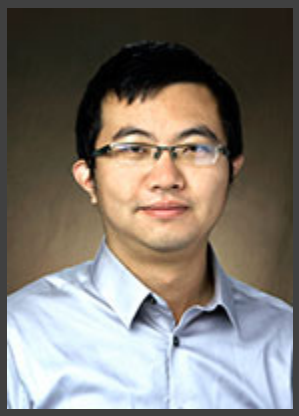
NDSU OFFICE OF RESEARCH AND CREATIVE ACTIVITY

RCA UPDATE

February 10, 2020

NDSU Researchers Receive NSF CAREER Awards

Zhongyu Yang, assistant professor in Chemistry and Biochemistry, and Dharmakeerthi Nawarathna, assistant professor in Electrical and Computer Engineering, have recently earned NSF CAREER Awards. The NSF Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of 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.



Zhongyu Yang studies the structural information of protein molecules impacted by confined environments. He hopes to better understand how confinement found in natural cell structures impacts protein functions.

Read more about Dr. Yang's research >>

Dharmakeerthi Nawarathna's research is focused on developing a low-cost, highly-sensitive sensor that can detect the early stages of cancers and other diseases. His work has the potential to be a game-changer in delivering quality healthcare at an affordable price.
Read more about Dr. Nawarathna's research >>

Congratulations to all award recipients from December 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 >>

NIH Releases New Guidance on Salary Limitations

The National Institutes of Health (NIH) issued new guidance on salary limitations/caps for grants and cooperative agreements. The new salary limitation/cap is $197,300, which is an increase of $5,000 from the previous $192,300. This change is effective starting January 5, 2020. Additional information concerning use of salary caps can be found on the RCA Website.

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FUNDING OPPORTUNITIES

EVENTS & NOTICES

Please note: The NDSU Scholars Database website has been retired. This public-facing tool was targeted at sharing faculty Pivot profile information with individuals who did not have access to Pivot but may have wanted to find collaborators at NDSU. All faculty profile information is still available to Pivot users. Any links to the Scholars Database should be changed to https://pivot.proquest.com/profiles/main.

DOE: Solar Energy Technologies Office (SETO) 2020 Funding Program

The U.S. Department of Energy (DOE) announced up to $125.5 million in new funding to advance solar technology research. Through the Office of Energy Efficiency and Renewable Energy (EERE) Solar Energy Technologies Office, DOE continues to advance research and development of solar technologies that reduce the cost of solar, increase the competitiveness of American manufacturing and businesses, and improve the reliability of the grid. Funding will support advancements in the following areas:

- Photovoltaics (PV) Hardware Research;
- Integrated Thermal Energy Storage and Brayton Cycle Equipment Demonstration (integrated TESTBED);
- Solar Energy Evolution and Diffusion Studies 3 (SEEDS 3);
- Innovations in Manufacturing: Hardware Incubator;
- Systems Integration;
- Solar and Agriculture: System Design, Value Frameworks, and Impacts Analysis;
- AI Applications in Solar Energy with Emphasis on Machine Learning;
- Small Innovative Projects in Solar (SIPS): PV and Concentrated Solar Power.

Read the Funding Opportunity Announcement [DE-FOA-0002243] >>
Sign up for a webinar about this funding opportunity >>

Letter of Intent Deadline: March 9, 2020
Concept Paper Deadline: March 16, 2020
Full Application Deadeline: May 21, 2020

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DOE Notice of Intent: Workforce Development in Emerging Fields

The Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) intends to issue a Funding Opportunity Announcement (FOA) entitled “Workforce Development in Emerging Fields.” This funding opportunity will support leading-edge interdisciplinary research that promotes workforce development in emerging fields by supporting a coordinated expansion of existing joint graduate education programs with national laboratories to prepare the next generation of scientists and engineers. Consistent with Congressional guidance, **applicants will be restricted to land grant universities**. EERE plans to issue the FOA in February of 2020 via the EERE Exchange website. If applicants wish to receive official notifications and information from EERE regarding this FOA, they should register in EERE Exchange. When the FOA is released, applications will be accepted only through EERE Exchange.

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Fulbright: Short-term Exchange Specialist Program

The Fulbright Specialist Program offers opportunities to share expertise, gain international experience and develop collaborative partnerships through short-term, project-based exchanges of 2-6 weeks duration at institutions around the globe. It is worth noting that it is possible to receive multiple Fulbright awards, thus receiving a specialist award does not hinder your chances for a longer-term award at another time.

For more information, register for the program webinar:
Thursday, February 20, 2020 | Noon | *Register >>*

*The Fulbright Specialist Program accepts applications on a year-round basis, and convenes peer review panels approximately six times per year. Deadlines for 2020 are now available on the Specialist Application Process page. The next two deadlines are **March 6, 2020** and **May 6, 2020**.*

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NIH: Collaborative Program Grant for Multidisciplinary Teams (RM1)

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.

NIH RM1: Notify RCA of your interest in participating in this program by February 20, 2020, 5pm.

This funding opportunity announcement (FOA / PAR-20-103) is designed to support highly integrated research teams of three to six PD/PIs to address ambitious and challenging research questions that are important for the mission of NIGMS and are beyond the scope of one or two investigators. Collaborative program teams are expected to accomplish goals that require considerable synergy and managed team interactions. Project goals should not be achievable with a collection of individual efforts or projects. Teams are encouraged to consider far-reaching objectives that will produce major advances in their fields. Applications that are mainly focused on the creation, expansion, and/or maintenance of community resources, creation of new technologies or infrastructure development are not appropriate for this FOA.

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NIH: Non-Viral Technologies for *in vivo* Delivery of Genome Editors

The purpose of this funding opportunity [PAR-20-098] is to support the development and evaluation of innovative approaches to deliver genome editing machinery into somatic cells, with the ultimate goal of enabling the use of genome editing therapeutics to treat human disease. The primary goal of this Funding Opportunity Announcement (FOA) is not to develop gene editing therapies for specific diseases, but to develop delivery systems to particular cells which would be of relevance to multiple diseases resulting from genetic abnormalities in given cell type(s).

Deadline: Standard dates apply

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NSF DCL: Exploring the NSF 2026 Idea Machine

The National Science Foundation (NSF) seeks to further explore the pool of ideas submitted to the NSF 2026 Idea Machine, for the purpose of framing new potential areas for NSF investment. This Dear Colleague Letter (DCL) invites submission of proposals for Conferences, and EArly-concept Grants for Exploratory Research (EAGERs), following the themes that emerged in the top group of Idea Machine entries.

Each proposal submitted in response to this DCL should be grounded in a compelling, cross-disciplinary research challenge in line with one or more of the top-ranked Idea Machine entries. The proposal should address the current state of the research challenge and describe an integrated strategy for addressing the challenge. Proposals must identify which concepts from among the 33 entries the activity proposes to enrich or extend.

Deadlines:
Conference proposals: March 15, 2020
EAGER Research Concept Outlines: March 1, 2020
EAGER proposals: April 30, 2020

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NSF DCL: Secure Analog-RF Electronics and Electromagnetics

With this Dear Colleague Letter (DCL), the Directorate for Engineering and the Directorate for Mathematical and Physical Sciences of the National Science Foundation (NSF) announce their interest in receiving EArly-Concept Grants for Exploratory Research (EAGER) proposals to support research in fundamental theory, design, algorithm, and experimental verification of RF, analog, and mixed-signal techniques that will significantly enhance and ensure the security of electronic devices. To encourage convergence in research, PIs are expected

to submit proposals demonstrating complementary expertise to tackle the challenging security problems involving multiple disciplines.

Examples of research topics include novel RF, analog, and mixed-signal approaches to:

1. address the security vulnerability caused by electromagnetic emissions;
2. address the security vulnerability originated from the power management circuits;
3. ensure secure communications and sensing within the RF spectrum from kHz to THz;
4. ensure trusted microelectronics going through multiple phases of design, fabrication, packaging, and validation;
5. explore advanced materials and devices that can enhance and ensure security.

Deadline: March 1, 2020

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NSF: Reproducible Cells and Organoids via Directed-Differentiation Encoding

The National Science Foundation (NSF) Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET), seeks proposals that elucidate mechanisms of, and develop strategies to, direct the differentiation of undifferentiated cells into mature, functional cells or organoids. Projects responsive to this solicitation [NSF 20-541] must aim to establish a robust and reproducible set of differentiation design rules, predictive models, real-time sensing, control, and quality assurance methods, and integrate them into a workable differentiation strategy. They must develop a fundamental understanding of how cells develop, including mechanisms, molecular machinery, dynamics, and cell-cell interactions, and use this understanding to manipulate cells purposefully. Investigators can choose any undifferentiated cell type, from any animal species, as a starting point and choose any appropriate functional product (cell, organoid, etc.) with real-world relevance. This solicitation parallels NSF's investment in *Understanding the Rules of Life (URoL): Predicting Phenotype*, NSF's Big Idea focused on predicting the set of observable characteristics (phenotype) of an organism based on its genetic

makeup and the nature of its environment and applies it to understanding and accomplishing the intentional and guided differentiation of an undifferentiated cell into cells, organoids or tissues with predetermined activities and functions.

Note: An investigator may only be a PI, Co-PI, or other Senior Personnel on one RECODE proposal.

Required Letter of Intent: March 2, 2020
Deadline: April 30, 2020

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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. The NSF CAREER Program will also be part of the programming.

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

- February 11 - NSF CAREER Program (*11:30am-1:30pm*)
- February 25 - NSF Broader Impacts and Intellectual Merit
- 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 >>

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NDSU Core Biology Facility

The NDSU Core Biology Facility (CBF) assists researchers by providing equipment and resources that might not otherwise be accessible in the standard laboratory. CBF is equipped with BD Accuri C6 flow cytometers, BD FACSJazz cell sorter, Agilent 2100 Bioanalyzer, BioTek Synergy H1 microplate reader, iBright FL 1500 imaging system, Thermo Nanodrop 2000c, and more. In addition, CBF contains the equipment and resources to perform tissue/cell culture. CBF is a reasonable fee structure-based facility with the goal of assisting and promoting research. If interested in touring the facility and/or discussing how the facility may assist your research, please contact the CBF Manager, Dr. Amber Chevalier Plambeck (amber.chevalier@ndsu.edu, 701-231-5334).

During January and February, the CBF is offering a free training session per laboratory on the iBright FL1500. The iBright FL1500 is used to image, document, and quantify/analyze samples on gels and blots. This free training time will benefit laboratories that are interested in using the instrument. Contact Dr. Chevalier Plambeck (amber.chevalier@ndsu.edu, 701-231-5334) if you are interested in this training.

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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.