

# COLLEGE HAPPENINGS

September 17, 2019

## FROM THE DEAN

### Enrollment

Today I'm travelling with Joe Mocnik, Dean of Libraries, to Purdue University to tour some of the new engineering and library facilities that they have built recently and to meet with various administrators. The Wilmeth Active Learning Center, the Bechtel Innovation Design Center, and the Neil Armstrong Hall of Engineering are three of the facilities we'll tour and learn about as we seek inspiration for future facilities at NDSU. One of my goals for the coming biennium is to position the College of Engineering for approval in the 2021 legislative session for a new facility to meet the needs of the college for research labs, undergraduate teaching and design labs, learning spaces that facilitate student teamwork, and tools for innovation.

You likely have heard that NDSU's overall enrollment this fall is down. This is due to a smaller than hoped for incoming class for the second year in a row, while graduating a large cohort of students. Although the exact enrollment numbers won't be official until census day on September 25, the most recent estimates I've seen shows NDSU's total enrollment to be between 600 and 650 students fewer than last year, or about a 5% decrease in student enrollment. The most recent numbers I have for fall enrollment in the College of Engineering is 2,867. While this is the largest fall enrollment ever for the college, that is only due to the fact that we added the Department of Computer Science in July 2019. If we compare the enrollment of the College of Engineering to the enrollment of the college last year plus the enrollment of the Department of Computer Science last year, we are down by an unofficial 188 students, or 6% fewer students than last year.

Part of the drop in students may be attributed to increasing competition for out-of-state students, particularly those from Minnesota. Specifically, it seems that the Minnesota State Grant for MN students (which is a significant financial incentive for MN students from low- and moderate-income families to pay for educational expenses at eligible Minnesota colleges or universities) may be a contributing factor. The lower enrollment has an immediate impact on NDSU's tuition generated revenue, as well as a lagging impact in the next biennium's budget, since the state appropriated funding comes from the higher education funding formula that provides institutions with operating funds based upon successfully completed student credit hours.

For the health of the university, it will be important for all of us to do what we can to take ownership of the enrollment of our units. At the department level, most faculty and staff will have the biggest impact on enrollment by focusing on activities to improve retention, such as proactive advising. For example, as Associate Dean Pryor mentioned last month, 55% of undergraduates at NDSU who were identified as high risk (coded as red) on the Navigate advising system leave NDSU (not counting graduation) within 1 year. These high risk students can benefit from a proactive adviser that gets to know them, demonstrates care for them, and is willing to help them. In addition to retention, there are ample opportunities for our most effective faculty at recruiting to get in front of students who are either visiting campus on individual daily visits, through Discover NDSU group visits, and at Weekend Academic Events (a schedule of on campus recruiting events is online at [ndsuhub.ndsu.edu/visit](https://ndsuhub.ndsu.edu/visit)). If called upon to help with these recruiting activities, please accept.

As I have reiterated several times, I want to be as transparent as possible about the health of our college and NDSU. If you have any questions, please do not hesitate to reach out to me at any time.



## IN THE NEWS

[Students come from across the country to research cybersecurity at NDSU](#)

[NDSU to host Biomedical Engineering Symposium](#)

[College of Engineering celebrates scholarship recipients and donors](#)

[College of Engineering honors researchers of the year](#)

[Engineering faculty recognized for teaching excellence](#)

[Engineering Outstanding Staff Award winners announced](#)

## CONGRATULATIONS

Kalpana Katti from the Department of Civil and Environmental Engineering was the plenary speaker at this summer's European Biomechanics Society conference in Vienna, Austria. The conference is considered one of the world's premiere biomechanics meetings.

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

## CONSTRUCTION MANAGEMENT AND ENGINEERING CHAIR CANDIDATE SEMINARS

Each of the four finalists will be giving a presentation on their research and teaching accomplishments and interaction with industry and students. The seminars are open to all members of the College of Engineering.

### **Mohamed Hegab, California State University, Northridge**

- Thursday, September 19 from 3:30 – 5:00 p.m. in Loftsgard Auditorium (Room 114)

### **Julian Kang, Texas A&M University**

- Thursday, September 26 from 3:30 – 5:00 p.m. in Loftsgard Auditorium (Room 114)

### **Hazem Elzarka, University of Cincinnati**

- Monday, October 7 from 12:00 – 1:30p.m. in the Family Life Center Room 124

### **Zhigang Shen, University of Nebraska-Lincoln**

- Thursday, October 10 from 3:30 – 5:00 p.m. in Loftsgard Auditorium (Room 114)

## COE FACULTY COUNCIL

Please mark your calendars for the CoE Faculty Council Meetings for the 2019-2020 academic year.

•	September	20 <sup>th</sup> (Fri)	3:00 – 4:00 PM	QBB 104 (auditorium)
•	October	16 <sup>th</sup> (Wed)	3:00 – 4:00 PM	QBB 104 (auditorium)
•	November	13 <sup>th</sup> (Wed)	3:00 – 4:00 PM	QBB 104 (auditorium)
•	December	10 <sup>th</sup> (Tue)	12:30 – 1:30 PM	Prairie Rose Room, Memorial Union
•	January	29 <sup>th</sup> (Wed)	3:00 – 4:00 PM	QBB 104 or CME Auditorium
•	February	18 <sup>th</sup> (Tue)	12:30 – 1:30 PM	Prairie Rose Room, Memorial Union
•	March	11 <sup>th</sup> (Wed)	3:00 – 4:00 PM	QBB 104 or CME Auditorium
•	April	14 <sup>th</sup> (Tue)	12:30 – 1:30 PM	Prairie Rose Room, Memorial Union
•	May	6 <sup>th</sup> (Wed)	3:00 – 4:00 PM	QBB 104 or CME Auditorium

This Friday's meeting includes a reception and meet and greet to help welcome the Department of Computer Science to the College of Engineering. Hope to see you there!

## UPCOMING EVENTS

Thursday, September 19, **Leading and Contributing in Meetings**. 12:30 – 2:00 p.m. in the Memorial Union Mandan Room. [Register Here](#).

Friday, September 20, **ABEN Seminar: Conservation Drainage Practices in the Red River Basin** presented by Jeppe Kjaersgaard from the Minnesota Department of Agriculture. 3:00 p.m. in ABEN 201.

Wednesday, September 25, **Employer Appreciation Breakfast**. 8:30 – 10:00 a.m. at the Fargodome.

Wednesday, September 25, **Engineering and Tech Expo**. 10:00 a.m. – 3:00 p.m. at the Fargodome.

Monday, September 30, **3<sup>rd</sup> Annual North Dakota Biomedical Engineering Symposium**. Registration is free and can be [completed here by September 22](#). Please encourage your graduate students to register and participate in poster presentations to showcase their biomedical related research.

Thursday, October 10, **In Our Hands: The Campaign for North Dakota State University**. Join the campus community for the public launch of the largest capital campaign in the history of NDSU. 4:15 p.m. at the Sanford Health Athletic Complex.

Friday, October 11, **College of Engineering Homecoming Showcase**. 11:00 a.m. – 1:00 p.m. in the Memorial Union Great Plains Room. Mark your calendars now and stay tuned for registration information.

Thursday and Friday, October 17 and 18, **Discover NDSU**. The largest event of the year for high school juniors and seniors.

## PROPOSAL DEVELOPMENT PROGRAM

The Office of Research and Creative Activity has launched a 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 finding funding opportunities to developing ideas and a well-aligned and structured proposal. Budgeting, evaluation planning, and peer review sessions 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!](#)

## FUNDING OPPORTUNITIES

### NSF: Emerging Frontiers in Research and Innovation (EFRI) 2020

The Emerging Frontiers in Research and Innovation (EFRI) program [[NSF 19-599](#)] of the National Science Foundation (NSF) Directorate for Engineering (ENG) serves a critical role in helping ENG focus on important emerging areas in a timely manner. This solicitation is a funding opportunity for interdisciplinary teams of researchers to embark on rapidly advancing frontiers of fundamental engineering research. For this solicitation, proposals that aim to investigate emerging frontiers in one of the following two research areas will be considered:

- Distributed Chemical Manufacturing (DChem)
- Engineering the Elimination of End-of-Life Plastics (E3P)

EFRI seeks proposals with transformative ideas that represent an opportunity for a significant shift in fundamental engineering knowledge with a strong potential for long term impact on national needs or a grand challenge. The proposals must also meet the detailed requirements delineated in this solicitation. This solicitation will be coordinated with the Directorate for Biological Sciences, the Directorate for Mathematical and Physical Sciences and the Directorate for Social, Behavioral and Economic Sciences.

FURTHER INFORMATION: The Emerging Frontiers and Multidisciplinary Activities (EFMA) Office will host an informational webinar on Wednesday, September 18, 2019 at 1:00pm Eastern to discuss the EFRI program and answer questions about the FY 2020 solicitation. Details on how to join this webinar will be posted on the [EFMA website](#).

*LOI Deadline: November 4, 2019*

### VentureWell Faculty Grants - Limited Submission

[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. [Notify RCA by 9/19/2019, 5:00 p.m. if you intend to apply.](#)

[VentureWell Faculty Grants](#) provide up to \$30,000 to help fund and support faculty with innovative ideas to create new or transform existing courses and programs to help students develop novel, STEM-based inventions and gain the necessary entrepreneurial skills needed to bring these ideas to market. Proposals are sought for areas that will support the emerging generation of inventors and innovators and the ecosystems critical to their success.

### Successful grant proposals include:

- A focus on technology entrepreneurship;
- Experiential learning by doing, and creative approaches to solving real world problems;
- The formation of student teams focused on technology inventions with positive social and/or environmental impact;
- A supportive entrepreneurial ecosystem for student teams to pursue commercialization;
- A plan for continuation of the course or program after VentureWell funding.

## RECENTLY FUNDED GRANTS

- Benjamin Davis Braaten (PI). Chip-Based ADS-B for High Density, Low Altitude UAV Operations. \$12,097 from the National Aeronautics and Space Administration. 08/15/2019 – 12/31/2019.

## RECENTLY SUBMITTED PROPOSALS

- Trung Bao Le (PI). Data-driven approach to evaluate wetland as storage for critical highway infrastructure under extreme flooding. \$157,626 from the MN Department of Transportation. 07/01/2020 – 06/30/2022.
- Yao Yu (PI), Zhibin Lin (CPI), Qifeng Zhang (CPI). Long-term Monitoring of Indoor Environmental Quality of Children's Living and Studying Environments within an Established Smart and Connected Community between Homes and Schools. \$150,000 from the National Science Foundation. 06/01/2020 – 05/31/2021.
- Kalpana Katti (PI), Dinesh R Katti (CPI). Next Generation Solutions for Personalized Care of Breast Cancer Bone Metastasis. \$725,227 from the U.S. Army. 02/01/2020 – 03/01/2023.
- Simone Ludwig (PI). IRES: International Research Collaboration - Hunt for Explainable A. I. \$292,609 from the National Science Foundation. 02/01/2020 – 01/31/2023.
- Beena D Ajmera (PI). Research Experience for Teachers: Civil Engineering Instruction for Secondary Education Teachers. \$599,296 from the National Science Foundation. 1/01/2020 – 12/31/2023.
- Beena D Ajmera (PI), Ying Huang (CPI). New Soil Moisture Measurement Device for Field Compaction Optimization. \$195,037 from the MN Department of Transportation. 07/01/2020 – 06/30/2022.
- Beena D Ajmera (PI). Trends in Minnesota Freeze - Thaw Cycles. \$101,744 from the MN Department of Transportation. 07/01/2020 – 06/30/2022.
- Kambiz Farahmand (PI), Trung Quoc Le (CPI). Evaluation of Fatigue on Snow Plow Drivers and Evaluation of Aids to Assist Drivers in Recognizing and Dealing with Fatigue. \$199,949 from the MN Department of Transportation. 10/15/2019 – 09/15/2021.
- Nita Yodo (PI), Zhibin Lin (CPI). Accessibility-Based Congestion Measure for Transit. \$150,000 from the MN Department of Transportation. 07/01/2020 – 06/30/2022.
- Shafiqur Rahman (CPI). Indirect Calorimetry Equipment to Enhance Multidisciplinary Research, Teaching, and Extension Programs on Beef Cattle Production Systems. \$49,250 from the National Institute of Food & Agriculture. 02/01/2020 – 01/31/2021.

## RECENT PUBLICATIONS

*For 2019, 92 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:*

- Golfam, Parvin, Parisa-Sadat Ashofteh, Taher Rajaei, and Xuefeng Chu. 2019. "Prioritization of Water Allocation for Adaptation to Climate Change Using Multi-Criteria Decision Making (MCDM)." *Water Resources Management* 33 (10): 3401–16. <https://doi.org/10.1007/s11269-019-02307-7>.
- Hosseini-Farid, M., A. Rezaei, A. Eslaminejad, M. Ramzanpour, M. Ziejewski, and G. Karami. 2019. "Instantaneous and Equilibrium Responses of the Brain Tissue by Stress Relaxation and Quasi-Linear Viscoelasticity Theory." *Scientia Iranica* 26 (4): 2047–56. <https://doi.org/10.24200/sci.2019.21314>.
- Kadioglu, Hakan, Harlene Hatterman-Valenti, Xinhua Jia, Xuefeng Chu, Hakan Aslan, and Halis Simsek. 2019. "Groundwater Table Effects on the Yield, Growth, and Water Use of Canola (*Brassica Napus* L.) Plant." *Water* 11 (8): 1730. <https://doi.org/10.3390/w11081730>.
- Sharma, Swati, and Halis Simsek. 2020. "Sugar Beet Industry Process Wastewater Treatment Using Electrochemical Methods and Optimization of Parameters Using Response Surface Methodology." *Chemosphere* 238 (January): 124669. <https://doi.org/10.1016/j.chemosphere.2019.124669>.

- Sinclair, Alex, Xiaoyi Zhou, Siwakorn Tangpong, Dilpreet S. Bajwa, Mohiuddin Quadir, and Long Jiang. 2019. “High-Performance Styrene-Butadiene Rubber Nanocomposites Reinforced by Surface-Modified Cellulose Nanofibers.” *ACS Omega* 4 (8): 13189–99. <https://doi.org/10.1021/acsomega.9b01313>.
- Sirotiak, Todd, and Achintyamugdha Sharma. 2019. “Problem-Based Learning for Adaptability and Management Skills.” *Journal of Professional Issues in Engineering Education and Practice* 145 (4): 04019008. [https://doi.org/10.1061/\(ASCE\)EI.1943-5541.0000420](https://doi.org/10.1061/(ASCE)EI.1943-5541.0000420).

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.

