

# COLLEGE HAPPENINGS

April 14, 2020

## FROM THE DEAN

### Today's Faculty Council Meeting

As I drove north onto campus, shortly after NDSU announced that face-to-face instruction would not resume this semester, I passed one of our students dressed in her cap and gown posing for pictures by the iconic Bison statue between Minard Hall and the Library. The sight brought home to me the sad reality that many of us have grappled with over the past weeks. In a recent newsletter to alumni, I acknowledged that the way that we are closing out the spring semester, especially for our graduating students, is nothing short of a loss that we must acknowledge together.

And while we continue to interact with each other and our students on Zoom, Teams, or Blackboard Collaborate, it is not the same as seeing our students, faculty and staff and saying hello in person. What are you missing most right now? And how can we enhance our sense of community while working remotely?

For our faculty, I would like to invite you to join me today for a conversation at 12:30 p.m. for our monthly scheduled College of Engineering faculty meeting. Much of the meeting is dedicated to a discussion of the college response to COVID-19. I would like to hear from you about issues you are facing and ways that the college can support you. I also plan to facilitate discussion about scenarios for the fall semester, and what we can be doing now to best prepare for those scenarios. Finally, we will also have a time for questions through an interactive experience. The link for the meeting is <https://ndsu.zoom.us/j/388834565>. I will be hosting a similar open forum for staff soon.

The past month I have been humbled by the way you all, faculty and staff, have come together to keep our college moving forward in a situation unprecedented in our lifetime. Thanks for all you do for NDSU. I look forward to seeing many of you this afternoon.



## IN THE NEWS

[Program spotlight: Civil and Environmental Engineering](#)

[NDSU partners with Wahpeton company to develop, mass produce health care masks](#)

[North Dakota State students work to fight medical mask shortages amid COVID-19](#)

[ANTEC 2020: The Virtual Edition - PlastChicks LIVE w/ Chad Ulven, Ph.D.](#)

## CONGRATULATIONS

Please let [College Happenings](#) know about honors, awards, new grants and other announcements so we can share them with other faculty and staff.

## OPEN FORUMS WITH THE PROVOST

The Provost's Office will be sponsoring two open forums next week to share updates and respond to questions from the faculty. Participation is optional. The sessions will be conducted via Zoom.

### Join Zoom Meeting on April 14<sup>th</sup> @ 3:00 pm

<https://ndsu.zoom.us/j/267990337>

### Join Zoom Meeting – April 16<sup>th</sup> @ 1:00 pm

<https://ndsu.zoom.us/j/913002855>

## UPCOMING REMOTE TEACHING TRAINING

NDSU Information Technology Services continues to offer remote and recorded training opportunities. You can find the latest offerings and [more details here](#).

## COLLEGE AWARD NOMINATIONS

Nomination deadlines have been **EXTENDED** for the College of Engineering's Teaching and Research awards.

- Teacher of the Year – Friday, April 17, 2020
- Researcher of the Year – Friday, April 17, 2020
- Outstanding Staff Award – Wednesday, July 15, 2020

You can find more information about the awards, nomination documents and submission information at the [College Awards page](#).

## GREEN BANDANA PROJECT

The purpose of The Green Bandana Project is to create a quiet sign of solidarity to unite NDSU against the stigmas that surround mental health while providing support to those struggling with anxiety or depression. By taking the pledge, attending a short training session and tying the green bandana to your backpack, you show that you are a safe individual for others to come to with mental health related issues.

Organizers believe it is important for everyone to show their support and are inviting faculty and staff to join the project by hosting a faculty/staff virtual training session on **Wednesday, April 22nd at 11:30am**.

More information, to take the pledge, and training session sign ups can be found online:

[https://www.ndsu.edu/reslife/rha/green\\_bandana\\_project/](https://www.ndsu.edu/reslife/rha/green_bandana_project/)

Zoom Access Information for training:

- Join Zoom Meeting | <https://ndsu.zoom.us/j/2724560900>
- Download the Zoom App | Meeting ID: 272 456 0900

## UPDATES FROM RCA

[NDSU PPE Donation program](#). NDSU is inventorying our personal protective equipment (PPE) that could be mobilized for use by healthcare personnel and others to help prevent the spread of the coronavirus. Please add your information to the survey and thanks to all who have already done so.

Please read “[Guidance for NDSU Principal Investigators for Researchers paid on federal grants or contracts during COVID-19 pandemic](#).” This guidance should answer questions related to the impact of the pandemic on research activities and contains important items for you to consider moving forward.

## FUNDING OPPORTUNITIES

### National Science Foundation: COVID-19 Funding

The recently signed Coronavirus Aid, Relief, and Economic Security Act (CARES Act) included \$75M for the National Science Foundation (NSF) in support of the agency’s ongoing RAPID grant response. Research can explore how to model and understand the spread of COVID-19; to inform and educate about the science of virus transmission and prevention; and to encourage the development of processes and actions to address this global challenge.

NSF encourages the research community to respond to this challenge through [existing funding opportunities](#). In addition, researchers are invited to use the Rapid Response Research (RAPID) funding mechanism, which allows NSF to receive and review proposals having a severe urgency with regard to availability of or access to data, facilities or specialized equipment as well as quick-response research on natural or anthropogenic disasters and similar unanticipated events. Requests for RAPID proposals may be for up to \$200K and up to one year in duration.

All questions should be directed either to a program officer managing an NSF program with which the research would be aligned or to [rapid-covid19@nsf.gov](mailto:rapid-covid19@nsf.gov).

Complete guidance on submitting a RAPID proposal may be found in [Chapter II.E.1 of the NSF Proposal and Award Policies and Procedures Guide](#).

For additional information:

- [NSF Dear Colleague Letter on the Coronavirus Disease \(20-052\)](#)
- [Frequently Asked Questions for NSF DCL 20-052](#)

### DOE: Plastics Recycling Research and Development

The [Bioenergy Technologies Office](#) (BETO) and [Advanced Manufacturing Office](#) (AMO) within the U.S. Department of Energy's (DOE's) Office of Energy Efficiency and Renewable Energy have issued a joint Funding Opportunity Announcement (FOA) titled “**BOTTLE: Bio-Optimized Technologies to keep Thermoplastics out of Landfills and the Environment**.” This FOA supports the DOE’s [Plastics Innovation Challenge](#), a comprehensive program to accelerate innovations in energy-efficient plastics recycling technologies. The FOA will support high-impact research and development for plastics by developing new plastics that are capable of efficient recyclability and by improving recycling strategies that can break existing plastics into chemical building blocks that can be used to make higher-value products. In addition, the FOA will seek partners for the newly launched National Laboratory-led [BOTTLE consortium](#), focused on designing new plastics and recycling strategies in collaboration with industry and academia.

FOA Topic Areas include:

- Highly Recyclable or Biodegradable Plastics
- Novel Methods for Deconstructing and Upcycling Existing Plastics
- BOTTLE Consortium Collaborations to Tackle Challenges in Plastic Waste

Learn more about the full FOA on [EERE Exchange](#) and [Grants.gov](#), as well as through the [BETO Funding Opportunity Page](#) and the [DOE press release](#).

## **DOE NOI: Energy Storage for Fossil Power Generation**

The Department of Energy (DOE) has published a [notice of intent](#) to issue Funding Opportunity Announcement No. DE-FOA-0002332 titled Energy Storage for Fossil Power Generation. The overall objective of the planned Funding Opportunity Announcement is to competitively solicit and award Research and Development projects that will advance energy storage technologies and integrate them with fossil-fueled assets to enhance the flexibility, reliability, efficiency, environmental performance, and resiliency.

## **NSF: Hydrologic Sciences**

The National Science Foundation (NSF) Hydrologic Sciences Program ([NSF 20-560](#)) supports basic research on the fluxes of water in the terrestrial environment that constitute the water cycle as well as the mass and energy transport function of the water cycle. The Program supports the study of processes including (but not limited to): rainfall, runoff, infiltration and streamflow; evaporation and transpiration; the flow of water in soils and aquifers; and the transport of suspended, dissolved, and colloidal components. The Program is interested in how water interacts with the landscape and the ecosystem as well as how the water cycle and its coupled processes are altered by land use and climate. Studies may address physical, chemical, and/or biological processes that are coupled directly to water transport. Observational, experimental, theoretical, modeling, synthesis and field approaches are supported. Projects submitted to Hydrologic Sciences commonly involve expertise from physical and ecosystem sciences, engineering and/or mathematics; and proposals may require joint review with related programs.

## **RECENTLY FUNDED GRANTS**

- Long Jiang (PI). Upcycling of CFRP Waste: Viable Eco-friendly Chemical Recycling and Manufacturing of Novel Repairable and Recyclable Composites. \$298,562 from the Department of Energy. 01/01/2020 – 12/31/2023.

## **RECENTLY SUBMITTED PROPOSALS**

- Yan Zhang (PI). Development of a Simultaneous Velocity-Concentration Measurement (PIV-LIF) System for Fluid Dynamic Research and Teaching. \$5,000 from the NDSU Foundation and Alumni Association. 06/01/2020 – 11/30/2021.
- Qifeng Zhang (PI). Exploring the Origin of Lithium Dendrite Formation in Garnet-type Solid-State Electrolyte to Answer an Important Question towards the Development of Solid-State Lithium Ion Batteries. \$5,000 from the NDSU Foundation and Alumni Association. 08/15/2020 – 08/14/2021.
- Di Wu (PI), Dali Sun(CPI). A novel therapeutic target screening method for pancreatic cancer aided by efficient identification of critical pathways using graph theoretical framework. \$5,000 from the NDSU Foundation and Alumni Association. 06/01/2020 – 05/31/2021.
- Beena D Ajmera (PI), Om Prakash Yadav (CPI). Fluctuations in Shear Strengths of Fine-Grained Soils as a Result of Earthquake loading. \$5,000 from the NDSU Foundation and Alumni Association. 06/01/2020 – 12/31/2021.
- Ivan T Lima Jr (PI). Preliminary Studies for the Development of Therapeutic Antibodies using Dielectrophoresis. \$5,000 from the NDSU Foundation and Alumni Association. 05/16/2020 – 06/15/2021.
- Danling Wang (PI). Integrated Study of Novel Nanocomposites Based on Two-Dimensional MXene and One-Dimensional Nanowires for Biomedical Sensing Applications. \$1,000 from the NDSU Foundation and Alumni Association. 06/01/2020 – 05/31/2021.
- Danling Wang (PI). Innovative Remote Sensing Technology Based on New 2D MXene Nanosheets and 1D Nanowires Nanocomposite for Agriculture and The Food System. \$6,000 from the NDSU Foundation and Alumni Association. 05/01/2020 – 04/30/2021.

- Xinnan Wang (PI). The Effect of Surface Roughness on Functionality of Orthopedic Implants. \$4,978 from the NDSU Foundation and Alumni Association. 05/01/2020 – 11/30/2020.
- Jessica Lynne Lattimer Vold (PI). Polymer Additives Based on Sucrose Esters. \$105,000 from Renuvix LLC. 10/01/2020 – 09/30/2021.
- Adam Curtis Gladen (PI), Fardad Azarmi (CPI). Development of a stable, thermochemical-adsorption structure using additive manufacturing. \$708,472 from the Department of Energy. 01/01/2021 – 12/31/2023.

## RECENT PUBLICATIONS

For 2020, 47 publications by authors with the College of Engineering affiliation have appeared in various journals, according to the ISI Web of Science and submissions from faculty. Here are some of the most recent publications:

- Alshandah, Mohanad, Ying Huang, Zhili Gao, and Pan Lu. 2020. "Internal Crack Detection in Concrete Pavement Using Discrete Strain Sensors." *Journal of Civil Structural Health Monitoring* 10 (2): 345–56. <https://doi.org/10.1007/s13349-020-00388-2>.
- Roy, Debjit, Xinhua Jia, Dean D. Steele, Xuefeng Chu, and Zhulu Lin. 2020. "Infiltration into Frozen Silty Clay Loam Soil with Different Soil Water Contents in the Red River of the North Basin in the USA." *Water* 12 (2): 321. <https://doi.org/10.3390/w12020321>.
- Shirzadifar, Alimohammad, Sreekala Bajwa, John Nowatzki, and Jamileh Shojaeiarani. 2020. "Development of Spectral Indices for Identifying Glyphosate-Resistant Weeds." *Computers and Electronics in Agriculture* 170 (March): 105276. <https://doi.org/10.1016/j.compag.2020.105276>.
- Wang, Ning, and Xuefeng Chu. 2020. "A New Algorithm for Delineation of Surface Depressions and Channels." *Water* 12 (1): 7. <https://doi.org/10.3390/w12010007>.
- Xu, Luyao, Huanhai Xin, Linbin Huang, Hui Yuan, Ping Ju, and Di Wu. 2020. "Symmetric Admittance Modeling for Stability Analysis of Grid-Connected Converters." *IEEE Transactions on Energy Conversion* 35 (1): 434–44. <https://doi.org/10.1109/TEC.2019.2943255>.
- Xu, Yiwen, Hritom Das, Yifu Gong, and Na Gong. 2020. "On Mathematical Models of Optimal Video Memory Design." *IEEE Transactions on Circuits and Systems for Video Technology* 30 (1): 256–66. <https://doi.org/10.1109/TCSVT.2018.2890383>.

See your name on this list? Help us get the word out about your amazing work by submitting it as a **Breakthrough Alert**. [This online form](#) is an easy, step-by-step guide for summarizing published research for the general public.

*College Happenings* is distributed to the NDSU College of Engineering staff and faculty every other Tuesday.

Read past issues of *College Happenings* [here](#).

Deadline for submissions to *College Happenings* is 12:00 p.m. Fridays.

Contact [kyle.bosch@ndsu.edu](mailto:kyle.bosch@ndsu.edu) to submit items for *College Happenings*.

Follow the College of Engineering on social media.



