

**NDSU** OFFICE OF  
RESEARCH AND CREATIVE ACTIVITY

# RCA UPDATE

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December 10, 2018

## Meet NDSU's New Assistant Professors

### Lu Liu, Ph.D.

#### Computer Science

#### What are your primary research and scholarly interests?

Bioinformatics, Data Mining, Machine Learning and Computational Biology.

#### Where are you from and where did you pursue your education?

I am from China and I received my Ph.D. from the University of Texas at San Antonio.

#### What excites you about NDSU?

Research and collaboration opportunities.

#### What motivates you?

My family.



*Throughout the year, RCA will feature new assistant professors. These profiles are available on the [RCA website >>](#).*



## **NDSU Professor Dean Webster Honored by Director of the United States Patent and Trademark Office**

NDSU Professor and Chair of Coatings and Polymeric Materials Dean Webster was honored during North Dakota Senator John Hoeven's annual State of Technology conference recently held in Fargo.

During his career, Webster has been the recipient of numerous patents for his research and he was presented with his latest directly by Andrei Iancu, Under Secretary of Commerce for Intellectual Property and the Director of the United States Patent and Trademark Office, who keynoted at the event.

Webster's patent was issued on September 11, 2018 and is entitled "Biobased cyclic carbonate functional resins and polyurethane thermosets." During the conference, he was called to stage and presented the patent by Iancu.

Webster didn't know ahead of time that he would receive the patent that day. He commented, "It was a privilege to be able to meet the director of the USPTO in person and then to be handed my most recent United States Patent was incredible. It

was an experience I will never forget.”

Along with serving as Chair of the Coatings and Polymeric Materials department, Webster is also Director of the [Center for Sustainable Materials Science \(CSMS\)](#). The CSMS and Webster’s patent are both supported by the National Science Foundation under ND EPSCoR Award #IIA-1355466 and by the State of North Dakota.



Do you have an ORCID identifier? [ORCID.org](#) allows you to register for a free digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities so that your work is recognized. If you already keep your ORCID profile up-to-date, such as with your publications, that data can be set to *autoflow* to your Pivot profile. For this to happen, there is a two-step process. In Pivot, enter your ORCID identifier in the relevant field of your profile. In ORCID, your settings must be set to allow permission for ProQuest Pivot to be considered a “trusted organization.” Once this has been done, your publications should flow from ORCID to Pivot automatically. Here is a [quick video](#) with these instructions.

We would like to hear from individuals that have had success with this process; please let us know at [ndsu.researchdev@ndsu.edu](mailto:ndsu.researchdev@ndsu.edu).

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Equipment?  
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## Arts Midwest: Touring Fund

A nonprofit regional arts organization headquartered in Minneapolis, [Arts Midwest](#) serves audiences, arts organizations, and artists in the nine states of Illinois, Indiana, Iowa, Michigan, Minnesota, North Dakota, Ohio, South Dakota, Wisconsin, and beyond. To that end, Arts Midwest invites organizations that contract artists/ensembles to perform in their own or a community venue to apply to the [Arts Midwest Touring Fund](#). Engagements must run between July 1, 2019, and June 30, 2020. The maximum award is generally \$4,000, with a minimum award of \$500. Support from the Arts Midwest Touring Fund must be used to offset the artist's contracted fee and may not be used for other purposes or costs. To be eligible, applicants must be a nonprofit 501(c)(3) organization, a unit of state or local government, or a federally recognized tribal community or tribe and be located in Illinois, Indiana, Iowa, Michigan, Minnesota, North Dakota, Ohio, South Dakota, or Wisconsin. In addition,

applicants must compensate all professional performers and related or supporting professional personnel at no less than the prevailing minimum compensation.

*Application deadline: April 24, 2019*



## **L'Oreal USA: Women in Science Postdoc Fellowship Program**

Applications for the [2019 L'Oréal USA For Women in Science fellowship program](#) are now open. The L'Oréal USA For Women in Science fellowship program honors female postdoctoral scientists at a critical stage in their careers with grants of \$60,000 each. Since 2003, they have awarded 75 postdoctoral women scientists nearly \$4 million in grants. L'Oreal is seeking five exceptional female scientists looking to advance their research and serve as role models for the next generation of girls in STEM. Candidates are selected from a variety of fields including the life and physical/material sciences, technology (including computer science), engineering, and mathematics. Candidates must have completed their PhD and have started in their postdoctoral position by the application deadline. Applicants who hold faculty positions are not eligible.

*Application deadline: February 1, 2019*



## **NEA: Literature Fellowships - Creative Writing**

The National Endowment for the Arts (NEA) [Literature Fellowships](#) program offers grants in prose (fiction and creative nonfiction) and poetry to published

creative writers that enable recipients to set aside time for writing, research, travel, and general career advancement. Applications are reviewed through an anonymous process in which the only criteria for review are artistic excellence and artistic merit. To review the applications, the National Endowment for the Arts assembles a different advisory panel every year, each diverse with regard to geography, race and ethnicity, and artistic points of view.

*Application deadline: March 6, 2019*



## **NSF: Designing Materials to Revolutionize and Engineer our Future (DMREF)**

Designing Materials to Revolutionize and Engineer our Future ([DMREF / NSF 19-516](#)) is the primary program by which the National Science Foundation (NSF) participates in the [Materials Genome Initiative \(MGI\) for Global Competitiveness](#). MGI recognizes the importance of materials science and engineering to the well-being and advancement of society and aims to "deploy advanced materials at least twice as fast as possible today, at a fraction of the cost." MGI integrates materials discovery, development, property optimization, and systems design with a shared computational framework. This framework facilitates collaboration and coordination of research activities, analytical tools, experimental results, and critical evaluation in pursuit of the MGI goals. Consistent with the [MGI Strategic Plan](#), DMREF highlights four sets of goals:

1. Leading a culture shift in materials science and engineering research to encourage and facilitate an integrated team approach;
2. Integrating experimentation, computation, and theory and equipping the materials science and engineering communities with advanced tools and techniques;

3. Making digital data accessible, findable, and useful to the community;  
and
4. Creating a world-class materials science and engineering workforce that  
is trained for careers in academia or industry.

*All awards will be four years in duration. Awards are expected to range from \$1,000,000 to \$1,750,000.*

*Application window: January 28-February 4, 2019*

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## **NSF: EPSCoR Research Fellows (RII Track 4) - 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.

**NSF EPSCoR RII Track 4 : Notify RCA by 1/09/2019, 5:00 p.m. if you intend to apply.**

The National Science Foundation (NSF) EPSCoR Research Infrastructure Improvement Track 4 Program ([RII Track 4 / NSF 18-526](#)) provides opportunities for non-tenured investigators in EPSCoR states to further develop their individual research potential through extended collaborative visits to the nation's premier private, governmental, or academic research centers. During these visits, the EPSCoR Research Fellows will be able to learn new techniques, develop new collaborations or advance existing partnerships, benefit from access to unique equipment and facilities, and/or shift their



research toward potentially transformative new directions. The experiences gained through the fellowships are intended to have lasting impacts that will enhance the Fellows' research trajectories well beyond the award period. These benefits to the Fellows are also expected in turn to improve the research capacity of their institutions and jurisdictions more broadly. Those submitting proposals must hold either a non-tenured faculty appointment at an institution of higher education or an early-career career-track appointment at an eligible non-degree-granting institution. Only three RII Track-4 proposals may be submitted in response to this solicitation by any single institution in a RII-eligible jurisdiction (state).

*NSF application deadline: March 12, 2019*



## **NSF: Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) - 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.

**NSF S-STEM : Notify RCA by 1/16/2019, 5:00 p.m. if you intend to apply.**

A well-educated science, technology, engineering, and mathematics (STEM) workforce is a significant contributor to maintaining the competitiveness of the U.S. in the global economy. The National Science Foundation (NSF) Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program (NSF 17-527) addresses the need for a high quality STEM workforce in STEM disciplines supported by the program and for the increased success of

low-income academically talented students with demonstrated financial need who are pursuing associate, baccalaureate, or graduate degrees in science, technology, engineering, and mathematics (STEM). Recognizing that financial aid alone cannot increase retention and graduation in STEM, the program provides awards to Institutions of Higher Education (IHEs) to fund scholarships and to advance the adaptation, implementation, and study of effective evidence-based curricular and co-curricular activities that support recruitment, retention, transfer (if appropriate), student success, academic/career pathways, and graduation in STEM. The S-STEM program encourages collaborations among different types of partners: Partnerships among different types of institutions; collaborations of STEM faculty and institutional, educational, and social science researchers; and partnerships among institutions of higher education and local business and industry, if appropriate. The program seeks:

1. to increase the number of low-income academically talented students with demonstrated financial need obtaining degrees in STEM and entering the workforce or graduate programs in STEM;
2. to improve the education of future scientists, engineers, and technicians, with a focus on academically talented low-income students; and
3. to generate knowledge to advance understanding of how factors or evidence-based curricular and co-curricular activities affect the success, retention, transfer, academic/career pathways, and graduation in STEM of low-income students.

*Applications due: March 27, 2019*

# **NSF Dear Colleague Letter: STEM Workforce Development Utilizing Flexible Personal Learning Environments**

The National Science Foundation (NSF), through [\*\*Dear Colleague Letter \(DCL\) NSF 19-025\*\*](#), seeks new proposals and supplemental funding requests to existing awards that support flexible personalized learning to prepare the science, technology, engineering and mathematics (STEM) workforce of the future. NSF envisions projects that collectively apply to all learners, from young children to those already in the workforce. In particular, NSF would like to support research that complements an anticipated future funding opportunity made possible by a gift from the Boeing Corporation in September 2018. The Boeing gift established a partnership between NSF and Boeing to accelerate training in crucial skill areas for the future U.S. workforce. It will be used to support design, development, implementation, and analysis of online courses in model-based engineering, model-based systems engineering, mechatronics, robotics, data science and sensor analytics, program management, and artificial intelligence. These courses will use personalized learning systems to maximize their effectiveness for diverse learners. Proposals may address topics including, but not limited to:

- effective design of personalized learning systems for STEM education at any level;
- factors that increase persistence, motivation, self-efficacy, and retention of learners;
- the influence of public/private partnerships on workforce preparation;
- the design of educational interventions that meet workplace expectations for knowledge and competencies; and
- measuring the effectiveness of these interventions for different audiences.

Proposals responding to this DCL should be made through one of the existing NSF programs listed below. Supplemental funding requests responding to this DCL for existing awards in the programs listed below are also welcome. To determine whether a research topic is within the scope of this DCL, principal investigators are strongly encouraged to contact the managing NSF Program Officer(s) of the participating program(s) to which they plan to submit their proposal. These programs include:

- EHR Core Research ([ECR](#))
- Cyberlearning for Work at the Human-Technology Frontier ([Cyberlearning-WHTF](#))
- Discovery Research PreK-12 ([DRK-12](#))
- Improving Undergraduate STEM Education (IUSE) - [Exploration and Design Tier](#)
- Improving Undergraduate STEM Education: Hispanic-Serving Institutions ([HSI](#))
- Secure and Trustworthy Cyberspace ([SaTC](#)) - EDU Projects

For new proposals to ensure proper consideration, principal investigators must refer to this DCL.

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## **Sanford Health - NDSU Collaborative Research Seed Grant Program**

The fifth Sanford Health - NDSU Collaborative Research Seed Grant program's Request for Applications (RFA) has been released. Proposals are to be submitted electronically to [NDSU.BusinessDev@ndsu.edu](mailto:NDSU.BusinessDev@ndsu.edu) by 5:00 PM on March 19, 2018. The full RFA and Application form can be downloaded from the

[program's webpage](#).

**To better facilitate collaboration between NDSU and Sanford Health collaborators, proposers are requested to submit a short description of a possible proposal by January 29th. Additional information about the Collaboration Request can be found in the RFA or at the link above.**

Questions regarding suitability of topic areas, collaborating with Sanford, or other program-related questions can be addressed by Business Development (231-6660 or [NDSU.businessdev@ndsu.edu](mailto:NDSU.businessdev@ndsu.edu)).

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## **USDA: National Needs Graduate Fellowships**

*This funding opportunity is open to eligible institutions; individuals are not eligible to apply.* The U.S. Department of Agriculture (USDA) [National Needs Graduate and Postgraduate Fellowships Grant Program](#) supports graduate student training and completion of master's and/or doctoral degree programs in identified national need areas within the Food, Agricultural, Natural Resources, and Human (FANH) Sciences. Awards made under the National Needs Fellowships (NNF) program are specifically intended to support traineeship programs that engage outstanding students to pursue and complete their degrees in areas where there is a national need for the development of scientific and professional expertise in the food and agricultural sciences. Targeted Expertise Shortage Areas are:

1. animal and plant production;
2. forest resources;
3. agricultural educators and communicators;
4. agricultural management and economics;
5. food science and human nutrition;

6. sciences for agricultural biosecurity; and
7. training in integrative biosciences for sustainable food and agricultural systems.

NNF awards invest in graduate training and relevant international experiential learning for a cadre of diverse individuals who demonstrate their potential to complete graduate degree programs in disciplines relevant to the mission of the USDA. For the FY 2018 award cycle, NIFA intends to support graduate Fellowship training grants for masters and doctoral levels of study only. Post-doctoral Fellowships will not be awarded under this grant announcement. NIFA is soliciting applications for the Food and Agricultural Sciences National Needs Graduate Fellowship Grants Program under the following areas:

1. Graduate Fellowships to support training for and the completion of masters and doctoral degree programs in the FANH sciences; and
2. Special International Study or Thesis/Dissertation Research Travel Allowances (IRTA) for eligible new master's and doctoral USDA Fellows.

*Application deadline: January 23, 2019*



## **NSF CAREER 101**

Are you interested in the NSF CAREER program but are not sure where to start or what is involved? This session is designed for those new to the program. It will include a program overview, proposal requirements, planning for an application, and opportunities for Q&A.

### **NSF CAREER 101**

**Tuesday, December 11, 2018 | 12-1 p.m.**

**Memorial Union Peace Garden Room**

[Register to attend >>](#)

The National Science Foundation (NSF) Faculty Early Career Development ([CAREER](#)) Program is a prestigious grant award program that supports early career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization. Activities pursued by early-career faculty should build a firm foundation for a lifetime of leadership in integrating education and research.



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.*

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