NDSU OFFICE OF RESEARCH AND CREATIVE ACTIVITY

HAPPY NEW YEAR!

RCA UPDATE

January 7, 2019

Meet NDSU's New Assistant Professors

Trung (Tim) Le, Ph.D.

Industrial and Manufacturing Engineering

What are your primary research and scholarly interests?
Data-driven and Sensor-based Modeling, Predictive Analytics, Bio-signal Processing and Bio-instrumentation.

Where are you from and where did you pursue your education?
I am from Vietnam. I got my Bachelors degree from Ho Chi Minh City University of Technology - Vietnam National University and my PhD from Oklahoma State University.

What excites you about NDSU?
Everyone at NDSU always shows their willingness to help out.

What motivates you?

I am motivated by my family.

Read more about Trung >>

Throughout the year, RCA will feature new assistant professors. These profiles are available on the RCA website >>.

Due to scheduled ProQuest site maintenance, Pivot will be unavailable on Saturday, January 19, 2019 for approximately 8 hours beginning at 9:00 p.m. Central Time.
For tips on Pivot searches or updating your profile, visit NDSU's Pivot webpage.

Pivot is Moving to a New URL

On March 1, 2019, Pivot is moving to https://pivot.proquest.com and the current Pivot URL, https://pivot.cos.com will be discontinued. Traffic to cos.com *will not* automatically redirect to the new URL, including any links you have saved.

This is a change in address only: all data remains, and the user experience and functionality are unchanged.

Saved links will need to be updated to reflect the new address.

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Looking for Collaborators? Visit the NDSU Scholars Database

In Search of Equipment? Check the NDSU Equipment Database

pivot™ funding connected

Need to update your profile? Click here to learn how!

NASA EPSCoR Cooperative Agreement Notice: Rapid Response Research Pre-Proposals

The North Dakota NASA Established Program to Stimulate Competitive Research (EPSCoR) is soliciting pre-proposals from North Dakota faculty in STEM fields to fulfill this Cooperative Agreement Notice (CAN). Eligible proposers include faculty members at a ND NASA EPSCoR affiliate institution.

This CAN solicits proposals of 2-3 pages for the 2018 NASA EPSCoR Rapid Response Research program. Each funded NASA EPSCoR proposal shall focus on developing competitive research and technology for the solution of scientific and technical problems of importance to the Science Mission

Directorate (SMD) and the Commercial Partnerships Office as listed in the appendices. The Rapid Response Research program is an attempt to implement research within NASA and commercial programs to address technical issues. It will allow EPSCoR researchers to work alongside of NASA and Commercial providers for up to one year and is intended strengthen the bonds between EPSCoR jurisdictions, NASA, the commercial partners and others.

This is a limited submission program. The NASA EPSCoR FY18 CAN R3 Solicitation limits each jurisdiction to the submission of one proposal per each of the technical areas specified. This limited submission process is to identify which proposal(s) will go forward for North Dakota.

- More details can be found here.
- A pdf of the North Dakota NASA EPSCoR pre-proposal instructions can be found here.

If you have questions, contact the ND EPSCoR Office.

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NASA ROSES 2018: Remote Sensing Theory for Earth Science

The National Aeronautics and Space Administration (NASA) Science Mission Directorate (SMD) announces the release of its annual NASA Research Announcement (NRA), Research Opportunities in Space and Earth Sciences (ROSES) – 2018. ROSES is an omnibus NRA, with many individual program elements, each with its own due dates and topics. All together these cover the wide range of basic and applied supporting research and technology in space and Earth sciences supported by SMD.

Remote Sensing Theory for Earth Science is a new program element in ROSES-2018. Remote sensing science to establish a theoretical basis for measuring Earth surface properties using reflected, emitted, and scattered electromagnetic radiation and to develop the methodologies and technical approaches to analyze and interpret such measurements lies at the heart of NASA's mission. Remote sensing science investigations are needed to prepare for new remote sensing measurements of the Earth from space and to ascertain the readiness of candidate technologies for obtaining them. The objective of the Remote Sensing Theory (RST) program element, a multidisciplinary/interdisciplinary program, is to enable major steps in algorithm and future technology development that will ultimately lead to significant advances in remote sensing Earth observing. The program will support fundamental scientific, nonincremental advances in remote sensing theory and radiative transfer, including advancement of retrieval algorithms to be used for space-based remote sensing of the Earth's atmosphere, oceans, biosphere, cryosphere, land surface, and/or Earth interior.

Notice of Intent deadline: February 28, 2019; Application deadline: March 22, 2019

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NIH: Research Enhancement Award Program (REAP; R15)

The purpose of this new program, the Research Enhancement Award Program (REAP / PAR-19-135) for Health Professional Schools and Graduates Schools of Arts and Sciences, is to stimulate basic and clinical research in educational institutions that provide baccalaureate or advanced degrees for a significant

number of the Nation's research scientists, but that have not been major recipients of NIH support. REAP grants create opportunities for scientists and health professional institutions otherwise unlikely to participate extensively in NIH research programs to contribute to the Nation's biomedical and behavioral research effort. REAP grants are intended to support small-scale research projects proposed by faculty members of eligible, domestic institutions, to expose undergraduate and/or graduate students at health professional schools or graduate schools of arts and sciences to meritorious research projects, and to strengthen the research environment of the applicant institution.

For this FOA, only eligible Health Professional Schools or Graduate Schools may apply. See the FOA for a detailed definition. NDSU faculty in all other colleges are eligible to apply for the R15 AREA program.

Application deadline: Standard R15 dates apply [February 25, June 25, and October 25 annually]

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NSF: Cyberinfrastructure for Emerging Science and Engineering Research

The Cyberinfrastructure for Emerging Science and Engineering Research (CESER / PD 19-7684) program aims to catalyze new science and engineering discovery pathways through early-stage collaborative activities between disciplinary scientists and engineers as well as developers / implementers of innovative cyberinfrastructure (CI) capabilities, services, and approaches.

A central feature of successful CESER projects is a **strong, mutually-dependent collaborative team** comprising expertise in the target science/engineering discipline(s) as well as expertise in CI development and

implementation. CESER supports **early-stage exploratory efforts** that may comprise analysis, community planning, and pilot-level activities that are preparatory or informative for eventual future development and deployment of science/engineering-driven CI. Proposals are particularly welcomed that address identified common needs across multiple research disciplines; leverage and accelerate the impact of existing CI investments in resources and services in one or more application domains; aim to reduce barriers to broader adoption of CI-enabled science/engineering approaches; and integrate different aspects and elements of CI to achieve holistic solutions with transformative science/engineering impact.

Requirement to contact NSF Cognizant Program Officers: CESER is an inherently collaborative science/engineering-CI program. Successful CESER projects typically involve co-funding from the relevant disciplinary research programs within NSF. Consequently, before submitting a proposal to CESER, proposers **must first**

1. discuss their ideas with a cognizant CESER Program Officer to ensure that CESER is the appropriate venue for the proposal and
2. discuss their ideas with the relevant NSF disciplinary science and engineering research program(s) to ensure there is adequate disciplinary interest in the proposed effort.

CESER accepts proposals pursuant to this Program Description year-round.

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NSF DCL: Research Coordination Networks (RCNs) for driving convergent science with the National Ecological Observatory Network (NEON)

Through this Dear Colleague Letter (DCL), the National Science Foundation's (NSF) Division of Biological Infrastructure (DBI) and Division of Environmental Biology (DEB) within the Directorate for Biological Sciences (BIO) announce an intent to support Research Coordination Networks (RCNs / NSF 17-594) to coordinate new and existing groups of scientists conducting research enabled by the National Ecological Observatory Network (NEON). Now entering its first year of full operations, NEON is a continental-scale network of standardized field instruments, sensors, and manual biological sampling that will enable reproducible research over the next 30 years.

Solutions for the most persistent challenges facing the ecological sciences today are hindered by our limited understanding of the complex interactions between living and non-living systems operating over large spatial and temporal scales. Because many environmental controls, responses, and feedbacks operate over regional to continental scales, they cannot be investigated mechanistically by disconnected studies of individual ecosystems over short periods of observation. Understanding ecological processes at continental scale has been impeded by a lack of distributed ecological research infrastructure that would enable the research needed to address complex issues at the necessary spatiotemporal scales. NEON is a major facility for studying the biosphere synoptically at regional to continental scales and for supporting ecological forecasts in North America with openly accessible methods and high precision data products.

These RCN awards will provide collaborative opportunities for NEON-enabled science communities to communicate their research and to synthesize investigations of key ecological problems, ideas, and practices. Successful RCNs will conduct inclusive conferences, in-person and/or virtual meetings,

and other structured activities to establish new collaborations and enhance cooperation among NEON-enabled science research communities. RCN awards will address most of the following five science priorities:

1. identify and prioritize research topics;
2. enable synthesis activities that establish a basis for new NEON-enabled science;
3. define questions and evaluations of NEON data products that resolve methodological challenges and offer new or improved algorithms;
4. establish mechanisms to coordinate ongoing or planned collaborative research activities; and
5. develop best practices for data management that promote open sharing of information.

Proposals that emphasize training and educational activities to build the next generation of scientists involved in NEON-enabled science are also encouraged. All RCN awards must communicate information and ideas to the public and the broader community of scientists and plan to fully include women, underrepresented minority groups, veterans, and persons with disabilities, and promote a respectful, inclusive, and collaborative environment.

NSF application deadline: February 25, 2019

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NSF DCL: Research to Improve STEM Teaching and Learning, and Workforce Development for Persons with Disabilities

Through this Dear Colleague Letter (DCL), the National Science Foundation's (NSF's) Directorate for Education and Human Resources (EHR) announces an

intent to support fundamental research on science, technology, engineering and mathematics (STEM) learning for persons with disabilities, such as dyslexia or autism. NSF intends to foster the development of fundamental knowledge in STEM teaching and learning for persons with disabilities, in both formal and informal contexts, from the earliest developmental stages of life through participation in the workforce. This notification identifies opportunities for such research and development through the following programs:

- EHR Core Research (ECR): STEM Learning and Learning Environments, Broadening Participation, and Workforce Development (NSF 19-508)
- Discovery Research preK-12 (NSF 17-584)
- Improving Undergraduate STEM Education: Education and Human Resources (NSF 17-590)
- Faculty Early Career Development Program (CAREER) (NSF 17-537)

NSF invites proposals focused explicitly on advancing knowledge about STEM teaching, learning, and workforce development for individuals with disabilities. Research in disabilities education includes fundamental research about learners (of all ages) with disabilities, with a particular focus on efforts to understand and address disability-based differences in STEM teaching and learning and workforce preparation and participation. Proposers are encouraged to explore a wide range of fundamental and applied research and development projects that may address, but are not limited to, such areas as:

- The cognitive and neurological underpinnings of learning disabilities (such as attention, working memory, spatial reasoning, or executive function) in the context of STEM education and/or employment;
- Theoretical constructs about self-regulated learning (such as metacognition, strategic action, learning motivation, and self-efficacy) in the STEM disciplines involving students with disabilities;

- Computer and on-line training programs for improving mathematics learning and performance for students with dyslexia and other specific learning disabilities;
- Developmental trajectories of persons with specific learning disabilities, or other types of specific learning disabilities, in STEM education and professional disciplines over time;
- The development and efficacy of STEM instructional strategies for persons with disabilities at early ages through undergraduates;
- Instructional practices for young students with disabilities who are not responsive to typical mathematics and/or science classroom instruction;
- The auditory processing and learning mechanisms employed by students with visual impairments, and/or visual processing and learning mechanisms by students who are deaf or hard of hearing, in the context of learning in the STEM disciplines;
- The development of measures in the STEM disciplines that support valid and reliable observations (e.g., progress monitoring tools or dynamic assessments) for students with disabilities;
- Effective professional development for teachers of students with disabilities;
- The stereotype and identity threat that persons with disabilities experience in STEM classrooms, research settings, and workplaces
- The societal and organizational characteristics that influence STEM learning, educational, and career pathways for students with specific types of disabilities;
- How to improve STEM outcomes for individuals with specific learning disabilities, including dyslexia.

In addition, NSF is interested in supporting proposals focused on building capacity for research on STEM education for persons with disabilities through synthesis projects and conferences related to advancing research and understanding of individuals with disabilities.

- **Synthesis** proposals seek support for the synthesis and/or meta-analysis of existing knowledge on a topic of critical importance to STEM learning and/or education, or for the diffusion of research-based knowledge. Examples of syntheses in this area could include the clarification of the current status of research relative to cognition and mathematics learning disabilities or clarifying identification and screening procedures for mathematics learning disabilities.
- **Conference** proposals seek support to conduct well-focused conferences related to the research goals of the program. Investigators are strongly encouraged to contact a program officer prior to submission to discuss their ideas.

Proposals responding to this DCL should be submitted by the due date (if any) of the relevant NSF program.

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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 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).

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Implementation of Revisions to Common Rule - January 21, 2019

Full Implementation of the revised Common Rule will go into effect January 21, 2019. At this time, NDSU will begin using the revised Exemption Categories (with the exception of Categories 6 and 7), will implement the additional option for waiving documentation of consent, continue to comply with the additional elements of consent required for non-exempt research and apply flexibility to annual continuing review requirements where permitted.

Helpful resources on these changes can be found on the NDSU Institutional Review Board webpage.

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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.