NDSU OFFICE OF RESEARCH AND CREATIVE ACTIVITY

RCA UPDATE

July 6, 2020

Hello NDSU Research Community!

Many studies have shown the value of an undergraduate research experience for students. It helps form important bonds for participants while providing them valuable on-the-job experience. Students who work in a research environment also tend to have higher grade point averages. Universities that promote undergraduate research report higher student retention and undergraduate researchers show enhanced leadership and communication skills along with a greater understanding of science.

This spring we surveyed the NDSU faculty about undergraduate research, and we received responses from 30 departments or units representing six of the NDSU academic colleges. Responses were targeted across three timeframes (summer and fall of 2019 and spring 2020). I'd like to share a couple highlights:

- More than half of respondents reported having publications and/or presentations that included undergraduate students in the last year.
- When asked what type of research experiences were provided, the most common response was grant-funded, followed by volunteer opportunities, and then experiences for research credit.
- The two main areas that NDSU faculty indicated they would like support for include funding support for undergraduate researchers and assistance in identifying interested students.
- The methods our respondents with undergraduate researchers listed for identifying interested students were varied and ranged from simply discussing

the opportunities in class, recruiting via email, or asking for recommendations from colleagues.

Thank you for your input on this survey. I invite you to look at the survey results on the RCA webpage.

Kind regards,

Jane Schuh
Vice President
Research and Creative Activity

Novelution: No More Proposal Transmittal Forms after July 1

NDSU's process for preparing and routing proposals went completely online effective July 1, 2020 with the rollout of the Novelution System. With the Novelution System, you will no longer prepare Proposal Transmittal Forms or manually route paper forms; rather you will request no-cost extensions, changes to budgets, and PI changes online.

The Novelution Research Management System is a major upgrade to our processes and we are glad to offer it to our faculty and staff. Thank you to those who have been piloting the system and to all who have participated in training. If you have not yet had the opportunity to learn about or utilize Novelution, we are happy to help you. A training video is available at: https://www.ndsu.edu/research/for_researchers/novelution/. Additional questions can be directed to ndsu.novhelp@ndsu.edu.
Other information on Novelution, including log-in and a brief User Guide, can be found on the RCA website.

Congratulations to all award recipients from May 2020!

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 >>

Export Controls Roundtables

Come join us for a new series of roundtables. Roundtables are designed to be discussions regarding specific topics and are less formal than webinars. There will be a 1-2 slide formal presentation providing background on the subject, and two discussion leaders will lend their experience to the group. Participants will be encouraged to share their own knowledge as well as ask questions, hopefully leading to a successful group discussion. The direction of the conversation is entirely dependent on the group.

- **Presidential Proclamation on Chinese Students and Researchers**
  Wednesday, July 8, 2020 - 9:00 AM
  Facilitators: Sharon May and Tabitha Thomas
  The recent Presidential Proclamation regarding Chinese student visas has left many of us with questions and not a clear idea of how best to proceed. Come to this roundtable to learn what NDSU is doing and how we are approaching this unique situation. We will share our concerns and any knowledge we may have about the current situation.

- **Foreign Influence**
  Wednesday, July 22, 2020 - 11:00 AM
  Facilitators: Sharon May and Julie Sherwood
  Safeguarding research on campus against foreign threats from some foreign governments seeking to influence, interfere and in some cases steal scientific research and intellectual property has been the subject of warnings by national security and law enforcement officials over the past several years. To date, cases have been brought against professors, scholars and students from universities and research institutions across the US. This roundtable will open the discussion on the issue of foreign

influence on American university campuses to protect federally funded research projects from cyberattacks, theft, and other foreign threats while we work to balance between security and maintaining openness and international academic collaboration.

Spots are limited for both sessions. Please email sharon.may@ndsu.edu **to reserve your space.** *Sessions will be limited to around 20 participants to maximize discussion.*

Changes to NDSU Rodent Training Series

The fall Rodent Training Series will be conducted on an individualized basis following CDC distancing guidelines. The training series covers basic mouse handling and techniques.

If your research team has any training needs, please contact the IACUC Office at ndsu.iacuc@ndsu.edu or 231-8114 to schedule a training.

Changes to Human Subjects Training Requirements

Beginning July 1, 2020, human subjects training must be completed through the Collaborative Institutional Training Initiative (CITI) online training program. Training will be verified upon submission of new and requests for continuing review (or recertification of exemption). In-person training will no longer be accepted. More information on the CITI training program can be found on the IRB website. In-person sessions to supplement the online training are still available upon request.

Change to NSF CAREER Program Deadline

NSF is extending the upcoming proposal deadline for the Faculty Early Career Development Program (CAREER) until 5:00 p.m. submitter's local time on Tuesday, August 11, 2020.

Please note that the eligibility requirements specified in the solicitation remain unchanged, and proposers must meet all of the eligibility requirements as of the original deadline of July 27, 2020. The Departmental Letter that must be submitted by the Department Chair (or equivalent) must use July 27, 2020 to determine eligibility, regardless of whether the CAREER proposal is submitted before, on, or after July 27, 2020. An untenured assistant professor on July 27, 2020 is eligible to submit a CAREER proposal even if the Principal Investigator is tenured/promoted in the fall. A new faculty member who starts on July 28, 2020 or later is not eligible to submit a CAREER proposal this year.

For more about information about the CAREER Program please visit www.nsf.gov/career.

COVID-19 Guidance for researchers is available on the RCA Website, including NDSU guidance for PIs, Federal Agency guidance, and Funding Opportunities. As this situation is rapidly changing, please refer to the NDSU COVID-19 Preparedness and Response page for additional information.

CONTENTS

FUNDING OPPORTUNITIES

- NIH: Bridges to the Baccalaureate Research Training Program
- NSF: Condensed Matter and Materials Theory
- NSF: Methodology, Measurement, and Statistics
- Russell Sage Foundation: Social Science Research Special Topics
- Social Science Research Council: Covid-19 Rapid Response Grants
- USDA: Monitoring Soil Health Impacts of CRP

EVENTS

- Department of Energy Summer Webinar Series
- SBIR/STTR Preparation Webinar
- DEPSCoR DoD Day at the University of South Dakota

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DOE: Advanced Water Resource Recovery Systems

The goal of this Funding Opportunity Announcement (FOA) is to conduct research, development, and deployment on technology innovations that enable advanced water resource recovery systems. Topic Area 1 of this FOA seeks to advance the development of transformative technologies beyond early stage research and development (R&D) to become pilot ready. Topic Area 2 of this FOA seeks to test

currently developed, pilot ready technologies though design, build, and operations in industrially relevant conditions to enable commercialization.

This FOA is being issued by the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) Advanced Manufacturing Office (AMO) as part of the DOE's Water Security Grand Challenge (WSGC). The WSGC is a White House initiated, U.S. DOE led framework to advance transformational technology and innovation to meet the global need for safe, secure, and affordable water. Using a coordinated suite of prizes, competitions, R&D, and other programs, the Water Security Grand Challenge has set the following goals for the United States to reach by 2030:

- launch desalination technologies that deliver cost-competitive clean water;
- transform the energy sector's produced water from a waste to a resource;
- achieve near-zero water impact for new thermoelectric power plants, and significantly lower freshwater use intensity within the existing fleet;
- double resource recovery from municipal wastewater; and
- develop small, modular energy-water systems for urban, rural, tribal, national security, and disaster response settings.

Deadline: October 6, 2020

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NDSU Foundation: Impact Grants

The NDSU Foundation Grants Committee is now accepting applications for the Impact Fund Grant Program for the 2020 academic year. The NDSU Impact Fund Grant Program provides funding for projects that make a significant impact on excellence and the educational experience for students at North Dakota State University. This program is supported by annual contributions from alumni and friends of the university.

Applications are accepted from faculty, staff, and recognized student groups. The Impact Grant Fund Program offers grants of $20,000 to $75,000.

The application form and additional information about the NDSU Impact Grant Program can be found at the NDSU Foundation website: https://www.ndsufoundation.com/impact-fund.

For any further questions, please email Jennifer Reinhold, Grants Committee

Liaison, at jennifer.reinhold@ndsufoundation.com.

Application deadline: July 27, 2020

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NEH: Humanities Connections Grants

The National Endowment for the Humanities (NEH) Division of Education Programs has multiple funding opportunities with upcoming deadlines:

- Humanities Connections Planning Grants: These grants support the interdisciplinary collaboration of faculty from two or more separate departments or schools (a minimum of one in and one outside of the humanities), with the goal of designing a new, coherent curricular program or initiative. The award gives the institution(s) the opportunity to create a firm foundation for implementing the program.
- Humanities Connections Implementation Grants: These projects have four core features: (1) substantive and purposeful integration of the subject matter, perspectives, and pedagogical approaches of two or more disciplines (with a minimum of one in and one outside of the humanities), (2) collaboration between faculty from two or more separate departments or schools at one or more institutions, (3) experiential learning as an intrinsic part of the curricular plan, and (4) long-term institutional support for the proposed curriculum innovation(s).

Deadline: September 16, 2020

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NEH: Summer Stipends

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.

NEH Summer Stipends: Pre-application due by 7/17/2020.
Pre-application instructions >>

NEH Summer Stipends support individuals pursuing advanced research that is of

value to humanities scholars, general audiences, or both. Recipients produce articles, monographs, books, digital materials, archaeological site reports, translations, editions, or other scholarly resources. Summer stipends:

- are awarded to individual scholars;
- support continuous full-time work on a humanities project for two months; and
- support projects at any stage of development.

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NIH: BRAIN Initiative: Theories, Models and Methods for Analysis of Complex Data from the Brain (R01 Clinical Trial Not Allowed)

This funding opportunity announcement [RFA-EB-20-002] solicits the development of theories, computational models, and analytical tools to derive understanding of brain function from complex neuroscience data. Proposed projects could develop tools to integrate existing theories or formulate new theories; conceptual frameworks to organize or fuse data to infer general principles of brain function; multiscale / multiphysics models to generate new testable hypotheses to design / drive future experiments; new analytical methods to either support or refute a stated hypothesis about brain function. It is expected that the tools developed will be made widely available to the neuroscience research community for their use and modification. Investigative studies should be limited to model parameter estimation and / or validity testing of the tools being developed.

Deadline: September 14, 2021

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NIH: Bridges to the Baccalaureate Research Training Program (T34) - Limited Submission Program

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

NIH Bridges to the Baccalaureate : Notify RCA by 7/15/2020, 4:00 p.m. if you

are interested in submitting to this program.

The goal of the Bridges to the Baccalaureate Research Training Program [PAR-19-299] is to provide structured activities to prepare a diverse cohort of community college students to transfer to and complete a bachelor's degree in biomedical research fields. This funding opportunity announcement provides support to eligible, domestic institutions to develop and implement effective, evidence-based approaches to biomedical training and mentoring that will keep pace with the rapid evolution of the research enterprise. The NIH National Institute of General Medical Sciences (NIGMS) expects that the proposed research training programs will incorporate didactic, research, mentoring, and career development elements to prepare trainees to bridge from the community college and complete the bachelor's degree in biomedical fields.
The Bridges to Baccalaureate Research Training Program requires strong partnerships between community colleges (or two-year colleges) and four-year baccalaureate degree granting institutions. One partner must be an institution that offers the associate degree as the highest science degree. The other institution must be a college or university granting baccalaureate degrees in disciplines relevant to the biomedical sciences. Two different scenarios are anticipated for these partnerships: (1) one baccalaureate degree granting institution as the lead applicant institution partnering with one or more associate degree granting institutions, or (2) one associate degree granting institution as the lead applicant institution partnering with one or more baccalaureate degree granting institutions. An eligible applicant or partner institution may participate in more than one Bridges to the Baccalaureate Research Training Program partnership if the multiple partnerships are strongly justified by the potential to magnify the programs' and institutions' outcomes. However, an institution may be the lead in only one Bridges to Baccalaureate Research Training Program at one time. To reinforce the strong partnerships, the Bridges to Baccalaureate Research Training Program requires the participation of least one Program Director/Principal Investigator (PD/PI) from each partner institution. The program does not support single institutions offering both associate and baccalaureate degrees where graduates or transfers from the associate degree programs enter the baccalaureate programs, even if the students are moving to another department, school, or college.

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NSF: Condensed Matter and Materials Theory

The National Science Foundation (NSF) Condensed Matter and Materials Theory (CMMT) program (NSF 20-582) supports theoretical and computational materials research in the topical areas represented in the Division of Materials Research (DMR) Topical Materials Research Programs, which include: Condensed Matter Physics (CMP), Biomaterials (BMAT), Ceramics (CER), Electronic and Photonic Materials (EPM), Metals and Metallic Nanostructures (MMN), Polymers (POL), and Solid State and Materials Chemistry (SSMC). The CMMT program supports fundamental research that advances conceptual understanding of hard and soft materials, and materials-related phenomena; the development of associated analytical, computational, and data-centric techniques; and predictive materials-specific theory, simulation, and modeling for materials research. First-principles electronic structure, quantum many-body and field theories, statistical mechanics, classical and quantum Monte Carlo, and molecular dynamics, are among the methods used in the broad spectrum of research supported in CMMT. Research may encompass the advance of new paradigms in materials research, including emerging data-centric approaches utilizing data-analytics or machine learning. Computational efforts span from the level of workstations to advanced and high-performance scientific computing. Emphasis is on approaches that begin at the smallest appropriate length scale, such as electronic, atomic, molecular, nano-, micro-, and mesoscale, required to yield fundamental insight into material properties, processes, and behavior, to predict new materials and states of matter, and to reveal new materials phenomena. Approaches that span multiple scales of length and time may be required to advance fundamental understanding of materials properties and phenomena, particularly for polymeric materials and soft matter. Areas of recent interest include, but are not limited to: strongly correlated electron systems; active matter; topological phases; low-dimensional materials and systems; quantum and classical nonequilibrium phenomena, the latter including pattern formation, materials growth, microstructure evolution, fracture, and the jamming transition; gels; glasses; disordered materials, hard and soft; defects; high-temperature superconductivity; nanostructured materials and mesoscale phenomena; creation and manipulation of coherent quantum states; polymeric materials and soft condensed matter, biologically inspired materials, and research at the interface with biology.

CMMT encourages potentially transformative submissions at the frontiers of theoretical and computational materials research, which includes but is not limited to: i) advancing the understanding of emergent properties and phenomena of materials and condensed matter systems, ii) developing materials-specific prediction and advancing understanding of properties, phenomena, and emergent

states of matter associated with either hard or soft materials, iii) developing and exploring new paradigms including computational and data-enabled approaches to advance fundamental understanding of materials and materials related phenomena, or iv) fostering research at interfaces among subdisciplines represented in NSF DMR.

Proposals accepted anytime.

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NSF: Methodology, Measurement, and Statistics

The Methodology, Measurement, and Statistics (MMS) Program [NSF 19-575] is an interdisciplinary program in the Directorate for Social, Behavioral, and Economic Sciences that supports the development of innovative analytical and statistical methods and models for those sciences. MMS seeks proposals that are methodologically innovative, grounded in theory, and have potential utility for multiple fields within the social, behavioral, and economic sciences. As part of its larger portfolio, the MMS Program partners with a consortium of federal statistical agencies to support research proposals that further the production and use of official statistics.

The MMS Program provides support through a number of different funding mechanisms. The following mechanisms are addressed in this solicitation:

- regular research awards;
- awards for conferences and community-development activities;
- Doctoral Dissertation Research Improvement (DDRI) Grants;
- Research Experience for Undergraduates (REU) Supplements.

Deadline: August 27, 2020

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Russell Sage Foundation: Social Science Research Special Topics

The Russell Sage Foundation (RSF) has long supported social science research with the aim of improving social and living conditions in the United States. In response to the crises of 2020, RSF is dedicating its next funding cycle exclusively

to research that seeks to improve our understanding of these extraordinary times. The severe consequences of the Covid-19 pandemic, including its economic disruptions, and the recent mass protests to combat systemic racial inequality in policing and other institutions have reaffirmed the importance of social science research examining economic, political, racial, ethnic, generational, and social inequalities relevant to public policy and social change.

For its **August 5, 2020** deadline, RSF will only accept letters of inquiry relevant to one of RSF's core programs that address at least one of the following issues:

1. **Research on the Covid-19 pandemic and the resulting recession in the U.S.** Specifically, research that assesses the social, political, economic, and psychological causes and consequences of the pandemic, especially its effects on marginalized individuals and groups and on trust in government and other institutions. Our priorities do **not** include analyses of health outcomes or health behavior.
2. **Research focused on systemic racial inequality and/or the recent mass protests in the U.S.** Specifically, research that investigates the prevalence of racial disparities in policing and criminal justice and their social, political, economic, and psychological causes and consequences; the effects of the current social protest movement and mass mobilization against systemic discrimination; the nature of public attitudes and public policies regarding policing, criminal justice, and social welfare; and the effects of those attitudes in the current political environment.

For its subsequent, November 11, 2020, letter of inquiry deadline, RSF will return to accepting letters of inquiry in its three core programs that have and will continue to focus on many of the causes and consequences of the crises of 2020.

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Social Science Research Council: Covid-19 Rapid-Response Grants

The Social Science Research Council (SSRC) seeks proposals from across the social sciences and related fields that address the risks, opportunities, and challenges posed by public health surveillance stemming from the Covid-19 pandemic. SSRC specifically encourages proposals that interrogate the role the public and private sectors may play in mitigating or exacerbating the health crisis, the effects of which are already unevenly distributed.

The Covid-19 pandemic has already laid bare the vast differences in available infrastructure, long-term support, and economic security available to different segments of society. As we develop solutions that will necessarily marry state intervention with technological development—exposure notification, wearables, contact tracing, and the federation of varied forms of personal data, such as electronic health records, geolocation information, and consumer data—we must also pause to reflect on how choices made now will structure political, social, and public health risks and opportunities on the horizon. As societies expand efforts to conduct contact tracing and mass testing, or engage in rapid transitions to remote work and learning, it is imperative that social researchers ask critical questions and provide frameworks and methods that address these interventions with focused attention to issues of power, inequality, and social impact.

While new knowledge is urgently needed, in the conditions of the present moment many social research methodologies are either not possible or require adaptation in order to protect the health and safety of both researchers and research subjects. The Rapid-Response Grants will thus support innovative research projects that deploy remote research methods to shed light on both the short- and potential long-term implications of public health interventions for a range of rights, liberties, and public goods. Subjects may include, but are not limited to:

- Contact tracing and public health surveillance
- Voting access and rights amid “lockdowns” and widespread social distancing
- Disparities in the collection, representation, and use of health data
- The digital divide in remote work and learning, education, and public health
- Precarity of labor and work in the tech industry or gig economy
- Remote organizing, campaigning, and social movements
- The impact of predictive algorithms on the provision of social welfare and policing

These topics are illustrative. Applicants are welcome to propose others. Projects illuminating the experiences of historically marginalized people are especially encouraged, as are those that can constructively inform policy responses across communities and institutions. This program is open to researchers who hold a PhD in any social science discipline or related interdisciplinary field.

Proposals are accepted on a rolling basis; the first review period begins August 31, 2020.

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USDA: Monitoring Soil Health Impacts of CRP

The Conservation Reserve Program (CRP) is a Federally funded voluntary program that contracts with agricultural producers to convert marginal or environmentally sensitive cropland and pasture to a perennial cover of a mix of grasses, forbs, legumes, and/or trees for 10 to 15 years. Program participants receive annual payments, cost-share assistance, and sometimes additional incentives. CRP generates significant conservation benefits: The program enhances soil health and effectively eliminates soil erosion on each acre enrolled. The enrollments also impact water quality and quantity by intercepting sediment and nutrient losses from upland fields before they reach surface waters and contributing to aquifer recharge. CRP restores critical habitat, such as prairie, wetlands, and longleaf pine, supporting waterfowl, songbird, and pollinator populations, along with other wildlife species.

While the impact of CRP on soil health is acknowledged and may be considerable, it has not received the same attention to date as other benefits. Estimates of soil health benefits are neither available to fill out the comprehensive benefits picture of the program, nor to inform offer selection during the signup process so as to maximize program benefits.

This Notice of Funding Opportunity solicits proposals for an assessment project to address this data gap. The project involves monitoring soil health over multiple years on CRP enrollments across a range of stand ages, practices, plant diversity, and agronomic contexts.

Deadline: July 28, 2020

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Department of Energy Summer Webinar Series

This free webinar series will connect early- and growth-stage companies, accelerators and incubators, and university entrepreneurial scientists and engineers to the latest program initiatives and partnering opportunities from the Department of Energy (DOE). It will provide attendees with an opportunity to hear from DOE senior leaders and program managers, those who are the administrators and decision-makers for current and upcoming funding and partnering opportunities. All webinars are scheduled for 12pm (Noon) CT. *Learn more and*

register >>

- **July 9**: America's Seed Fund Powered by DOE's SBIR / STTR Programs
- **July 23**: See the Light - The National Syncrotron Light Source and Other Tools of Discovery
- **August 6**: Energy I-Corp for DOE's SBIR / STTR Programs
- **August 13**: The DOE Technology Commercialization Fund
- **August 20**: DOE and the Federal Lab Consortium - What's in it for you?
- **September 4**: DOE's Prize Competitions and Challenges
- **September 11**: The Laboratory Partnership Service
- **September 18**: Wells Fargo Innovation Incubator (IN2) and the NREL Industry Growth Forum

Past webinars are available to watch on-demand.

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SBIR / STTR Preparation Webinar

Commercialization Planning for SBIR / STTR Proposals
Tuesday, July 28, 2020 - 8:30am-1:00pm
Learn the essential components of an effective plan, how to find and use cost-effective market research to direct your efforts, which supporting documents you will need, and other tips for writing a winning plan.
Learn more and register >>

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DEPSCoR DoD Day at the University of South Dakota

On September 10, 2020, the University of South Dakota will host DEPSCoR DoD Day, presented by the Department of Defense. Breakfast, lunch and refreshments will be provided. Program officers from the Army, Navy, Air Force and other DoD representatives will participate in the meeting, which will cover the following topics:

- how to work with the DoD, especially ARO, ONR, AFOSR;
- how to make connections with DoD program officers;
- how to pursue funding opportunities specific to DEPSCoR;
- how to pursue other programs within the Basic Research Office.

There is also a Speed Networking Opportunity with DoD Program Officers.

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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.