

April 28, 2023

## From the Executive Director

I would like to start by saying thank you to NDSU VPR Fitzgerald for the opportunity to serve as the ND EPSCoR Executive Director. My decision to "throw my hat into the ring" for this position was due to all of you and the vision of how ND EPSCoR can impact North Dakota. I have been touched by the number of people who have reached out to welcome me into this role and I thank you all for well wishes.



We recently welcomed Mark Puppe into our office as the Communications Specialist, in this issue you will learn more about his background and his communication philosophy.

One of the highlights of the ND EPSCoR State Conference was the poster session. This year we had 84 posters displaying the scientific efforts of North Dakota ranging from undergraduate students to tenured faculty members in a broad spectrum of topics. Congratulations to the [winners of the poster contest](#) and thank you to everyone who participated!

I look forward to working with you all as we continue to build partnerships and collaboration across North Dakota.

Jolynne

## **ND EPSCoR Executive Director Named**

Jolynne Tschetter, Ph.D. has been named Executive Director at the North Dakota Established Program to Stimulate Competitive Research (ND EPSCoR). From this role, Tschetter is responsible for the day-to-day operations, management and overall coordination of this statewide program to advance science, technology, engineering and mathematics (STEM) in education and the workforce.

ND EPSCoR helps students, supports quality faculty, grows research infrastructure capacity and funds scientific projects that positively impact the state's economy and its citizens. The ND EPSCoR Steering Committee evaluates and advises the program.

"I worked with Jolynne during her time as interim director am very pleased that Jolynne will serve as ND EPSCoR Executive Director," says John Warford, Ph.D. who chairs the ND EPSCoR State Steering Committee and is a member of North Dakota State Board of Higher Education. "She brings vision, extensive experience and the leadership skills necessary to sustain and improve the program. I look forward to her leadership as Executive Director. Her experience in both the public and private sectors will be a great asset to ND EPSCoR and the committee."

Tschetter has been Executive Director of the Innovation and Economic Development Department at the NDSU Office of Research and Creative Activity, Executive Director of the NDSU Research Foundation, and Manager of Science and Technology Business Development at the North Dakota Department of Commerce. She has a Ph.D. in veterinary science and bachelor's in biotechnology.

"As interim executive director over the past six months, Jolynne has provided the leadership and knowledge required to broaden and diversify North Dakota's STEM pathway from elementary through graduate school and into the workforce," says NDSU Vice President for Research and Creativity Colleen Fitzgerald, Ph.D. "That transition must be facilitated and Jolynne is exactly the person students, schools

and enterprise need to strategize, sustain and continually enhance the process.”

ND EPSCoR partners with 10 institutions of higher learning to develop, implement, fund and manage several STEM-related programs across North Dakota. The group administers several federal awards to support STEM research capacity and competitiveness while informing and communicating science to North Dakota stakeholders.

“These partnerships and programs represent how ND EPSCoR supports North Dakota communities, industries and citizens. Jolynne and I share the vision for ND EPSCoR to continue building trusted relationships and collaborations, to be strategic and to leverage and fulfill our mission of serving the state,” Fitzgerald said.

“Students, faculty, institutions and business owners already benefit from Jolynne’s work at ND EPSCoR and can be excited about those she will generate as executive director.”

## **Mark Puppe accepts Communication Specialist position**

ND EPSCoR:

Accepting the Communication Specialist position represents my own enthusiasm for STEM and crafting and enhancing the messages that advance your interests.

Science and research generate invaluable returns, and I am excited to help STEM and non-STEM audiences understand and appreciate the value they generate for each other.

After earning a bachelor’s in political science and master’s in communication at NDSU and a law degree at UND, I relocated to western North Dakota. Positions in each branch of North Dakota government were interesting and educational but affirmed that law is not the career



for me.

Instead, the communication strategies and content I created for business organizations as an employee and myriad clients served as an independent strategist and writer validated advocacy and storytelling to be my career callings. I am proud of, yet humbled by how these organizations and clients were surpassing goals that they had considered unattainable before working with me. If you have a story to share, please reach out to me.

Over the past 20 years, I have been engaging my passions and proficiencies to not only help others authenticate, substantiate and promote their messages, but enabled them to identify, attract, sway and sustain the audiences. The outcomes match me to the Communication Specialist position and introduce how I can help ND EPSCoR promote STEM across the board.

I am excited to move forward and capitalize upon our collective potential and optimize unexpected opportunities along the way.

See you soon!



[mark.puppe@ndsu.edu](mailto:mark.puppe@ndsu.edu)

### **ND EPSCoR wants to hear your news**

Given the opportunity to communicate with both the public and internally within our own program, the ND EPSCoR team invites you to provide content that can be used in stories, social media, press releases, and ND EPSCoR News and Notes.

Send us your news, events, accomplishments and most importantly, your BRIGHT SPOTS!

[Submit a story>>](#)

## **A newsworthy note from the desk of Kimberly Beauchamp, ND EPSCoR Project Administrator**

In the March 2023 Edition of News and Notes, we shared highlights of the ND EPSCoR State Conference [see here: [News and Notes Newsletter \(03/31/2023\)](#)]. This annual event, held on March 29, 2023, presented a tremendous professional development opportunity for undergraduate students, graduate students, post docs, technical staff, and faculty to showcase their work and engage in discussions with more than 200 conference attendees. Throughout the conference, more than 80 posters were displayed in the main-entrance lobby of the Fargodome [see here: [2023 Poster Agenda and Abstract Booklet](#)]. On behalf of the ND EPSCoR Office, I would like to thank all poster presenters for highlighting the important and collaborative work that remains ongoing throughout North Dakota!

Specific to the conference, undergraduate and graduate students participated in a poster competition sponsored by ND EPSCoR. For this competition, ND-ACES affiliated faculty evaluated each poster for quality of content, quality of clarity, layout design and significance of research. The top undergraduate and graduate student posters were determined by the faculty scores. The students' advisors are formally presenting the Certificates of Achievement and Professional Development Awards, as provided through ND EPSCoR.



On behalf of the ND EPSCoR Office, I would like to congratulate the following students, as recipients of the conference-related awards:

- **Chiranthi Mahadurage (graduate student, University of North Dakota)**
- **Sharad Jaswandkar (graduate student, North Dakota State University)**
- **Sakurako Tani (graduate student, NDSU)**
- **Zhaofan Li (graduate student, NDSU)**
- **Nicholas Bittner (undergraduate student, UND)**
- **Aerica Nagornyuk (undergraduate student, UND)**
- **Ryan Thoreson (undergraduate student, NDSU)**
- **Kaydee Koistinen (undergraduate student, Mayville State University)**
- **Branden Pelzer (undergraduate student, Minot State University).**

[View winning poster presentations](#)

Well done, students!

**Kimberly Beauchamp**  
ND EPSCoR Project Administrator

## From the desk of Danielle Condry, Ph.D., dREU Coordinator for ND-ACES

Do you have an interesting project? Enroll dREU students to help you!

The Distributed Research Experience for Undergraduates (dREU) Program is designed to strengthen North Dakota's STEM ecosystem by catalyzing bioscience research and career development opportunities for undergraduates.

ND EPSCoR is currently seeking 10 faculty-pair projects to work with undergraduate students (ideally from primarily undergraduate universities/Tribal colleges & universities). For more information, please see here: [Request for Application](#).

The faculty-pair project application should describe the following (in 125 words):

1. the intended research
2. the techniques students would learn
3. why the experience would be valuable to the students. All application materials should be submitted by May 15, 2023 to: **Danielle Condry, Ph.D.** [danielle.condry@ndsu.edu](mailto:danielle.condry@ndsu.edu).

Selected students will conduct science, technology, engineering and mathematics (STEM) research projects under the supervision and guidance of faculty researchers from the New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES) Center for Cellular Biointerfaces in Science and Engineering (CCBSE).

Examples of previously identified faculty-pair projects are listed below:

- **Faculty-pair mentors: Binglin Sui (Ph.D.; UND) and Khwaja Hossain (Ph.D.; Mayville State University).**  
Project: "Biodegradable nanoparticles for cancer-targeted drug delivery." In this project, undergraduate students will learn basic skills in organic synthesis, polymer chemistry, materials science, nanotechnology, biochemistry, cellular biology, and animal studies. [Project description](#)
- **Faculty-pair mentors: Arachana Dhasarathy (Ph.D.; UND) and Hilde van Gijssel (Ph.D.; Valley City State University).**

Project: “Using 3D cell culture to test potential cancer drugs.” In this project, students will: 1) use breast and prostate cancer derived cell lines to learn how to culture cells in a simple 3D cell culture system, and 2) use immunofluorescence, RNA sequencing, data mining, and analysis to evaluate results. [Project description](#)

As with all ND-ACES programs, dREU is committed to building a diverse pool of engaged students and competitive researchers. Underrepresented people in STEM (e.g., women, first-generation college students, persons with disabilities, rural populations) are thus strongly encouraged to apply.

**Danielle Condry, Ph.D.**  
**dREU Coordinator for ND-ACES**

## **NSF, EPSCoR and others offer FREE workshops to facilitate use-inspired research and science-informed practices**

The Directorate of Biological Sciences (BIO), the Established Program to Stimulate Competitive Research (EPSCoR), and the Directorate for Technology, Innovation, and Partnerships (TIP) at the National Science Foundation have jointly funded a workshop that aims to build new connections among key BioSci communities to successfully conduct ‘Use-inspired Research’.



To maintain global leadership in Biological Science (BioSci) innovation, our nation needs strong support for basic research and new processes that improve collaborations among academic, private, and governmental BioSci communities. To meet this need, NSF is expanding their funding portfolio to support use-inspired research. Use-inspired research is defined as research and training that is intentionally co-designed by teams of scientists and engineers, practitioners, and users to address the nation's environmental, societal, and economic challenges and grow a diverse and versatile STEM workforce. These intentional collaborations will



facilitate the translation of basic research to innovation, better inform evidence-based practices, and establish novel training opportunities for careers in use-inspired research and science-informed practices for the current and next generation of STEM researchers.

The workshops consist two free virtual Pre-Workshop MicroLabs (for an unlimited number of participants) and an In-Person Workshop (for 120 selected participants representing diverse groups and organizations). These events are being facilitated by KnowInnovation, a company that specializes in working with science groups to accelerate scientific innovation and achieve actionable outcomes. There are no registration fees and the April workshop is not required for the Micro Lab 2 workshop on May 12. [Learn more and register.](#)

## NSF Workshop for NSF Directorate for STEM Education CAREER Applicants

The workshop is intended to provide guidance and mentorship to prospective CAREER applicants to the NSF Directorate for STEM Education. It will serve as an opportunity for participants to gain a better understanding of the program, including eligibility requirements, the application process, and outcomes of past CAREER awardees, and for participants to interact with other applicants, former awardees, and NSF program officers.



**WHEN:** Thursday, May 11, 2023, 10:00 am – 4:00 pm Eastern time

**WHO SHOULD ATTEND:** Potential CAREER applicants to the NSF EDU Directorate, including early-career faculty who conduct or plan to conduct research in STEM education. Detailed information on program eligibility generally can be found [here](#). EDU-specific guidance regarding CAREER applications can be found [here](#).

**WHERE:** The workshop will be conducted virtually via Zoom. To participate fully you will need to have the Zoom app installed on your device. You can download the

latest version for free here. RSVP: Pre-registration is required for this event. The link to pre-register is [here](#). A Zoom meeting link and password will be sent to you after your registration is confirmed.

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## Update on open positions

- **Director - Tribal Partnerships**  
Candidates being reviewed
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## DoD Breast Cancer Research Opportunities

These funding opportunities are applicable to ND ACES as part of the sustainability component.

- Dept. of the Army — USAMRAA  
[DoD Breast Cancer, Clinical Research Extension Award](#)  
**Deadline: Jun 22, 2023**
- Dept. of the Army — USAMRAAT  
[DoD Breast Cancer, Breakthrough Award Level 3](#)  
**Deadline: Jun 28, 2023**
- Dept. of the Army — USAMRAA  
[DoD Breast Cancer, Breakthrough Award Level 4](#)  
**Deadline: Jun 28, 2023**
- Dept. of the Army — USAMRAA  
[DoD Breast Cancer, Innovator Award](#)

**Deadline: Jun 28, 2023**

- Dept. of the Army — USAMRAA  
[DoD Breast Cancer, Transformative Breast Cancer Consortium Award](#)  
**Deadline: Jun 28, 2023**

## **DEPSCoR RESEARCH COLLABORATION (RC) OPPORTUNITY**

The Department of Defense (DoD) announces the fiscal year 2023 (FY23) Defense Established Program to Stimulate Competitive Research (DEPSCoR) – Research Collaboration (RC) opportunity. The program is sponsored and managed by the Basic Research Office, Office of the Under Secretary of Defense for Research and Engineering (OUSD [R&E]), awarded by the Air Force Office of Scientific Research (AFOSR), and administered through the Office of Naval Research (ONR). The DoD plans to award FY23 DEPSCoR appropriations through this announcement.



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**This funding opportunity aims to create basic research collaborations between a pair of researchers, namely**

1. **Applicant/Principal Investigator (PI), henceforth referred to as Applicant, a full-time faculty member who has never served as a PI on a prior DoD directly funded research Prime award and**
2. **Collaborator/co-Principal Investigator (co-PI), henceforth referred to as Collaborator, an investigator who will provide mentorship to the Applicant and has served as a PI on a DoD directly funded research Prime award actively between 1 October 2016 and 30 September 2023.**

**This structure is aimed at introducing potential applicants to the DoD's unique research challenges and its supportive research ecosystem.**

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The Basic Research Office anticipates up to \$16 million in total funding will be made available for this program to fully fund and award up to twenty five (25) grants up to

\$600,000 (total cost) each. Each grant award will be funded up to \$200,000 (total cost) per year for three (3) years.

The DoD intends to competitively make, and fund from fiscal year 2023 appropriations, multiyear awards for S&E research in areas relevant to the DoD's mission and important to national security.

Awards are subject to funding availability. There is no guarantee of an award.

*Deadline: November 20, 2023*

[Learn more >>](#)

## DEPSCoR CAPACITY BUILDING (CB) OPPORTUNITY

The Department of Defense (DoD) announces the fiscal year 2023 (FY23) Defense Established Program to Stimulate Competitive Research (DEPSCoR) – Research Collaboration (RC) opportunity. The program is sponsored and managed by the Basic Research Office, Office of the Under Secretary of Defense for Research and Engineering (OUSD [R&E]), awarded by the Air Force Office of Scientific Research (AFOSR), and administered through the Office of Naval Research (ONR). The DoD plans to award FY23 DEPSCoR appropriations through this announcement.



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**This funding opportunity aims to support the strategic objectives of IHEs (either individually or in partnership with others) in DEPSCoR States/Territories to achieve basic research excellence in areas of high relevance to the DoD.**

**IHEs in the following States/Territories are eligible to apply for this DEPSCoR opportunity under this announcement: Alabama, Alaska, Arizona, Arkansas, Connecticut, Delaware, District of Columbia, Guam, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Minnesota, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oklahoma, Oregon, Puerto Rico, Rhode Island, South Carolina, South Dakota, Tennessee, U.S. Virgin Islands, Vermont, West Virginia, Wisconsin, and Wyoming.**

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The Basic Research Office anticipates up to \$6 million in total funding will be made available for this program to fully fund and award between one to four grants up to \$1.5 million (total cost) each. Each grant award will be funded up to \$750,000 (total cost) per year for two (2) years.

The award is subject to funding availability. The Basic Research Office reserves the right to select and fund for award all, some, part, or none of the proposals received. There is no guarantee of an award.

*Deadline: November 20, 2023*

[Learn more >>](#)

## **NSF DCL: Radio Spectrum Sharing - The Human Environment**

The purpose of this Dear Colleague Letter (DCL) [[NSF 23-065](#)] is to inform researchers in the social, behavioral and economic sciences (SBE) of a funding opportunity under the [Spectrum Innovation Initiative](#) (SII) of the National Science Foundation (NSF). The electromagnetic spectrum has disparate users including commercial companies (wireless communication, navigation, etc.), scientists (radio astronomy, geospace sciences, etc.), air traffic controllers and first responders.

A major objective of the SII, pursued through its [National Radio Dynamic Zones](#) (SII-NRDZ) program, is to advance dynamic and agile sharing of the electromagnetic spectrum. The term dynamic and agile sharing refers to methods enabling electromagnetic spectrum users to safely operate closer together in space or frequency or to safely alternate spectrum access more rapidly than is possible with the geographic exclusive licenses used in traditional spectrum management. Widespread use of dynamic and agile spectrum sharing is essential to mitigate spectrum congestion problems that constrain growth in many sectors of society and the economy.

Through this DCL, NSF invites both proposals and requests for supplements to active NSF awards. Both proposals and supplemental funding requests should focus on research that helps advance the use of dynamic spectrum sharing by studying its

human environment, which includes studying the economic, social, and incentive issues associated with:

- adoption by private and public sector entities;
- understanding by and support from the general population; and
- paths to overcome barriers to deployment and use.

*Proposals and supplemental funding requests must be received on or before May 30, 2023*

## **NSF: Fluid Dynamics**

The Fluid Dynamics program [[PD 23-1443](#)] supports fundamental research toward gaining an understanding of the physics of various fluid dynamics phenomena. Proposed research should contribute to basic scientific understanding using and/or creating innovative experimental, theoretical, and/or computational methods.

Major areas of interest and activity in the program include:

- Turbulence and Transition
- Bio-Fluid Physics
- Non-Newtonian Fluid Mechanics
- Microfluidics and Nanofluidics
- Wind and Ocean Energy Harvesting
- Fluid-Structure Interactions (FSI)
- Canonical Configurations
- Artificial Intelligence (AI)/Machine Learning
- Instrumentation and Flow Diagnostics

*Deadline: Proposals accepted ANYTIME*

## **NSF: Spectrum and Wireless Innovation enabled by Future Technologies**

The National Science Foundation's Directorates for Mathematical & Physical Sciences (MPS), Computer and Information Science and Engineering (CISE), Engineering (ENG), and Geosciences (GEO) are coordinating efforts to identify new

concepts and ideas on Spectrum and Wireless Innovation enabled by Future Technologies (SWIFT) [[NSF 23-567](#)]. A key aspect of the SWIFT program, now in its fourth year, is its focus on effective spectrum utilization and/or coexistence techniques, especially with passive uses, which have received less attention from researchers. Coexistence is when two or more applications use the same frequency band at the same time and/or at the same location, yet do not adversely affect one another. Coexistence is especially difficult when at least one of the spectrum users is passive, i.e., not transmitting any radio frequency (RF) energy. Within the general area of the SWIFT program, this SWIFT-SAT solicitation focuses on satellite-terrestrial coexistence and covers both radio-spectrum and optical-wavelength coexistence.

The goal of these research projects may be the creation of new technology or significant enhancements to existing wireless infrastructure, with an aim to benefit society by improving spectrum utilization and ancillary challenges, beyond mere spectrum efficiency. The SWIFT program encourages collaborative team research that transcends the traditional boundaries of individual disciplines.

*Deadline: June 5, 2023*

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Have questions, ideas, or suggestions for News and Notes?

[Contact Us](#)

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*Acknowledgement*

*Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.*

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