STEM programs; and 4) a quotation for the repair.

3. Undergraduate research. Data show that engaging undergraduate students in research leads to better retention and success of the student. The proposal must contain: 1) a short introduction (and significance of) to the research topic; 2) goals and objectives of the specific proposed research; 3) innovation of the research; 4) approach/methods; and, 5) references. The student's faculty advisor/mentor must submit a letter supporting the research and certifying that he/she will be providing space/resources and mentoring to the student during the course of the research. Awards up to $6,000 will be provided. The faculty member must be the PI on the proposal [and submit the

proposal]. If an IRB, IACUC, or IBC will be needed, proof of an exemption and/or active protocol number will be needed prior to releasing funds. Students hired under this award are required to complete responsible conduct of research (RCR) training in their first pay cycle. Certificates of RCR and IRB (if needed) training must be submitted to NDSU EPSCoR by the end of the first pay cycle. Undergraduate students must be identified to ND EPSCoR by December 15, 2022.

4. Seed awards for faculty to collect preliminary data for the preparation of ***federal*** STEM proposals. Funding will be provided to researchers for the specific purpose of gathering preliminary data needed for proposal preparation and submission to a federal agency. Funds may be used for materials and supplies, student support (undergraduate and graduate), operating services (e.g., recharge center fees), travel within North Dakota to collect samples, publishing, and lab technician support. Proposals must contain: 1) an introduction and justification for the research, 2) description of the research and data to be collected, 3) the specific federal agency RFP to which a proposal will be submitted, 4) references, and 5) a short biosketch (2 page) for all participating faculty/instructors. Priority will be given to collaborative, interdisciplinary teams/research. Awards of up to $15,000 will be provided. Funding may not be used to support faculty salary, postdocs, visiting scholars, or non-support personnel (i.e.: researchers) serving in the lab technician role. If an IRB, IACUC, or IBC will be needed, proof of an exemption and/or active protocol number will be needed prior to releasing funds. Students and postdocs hired under this award are required to complete responsible conduct of research (RCR) and IRB (if required) training in their first pay cycle. Certificates of RCR and IRB (if needed) training must be submitted to NDSU EPSCoR by the end of the first pay cycle.

5. External proposal review for large, collaborative and interdisciplinary STEM efforts. The competition for federal research dollars has grown substantially over the past decade. In addition, federal agencies are placing a significant focus on interdisciplinary, cross-cutting efforts. Funds for external peer review will be provided to large, interdisciplinary teams/efforts to help position researchers for even greater success in receiving federal awards. Proposals must contain: 1) list of researchers/affiliations; 2) title of proposal; 3) executive summary of proposal; 4) funding amount; 5) federal agency (including specific solicitation) and proposal due date; and, 6) short biosketch (2 page) of all participating faculty/instructors. Requests must be received at least four months in advance of the proposal due date so reviewers/review entity can be arranged. Most reviews take approximately one month once the review entity receives the proposal. Awards up to $10,000 will be made. NDSU EPSCoR will contract directly with the external review entity for this service. The deadline for this funding category is open and does not follow the October 27, 2022 deadline.

6. Seed awards for faculty and students to engage K-12 in STEM outreach activities. Strengthening and broadening the STEM pathway is a core goal of ND EPSCoR. Proposals will be accepted that focus on activities that build stronger partnerships with K-12 STEM education in the state. Of particular interest are activities that engage historically underrepresented groups and result in an increased awareness and interest in STEM careers. Proposals must contain: 1) introduction and justification for the activity (i.e., is it grounded in a best practice); 2) description of the activity (including whether it is a formal or informal STEM activity); 3) description of the K-12 partner entity; 4) a statement whether this is a new or existing activity with this partner; 5) target audience (i.e., grade level, student demographics, etc.); 6) references; 7) short biosketch (2 page) of each participating faculty/instructors; and, 8) letter from partner K-12 school. If IRB, IACUC, or IBC will be needed, proof of an exemption and/or active protocol number will be needed prior to releasing funds. Awards up to $8,000 will be made. Of particular interest will be the development of virtual/online activities. Students hired under this award are required to complete responsible conduct of research (RCR) and IRB (if required) training in their first pay cycle. Certificates of RCR and IRB (if needed) training must be submitted to NDSU EPSCoR by the end of the first pay cycle.

7. Development of online/virtual modules for STEM laboratory courses. The COVID-19 pandemic illuminated the need to increase our online/virtual presence with respect to training STEM students in a variety of learning settings (classroom, laboratory, etc.). Students are not always able to participate in practical activities that connect practice to theory. Proposals will be accepted that focus on the development of virtual hands-on STEM laboratory experiences (up to $6,000) to replace and/or enhance the face-to-face STEM laboratory experience. Proposals must contain: 1) introduction and justification for the activity (course title and number), 2) description of the laboratory exercise that will result from the award, and 3) description of the dataset that will be created and provided to students as part of the online STEM laboratory exercise (and analysis, interpretation, and reporting requirements of the students). Students hired under this award are required to complete responsible conduct of research (RCR) training in their first pay cycle. Certificates of RCR training must be submitted to NDSU EPSCoR by the end of the first pay cycle.

NDSU EPSCoR is particularly interested in proposals that continue to build capacity for the online/virtual implementation of activities to better position ND for the ongoing COVID pandemic and future crises.

8. Seed award for community-based STEM research. Under this category, campus PIs will engage members of ND communities that are traditionally underrepresented and underserved in STEM. These community-based participatory research (CBPR) projects must focus on STEM-based issues/needs impacting the PI's local community. Proposals must contain: 1) introduction and justification for the CBPR research (i.e., STEM-based community issue/need); 2) description of the CBPR research; 3) targeted (partner) community demographics; 4) a short biosketch (2 page) of each participating faculty/instructor; 5) references; and, 6) letter from community partner. If an IRB will be needed, proof of an exemption and/or active IRB number will be needed prior to releasing funds. Awards up to $15,000 will be made. Students hired under this award are required to complete responsible conduct of research (RCR) and IRB (if required) training in their first pay cycle. Certificates of RCR and IRB (if needed) training must be submitted to NDSU EPSCoR by the end of the first pay cycle.

9. Electronic STEM datasets. Rapid changes in technology and faculty/researcher time constraints mean that throughout our participating institutions, many STEM research data sets remain in written format or in file formats that have become obsolete. This category provides funding (up to $5,000) to convert STEM data sets that are important to North Dakota into an electronic format; a precursor to larger data mining/manipulation efforts. Proposals must contain: 1) introduction and justification for the conversion of the STEM dataset(s) to an electronic format; 2) description of the size, timespan, and current format of the STEM dataset(s); 3) a statement regarding the importance of the dataset; 4) proposed method of conversion; and, 4) a short biosketch (2 page) of each participating faculty/instructor. Funds can used for personnel time to perform conversion, data entry, etc.

B. Eligibility

All tenure-track and tenured faculty and faculty/instructors are eligible to apply for funding. **Applicants with past due final reports on other current/past ND EPSCoR- or NDSU EPSCoR-awarded projects are not eligible to compete.**

C. Priority

The intent of this funding is to build research, education, and outreach infrastructure and capacity across the state. In addition, funding priority will be to applicants who did not receive an ND EPSCoR or NDSU EPSCoR award in the same category in 2019, 2020, or 2021 (calendar years).

D. Proposal Submission Deadline

Proposals are due to the ND EPSCoR office no later than noon on October 27, 2022. Proposals for external review of large collaborative and interdisciplinary efforts follow the submission guideline given under section A, item #5.

The state office has a limited amount of funds to disburse; thus, the submission of a proposal does not automatically guarantee funding.

E. Funding Availability

It is anticipated that funds will be released November 30, 2022, and may be used through May 31, 2023.

F. Proposal Preparation Guidance

You must use the proposal template for the proposal narrative. In addition to the category-specific information noted for each category in section A, the narrative must also contain a section on ***how the research/activity fits into the strategies outlined in the North Dakota Science and Technology Plan (the July 1, 2018 version).*** This section must include references to specific strategies. The current ND Science and Technology Plan can be found at:
https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/documents/NDSTPlanFINALJune201 8.pdf

Each proposal must contain a cover page, a completed proposal template, and a budget (and justification).

- Cover page is at:
  https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/STEM/NDSUCovSheetSTEM2022.pdf
- Proposal template (choose the template that matches the category of your proposal):
  - Proposal Template Categories 1 and 2:
    https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/STEM/NDSU_Proposal_Template_Categories_1_2_2022.pdf
  - Proposal Template Category 3:
    https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/STEM/NDSU_Proposal_Template_Category_3_2022.pdf
  - Proposal Template Category 4:
    https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/STEM/NDSU_Proposal_Template_Category_4_2022.pdf
  - Proposal Template Category 5:
    https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/STEM/NDSU_Proposal_Template_Category_5_2022.pdf
  - Proposal Template Category 6:
    https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/STEM/NDSU_Proposal_Template_Category_6_2022.pdf
  - Proposal Template Category 7:
    https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/STEM/NDSU_Proposal_Template_Category_7_2022.pdf
  - Proposal Template Category 8:
    https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/STEM/NDSU_Proposal_Template_Category_8_2022.pdf
  - Proposal Template Category 9:
    https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/STEM/NDSU_Proposal_Template_Category_9_2022.pdf
- Budget form is at:

https://www.ndepscor.ndus.edu/fileadmin/ndus/ndepscor/SeedAwards/2020NDEPSCoRStandardBudgetForm.xlsx

G. Proposal Submission

Your proposal requires the signatures of the Department Chair/Dean. Once you have those signatures, you will submit your proposal straight to the ND EPSCoR office.

Please submit your proposal electronically as a single, searchable PDF to ndepscor@ndus.edu with the subject heading of "2022 NDSU EPSCoR STEM RFP."

If you have any questions, please contact ndepscor@ndus.edu

H. Proposal Evaluation

Proposals will be evaluated for fit with the ND EPSCoR State Office mission, the ND S&T Plan, and national priorities related to broadening participation in the STEM ecosystem.

I. Award Requirements

All awards require: 1) an end of award report submitted to NDSU EPSCoR within 30 days of the award expiration date; 2) completion of the data and product tracking form provided with the award letter, 3) acknowledgement of the NDSU EPSCoR as the funder in any publications/presentations; 4) signed photo releases for any figures in the final report as these figures may be used in other ND EPSCoR marketing, social media, reports; 5) presentation of the activity/results at the ND EPSCoR Annual State conference (this is for proposals funded in categories 3,4, 6, 7, and 8); equipment orders and equipment repair requisitions must be placed by February 28, 2023 (this is for proposals funded in categories 1 and 2).