

COLLEGE HAPPENINGS

February 18, 2020

FROM THE DEAN

National Engineers Week

This week is nationally recognized as “Engineers Week”, a week dedicated to raising public awareness of engineers’ positive contributions to quality of life. Again this year there are several outreach events taking place throughout the week to celebrate engineering, including activities for kids at the Fargo Public Library today hosted by our NDSU Engineering Ambassadors and culminating on Friday with Introduce a Girl to Engineering Day, where about 250 eighth grade girls will visit NDSU and area companies in an effort to inspire young women to pursue careers in engineering.

A few weeks ago, I spoke to the Engineering Grand Challenges Scholars seminar class on the topic of the impact that engineers have on society. We talked about the [20 greatest engineering achievements of the 20th century](#), things like electrification, the automobile, computers, and agricultural mechanization. And then we discussed how these engineering breakthroughs fundamentally changed society. Next, we speculated on what the greatest engineering achievements might be for the 21st century. We concluded by focusing on the [grand challenges for the 21st century](#) identified by the National Academy of Engineering, and the key role that engineers will have in meeting these challenges.

As we recognize engineers this week, we can certainly take pride in our contribution to the engineering profession and its impact to enhance society. As the state’s land grant university, engineering education, research and outreach have been part of NDSU’s mission since its founding. The subject was listed in the very first university bulletin in May 1892, with the establishment of the Department of Mechanic Arts. Now, over a century later, we have more than 15,000 engineering alumni working regionally, nationally and around the world in every major field of engineering and computer science. The College of Engineering is the largest (and best) contributor to the engineering workforce in North Dakota, and demand for our graduates continues to grow.

I hope you will take some time this week to reflect on the importance of the engineering, computer science, and construction management, and the role we play (by preparing innovative problem solvers in these fields and creating new knowledge through research) to improve lives in North Dakota and beyond. Happy EWeek!



IN THE NEWS

[Engineering faculty member receives CAREER Award](#)

[Finalists selected for Faculty Lectureship](#)

[NASA internship 'inspired me even more to pursue difficult tasks'](#)

[Inspiring Teacher: Anne Denton, professor of computer science](#)

[GeoWall team wins regional competition](#)

[Environmental engineering degree approved](#)

CONGRATULATIONS

Dinesh Katti, Jordan A Engberg Presidential Professor of civil and environmental engineering, has been named a finalist for the **NDSU Faculty Lectureship**, one of the university's oldest and most prestigious awards.

The **NDSU GeoWall team** won the **2020 Midwest Regional GeoWall Competition**, bringing home the coveted Sand Cone Trophy for the 2nd year in a row.

The **Bison Robotics VEX U** teams recently competed at regional tournaments in St. Cloud, MN and Norfolk, NE. At the Nebraska event **Bison1 won 1st place and the Excellence Award**, qualifying the team for the VEX U World Championships in April.

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

UPCOMING EVENTS

Wednesday, February 19, **Meeting NDSU's Enrollment Challenges**. 12:00 – 1:00 p.m. in the Memorial Union Century Theater.

Thursday, February 20, **Three Minute Thesis competition**. Preliminary rounds are set for 10:00 a.m. and 11:00 a.m. in NDSU's Memorial Union, with the final round scheduled for 2:00 p.m. In addition to the competition, the **Graduate Student Showcase** is scheduled for 10:00 a.m. to noon and 1:00 p.m. to 1:50 p.m. in the Memorial Union Ballroom.

Tuesday, February 25, **Promotion to Professor Panel Discussion: Preparation of an Effective Portfolio**. 11:30 a.m. – 1:00 p.m. in the Memorial Union Arikara Room. All faculty members, PTE reviewers, and academic administrators are invited to attend. [Register here](#).

Wednesday, February 26, **Academic Leaders Series: Establishing a (personal/professional) Online Presence**. 12:30 p.m. – 2:00 p.m. in the Memorial Union Rose Room. This interactive session will explore the opportunities for faculty to promote their research and showcase their academic programs through social media. [Register here](#).

Friday, February 28, **Discover NDSU, Admitted Student Day**.

Wednesday, March 11, **College of Engineering Faculty Council meeting**. 3:00 p.m. in FLC 124. Agendas, minutes and meeting attachments are [posted here](#).

COLLEGE AWARD NOMINATIONS

Nomination deadlines have been set for the College of Engineering's Teaching, Research and Staff awards.

- Teacher of the Year – Friday, April 3, 2020
- Researcher of the Year – Friday, April 3, 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](#).

ASSOCIATE COORDINATOR OF NATURE UNIVERSITY SUMMER CAMP

The North Dakota Established Program to Stimulate Competitive Research (ND EPSCoR) seeks to hire an NDSU faculty member to act as an associate NATURE University Summer Camp Coordinator for the NDSU campus for its 2020 camp.

Working under the direction of Dr. Scott Hanson, ND EPSCoR Tribal Colleges Liaison Manager / NATURE Coordinator and in conjunction with the Associate NATURE University Summer Camp Coordinator for the UND campus, the duties of this position include:

- 1) participate in pre-planning meetings;
- 2) coordinate and implement the NDSU-based activities during the two-week residential camp (Sunday, May 31, 2020 – Friday, June 12, 2020); and
- 3) participate in a post-camp review session.

Deadline to Apply: 5pm, Wednesday, February 26, 2020

Please submit a one-page narrative outlining how your background aligns with this position and a NSF-style bio sketch to Scott Hanson (scott.martin.hanson@ndsu.edu) with a copy to Jean Ostrom-Blonigen (jean.ostrom@ndsu.edu)

Questions: Please direct your questions to: Scott Hanson, ND EPSCoR NATURE Coordinator / Tribal Colleges Liaison Manager (scott.martin.hanson@ndus.edu)

FUNDING OPPORTUNITIES

NDSU Foundation Grants

The NDSU Foundation Grants Committee is accepting applications from faculty and staff for five grant funds for the 2020 academic year. These grants are ways NDSU benefactors annually support NDSU faculty and staff. By providing funding through philanthropy, benefactors help enhance the NDSU experience by supporting faculty and staff innovation.

Faculty and staff can obtain application forms and additional information for all five grants at the NDSU Foundation website:

<https://www.ndsufoundation.com/grant-applications>.

The application deadline is March 30, 2020 by 5 p.m.

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 Deadline: May 21, 2020

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**.*

RECENTLY FUNDED GRANTS

- Ali Amiri (PI), Chad A Ulven (CPI). Investigating Root Cause and Reduce Fogging Behavior of Natural Fiber Filled Thermoplastics. \$44,800 from the Center for Bioplastics and Biocomposites. 01/01/2020 – 12/31/2020.
- David Grewell (PI). Moisture sensitivity of PLA/PBS blends during Ultrasonic and FDM welding. \$32,013 from the Center for Bioplastics and Biocomposites. 01/20/2020 – 12/31/2020.

RECENTLY SUBMITTED PROPOSALS

- Dinesh R Katti (CPI), Simone Ludwig (CPI). NRT-QL: Theory, Informatics, Modeling and Engineering (TIME) of Quantum Materials. \$2,999,997 from the National Science Foundation. 09/01/2021 – 08/31/2026.
- Anne Denton (CPI). AI Institute: Agro AI: The Institute for Advancing Agriculture and Food in a Changing World Using AI. \$750,000 from the University of Minnesota. 09/01/2020 – 08/31/2025.
- Achintya Bezbaruah (CPI). Development of RNA Fungicides for Management of Sclerotinia Sclerotiorum on Canola. \$84,124 from the Agricultural Research Service. 07/01/2020 – 06/30/2021.
- Zhao Zhang (PI). Development, Test, and Improvement of a UAV-Based Innovative Spore Sampling System For Better Management of Sclerotinia Disease. \$45,544 from the Agricultural Research Service. 07/01/2020 – 6/30/2021.
- Zhao Zhang (PI). Development and test of a movable spore sampling system for better blackleg management. \$33,300 from the Northern Canola Growers Association. 06/01/2020 – 06/01/2023.
- Zhao Zhang (PI), John F Nowatzki (CPI). Using different kinds of images collected by UAVs for automatic wheat spike recognizing/counting and density calculation. \$112,500 from the ND Wheat Commission. 07/01/2020 – 06/30/2023.
- Zhao Zhang (PI), John F Nowatzki (CPI). Is it worthwhile to apply mid-season nitrogen? \$57,050 from the ND Wheat Commission. 07/01/2020 – 07/01/2022.
- Amiy Varma (PI). Assessing Airport Programs for Travelers with Disabilities and Older Adults. \$500,000 from the National Academies. 06/01/2020 – 11/30/2021.
- David Grewell (PI), Nita Yodo (CPI), Chad A Ulven (CPI). Rumen Roughage Replacement for Ruminant Species Based on Wet milling Co-Products. \$375,728 from Cargill Inc. 03/01/2020 – 02/28/2022.

- Nurun Nahar (PI). Fabricating Ceiling Tiles from Flax Straw - A Value Added Application. \$24,000 from AmeriFlax. 07/01/2020 – 06/30/2021.
- Xuefeng Chu (PI), Anne Denton (CPI). Development of a big data assimilation focused hydrological-agricultural-meteorological (HAM) modeling system to support risk analysis and decision-making at large spatial. \$1,530,084 from the National Science Foundation. 08/01/2020 – 07/31/2024.
- Dharmakeerthi Nawarathna (PI). Scalable microfluidics-free platform for single-cell molecular analysis. \$398,750 from the National Institutes of Health. 10/01/2020 – 09/30/2022.
- Halis Simsek (PI). Effects of Different Water Table Depth on Plant Water Consumption, Yield, Quality Parameters and Antioxidant Enzyme Activities in Wheat Plant: A Lysimeter Study. \$18,540 from the ND Wheat Commission. 07/01/2020 – 06/30/2021.

RECENT PUBLICATIONS

For 2020, 20 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:

- Bozorg-Haddad, Omid, Mahyar Abutalebi, Xuefeng Chu, and Hugo A. Loaiciga. 2020. "Assessment of Potential of Intraregional Conflicts by Developing a Transferability Index for Inter-Basin Water Transfers, and Their Impacts on the Water Resources." *Environmental Monitoring and Assessment* 192 (1): 40. <https://doi.org/10.1007/s10661-019-8011-1>.
- Bozorg-Haddad, Omid, Babak Zolghadr-Asli, Parisa Sarzaeim, Mahyar Aboutalebi, Xuefeng Chu, and Hugo A. Loaiciga. 2020. "Evaluation of Water Shortage Crisis in the Middle East and Possible Remedies." *Journal of Water Supply Research and Technology-Aqua* 69 (1): 85–98. <https://doi.org/10.2166/aqua.2019.049>.
- Kolars, K., X. Jia, D. D. Steele, and T. F. Scherer. 2019. "A Soil Water Balance Model for Subsurface Water Management." *Applied Engineering in Agriculture* 35 (4): 633–46. <https://doi.org/10.13031/aea.13038>.
- Kundu, Krishna, Dinesh R. Katti, and Kalpana S. Katti. n.d. "Tissue-Engineered Interlocking Scaffold Blocks for the Regeneration of Bone." *JOM*. <https://doi.org/10.1007/s11837-020-04027-5>.
- Luan, Moude, Shangyuan Li, Deqiang Gan, and Di Wu. 2020. "Frequency Domain Approaches to Locate Forced Oscillation Source to Control Device." *International Journal of Electrical Power & Energy Systems* 117 (May): 105704. <https://doi.org/10.1016/j.ijepes.2019.105704>.

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 to submit items for *College Happenings*.

Follow the College of Engineering on social media.



