

RCA UPDATE

January 13, 2020



Welcome to the second half of the 2019-2020 collegiate year! I hope you found some time during the recent holidays to unplug, rest, and recharge.

You may have seen news that federal funding agencies are heightening their review of foreign influence, including academic institutions. Currently, they are working across institutes and foundations to clarify guidance for researchers who work with foreign governments. As new information becomes available, my office will help interpret how these changes may affect your research activities and assist you in navigating the challenges.

2020 will be an exciting time for research at NDSU and we're looking forward to it. The RCA team is committed to helping you find, secure, and manage your research endeavors. The RCA Update newsletter is a great way to find new opportunities, and for 2020, two issues each month will be focused primarily on funding opportunities. I am happy to announce that RCA is opening applications for travel and research resources support. Information on the application process can be found in this edition of the RCA Update or on the [RCA website](#).

I also want to take this opportunity to remind you about [NDSU EXPLORE](#),

our showcase of undergraduate research and creative activity. The event will take place on April 22 and registration is set to open in February. It's a great opportunity for your undergraduate students to present their research projects.

Earlier this fall I took part in a university-wide shadow-a-student event. I was honored to be paired with junior marketing major Aaron Mercadel. Not only did I learn a great deal about daily activities the first team Bison linebacker and marketing student goes through, (including an immense amount of team-mandated caloric intake...I mean LOTS), but I also saw firsthand just how dedicated he is to his own success, to the college of business, and to NDSU overall.



Regardless of how long you've been at the University, I highly recommend taking part in this activity when it's offered again. It will help you approach your work with fresh eyes.

I want to express my pride in our football team and staff on their incredible achievement in Frisco last weekend. It was wonderful to watch their hard work and passion pay off for a perfect 16-0 season. That kind of dedication and hard work is in our DNA at NDSU and it's an important part of what makes this university the great place that it is. Go Bison!

On behalf of the entire RCA team, thank you for everything you do for NDSU. Please reach out to us if you have questions or need assistance. We are here to help.

Kind regards,
Jane Schuh
Vice President
Research and Creative Activity

RCA Funding Opportunities

RCA has opened applications for two funding programs:

The **Research Development Travel Award program** helps defray travel expenses for faculty presenting at national conferences or for supporting travel to visit archives or special collections. International opportunities may be accommodated if required for discipline-specific research. 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.

The **Research Support Services program** helps 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.

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



Congratulations to all award recipients from November 2019!

View the complete list online: [PDF](#) | [Excel](#)

The awards listed are externally funded projects. Each month one of the RCA Updates will include prior month awards.

[See Award Reports from previous months >>](#)

Agricultural Products Utilization Commission Grants Seminar

Are you doing research and development in agriculture? Do you want to learn more about the Agricultural Products Utilization Commission ([APUC](#)) and what it does?

This free class led by John Schneider, ND Department of Agriculture Marketing and Information Division Director, will cover APUC's grant application process, funding availability, fiscal agent responsibility, requirements for research grants, and new rules in effect following APUC's move to the ND Department of Agriculture.

Thursday, January 23, 2020

12:00pm-1:30pm

NDSU Technology Incubator

1854 NDSU Research Circle North

RSVP to Barb Villella: barb.villella@ndsurtip.com.

UND Center for Innovation Workshop: Proposal Prep for National Institutes of Health

The University of North Dakota (UND) Center for Innovation continues its partnership with SHARPHub as one of the five-state regions (North Dakota, South Dakota, Kansas, Oklahoma, Nebraska) to bring key resources to Life-Science Innovators. The next SBIR/STTR workshop series will focus on Proposal Prep and Commercialization for SBIR/STTR Funding which awards over \$3 billion in R&D funding annually to small businesses developing game-changing technologies.

In order to help with the application process, the UND Center for Innovation will host the Part 1 Workshop: Proposal Prep for National Institutes of Health (NIH). We highly encourage faculty, students, post docs, clinicians, and early stage life science companies to attend to learn more on how to plan for and develop a competitive proposal, writing to meet the reviewers' expectations, common pitfalls, how to avoid them, and more. The workshop will be hosted at the UND Center for Innovation at the following date and time:

Thursday, January 23, 2020

8:30am-4:00pm

UND Center for Innovation Idea Lab

4200 James Ray Drive

Grand Forks, ND 58203

There will be a boxed lunch provided during the event as well.

Please register for this free event [here](#).

If you have any questions, feel free to contact Marisol Rodriguez at marisol@bbcetc.com.

NDSU Core Biology Facility

The [NDSU Core Biology Facility \(CBF\)](#) assists researchers by providing equipment and resources that might not otherwise be accessible in the standard laboratory. CBF is equipped with BD Accuri C6 flow cytometers, BD FACSJazz cell sorter, Agilent 2100 Bioanalyzer, BioTek Synergy H1 microplate reader, iBright FL 1500 imaging system, Thermo Nanodrop 2000c, and more. In addition, CBF contains the equipment and resources to perform tissue/cell culture. CBF is a reasonable fee structure-based facility with the goal of assisting and promoting research. If interested in touring the facility and/or discussing how the facility may assist your research, please contact the CBF Manager, Dr. Amber Chevalier Plambeck (amber.chevalier@ndsu.edu, 701-231-5334).

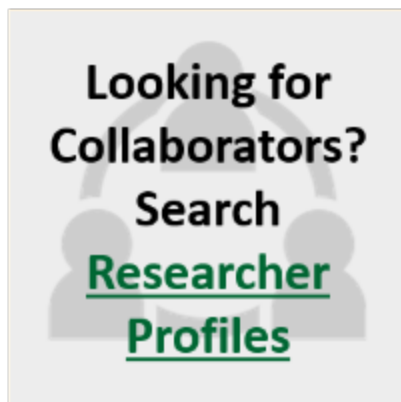
During January and February, the CBF is offering a free training session per laboratory on the iBright FL1500. The iBright FL1500 is used to image, document, and quantify/analyze samples on gels and blots. This free training time will benefit laboratories that are interested in using the instrument. Contact Dr. Chevalier Plambeck (amber.chevalier@ndsu.edu, 701-231-5334) if you are interested in this training.

CONTENTS

FUNDING OPPORTUNITIES

- [DOD: National Defense Education Program for STEM Education, Outreach, and Workforce Initiative Programs](#)
- [DOE: Systems for Monitoring and Analytics for Renewable Transportation Fuels from Agricultural Resources and Management](#)

- [FFAR: 2020 New Innovators in Food and Agriculture](#)
- [NEH: Institutes for Advanced Topics in the Digital Humanities](#)
- [NSF DCL: Developing and Supporting the National Ecological Observatory Network User Community](#)
- [NSF: Spectrum and Wireless Innovation enabled by Future Technologies](#)
- [USDA-AFRI: Foundational and Applied Science](#)
- [USDA-NIFA: Women and Minorities in STEM Fields](#)



Need to update your profile?
Click here to learn how!

**DoD: National Defense Education Program for STEM
Education, Outreach, and Workforce Initiative
Programs - FY2020**

The Department of Defense (DoD) is seeking a broad range of programs to support the DoD STEM mission to, “attract, inspire, and develop exceptional STEM talent across the education continuum to enrich the current and future DoD workforce to meet defense technological challenges.” The goal of any proposed effort must provide solutions that will establish and maintain a STEM talent pool with an aptitude for innovation, diversity of thought, and the technical agility to sustain the Department’s competitive edge. DoD seeks to complement its [portfolio of programs](#) while maintaining and/or increasing its focus on underserved populations to include military connected children. [This announcement](#) explicitly encourages projects that improve the capacity of education systems and communities to create impactful STEM educational experiences for students and teachers, and prepare the 21st century technical workforce. Funding efforts will be targeted primarily towards programs, both formal and informal, that are aligned with the [Federal STEM Education Strategy](#) vision for a future where all Americans will have lifelong access to high-quality STEM education, and the United States will be the global leader in STEM literacy, innovation, and employment. This consists of strategic partnerships, convergence, and building computational literacy, and aligns with DoD's STEM mission. This includes, but is not limited to, programs that:

- Address geographic disparities and broaden participation for underrepresented and underserved communities;
- Target military-connected students (dependents from preschool through college of an active Military Service member) and provide this unique population with the resources and encouragement to pursue careers in STEM;
- Consider early academic education activities from pre-kindergarten through middle school to generate introductory awareness in STEM subjects and supplement understanding of foundational concepts in STEM;
- Build STEM skills and literacy in an evidence-based and innovative manner;
- Utilize project-based learning opportunities such as STEM challenges, science fairs, and competitions;

- Foster family and community support systems to encourage STEM learning and understanding;
- Increase awareness of DoD science and technology priorities such as artificial intelligence/machine learning, biotechnology, and cyber to prepare for careers in national security and DoD science and technologies.

DoD intends to award multiple grants, subject to the availability of funds. Each individual award will be up to a maximum of \$3,000,000, for a period of up to three (3) years. Applications for larger amounts may be considered on a case-by-case basis.

Deadline for Application Inquiries and Questions: January 16, 2020

Application Deadline: February 24, 2020



DOE: Systems for Monitoring and Analytics for Renewable Transportation Fuels from Agricultural Resources and Management (SMARTFARM)

U.S. agriculture has the potential to produce ~5 Quadrillion Btu of energy in the form of biofuels, and with new innovations throughout the biofuel supply chain, these fuels could become carbon negative. Reaching this potential and achieving greater carbon reductions requires that feedstock producers adopt new technologies and management practices that simultaneously improve yield, drive down production associated emissions, and enhance carbon sequestration in soils. To facilitate the adoption of these new technologies and practices for improved carbon management, feedstock producers need incentives beyond yield. While carbon management incentive structures exist elsewhere in the biofuel supply chain, they do not extend to feedstock production because monitoring and verification of feedstock production emissions is too costly to conduct at the field level. Instead, all feedstock producers are assumed to produce the same amount of emissions—the

national average —despite significant variations in actual emissions when moving to state or regional averages, let alone field-level estimates. The objective of the [Systems for Monitoring and Analytics for Renewable Transportation Fuels from Agricultural Resources and Management \(SMARTFARM\) program](#) is to bridge the data gap in the biofuel supply chain by funding the development of technologies that can replace national averages and emissions factors for feedstock-related emissions with field-level estimates. The value of such technologies will be evaluated by their ability to reliably, accurately (i.e. low uncertainty), and cost-effectively quantify feedstock production lifecycle emissions (in g CO₂e/acre) at the field level (i.e. scalable to >80 acres). If successful, the technologies funded by this phase of the SMARTFARM program will catalyze new market incentives for efficiency in feedstock production and carbon management, reducing annual U.S. emissions by ~1%, and with substantially greater potential emissions reductions implications if expanded to other agricultural products beyond biofuels.

Concept Paper Deadline: February 19, 2020

[^^](#)

FFAR: 2020 New Innovators in Food and Agriculture - 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.

FFAR New Innovators : Submit Pre-proposal by 1/31/2020, 5:00 p.m. if you are interested in being considered for this program.

The Foundation for Food and Agricultural Research (FFAR) seeks nominations for its [2020 New Innovator in Food and Agriculture Research Award](#). With this program, FFAR intends to support and promote the future generation of

exceptionally talented and creative new faculty who are conducting critical and highly innovative research, and are establishing research programs that will lead to expanded availability of food and facilitate the global practice of sustainable agriculture as the world's population grows to more than 9 billion people by the year 2050. The New Innovator Award seeks to promote career advancement of highly creative and promising new scientists who intend to make a long-term career commitment to research in food and agriculture and bring innovative, ground-breaking research initiatives and thinking to bear on problems facing food and agriculture. NDSU may nominate one applicant.

Nominee Eligibility:

- Required: Hired on or after August 1, 2016 for a tenure-track or equivalent position.
- Preference: Within 8 years of Ph.D. or equivalent degree.
Faculty with significant research experience prior to obtaining a faculty position will not be considered.
- This program is open to any discipline / program, but the nominee should be working in one of the FFAR Challenge Areas:
 - Advanced Animal Systems
 - Health-Agriculture Nexus
 - Next Generation Crops
 - Soil Health
 - Sustainable Water Management
 - Urban Food Systems

If you are eligible for this program and would like to be considered, please follow the process outlined below.

Friday, January 31, 2020: NDSU pre-applications are due to ndsu.researchdev@ndsu.edu by 5pm CT. Pre-applications should be prepared as indicated below and emailed as a single pdf file to ndsu.researchdev@ndsu.edu. Following a review of pre-applications received, one nominee will be selected.

Pre-applications should include the following:

- Cover Sheet – include name, department, date of hire in a tenure-track or equivalent position, and applicable FFAR Challenge Area.
- Provide a brief description of your research program (300 words or less).
- Provide a brief statement on the innovative nature of your research / how you are outstanding in your field (500 words or less).
- Curriculum Vitae



NEH: Institutes for Advanced Topics in the Digital Humanities

The National Endowment for the Humanities (NEH) [Institutes for Advanced Topics in the Digital Humanities \(IATDH\) program](#) supports national or regional (multistate) training programs for scholars, humanities professionals, and advanced graduate students to broaden and extend their knowledge of digital humanities. Through this program NEH seeks to increase the number of humanities scholars and practitioners using digital technology in their research and to broadly disseminate knowledge about advanced technology tools and methodologies relevant to the humanities.

Applicants may apply to create institutes that are a single opportunity or are offered multiple times to different audiences. Institutes may be as short as a few days or as long as six weeks and held at a single site or at multiples sites; virtual institutes are also permissible. Training opportunities could be offered before or after regularly occurring scholarly meetings, during the summer months, or during appropriate times of the academic year. The duration of a program should allow for full and thorough treatment of the topic; it should also be appropriate for the intended audience.

Draft deadline (optional): January 29, 2020

Application deadline: March 5, 2020



NSF Dear Colleague Letter: Developing and Supporting the National Ecological Observatory Network User Community

The National Science Foundation's (NSF) Directorate for Biological Sciences (BIO) announces plans to foster the continued development of individuals and teams of investigators pursuing research using the National Ecological Observatory Network (NEON). This [Dear Colleague Letter \(DCL\)](#) is part of a larger BIO-wide effort to stimulate and enhance engagement and integration of biological and environmental science communities, and to grow convergent research across the foundation.

Solutions for the most persistent challenges facing the environmental sciences today are hindered by our limited understanding of the complex interactions between living and non-living systems operating over large spatial and temporal scales. Because many environmental controls, responses, and feedbacks operate over regional to continental scales, they cannot be investigated mechanistically by disconnected studies of individual ecosystems over short periods of observation. NEON is a major facility designed for studying the biosphere synoptically at regional to continental scales, with openly accessible methods and freely available, high precision data products.

Entering its first year of full operations, NEON is a continental-scale network of standardized field instruments, sensors, and manual biological sampling designed to enable reproducible, fundamental research on biological responses to shifting environmental conditions, land-use changes, and invasive species. NSF plans to ensure that the impacts of NEON data and assignable assets on

environmental science are fully realized through a combined approach that includes user community support for the following activities:

- Workshops or Conferences
- NEON Research Coordination Networks (RCN) awards
- The Macrosystems Biology and NEON-Enabled Science (MSB-NES) program (NSF 20-506)
- Proposals submitted through existing NSF program solicitations

For additional information see the complete version of the [Dear Colleague Letter](#).

^^

NSF: Spectrum and Wireless Innovation Enabled by Future Technologies

The National Science Foundation's Directorates for Engineering (ENG), Computer and Information Science and Engineering (CISE), Mathematical and Physical Sciences (MPS), and Geosciences (GEO) are coordinating efforts to identify new concepts and ideas on Spectrum and Wireless Innovation enabled by Future Technologies ([SWIFT / NSF 20-537](#)). A key aspect of this new solicitation 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. Examples of coexisting systems may include passive and active systems (e.g., radio astronomy and 5G wireless communication systems) or two active systems (e.g., weather radar and Wi-Fi). Breakthrough innovations are sought on both the wireless communication hardware and the algorithmic/protocol fronts through synergistic teamwork. 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, beyond mere spectrum efficiency. The SWIFT program seeks to fund collaborative team research that transcends the traditional boundaries of individual disciplines.

Proposal Deadline: April 3, 2020



USDA-AFRI: Foundational and Applied Science

The USDA Agriculture and Food Research Initiative (AFRI) Foundational and Applied Science Program supports grants in six AFRI priority areas to advance knowledge in both fundamental and applied sciences important to agriculture. The six priority areas are:

1. Plant Health and Production and Plant Products;
2. Animal Health and Production and Animal Products;
3. Food Safety, Nutrition, and Health;
4. Bioenergy, Natural Resources, and Environment;
5. Agriculture Systems and Technology; and
6. Agriculture Economics and Rural Communities.

Research-only, extension-only, and integrated research, education and/or extension projects are solicited in this Request for Applications (RFA). [See Foundational and Applied Science RFA for specific details.](#)

Letter of Intent Deadline Varies by area, beginning February 19, 2020



USDA-NIFA: Women and Minorities in STEM Fields

The purpose of the USDA National Institute of Food and Agriculture (NIFA) [Women and Minorities in Science, Technology, Engineering, and Mathematics Fields Program program \(WAMS\)](#) is to support research, education/teaching, and extension projects that increase participation by women and underrepresented minorities from rural areas in STEM. NIFA intends this program to address educational needs within broadly defined areas of food, agriculture, natural resources, and human (FANH) sciences. Applications recommended for funding must highlight and emphasize the development of a competent and qualified workforce in the FAHN sciences. WAMS-funded projects improve the economic health and viability of rural communities by developing research and extension initiatives that focus on new and emerging employment opportunities in STEM occupations. Projects that contribute to the economic viability of rural communities are also encouraged.

Proposal Deadline: February 24, 2020



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.

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.