NDSU OFFICE OF RESEARCH AND CREATIVE ACTIVITY

RCA UPDATE

June 3, 2019

NDSU Joins NSF-funded Center for Bioplastics and Biocomposites

North Dakota State University has been awarded a National Science Foundation grant to become a university site of the Center for Bioplastics and Biocomposites (CB^2). The CB^2 center is part of NSF's Industry–University Cooperative Research Centers (I/UCRC) program and NDSU will receive $150,000 to set up the site.

Dean Wesbster

David Grewell

NDSU joins current CB^2 sites at Iowa State University, Washington State University, and the University of Georgia. NDSU was selected based upon the institution's long history of sustainable materials research and the strength of industry partnerships. In addition, the CB^2 Industry Advisory Board (IAB) has named NDSU as the lead site given that CB^2 founder and director and

NDSU engineering professor David Grewell recently moved from Iowa State University to NDSU. Grewell currently serves as chair of the NDSU Department of Industrial and Manufacturing Engineering. Dean Webster, NDSU professor and chair of Coatings and Polymeric Materials at NDSU, will serve as the Fargo site director.

“The work these centers are doing is taking the traditional biodegradable products development to the next step,” commented Grewell. “Our researchers are creating methods of building long term sustainable products that are co-products of agricultural processes, woody materials as well as other bio-based feedstocks.” Examples of some of the sustainable products already developed include air conditioning unit components and seed pots previously made of traditional plastics.

UNIQUE SPECIALITIES

Each site has a unique area of specialty. Grewell notes that Iowa State is working on thermoplastics and polymers processing, Washington State University on composites, and the University of Georgia on ocean-friendly packing. “NDSU will continue our history of work on thermosetting polymer systems and their use in applications such as coatings and composites,” added Webster. “Our history and expertise in these areas provides center members with additional scientific expertise in this rapidly growing area of sustainable materials. Our partnerships with industries including the North Dakota Corn Council, Sherwin-Williams, NatureWorks and potentially many other companies are an important component to our work and provide our researchers with an avenue to deliver solutions for the products they create.”

Grewell notes that while the components of the research are bio-based, the product development generated will not impact the food supply. “We use co-products of the food and agricultural industries,” he said. “We will utilize aspects of crops either considered waste or that which is in large supply in our area, such as soybean oil. Our work will also help remove our dependency on products created by traditional fossil fuels sources.”

“Ford has been an active member of CB^2 since its inception,” said Debbie Mielewski, Senior Tech Leader, Ford Motor Company, Research. “We consider it one of our strongest resources to learn about new bio-based materials, suppliers and applications. Having the expertise of NDSU involved just makes it that much more valuable. When it comes to the planet, it is critical that we all work together, and CB^2 has been the go-to place.”

The site will function as an educational unit for North Dakota by incorporating programs for undergraduate and graduate students, veterans, and other instructors. Research Experiences for Undergrads (REU) programs that provide early research opportunities for students are also part of the plan and have already been successfully conducted in other CB^2 sites.

REGION-WIDE IMPACT

“The impact to NDSU and the region becoming a member of this program will help the university by driving additional research dollars as well as student and industry engagement,” said Webster. “We also see it as an economic driver for the state similar to the ethanol industry. We have the materials to create the products right here. As it’s most cost-effective to not move the raw materials that far for processing, we will be providing a solid reason for industry to set up operations in our area.”

Grewell notes that it will be important for state support to make CB^2 successful. The team recently hosted North Dakota Lieutenant Governor Brent Sanford to show him the value of the center.

North Dakota Lt. Governor Brent Sanford

"This is another great North Dakota example of technological innovation creating synergy between agriculture and industry," commented Sanford. "Bioplastics is an exciting arena where ag waste products can be utilized as feedstock in applications traditionally filled by petroleum-based materials. It was exciting for me to present the welcome at the CB^2 gathering at NDSU and find leaders of industry in attendance who were eager to apply the bioplastics innovation in their material procurement and manufacturing processes. Congratulations to Dr. Grewell and Dr. Webster for bringing this organization and its leadership structure to NDSU and our state."

As the center is driven by industry in partnership with academics, Grewell adds that it will be important for the state to help small businesses secure memberships in the Center. "CB^2 is good for NDSU and North Dakota in many ways. We'll leverage unused biomaterial sources in creating environmentally-friendly and cost-effective new materials. In 12 months, CB^2 has doubled in size. That shows that both the need and the opportunity is there."

Congratulations to all award recipients from April 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 >>

EXPORT CONTROLS

International Travel with DUO Two Factor Authentication

The DUO mobile app and hardware tokens used by NDSU as part of its 2 factor authentication process are encryption items that are subject to export control regulations. NDSU's export control office has determined that the DUO app and hardware tokens themselves are controlled to Cuba, Iran, North Korea, Sudan, Syria and the Crimea Region of Ukraine. If you travel to one of these countries you must delete the DUO Mobile app from any device you take with you. Also, you cannot take a DUO hardware token with you. While in one of these countries use a phone call or passcode retrieved via SMS to authenticate with the Two-Step Login.

Contact Sharon May in the Export Control office with questions or to see if a license exception is available for the specific country you will be visiting.

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DOI BLM: National Wildlife Program

The Department of the Interior (DoI) Bureau of Land Management – Washington Office (BLM-WO) Wildlife Program [L19AS00041] helps ensure self-sustaining populations and a natural abundance and diversity of wildlife on public lands for the enjoyment and use of present and future generations. The Program is responsible for maintaining, restoring, and conserving species and their habitats in cooperation with the Federal and State wildlife agencies, and other partner organizations. BLM-administered public lands are home to thousands of mammal, reptile, avian, amphibian, and invertebrate species over some of our nation's most ecologically diverse and essential habitat.

Priorities include, but are not limited to, expanding hunting and wildlife viewing opportunities and identifying areas to increase access for these purposes; working with State agencies to meet State wildlife population objectives and working with rural communities to enhance economic opportunities related to wildlife; working to enhance habitat for upland game, waterfowl, big game and watchable wildlife species; providing employment opportunities for youth and veterans; providing consistent data to streamline energy and grazing permitting; working with partners to provide data to streamline land use planning; and partnering with conservation stewardship organizations to increase habitat quality.

Application Deadline: July 15, 2019, 4:00PM Central

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NASA Land-Cover / Land-Use Change for Early Career Scientists

The Land-Cover/Land-Use Change (LCLUC) program is developing interdisciplinary approaches combining aspects of physical, social and economic sciences, with a high level of societal relevance, using remote sensing tools, methods, and data. One of its stated goals is to develop the capability for periodic satellite-based inventories of land cover and monitoring and characterizing land-cover and land-use change. The program focuses on analysis at global to regional scales, taking advantage of the synoptic capability afforded by satellite remote sensing and with the understanding that land-use change occurs locally.

The eligible proposers should have their PhD awarded no earlier than 2014, so that at the time of submission of the full proposal (March 2020) a proposer would be no more than 6 years after the PhD.

*This program element uses a two-step proposal process, with **required** Step-1 proposals due August 1, 2019. Step 2 proposals must be submitted by March 3, 2020.*

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National Historical Publications & Records Commission

The National Historical Publications and Records Commission (NHPRC) program, Access to Historical Records: Major Initiatives 2021, seeks projects that will significantly improve public discovery and use of major historical records collections. The Commission is especially interested in collections of America's early legal records, such as the records of colonial, territorial, county, and early statehood and tribal proceedings that document the evolution of the nation's legal history.

All types of historical records are eligible, including documents, photographs, born-digital records, and analog audio and moving images. Projects may:

- digitize historical records collections, or related collections, held by a single institution and make them freely available online
- create new freely-available virtual collections drawn from historical records held by multiple institutions
- provide access to born-digital records
- create new tools and methods for users to access records

The NHPRC welcomes collaborative projects, particularly for bringing together related records from multiple institutions. Projects that address significant needs in the field and result in replicable and scalable approaches will be more competitive. Organizations are also encouraged to actively engage the public in the work of the project.

Cost sharing is required. The applicant's financial contribution may include both direct and indirect expenses, in-kind contributions, non-Federal third-party contributions, and any income earned directly by the project.

Preliminary proposal deadline: January 16, 2020

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NEH: Summer Stipends - 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.

NEH Summer Stipends: The internal NDSU deadline for pre-proposals is 4pm on July 26, 2019. Contact Christina Weber **for the pre-proposal**

requirements.

NEH Summer Stipends support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. Eligible projects usually result in articles, monographs, books, digital materials and publications, archaeological site reports, translations, or editions. Projects must not result solely in the collection of data; instead they must also incorporate analysis and interpretation. Summer Stipends support continuous full-time work on a humanities project for a period of two consecutive months. Summer Stipends support projects at any stage of development. Up to two applicants may be nominated by their institution.

Application deadline: September 25, 2019 (for projects beginning May 2020)

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NIH Research Infrastructure Development for Interdisciplinary Aging Studies (R21/R33)

This Funding Opportunity Announcement (FOA / PAR-18-645) 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. Successful aging research frequently depends on collaborations that draw on expertise from a variety of disciplines. In some cases, these collaborations arise naturally, but in other cases, organizational or fiscal obstacles hinder their effective development. Bridging data platforms, crossing inter-departmental silos, and other such challenges may pose substantial barriers to scientific progress despite the availability of personnel and resources. At the same time, innovative scientific findings often lead to novel opportunities that require the development of new collaborations. This FOA is intended to provide the needed resources for interdisciplinary collaborative groups to meet the challenge of developing effective research infrastructure in

important aging topics.

For a list of topic areas of interest, please see the FOA.

Application Deadline: September 7, 2019

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NSF: Innovative Technology Experiences for Students and Teachers

The National Science Foundation (NSF) Innovative Technology Experiences for Students and Teachers (ITEST) Program [NSF 19-583] is an applied research and development (R&D) program providing direct student learning opportunities in pre-kindergarten through high school (PreK-12). The learning opportunities are based on innovative use of technology to strengthen knowledge and interest in science, technology, engineering, and mathematics (STEM) and information and communication technology (ICT) careers. To achieve this purpose, ITEST supports projects that engage students in technology-rich experiences that:

1. increase awareness and interest of STEM and ICT occupations;
2. motivate students to pursue appropriate education pathways to those occupations; and
3. develop STEM-specific disciplinary content knowledge and practices that promote critical thinking, reasoning, and communication skills needed for entering the STEM and ICT workforce of the future.

ITEST seeks proposals that pursue innovative instructional approaches and practices in formal and informal learning environments, in close collaboration with strategic partnerships. ITEST proposals should broaden participation of all students, particularly those in underrepresented and underserved groups in STEM fields and related education and workforce domains. ITEST supports three types of projects:

1. Exploring Theory and Design Principles (ETD);
2. Developing and Testing Innovations (DTI); and
3. Scaling, Expanding, and Iterating Innovations (SEI).

ITEST also supports Synthesis and Conference proposals.

All ITEST proposals must address how they are:

A. designing innovations that meet ITEST program goals which include innovative use of technologies, innovative learning experiences, STEM workforce development, strategies for broadening participation, and strategic partnerships; and
B. measuring outcomes through high-quality research which includes high-quality research design, project evaluation, and dissemination of findings.

Deadline: August 19, 2019

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Defense Sciences Webcast on Upcoming BAA Announcement

The Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is sponsoring the Discover DSO Day event on June 18-19, 2019, to provide information to potential proposers on the objectives of an anticipated DSO Office-wide Broad Agency Announcement (BAA). The event will be webcast. Advance registration is required. All times listed in the announcement and on the registration website are Eastern Time.

DARPA anticipates releasing the BAA in June 2019. In support of the mission, the Office-wide BAA will invite proposers to submit innovative basic or applied research concepts in one or more of the following technical areas:

- Frontiers in Math, Computation & Design
- Limits of Sensing and Sensors
- Complex Social Systems
- Anticipating Surprise

Learn more >>

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Save the Date: CoSearch NDSU
October 25-26, 2019

On **October 25th and 26th**, NDSU researchers will have 30 hours to share a research idea, hone the idea with an interdisciplinary team they meet at the event and pitch the idea to a panel of judges. CoSearch is open to all faculty members who are interested in collaboration and research, and it is an exciting opportunity for researchers from a variety of disciplines to bring their perspectives and work together to solve real-world problems.

More information, including registration, is coming soon.

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Save the Date: NDSU EXPLORE 2020

The 2020 NDSU EXPLORE Showcase of Undergraduate Research and Creative Activity will take place Wednesday, April 22, 2020.

Learn more about this event >>

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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.