

Sent: Monday, February 29, 2016 2:58 PM
To: NDSU-EMPLOYEE-OFFICIAL@LISTSERV.NODAK.EDU
Subject: RCA Update - Feb. 29 Edition



Welcome to the Research and Creative Activity Update!

To share information quickly rather than through multiple emails, we will be providing weekly updates for researchers, scholars and staff to keep up-to-date on grant program changes, deadlines, notices and training, with links to expand the information you may be interested in. Thank you for your contributions to research and creative activity at NDSU.

These weekly email updates are archived on the [RCA Website](#).

FUNDING OPPORTUNITIES

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Limited Submission: NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)

This is a limited submission grant program. Please notify the Research Development Office, ndsu.researchdev@ndsu.edu, by Tuesday, March 15, if you are making plans to apply. A selection process may need to take place if more groups are making plans than NDSU is allowed to submit.

An Institution may submit one proposal (either as a single institution or as subawardee or a member of a Collaborative Research project) *from each constituent school or college that awards degrees in an eligible field.* (For example, a university with a College of Engineering, a School of Life Sciences, and a College of Arts and Sciences could

submit one proposal from each for a total of three proposals. However, within a College of Engineering, if the Department of Electrical Engineering were submitting a proposal, a proposal from the Department of Mechanical Engineering could be submitted only in a subsequent year. The two departments in this example could choose to submit a single joint proposal.)

Strand 1 – Institutional Capacity Building: Institutions of Higher Education (IHEs) that have not received an S-STEM award or a STEM Talent Expansion Program (STEP) award are eligible to submit to Strand 1 – Institutional Capacity Building. (NDSU is **NOT** eligible for Strand 1 since it has received at least one S-STEM award in the past.)

Strand 2 – Design and Development Type 2 Multi-Institutional Consortia: While there is a limit on the number of proposals submitted by an institution, a proposal whose Principal Investigator is an educational or social science researcher does not count against the limit on the number of proposals submitted by an institution.

For more information, consult the [NSF program solicitation \(16-540\)](#).

Limited Submission: INCLUDES (Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science)

This is a limited submission grant program. Just one proposal is allowed per institution. Please notify the Research Development Office, ndsu.researchdev@ndsu.edu, before or by Tuesday, March 15, 2016, if you are making plans to submit a proposal. If there are multiple groups planning to apply, there may need to be a selection process, unless groups can be combined into a single proposal.

The National Science Foundation (NSF) has just released the new INCLUDES (Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science) solicitation and Dear Colleague Letter.

Dear Colleague Letter NSF 16-048: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf16048
Grant Solicitation NSF 16-544: <http://www.nsf.gov/pubs/2016/nsf16544/nsf16544.htm>

The long-term goal of NSF INCLUDES is to fund new research, models, and partnerships that lead to demonstrable progress – moving the needle – in meeting the challenge of broadening participation in science and engineering. With special attention to the cross-cutting areas of inclusion, relevance, scalability, and sustainability, NSF will support a new set of NSF strategic investments to expand the culture of diversity in science and engineering across all sectors.

A key feature of this program and INCLUDES funding that will become available in FY17 are the partnerships, collaborations, networks, and alliances dedicated to broadening participation in STEM.

The Implementation Group, Inc. (TIG), our EPSCoR consultant, has provided an analysis of the RFP and some pointers for a successful preliminary proposal submission. TIG's analysis can be found [here](#).

Preliminary proposals are due to NSF April 15, 2016 - for Design and Development Launch Pilots. Full proposals are due June 24, 2016.

Gear up for Grants: Developing Evaluation Plans for Grant Proposals

This seminar will discuss program evaluation or the application of evaluation approaches, techniques, and knowledge to systematically assess and improve the planning, implementation, and effectiveness of programs. Additionally, the seminar will discuss how to apply and develop evaluation plans for grant proposals. Discussion will include locating and selecting outcome measures, logic models, and cost benefit analyses. If participants are working on a grant proposal, they are encouraged to bring it.

Dr. David is an Assistant Professor in Health, Nutrition and Exercise Science and holds a PhD in Educational Research and Evaluation. Dr. Deal is the Interim Director of the NDSU Center for Social Research and Professor in Human Development and Family Science.

When: Tuesday, March 22, 2016 | 3:00pm-4:30pm

Where: Memorial Union Arikara Room

[REGISTER NOW!](#)

Gear up for Grants: Broader Impacts

Amy Pratt, Associate Director of Northwestern University's Office of STEM Education Partnerships and a member of the National Alliance for Broader Impacts (NABI) Steering Committee, will give a workshop on Broader Impacts. Broader Impacts is one of two criteria employed by the National Science Foundation (NSF) in the merit review of proposals, and is meant to help assess the potential of the proposed activity to benefit society and contribute to the achievement of specific, desired social outcomes. Note that many other funding agencies also promote activities related to "broader impacts," though the terminology may be different.

When: Thursday, March 31, 2016 | 3:00pm-4:30pm

Where: Memorial Union Arikara Room

[REGISTER NOW!](#)

Colorado State University - CSU Collegiate Challenge - Deadline Extended!

The Colorado State University Collegiate Challenge is a Business Pitch Competition with a \$20,000 cash grand prize and multiple opportunities for students to gain valuable feedback and advice on building their company. They have **EXTENDED** the application deadline to March 6th, and made the video portion of the application optional after feedback from applicants.

The Challenge is open to undergraduate, graduate/post-doc, and alumni within 12 months of graduation from universities across the mountain region. This will be the first year the competition is open to students outside of Colorado.

For more information check out their website: www.csucollegiatechallenge.org or contact Jessica Rawley (Jessica.rawley@colostate.edu).

NDSU Mechanical Engineering Graduate Students Utilize Rubber Processing Equipment to Assist with Their Research

A research effort focused on reducing the carbon footprint of vulcanized rubber is underway at NDSU. Typical rubber, like that used in tires and industrial belting, contains large quantities of carbon black as a strengthening and filling agent. This carbon black, which is produced by burning oil and extracting the soot, is considered to be environmentally un-friendly. The focus of this research is to determine the viability of replacing the carbon black with fully bio-renewable cellulose nanofibers. A battery of ASTM tests will be conducted in order to determine if the rubber samples, compounded with the cellulose nanofibers, prove to be stronger and more abrasion resistant. The research is being conducted under the direction of Dr. Long Jiang with funding from the ND Soybean Council and the NDSU Department of Mechanical Engineering.



The ability to utilize specialized equipment, such as the rubber compounding and milling equipment depicted above, is an important enabling aspect to this research. Tools such as this and many others managed by the Research Operations Recharge Center are available to NDSU researchers for use on their projects. For more information on how these tools can help with your research, visit the Research Operations website at https://www.ndsu.edu/research/research_operations/.

Inventors and Inventorship is Complicated

CONCEPTION OF THE INVENTION: Inventorship for a patentable invention can often be difficult to determine. However, it is a legal determination and is different from authorship for a scholarly publication. Until a few years ago, incorrect inventorship was a per se invalidation of an issued patent, but presently it will only invalidate a patent if the incorrect inventorship is purposefully deceptive (i.e., it is “inequitable conduct” as determined by the US Patent Office).

Generally, invention requires conception of the invention followed by reduction to practice. Specifically, invention is “the formation, in the mind of the inventor[s], of a definite and permanent idea of the complete and operative invention.” (Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1375 (Fed. Cir. 1986). The inventive idea must be “definite and permanent.” Definite means that the idea must be the new solution to a problem. Thinking it would be nice to have a solution to a problem is not enough. The solution must be specific and detailed. To be permanent means communication to a third party who is not an inventor in a tangible form. That is why good laboratory practices are to have a permanently bound notebook in which ideas are recorded (in ink) and witnessed and dated by someone else. Invention Reporting Forms are another excellent permanent record of the idea. Find the NDSU Invention Reporting Form [here](#).

Additionally, the inventive idea must also be “complete and operative.” The courts have interpreted this to mean that the invention must be described in enough detail that “one of skilled in the art” (food chemistry, nuclear physics, integrated circuits, golf club design) could follow the detailed instructions for making and using the invention and have the invention that works for its intended purpose. This “enablement of the invention is at the core of the grant in the U.S. Constitution for inventors to exclude others from making or using their invention for a period of time for a new invention, but only if the inventor teaches everybody else how to make and use the invention.

Stay Tuned. Next week, REDUCTION TO PRACTICE. For more information about this complicated topic, contact Henry Nowak in the Technology Transfer Office at (1-8173 or henry.nowak@ndsu.edu).

Technology and the Future of Cities – A Report from President Obama’s Council of Advisors on Science and Technology

NDSU’s research vision is centered on three Grand Challenges. The President’s Council of Advisors on Science and Technology [PCAST] just released a new report on “Technology and the Future of Cities”, which may have relevance to two of our Grand Challenges: Healthy Populations and Vital Communities and Sustainable Energy, Environment and Societal Infrastructure. To read the full report go [here](#).

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