NDSU OFFICE OF RESEARCH AND CREATIVE ACTIVITY

RCA UPDATE

July 19, 2021

Undergraduate research programs give students opportunity to work with NDSU researchers

This summer, NDSU has welcomed undergraduate students from a broad cross-section of the country to conduct research with faculty in their labs and the field as participants in various undergraduate research experiences. The Research and Creative Activity Office (RCA) has implemented its first summer undergraduate research program, and multiple other summer research experiences are taking place in NDSU departments across campus. Through these programs, NDSU researchers are mentoring more than 200 students from around the world.

Read more >>

Undergraduate Research Poster Sessions

High school and undergraduate students who are participating in summer research experiences at NDSU will be presenting their research results during public poster sessions. You are invited to attend and learn more about their exciting work while providing them a positive experience in sharing their unique stories.

GREEN CHEMISTRY REU AND PICNICS POSTER SESSION

Thursday, July 29 / 1-4 p.m.

NDSU Memorial Union, Prairie Rose Room

Add this event to your calendar >>

RCA SUMMER UNDERGRADUATE RESEARCH PROGRAM POSTER SESSION

Tuesday, August 3 / 9-11:30 a.m.

Alumni Center, Diederich Atrium

- **9-10 a.m. / Remarks and certificate presentation**
  - Ying Huang, Ph.D., *civil and environmental engineering and RCA undergraduate research faculty fellow*
  - Jane Schuh, Ph.D., *vice president of research and creative activity*
- **10-11:30 a.m. / Poster session**

Add this event to your calendar >>

Three Join RCA Team

The Office of Research and Creative Activity welcomes Amanda Wilkinson, McKenna Tysdal, and Josh Babicz to the team. Amanda will serve as an NDSU research integrity and compliance administrator and McKenna is the new business development and licensing administrator. Josh has been working as a summer intern on the research informatics team.

Amanda has worked at NDSU since 2013 and served most recently as a research specialist in plant sciences. She earned a BS in forensics with a minor in chemistry at University of Central Florida and then worked at the University of Michigan's biochemistry lab as research assistant and manager. In her new role, Amanda will be responsible for the institutional biosafety committee (IBC) operations and conflict of interest (COI) reviews at NDSU.

McKenna is the new business development and licensing administrator. Previously, she worked with the RCA research integrity and compliance group while earning her BS in business administration at NDSU. Most recently, McKenna has worked in contract administration and licensing / permitting in the hospitality industry. In her role, McKenna will be responsible for receipt and recording of invention disclosures, federal compliance for reporting, and tracking of inventions developed with federal funds.

Originally from Barrington, Illinois, Josh is a management information systems student at NDSU. As a starting tight end for the Bison football team, Josh received the Missouri Valley Football Conference Commissioner's Academic Excellence Award in 2018 and was on the MVFC Honor Roll for 2017 and 2018. He plans to begin his MBA this fall and then hopes to either continue his football career or pursue a career in data analytics or IT.

During his internship this summer, Josh has worked on the PowerBI reports shared by RCA. RCA research informatics analyst Christy Gallagher-Lein, commented, "Josh has been a huge asset. His fresh, innovative ideas and up-to-date knowledge are proving to be invaluable."

Upcoming Virtual Opportunities

- **July 20: Webinar: Introduction to the Agricultural Genome to Phenome Initiative** *Learn more >>*
- **July 21: Webinar: Powering the Future – Challenges and Opportunities in Creating Next-Generation Battery Technologies** *Learn more >>*
- **July 28-29: NSF Convergence Accelerator Expo** *Learn more >>*
- **August 16-20: Virtual Conference: National Center for Education Statistics** *Learn more >>*

eRA Commons will be transitioning to the use of Login.gov to access eRA Commons, ASSIST, IAR and Commons Mobile by September 15, 2021.

After this time, users will not be able to access eRA models unless a **Login.gov** account is created and used with the required two-step verification process. All eRA users should plan to create the Login.gov account before this date. Resources are available to assist in the process in the form of a video or a tutorial.

July Issue: Research Development & Grant Writing News

The June issue of *Research Development and Grant Writing News* is now available to view. Use your NDSU login information to access this resource. Various topics are covered, including:

- When Proposal Writing Rather than Content Can Sink a Proposal;
- Because a Management Plan Is Not Required Does Not Mean It Is Not Necessary;

- NSF Funding at the Interface of Computer Science and the Social & Behavioral Sciences;
- Strategies for Proposal Resubmissions; and
- Understanding Plagiarism & Other Research Misconduct to Avoid in the Research Narrative.

JUMP into STEM University Student Competition

JUMP into STEM, a program provided through a collaboration between the Department of Energy (DOE) Building Technologies Office, Oak Ridge National Laboratory (ORNL), the National Renewable Energy Laboratory (NREL), and the Pacific Northwest National Laboratory (PNNL), **is seeking university and college professors to join the competition's Professor Team and integrate the JUMP into STEM challenges into their Fall 2021 class coursework.**

JUMP into STEM is an online university and college student competition that is inspiring the next generation of building scientists and encouraging diversity in the field by attracting a variety of majors and backgrounds. Any undergraduate or graduate student affiliated with a U.S. academic institution is eligible. Student teams submit written responses to challenges developed by the program's Professor Team. Three new challenges impacting the current state of building science are released each fall.

Challenge-level winners are matched with mentors in their field of interest. Eligible teams are then invited to present at the final event, typically in January every year. Final event student winners receive a 10-week paid summer internship at NREL, ORNL, or PNNL.

Members of the Professor Team are a critical link connecting students with the competition. They help shape the competition's challenges to best fit with their curriculum requirements and are invited to monthly meetings to receive competition updates and discuss best practices with the professor team network.

This is an opportunity to meet service-related metrics, form a connection with the U.S. Department of Energy and its National Laboratories, and make a meaningful

impact on building science education. Learn more about joining JUMP into STEM's Professor Team here.

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FUNDING OPPORTUNITIES

EVENTS

Upcoming Limited Submission Program Deadlines

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. Email notifications of interest to ndsu.researchdev@ndsu.edu.

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

- NIH: Faculty Institutional Recruitment for Sustainable Transformation (FIRST) Program: FIRST Cohort
  Notification Deadline: July 28, 2021

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

Looking for more funding opportunities?

On January 1, NDSU transitioned to a new funding opportunity database subscription: SPIN by InfoEd Global. SPIN is free for current NDSU faculty, staff, and students.

For more information, visit the SPIN page on the RCA website. If you have questions, please contact ndsu.researchdev@ndsu.edu.

DARPA: Environmental Microbes as a BioEngineering Resource

The Environmental Microbes as a BioEngineering Resource (EMBER) program [HR001121S0035] aims to develop novel, bio-based technologies to overcome key challenges facing domestic supply of Rare Earth Elements (REEs) critical to the U.S. and Department of Defense (DoD). The EMBER program will leverage the diversity, specificity, and customizability of environmental microbiology to enable new biomining methods for separation, purification, and conversion of REEs into manufacturing-ready forms. Microbes (and / or biomolecules), including those from extreme or metal-rich environments, can be biologically engineered or adapted to bind, assimilate, and manipulate individual REEs. These biological components, once developed, may be assembled into an in-line separation, purification, and recovery workflow resulting in individual, purified REEs. Scalability of EMBER's approach will be demonstrated with proof-of-concept, pilot scale studies aligned with existing mining / waste treatment infrastructure.

Abstract deadline: August 16, 2021

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DoD: Science & Technology for Advanced Manufacturing Projects

The Department of Defense Manufacturing Technology Program (ManTech) is the Defense Department's investment mechanism for staying at the forefront of defense-essential manufacturing capability. The Program develops technologies and processes for the affordable and timely production and sustainment of defense systems.

The focus of this Broad Agency Announcement (BAA) [N00014-21-S-B002] is primarily on projects that continue to advance the systems engineering approach needed for the design, fabrication, and manufacture of structural components to address challenges in system weight, performance, affordability, and / or survivability. The foundation of this approach should include the integration of materials information, captured in computational tools, with engineering product performance analysis and manufacturing-process simulation termed commonly as Integrated Computational Materials Engineering (ICME). From this foundation it is expected the integration of manufacturing process information and product performance information utilizing the full range of engineering and analytical tools, processes, and principles to improve efficiency and effectiveness of their integrated approach. The intent is to bring together materials designers, materials

suppliers, product designers, and manufacturers to collaborate on the design, production, and commercialization of novel affordable, manufacturable systems. Projects may include basic and applied research, technology and component development, and prototyping; but may also focus on manufacturing supply-chain technical support and integration, workforce development, and manufacturing education.

Prior to preparing proposals, potential offerors are encouraged strongly to contact the ONR technical point of contact (POC) identified for this program.

Deadline: October 30, 2021

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DOE: Advanced Building Construction

The U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) announced its intent to issue a Funding Opportunity Announcement (FOA) on behalf of the Building Technologies Office (BTO) called "Advanced Building Construction (ABC) – 2021." This FOA would fund research intended to accelerate the renovation and construction of affordable, appealing, and energy-efficient buildings, contributing to a carbon-neutral building economy in America by 2050.

This FOA, in support of BTO's Advanced Building Construction Initiative, will seek to accomplish this by funding R&D projects that would benefit all Americans–including underserved communities. ABC seeks innovations that:

- result in high performance, low carbon buildings with lower energy bills, improved indoor air quality, improved comfort, and reduced maintenance;
- deliver faster building renovations with less disruption to building occupants; and,
- incorporate modernized construction and manufacturing techniques to drive down costs and scale production of both low carbon new buildings and retrofit components.

Read more about this Notice of Intent here.

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ND EPSCoR Opportunities

The North Dakota Established Program to Stimulate Competitive Research (ND EPSCoR) has two open requests for proposals:

Emerging Areas Seed Awards: ND EPSCoR seeks to provide emerging areas seed awards of up to $25,000 to researchers from the NSF EPSCoR RII Track-1 New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES) participating institutions in areas of emerging high impact and transformative research related to the Center for Cellular Biointerfaces in Science and Engineering (CCBSE). Eligible applicants are not currently associated with the 2020-2025 ND-ACES cooperative agreement and did not receive a 2021 ND-ACES emerging seed award. Please see the Request For Applications for details.
Application Deadline: Noon, September 1, 2021

ND NASA EPSCoR Supplemental Project Funding (NDSU Only): the goal of NASA EPSCoR, an EPSCoR-like program, is to provide seed funding that will enable jurisdictions / states to develop an academic research enterprise directed toward long-term, self-sustaining, nationally competitive capabilities in aerospace and aerospace-related research. NASA EPSCoR has the following objectives:

- Contribute to and promote the development of research infrastructure in EPSCoR jurisdictions in areas of strategic importance to the NASA mission.
- Improve the capabilities of the jurisdictions to gain support from sources outside the NASA EPSCoR program.
- Develop partnerships between NASA research assets, industry, and EPSCoR jurisdictions' academic institutions.
- Contribute to the overall research infrastructure, science and technology capabilities, higher education, and / or economic development of the jurisdiction.

Please see the Request for Proposals for details.
Deadline: Noon on July 29, 2021

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NIH: Aging Research in Animals - Promoting Rigorous Research on Behavioral and Social Processes (R61/R33 Clinical Trial Not Allowed)

The overarching objective of this funding opportunity announcement (FOA) [RFA-AG-22-015] is to develop and strengthen animal models for behavioral and social research in the interest of furthering the mechanistic understanding of how social and physical environmental factors contribute to aging processes and the etiology and progression of age-related conditions and diseases. With the explicit two-fold goal of identifying socio-environmental sources of aging processes and advancing the integration of behavioral, social, and environmental measures into biological hallmarks of aging, this FOA invites R61/R33 phased innovation applications that propose to develop and test behavioral and social methods, tools, and measures in:

1. research on the natural history of aging in populations of wild animals to increase the understanding of the complex interplay of social and environmental factors which affect individual differences in aging trajectories and health outcomes; and
2. basic and applied research in captive animals that can improve the validity and value of animal models for basic and translational research.

Deadline: October 20, 2021

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NIH: Faculty Institutional Recruitment for Sustainable Transformation (FIRST) Program: FIRST Cohort (U54 Clinical Trial Optional) – 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 FIRST : Notify RCA **by 07/28/2021, 4:00 p.m. if you are interested in submitting to this program.**

The purpose of the FIRST Cohort [RFA-RM-21-025] is to transform culture at NIH-funded extramural institutions by building a self-reinforcing community of scientists committed to diversity and inclusive excellence. Implementing and sustaining

cultures of inclusive excellence within the program has the potential to be transformational for biomedical research at the awardee institutions and beyond. This community will be built through recruitment of faculty who are competitive for an advertised research tenure-track or equivalent faculty position (positions must be at the Assistant Professor (or equivalent) level), have not held a position at this level, and have demonstrated strong commitment to promoting diversity and inclusive excellence.

The overall goals and specific measurable objectives that the program expects FIRST Cohort awardees to accomplish are:

Goal 1: Demonstrate institutional support and develop or modify a strategic plan with specific goals and strategies, interventions, and organizational policies that will be implemented to achieve significant systemic and sustainable institutional culture change over baseline toward inclusive excellence (at the faculty, department, and institution level). FIRST Cohort awardees are also expected to develop an evaluation plan to assess the impact on their institution of action taken toward FIRST program goals.

Goal 2: Conduct recruitment activities for new faculty, outline institutional commitment, and develop recruitment committees based on past interests and commitments to diversity, equity, and inclusion. FIRST Cohort awardees are also expected to establish a supportive environment for new faculty.

Goal 3: Develop strategies to establish individual research and career development plans and mentorship and sponsorship plans for all new faculty hired under this award. The applicants must describe how the program will reduce isolation, increase community building, foster career development, and ensure retention of the new faculty.

LIMITED SUBMISSION: Only one application per institution is allowed.

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NIH: Omnibus Solicitations for the SBIR / STTR Grant Programs

The National Institutes of Health has released the omnibus solicitations for the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Grant Programs.

- PA-21-259: Parent SBIR [R43/R44] – Clinical Trial Not Allowed
- PA-21-260: Parent SBIR [R43/R44] – Clinical Required
- PA-21-262: Parent STTR [R41/R42] – Clinical Trial Not Allowed
- PA-21-261: Parent STTR [R41/R42] – Clinical Trial Required

Standard deadlines apply; the first deadline is September 5, 2021.

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NSF: Advanced Technological Education

With a focus on two-year Institutions of Higher Education (IHEs), the Advanced Technological Education (ATE) program [NSF 21-598] supports the education of technicians for the high-technology fields that drive our nation's economy. The program involves partnerships between academic institutions (grades 7-12, IHEs), industry, and economic development agencies to promote improvement in the education of science and engineering technicians at the undergraduate and secondary institution school levels. The ATE program supports curriculum development; professional development of college faculty and secondary school teachers; career pathways; and other activities. The program invites applied research proposals that advance the knowledge base related to technician education. It is required that projects be faculty driven and that courses and programs are credit bearing, although materials developed may also be used for incumbent worker education.

NSF recommends that two-year IHEs serve as the fiscal lead on proposals to this program, with four-year IHEs being sub-awardees. When a four-year IHE submits as the fiscal lead, then two-year IHE faculty must be PI or Co-PIs.

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NSF: Advancing Informal STEM Learning

The Advancing Informal STEM Learning (AISL) program [NSF 21-599] seeks to advance new approaches to and evidence-based understanding of the design and development of STEM learning opportunities for the public in informal environments; provide multiple pathways for broadening access to and engagement in STEM learning experiences; advance innovative research on and assessment of STEM learning in informal environments; and engage the public of all ages in learning STEM in informal environments.

The AISL program supports six types of projects:

1. Pilots and Feasibility Studies,
2. Research in Service to Practice,
3. Innovations in Development,
4. Broad Implementation,
5. Literature Reviews, Syntheses, or Meta-Analyses, and
6. Conferences.

Deadline: January 18, 2022

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NSF: Topical Materials Research Programs

Research supported by the Division of Materials Research (DMR) focuses on advancing the fundamental understanding of materials, materials discovery, design, synthesis, characterization, properties, and materials-related phenomena. DMR awards enable understanding of the electronic, atomic, and molecular structures, mechanisms, and processes that govern nanoscale to macroscale morphology and properties; manipulation and control of these properties; discovery of emerging phenomena of matter and materials; and creation of novel design, synthesis, and processing strategies that lead to new materials with unique characteristics. These discoveries and advancements transcend traditional scientific and engineering disciplines. DMR supports research and education activities in the United States through funding of individual investigators, teams, centers, facilities, and instrumentation. Projects supported by DMR are not only essential for the development of future technologies and industries that address societal needs, but also for the preparation of the next generation of materials researchers.

This solicitation [NSF 21-600] applies to seven DMR Topical Materials Research Programs (TMRPs):

1. Biomaterials (BMAT),
2. Ceramics (CER),
3. Condensed Matter Physics (CMP),
4. Electronic and Photonic Materials (EPM),
5. Metals and Metallic Nanostructures (MMN),
6. Polymers (POL), and
7. Solid State and Materials Chemistry (SSMC).

The Condensed Matter and Materials Theory (CMMT) program has its own solicitation. Applicants to CMMT must apply through solicitation NSF 20-582.

Proposals accepted at any time AFTER October 15, 2021.

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Robert Wood Johnson Foundation: Building a Culture of Health

The Robert Wood Johnson Foundation has two open calls for proposals related to building a Culture of Health:

- Evidence for Action: Investigator-Initiated Research to Build a Culture of Health
- Pioneering Ideas: Exploring the Future to Build a Culture of Health

A Culture of Health is broadly defined as one in which good health and well-being flourish across geographic, demographic, and social sectors; public and private decision-making is guided by the goal of fostering equitable communities; and everyone has the opportunity to make choices that lead to healthy lifestyles.

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Webinar: Introduction to the Agricultural Genome to Phenome Initiative

Tuesday, July 20, 2021 / 12:00-1:00pm

The Government-University-Industry Research Roundtable (GUIRR) will host a webinar on the Agricultural Genome to Phenome Initiative (AG2PI), supported by USDA's National

Institute of Food and Agriculture. The program aims to assemble a transdisciplinary research community of scientists from crop and livestock sciences, genetics, genomics, computational and data sciences, and engineering to better understand, predict, and develop phenotypes for agricultural products in the name of improving the efficiency and resilience of U.S. agriculture.

During this webinar, Patrick Schnable, Distinguished Professor at Iowa State University (ISU), Director of ISU's Plant Sciences Institute, and the PI for AG2PI, will discuss the priorities of the initiative, the ways in which it will develop and foster connection across communities of practice, and how to get involved.

There is no cost to this webinar, **but registration is required.** A confirmation email will be issued prior to the event containing the webinar URL.

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Webinar: Powering the Future – Challenges and Opportunities in Creating Next-Generation Battery Technologies

Wednesday, July 21, 2021 / 11:00am-12:00pm

During this free webinar, the speakers will :

- Lay out the current challenges for creating cheap, reliable battery technologies for the future;
- Describe how new polymer technologies can address many of the challenges found with today's Li-ion batteries;
- Outline how recent breakthroughs in materials science are enabling greater optimization of battery requirements and the production of more earth-friendly, portable energy sources.

Register to attend >>

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NSF Convergence Accelerator Virtual Expo

July 28-29, 2021

The virtual Convergence Accelerator Expo is an opportunity to see unique use-inspired research solutions funded by the NSF Convergence Accelerator. To deliver tangible

solutions that have a nation-wide societal impact and at a faster pace, the NSF Convergence Accelerator is designed to leverage a convergence approach to transition basic research and discovery into practice. Using innovation processes like human-centered design, user discovery, and team science; and integration of a multidisciplinary approach, NSF is making investments to solve high-impact societal challenges through use-inspired convergence research.

During the event, you will have the opportunity to connect with funded research teams and see live solution demos every 15 minutes across five research tracks, as well as network with other researchers, innovators, and business and technical practitioners from academia, industry, government, non-profit, and other communities of practice.

Featured Research Track Topics include:

- AI-Driven Data Sharing & Modeling
- Future of Work
- Open Knowledge Networks
- Quantum Technology
- Special Topic: EcoManufacturing

To register for Expo 2021 visit, nsf-ca.vfairs.com. Registration is complimentary.

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Virtual Conference: National Center for Education Statistics

August 16-20, 2021

Registration is now open for the 2021 NCES STATS-DC Data Conference, hosted by the National Center for Education Statistics (NCES). This virtual conference will be held August 16-20, 2021, and is free and open to the public. The theme of this year's conference is, "All Data on Deck! Using Data to Improve Education Through the Pandemic."

For more information, including information about the agenda, visit the registration page: https://cvent.me/BQOzZb.

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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.