NDSU OFFICE OF RESEARCH AND CREATIVE ACTIVITY

RCA UPDATE

March 9, 2020

Meet NDSU's New Assistant Professors

Jessica Vold, Ph.D.

Mechanical Engineering

What are your primary research and scholarly interests?
I have a very unique position as I serve the entire College of Engineering to encourage Entrepreneurship and Innovation within our students, faculty, and staff. I work to understand how students benefit from an entrepreneurial mindset and how we incorporate innovative thinking into everyday engineering education. I also conduct scientific research focused on advanced materials for additive manufacturing, aerospace applications, and biobased materials.

Where are you from and where did you pursue your education?
I spent most of my childhood in rural Ohio and completed high school in Chaska, MN. My bachelors degree is in Aerospace Engineering from the University of Minnesota - Twin Cities. My master's degree and PhD are from the Mechanical Engineering department here at NDSU.

What excites you about NDSU?
The sense of community both within campus and in the surrounding FM

area is very exciting. The pride and support that is shown when discussing endeavors of NDSU students, faculty, or staff is infectious. As the Engineering Entrepreneurship and Innovation faculty member there is nothing more exciting than to see the support of entrepreneurs and innovators in the area.

What motivates you?
Doing the unexpected.

Learn more about Jessica >>

NDSU EXPLORE Annual Showcase

Wednesday, April 22 | 9-11:15am | Memorial Union

Registration is open for the 2020 NDSU EXPLORE Showcase of Undergraduate Research and Creative Activity.
Encourage your undergraduate students to present their research or creative work at this annual showcase event.

Learn more:
www.ndsu.edu/research/EXPLORE

AWARD REPORT

Congratulations to all award recipients from January 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 >>

Updates from the NDSU Institutional Animal Care and Use Committee (IACUC)

- **Protocol Review Process Update**: The NDSU IACUC has updated the IACUC Review of Proposed and Continuing Animal Use Guiding Principle. Protocol review processes have changed. Please reference the Guiding Principle for details. For questions regarding protocol review processes, please contact Josie Hayden (josie.hayden@ndsu.edu) or Dr. Neil Dyer (neil.dyer@ndsu.edu).

- **March 2020 IACUC Meeting Date Change**: The March IACUC Meeting date has been rescheduled to March 26, 2020. All IACUC meeting information can be found on the IACUC website.

- **REMINDER**: Animal procurement and animal movement at NDSU must be communicated to the Attending Veterinarian by completing the Animal Acquisition Form. Information regarding animal procurement can be found in the Animal Procurement Guiding Principle.

The Higher Education Research and Development Expenditures Survey numbers (HERD) for fiscal year 2018 are now available on the research webpage.

Invitation to Open House: NDSU Research & Technology Park Innovation Studio

The NDSU Research & Technology Park invites you to learn about the NDSU Innovation Studio - a makerspace for students and local entrepreneurs. Guests include U.S. Assistant Secretary of Commerce for

Economic Development John Fleming; U.S. Senator John Hoeven; U.S. Senator Kevin Cramer; U.S. Congressman Kelly Armstrong; and N.D. Lieutenant Governor Brent Sanford. Midco will also make a special announcement.

Tuesday, March 17, 2020 - 2:00 pm
NDSU Research & Technology Park
1854 NDSU Research Circle North, Fargo

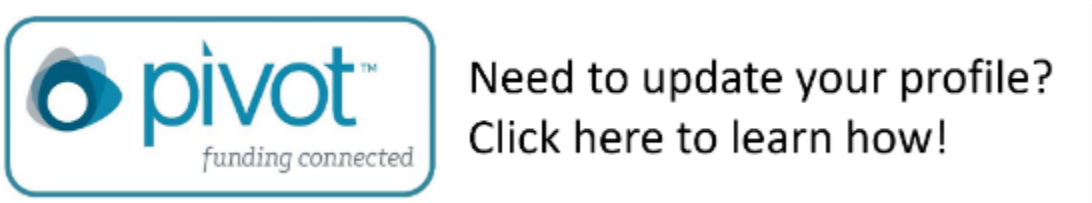
For more information, contact Brian Kalk [brian.kalk@ndsurtp.com] or Jan Sobolik [jan.sobolik@ndsurtp.com].

CONTENTS

FUNDING OPPORTUNITIES

EVENTS & NOTICES

- Great Plains Combinatorics Conference - NDSU



DOD CDMRP: Peer Reviewed Medical Research Program

The Congressionally Directed Medical Research Program (CDMRP) Peer Reviewed Medical Research Program (PRMRP) has recently released several funding opportunity announcements. There are more than 40 FY20 PRMRP Topic areas, including arthritis, diabetes, eating disorders, pancreatitis, and sustained release drug delivery. A complete list of topic areas is available in the individual solicitations linked below.

The Investigator-Initiated Research Award is designed to support research with the potential to yield highly impactful data that could lead to critical discoveries or major advancements. The application must clearly demonstrate the project's potential short-term and long-term outcome(s)/product(s) (knowledge and/or materiel) and how they will impact a critical problem or question in the field of research and/or patient care in the FY20 PRMRP Topic Area(s) addressed.

Research projects may focus on any phase of research from basic laboratory research through translational research, including preclinical studies in animal models and human subjects, as well as correlative studies associated with an existing clinical trial. Research involving human subjects and human anatomical substances is permitted; however, this award may not be used to conduct clinical trials.

The Technology/Therapeutic Development Award is a product-driven award mechanism intended to provide support for the translation of promising preclinical findings into products for clinical applications, including prevention, detection, diagnosis, treatment, or quality of life, in at least one of the Congressionally directed FY20 PRMRP Topic Areas. The product(s) to be developed may be a tangible item such as a pharmacologic agent (drugs or biologics) or device, or a knowledge-based product. PIs are encouraged to develop relationships with industry and/or other funding agencies to facilitate moving the product into the next phase of development.

The Discovery Award is to support innovative, non-incremental, high-risk/potentially high-reward research that will provide new insights, paradigms, technologies, or applications. Studies supported by this award are expected to lay the groundwork for future avenues of scientific investigation. The proposed research project should include a well-formulated, testable hypothesis based on a sound scientific rationale and study design. Innovation is the most important review criterion. Innovative research may introduce a new paradigm, look at existing problems from new perspectives, or exhibit other highly creative qualities. Research that represents an incremental advancement on previously published work is not considered innovative. Absence of preliminary data will not negatively affect scientific or programmatic review of the application. Early career investigators, including postdoctoral fellows (or equivalent), are encouraged to be named by the organization as the Principal Investigator (PI) on the application.

^^

NIH: Research Infrastructure Development for Interdisciplinary Aging Studies (R21/R33 - Clinical Trial Optional)

This Funding Opportunity Announcement (FOA / PAR-20-070) invites applications that propose to develop novel research infrastructure that will advance the science of aging in specific areas requiring interdisciplinary partnerships or collaborations. This FOA will use the NIH Phased Innovation Award (R21/R33) mechanism to provide up to 2 years of R21 support for initial developmental activities, and up to 3 years of R33 support for expanded activities. Through this award, investigators will develop a sustainable research infrastructure to support projects that address key interdisciplinary aging research questions.

^^

NSF DCL: Coronavirus Disease 2019 (COVID-19)

With this Dear Colleague Letter (DCL), the National Science Foundation (NSF) is accepting proposals to conduct non-medical, non-clinical-care research that can be used immediately to explore how to model and understand the spread of COVID-19, to inform and educate about the science of virus transmission and prevention, and to encourage the development of processes and actions to address this global challenge.

NSF encourages the research community to respond to this challenge through existing funding opportunities. In addition, we invite researchers to use the Rapid Response Research (RAPID) funding mechanism, which allows NSF to receive and review proposals having a severe urgency with regard to availability of or access to data, facilities or specialized equipment as well as quick-response research on natural or anthropogenic disasters and similar unanticipated events. Requests for RAPID proposals may be for up to $200K and up to one year in duration. Well-justified proposals that exceed these limits may be entertained. All questions should be directed either to a program officer managing an NSF program with which the research would be aligned or to rapid-covid19@nsf.gov.

^^

NSF DCL: Announcing Creation of the Foundational Research in Robotics Program

With this Dear Colleague Letter (DCL), the National Science Foundation (NSF) announces the creation of the Foundational Research in Robotics (Robotics) program as a program jointly managed by the Directorates for Engineering (ENG) and Computer and Information Science and Engineering (CISE).

The Robotics program supports research on robotic systems that exhibit significant levels of both computational capability and physical complexity. For the purposes of this program, a robot is defined as intelligence embodied in an engineered construct, with the ability to process information, sense, and move within or substantially alter its working environment. Here intelligence includes a broad class of methods that enable a robot to solve problems or make contextually appropriate decisions. Research proposals are welcomed that consider inextricably interwoven questions of intelligence, computation, and embodiment. Projects may also focus on a distinct aspect of intelligence, computation, and/or embodiment, as long as the proposed research is clearly justified in the context of a class of robots.

The goal of the Robotics program is to erase artificial disciplinary boundaries and provide a single home for foundational research in robotics. Robotics is a deeply interdisciplinary field, and proposals are encouraged across the full range of fundamental engineering and computer science research challenges arising in robotics. All proposals should convincingly explain how a successful outcome will enable transformative new robot functionality or substantially enhance existing robot functionality.

The Robotics program will accept CAREER proposals, subject to the CAREER Solicitation deadlines and other requirements (www.nsf.gov/career), starting in July 2020.

Starting August 1, 2020, the Robotics program will accept unsolicited proposals at any time. Prospective investigators are encouraged to discuss topic suitability and project scope with one of the Program Officers prior to proposal preparation.

^^

NSF DCL: Critical Aspects of Sustainability: Micro- and Nanoplastics

This Dear Colleague Letter (DCL) encourages the submission of proposals that tackle some of the fundamental scientific questions underlying micro- and nanoplastic characterization, behavior, and reactivity in the environment (including animal and human health), as well as their elimination from land and water systems.

Several Directorates/Offices/Divisions participate in this DCL and welcome the submission of proposals on this topic, though each division will only accept proposals of a certain type, as described in the DCL. Participants include:

- MPS: Division of Chemistry
- MPS: Division of Materials Research
- ENG: Chemical, Bioengineering, Environmental and Transport Systems Division
- ENG: Division of Civil, Mechanical, and Manufacturing Innovation
- GEO: Division of Earth Sciences
- GEO: Office of Polar Programs, Section for Antarctic Sciences
- BIO: Division of Environmental Biology
- EHR: Division of Research on Learning in Formal and Informal Settings
- EHR: Division of Undergraduate Education
- Office of International Science and Engineering

^^

NSF: Future Manufacturing

The goal of this solicitation [NSF 20-522] is to support fundamental research and education of a future workforce that will enable Future Manufacturing: manufacturing that either does not exist today or exists only at such small scales that it is not viable. Future Manufacturing will require the design and deployment of diverse new technologies for synthesis and sensing, and new algorithms for manufacturing new materials, chemicals, devices, components and systems. It will require new advances in artificial intelligence and machine learning, new cyber infrastructure, new approaches for mathematical and computational modeling, new dynamics and control methodologies, new ways to integrate systems biology, synthetic biology and bioprocessing, and new ways to influence the economy, workforce, human behavior, and society.

Among this array of technologies and potential research subjects, three thrust areas have been identified for support in FY 2020 under this solicitation:

- **Future Cyber Manufacturing Research**,
- **Future Eco Manufacturing Research**, and
- **Future Biomanufacturing Research**.

This solicitation will support the following three award tracks:

- **Future Manufacturing Research Grants (FMRG)** - Two types of awards will be supported in FY 2020:
  Type I: $500,000 to $750,000 per year for up to five years,
  Type II: $750,000 to $2,000,000 per year for up to five years;
- **Future Manufacturing Seed Grants (FMSG)** - Awards in this track will provide support for up to two years at a level not to exceed $250,000 per year; and
- **Future Manufacturing Networks (FMNet)** - Awards in this track will provide up to five years of support at a total amount of $500,000.

Interdisciplinary teams commensurate with the scope of the proposed research, education plan, and budget are required. Proposals must include demonstrated expertise among the team members to carry out the proposed research, education, and workforce development activities. The use of a convergence approach is expected.

An investigator may be a PI, co-PI or Senior Personnel on only one proposal in each track (FMRG, FMSG, and FMNet).

Letter of Intent Deadline: April 10, 2020
Full Proposal Deadline: June 5, 2020

^^

Spencer Foundation: Small Research Grants in Education

The Spencer Foundation Small Research Grants Program supports education research projects that will contribute to the improvement of education, broadly

conceived.

This program is "field-initiated" in that proposal submissions are not in response to a specific request for a particular research topic, discipline, design, or method. The goal for this program is to support rigorous, intellectually ambitious and technically sound research. The Foundation recognizes that learning occurs across the life course as well as across settings--from the classroom to the workplace, to family and community contexts and even onto the playing field--any of which may, in the right circumstance, provide the basis for rewarding study that makes significant contributions to the field. We value work that fosters creative and open-minded scholarship, engages in deep inquiry, and examines robust questions related to education. To this end, this program supports proposals from multiple disciplinary and methodological perspectives, both domestically and internationally, from scholars at various stages in their career. Proposals are anticipated to span a wide range of topics and disciplines that innovatively investigate questions central to education, including for example education, anthropology, philosophy, psychology, sociology, economics, history, or neuroscience, amongst others.

The Foundation encourages rigorous research designs that sensibly investigate the focal phenomena with the appropriate partners and expertise. The Foundation expects and welcomes methodological diversity in answering pressing questions, and therefore is open to projects that utilize a wide array of research methods including quantitative, qualitative, mixed-methods, ethnographies, design-based research, participatory methods, and historical research, to name a few.

Deadline: July 1, 2020, 12pm (noon)

^^

USDA-NIFA-AFRI: Education and Workforce Development

The Agriculture and Food Research Initiative (AFRI) is America’s flagship competitive grants program that provides funding for fundamental and applied research, education, and extension projects in the food and agricultural sciences. The Agriculture and Food Research Initiative (AFRI) - Education and

Workforce Development (EWD) program focuses on developing the next generation of research, education, and extension professionals in the food and agricultural sciences. In FY 2020, the National Institute of Food and Agriculture (NIFA) requests applications for the AFRI's EWD Program areas to support:

- professional development opportunities for K-14 educational professionals;
- workforce training at community, junior, and technical colleges;
- training of undergraduate students in research and extension; and
- fellowships for predoctoral candidates and postdoctoral scholars.

The program has four overarching goals:

- Growing Agricultural Literacy and Workforce Development for the Future;
- Training or Retraining of Agricultural Workers;
- Developing Pathways;
- Advancing Science.

- *Deadlines vary by program area.*

^^

Proposal Development Program

The purpose of the Proposal Development Program is to provide a professional development opportunity for NDSU faculty new to proposal writing or those seeking a refresher to hone proposal writing skills and knowledge in funding agency opportunities.

The Proposal Development Program will cover topics ranging from tips for writing proposals to specific agencies to peer review and developing collaborations. An experienced grant consultant, faculty, and research support staff will lead the sessions. Register soon to reserve your spot!

Spring 2020 Sessions
Memorial Union Badlands Room | 12:30pm-1:30pm

- March 10 - Meeting Expectations of Funding Agencies: Foundations and NIH
- March 31 - Meeting Expectations of Funding Agencies: USDA
- April 14 - Developing Collaborations

Register to Participate >>

^^

SBIR / STTR Workshop: Commercialization Planning

The University of North Dakota Center for Innovation continues its partnership with SHARPHub to bring key resources to Life-Science Innovators. The next SBIR/STTR workshop will focus on Commercialization for SBIR/STTR Funding.

In order to help with the application process, UND Center for Innovation will host the Part 2 Workshop: Commercialization Planning for SBIR/STTR Proposals. We highly encourage faculty, students, post docs, clinicians, and early stage life science companies to attend. Becky Aistrup, Managing Partner, BBC Entrepreneurial Training & Consulting, will present on the components of an effective plan, how to find and use cost-effective market research, and other tips. The workshop will be hosted at the UND Center for Innovation at the following date and time:

Monday, March 30, 2020
8:30am-12:00pm
UND Center for Innovation Idea Lab
4200 James Ray Drive Grand Forks, ND 58203

Please register for the event here. The event is free. If you have any questions, contact Marisol Rodriguez at marisol@bbcetc.com.

^^

Spring 2020 NSF Grants Conference - Minneapolis, MN

The **Spring 2020 NSF Grants Conference** will be held at the Minneapolis Marriott City Center on **May 18-19, 2020**.

These conferences are designed to give new faculty, researchers and administrators key insights into a wide range of current issues at NSF. NSF program officers representing each NSF directorate will be on hand to provide up-to-date information about specific funding opportunities and to answer attendee questions.

Registration will open on **Tuesday, March 17 at 12 p.m. EST**. NSF anticipates that the conference will reach capacity very quickly, so encourages registration as soon as it opens.

^^

Great Plains Combinatorics Conference 2020

The Great Plains Combinatorics Conference, scheduled for April 25-26 at NDSU, provides an opportunity for combinatorialists in the Great Plains region to present and share their research and to develop connections between different areas of combinatorics. The conference will consist of seven hour-long invited talks and a poster session for graduate students.

Learn more and register >>

^^

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.