

# COLLEGE HAPPENINGS

March 7, 2023

## FROM THE INTERIM DEAN

### Enrollment, Retention and Student Success

As one of his five strategic priorities, President Cook has identified the need to enhance enrollment, retention and student success at NDSU. Over the last few years, undergraduate enrollments have decreased across the institution, and the College of Engineering in particular has experienced significant declines. Since 2017, undergraduate enrollments in the CoE have dropped by over 20%. Many institutions in our region are experiencing similar declines, due to changing demographics and greater competition from neighboring states. To reverse these trends, in the coming years we will need to place a greater emphasis on the recruitment and retention of students. This will require an “all hands on deck” mentality as we seek to identify and implement new approaches for attracting and retaining students.

Fortunately, we have several groups on campus and in the college that are working to address these issues. On the recruitment side, we are honing our messaging and the mechanisms by which we deliver it to our target audiences. We are refining our approaches to hosting prospective students on campus to highlight the benefits of the NDSU experience. We are also exploring more articulation agreements with regional colleges and the development of “2+2” agreements with international universities in order to make NDSU a more transfer-friendly institution. These efforts are designed to attract more students to the College of Engineering at NDSU, and I am confident they will succeed.

Equally as important as student recruitment is the issue of student retention. The most common measure of success in this aspect is the retention of students at the institution after their first year of enrollment, referred to as first-year retention. It is between the first and second years that institutions typically experience the greatest drop in retention of undergraduate students. Last year, the first-year retention rate at NDSU was approximately 75%, down from nearly 80% over previous years. I am pleased to note that the rate within the CoE has been higher, nearly 79% last year. However, we can, and need to, do better.

Over the next few months, we will be rolling out several initiatives to improve student retention. These include the hiring of professional advisors for first and second year students; enhancing student engagement and the first-year experience; and focusing on improvement in the quality of teaching, particularly in the first-year courses. This is an area that we can all contribute to, and I would greatly appreciate your help in this endeavor. A small improvement in our retention rates will lead to big increases in student enrollments, and more importantly, immeasurable gains in student success. And that is something we can all be proud of.

**Alan R. Kallmeyer, Ph.D.**

**Interim Dean | College of Engineering**

## IN THE NEWS

[Engineering assistant professor receives NSF CAREER Award to fight cancer](#)

[Ag Tech Expo winners announced](#)

[Undergraduate research director named](#)

## CONGRATULATIONS

**Surya Congress**, assistant professor in the **Department of Civil, Construction and Environmental Engineering**, was recently appointed as a **Handling Editor for Transportation Research Record: Journal of the Transportation Research Board**. The Transportation Research Board is one of seven major programs of the National Academies of Sciences, Engineering, and Medicine.

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

Thursday, March 23, **Spring Faculty Council Meeting**. 12:00 to 1:00 p.m. (location TBD). Lunch will be served. At this meeting, we will be electing faculty to serve in several positions for the coming academic year.

Thursday, March 30, **College of Engineering Staff Luncheon**. 11:00 a.m. – 1:00 p.m. (location TBD). Lunch will be served. Please RSVP to Alissa Kuntz by March 10.

Thursday, March 30, **Strategies for Implementing Child Care and Family Support in Campus Communities**. This event is a continuation of the January 26 discussion on the equity issues faced by campus communities due to inadequate child care and caregiver support. 12:00 - 1:30 p.m. [Register Here](#).

Friday, March 31, **Faculty Luncheon**. You're invited to join this panel discussion to learn more about the innovative teaching techniques that the panelists have used in enhancing the education experience for students at NDSU. 11:30 a.m. – 1:00 p.m. in the Prairie Rose room in the Memorial Union. Deadline to [REGISTER](#) is **March 17**.

Tuesday, April 18, **Student Research Day**. NDSU Student Research Day is a one-day event dedicated to providing graduate and undergraduate students an opportunity to present their research and creative works. [Learn more and register](#).

## COLLEGE OF ENGINEERING AWARDS

Each year, the College of Engineering recognizes outstanding teaching activities of faculty and graduate students by awarding the Teacher of the Year awards; the unique research accomplishments of faculty and graduate students by conferring the Researcher of the Year awards; and the dedication and contributions of our staff members through the presentation of the Outstanding Staff Awards.

Nominations for each of these awards are now being accepted for 2023. The eligibility requirements and nomination documents for each award can be found at the following link: [https://www.ndsu.edu/coe/faculty\\_staff/college\\_awards/](https://www.ndsu.edu/coe/faculty_staff/college_awards/).

## NDSU NSF WORKSHOPS – MARCH 30, 2023

**NSF CAREER Proposals**

**8:30am-1:00pm / Memorial Union Hidatsa Room**

The *NSF Faculty Early Career Development (CAREER) Program (NSF 22-586)* is a prestigious award program 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 the department or organization. The intention is to provide a firm foundation for a lifetime of leadership in integrating research and education.

This highly interactive workshop will provide strategies for interacting with program officers, analysis of the solicitation, anatomy of the proposal, best practices for developing competitive proposals, and time for Q&A. This session will conclude with a panel of CAREER awardees at NDSU who will share their experience and tips for success. [Register >>](#)

### **NSF EPSCoR Research Infrastructure Improvement Program: Track 2 & Track 4 1:30-3:30pm / Memorial Union Hidatsa Room**

The *NSF EPSCoR Track 2: Focused EPSCoR Collaborations Program (NSF 22-633)* supports interjurisdictional teams of EPSCoR investigators to perform research in emerging industries, with the goal of promoting economic growth in their jurisdictions. The topic for FY2024 is “advancing climate change research and resilience capacity to expand opportunities for disproportionately affected communities.”

This is a limited submission program; the next opportunity for submission to the Track 2 program will be for the December 2023 letter of intent deadline.

The *NSF EPSCoR Track 4: EPSCoR Research Fellows Program (NSF 23-535)* supports early-career investigators located in EPSCoR jurisdictions (like ND) to go on extended collaborative visits to private, government, or academic research centers to enhance Fellows’ research trajectories and improve research capacity of their home institutions and jurisdictions.

This is a limited submission program; the next opportunity for submission to the Track 4 program will be for the April 2024 deadline. NDSU is not eligible for the NASA track.

This session will provide analysis of the programs and strategies for meeting program requirements and developing competitive proposals. Topics will include identifying potential collaborators in EPSCoR jurisdictions, hallmarks of collaborations required by the program, characteristics of a strong mentoring relationship, and strategies for constructing the research plan. [Register >>](#)

## **GUNKELMAN AWARD NOMINATIONS**

The Mary McCannel Gunkelman Recognition Award was established in January 1987, by the late John L. Gunkelman and his family in memory of Mrs. Gunkelman, who was a 1942 graduate of the College of Home Economics.

The purpose of this award is to honor the late Mary McCannel Gunkelman whose life, from the time she was a student on the campus of NDSU and throughout her unselfish life as a wife, mother, and active citizen in the Fargo-Moorhead community, found greatest expression and satisfaction in her contributions in creating an atmosphere of happiness for others to enjoy. Mary was firmly dedicated to the principle that a student would be more apt to attain their full potential if they were working and living in an enjoyable environment. She further believed that the more enjoyable the campus and programs of NDSU, the better university it would be in the future. It is in the firm endorsement of Mary’s belief that this award was established.

You are invited to nominate a student or employee of NDSU who you believe has made the most significant and unselfish contributions to creating a happy environment for the enjoyment of NDSU students. Nomination information can be found [here](#). Please provide specific examples of how this individual has had a direct impact on making NDSU a pleasant, cheerful campus during the current academic year. Nomination forms will be shared with the nominee.

Nominations must be submitted by **Friday, March 31, 2023.**

## 2023 NSF ENGINEERING CAREER PROPOSAL WORKSHOP

The 2023 NSF Engineering CAREER Proposal Workshop will be held virtually over three days: May 8, May 9, and May 12, 2023, from 12:00 PM to 6:00 PM Eastern Time each day.

This virtual workshop will provide early career faculty with knowledge and strategies to enable the formulation of more competitive CAREER proposals for submission to the NSF Directorate for Engineering (ENG) in 2023. Don't miss this opportunity to engage with NSF Program Directors and CAREER awardees!

Attendees of the 2023 NSF ENG CAREER Workshop will benefit from:

- Mock proposal reviews by panel
- Interactions with ENG Program Directors
- Focus sessions with recent CAREER awardees
- Interactions across disciplines and engineering schools nationwide

**The registration deadline is Friday, March 17, 2023, at 5:00 PM Eastern. [Register Now](#)**

## FUNDING OPPORTUNITIES

### NDSU Foundation Grants

The NDSU Foundation Grants Committee is now accepting applications from NDSU faculty and staff for six grant opportunities for the Spring 2023 Grant Program. By providing funding for these grants 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 the available grants at the NDSU Foundation website: <https://www.ndsufoundation.com/grant-applications>.

**The deadline to submit your application is March 14, 2023, by 4:30 p.m.**

- **The Board of Trustees Endowment** can provide maximum awards of \$1,000, with a total of \$6,300 available. This grant fund supports general programs across campus.
- **The Centennial Endowment** can provide maximum awards of \$5,000, with a total of \$24,000 available. This grant fund supports professorships, scholarships, biotechnology, faculty development, libraries, and cultural arts.
- **The Gordon A. Larson Foundation Fund** has \$16,500 available to award. This grant fund supports competitive grants for agricultural research efforts conducted at North Dakota State University.
- **The Library Endowment** has \$5,990 available to award. This grant fund supports requests from any academic unit on campus for materials that will enhance the collections and/or operations of university libraries.
- **The Carl A. and Jean Y. White Memorial Endowment for Agriculture Research** has \$6,100 available to award. This grant fund supports faculty and research staff to encourage Agricultural research initiatives.
- **The Engebretson Family Research Fund** has \$19,000 available to award. This grant fund is available every other year (odd years) and was established to support the advancement of pharmaceutical research, by encouraging the discovery and development of new drug therapies and delivery systems.

For questions, please email Janna Swanson at [janna.swanson@ndsufoundation.com](mailto:janna.swanson@ndsufoundation.com)

The NDSU Foundation will notify applicants of funding decisions by May 15, 2023.

### **DoD: FY24 Defense University Research Instrumentation Program (DURIP) Army Submission**

**DURIP** is designed to improve the capabilities of accredited United States (U.S.) institutions of higher education to conduct research and to educate scientists and engineers in areas important to national defense, by providing funds for

the acquisition of research equipment or instrumentation.

A central purpose of the DURIP is to provide equipment and instrumentation to enhance research related education in areas of interest and priority to the DoD. Therefore, your proposal must address the impact of the equipment or instrumentation on your institution's ability to educate students through research in disciplines important to DoD missions.

*Deadline: May 12, 2023*

### **DOD: Research Interests of the Air Force Office of Scientific Research (AFOSR)**

**AFOSR** plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force. Additionally, the office fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support U.S. Air Force needs.

The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national war fighting and peacekeeping capabilities. These areas are organized and managed in two scientific Departments: Engineering and Information Science (RTA), Physical and Biological Sciences (RTB), and our international offices (EAORD, SOARD, and AOARD).

*Deadline: Open until closed*

### **RECENTLY SUBMITTED PROPOSALS**

- Shuvashis Dey (PI), Benjamin Davis Braaten (CPI), Mijia Yang (CPI). MRI: Track 1 Acquisition of Multi-Material 3D Printer for Additively Manufactured Electronics to Enable Interdisciplinary Research and Education. \$777,100 from the National Science Foundation. 9/1/2023 - 8/31/2026.
- Jiale Xu (PI), Syeed Md Iskander (CPI). MRI: Track 1 Acquisition of a High-Resolution Mass Orbitrap LC-MS System to Advance Multidiscipline Research and Education at North Dakota State University. \$884,829 from the National Science Foundation. 9/1/2023 - 8/31/2026.
- Sudarshan Kumar Srinivasan (PI), Umamaheswara Rao Tida (CPI), Sumitha George (CPI). Hub for Upper Midwest MicroElectronics Innovation. \$416,063 from the Office of the Secretary of Defense. 9/1/2023 - 8/31/2028.
- Long Jiang (PI). Flame-retardant, mildew-resistant soy adhesive for foamed wood siding and other wood products. \$36,871 from the ND Soybean Council. 7/1/2023 - 6/30/2024.
- Long Jiang (PI). Soy-based Bailing Twine with High Digestibility Further Development. \$44,932 from the ND Soybean Council. 7/1/2023 - 6/30/2024.
- Long Jiang (CPI). Filling Epidemiological Knowledge Gaps and Developing a New Format of Bactericide for Managing Bacterial Leaf Streak (BlS) on Wheat and Barley. \$197,968 from the National Institute of Food & Agriculture. 1/1/2024 - 12/31/2025.
- Dr. Xiangfa Wu (PI). Sonoelectrolysis of soybean straws for low-cost green production of hydrogen and value-added chemicals. \$56,512 from the ND Soybean Council. 7/1/2023 - 6/30/2024.
- Yan Zhang (PI). Scalable Parachute Deorbit System for Low-Earth Orbit (LEO) Objects. \$24,999 from the U.S. Air Force. 5/1/2023 - 7/31/2023.
- Adam Curtis Gladen (PI). Advanced Materials for Lithium Ion Batteries - Phase V. \$150,000 from the U.S. Army. 4/1/2023 - 8/12/2024.
- Zhulu Lin (PI). Harnessing the Power of Interpretable Machine Learning to Improve Nutrient Prediction and Management in Agricultural Land in Cold Regions. \$15,840 from the NDSU Foundation. 7/1/2023 - 6/30/2024.

- Dali Sun (CPI). Integrin trans regulation and tumor microenvironment. \$145,000 from the National Institutes of Health. 12/1/2023 - 11/30/2025.

## RECENT PUBLICATIONS

For 2023, 35 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:

- Basu, Atreyee, Parijat Sen, and Ayan Jha. 2015. “Environmental Arsenic Toxicity in West Bengal, India: A Brief Policy Review.” *Indian Journal of Public Health* 59 (4): 295. <https://doi.org/10.4103/0019-557X.169659>.
- Fareed, Nadeem, Joao Paulo Flores, and Anup Kumar Das. 2023. “Analysis of UAS-LiDAR Ground Points Classification in Agricultural Fields Using Traditional Algorithms and PointCNN.” *Remote Sensing* 15 (2): 483. <https://doi.org/10.3390/rs15020483>.
- Huynh, Phat K., Arveity R. Setty, Quan M. Tran, Om P. Yadav, Nita Yodo, and Trung Q. Le. 2022. “A Domain-Knowledge Modeling of Hospital-Acquired Infection Risk in Healthcare Personnel from Retrospective Observational Data: A Case Study for COVID-19.” *PLOS ONE* 17 (11): e0272919. <https://doi.org/10.1371/journal.pone.0272919>.
- Oli-Uz-Zaman, Md, Saleh Ahmad Khan, William Oswald, Zhiheng Liao, and Jinhui Wang. 2022. “Stuck-at-Fault Immunity Enhancement of Memristor-Based Edge AI Systems.” *IEEE Journal on Emerging and Selected Topics in Circuits and Systems* 12 (4): 922–33. <https://doi.org/10.1109/JETCAS.2022.3207687>.
- Roy, Arkaprava, Siba Prasad Datta, Mandira Barman, Debasis Golui, Somnath Bhattacharyya, Mahesh Chand Meena, Viswanathan Chinnusamy, Suchitra Pushkar, Punyavrat S. Pandey, and Mohammad Mahmudur Rahman. 2023. “Co-Application of Silicate and Low-Arsenic-Accumulating Rice Cultivars Efficiently Reduces Human Exposure to Arsenic—A Case Study from West Bengal, India.” *Toxics* 11 (1): 64. <https://doi.org/10.3390/toxics11010064>.

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.

