

# COLLEGE HAPPENINGS

February 21, 2023

## FROM THE INTERIM DEAN

### A Week to Celebrate

This week, we celebrate National Engineer's Week (EWeek), an event founded by the National Society of Professional Engineers in 1951 to raise public awareness of the engineering profession and recognize the positive contributions made by engineers to society and our quality of life. EWeek is observed by more than 70 engineering, education, and cultural societies, and promotes recognition among parents, teachers, and students of the importance of a technical education grounded in mathematical and scientific principles.

Here in the College of Engineering at NDSU, we participate in Engineer's Week to recognize the contributions of our faculty, students and alumni to the engineering profession, and promote NDSU as the top producer of engineering graduates in the state of North Dakota. The demand for engineers remains incredibly high throughout our region, and EWeek provides a great opportunity to educate the public and motivate future students to pursue careers in this rewarding profession.

I would like to encourage all of our students, faculty and staff to participate in the activities we have scheduled this week, including Faculty Appreciation Day (Tuesday), donuts outside the CME Auditorium (Wednesday), pie a professor (Thursday), and dodgeball at the Wellness Center (Friday). In addition, please use this time to help spread the word about the importance and value of our profession, as well as the positive impacts that NDSU engineering graduates continue to make on our society.

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

**Interim Dean | College of Engineering**

## IN THE NEWS

[Agricultural and biosystems engineering student wins Three Minute Thesis Competition](#)

[NDSU's 3 Minute Thesis winner takes home top prize](#)

[NDSU faculty member invited to cybersecurity panel](#)

[January Innovation in Teaching Award recipients announced](#)

[Demand for NDSU students is incredibly strong](#)

## CONGRATULATIONS

**Dali Sun**, assistant professor of **Electrical and Computer Engineering**, has received a National Science Foundation CAREER Award, considered the agency's most prestigious award in support of early-career faculty. Sun's project will develop a new microscope that will revolutionize our understanding of cellular stereochemistry.

**Dinesh and Kalpana Katti**, professors of **Civil, Construction and Environmental Engineering**, have been awarded a United States Patent for their invention of *Block-Scaffolds for Bone Regeneration Using Nano-Clay Polymer Scaffolds*.

**Syed Iskander** and **Wenjie Xia** have been awarded an Innovation in Teaching Award from the NDSU Office of Teaching and Learning.

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, February 23, **Spring Blood Drive**. 10:30 a.m. – 5:00 p.m. in the Cater Hall Multi-Purpose Room. The sign up is located [HERE](#).

Tuesday, February 28, **Promotion-to-Professor Panel Session**. President Cook and Interim Provost Bertolini have been invited to share their thoughts on the promotion process. 11:30 a.m. - 12:45 p.m. in the Memorial Union Hidatsa room. Registration is requested and can be completed at <https://forms.gle/RzPonZwCw4PvokrQ8>.

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/).

## 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](#)**

## **FACULTY FELLOW OPPORTUNITY – UNCREWED AUTONOMOUS SYSTEMS**

The Office of Research and Creative Activity (RCA) is seeking applications for one or more Uncrewed Autonomous Systems Faculty Fellow positions. Uncrewed Autonomous Systems include aerial, ground, and marine vehicles. The state of North Dakota has and continues to make significant investments toward establishing a leadership role in research, development, and deployment of technology in various aspects of such systems.

The Uncrewed Autonomous Systems Faculty Fellow position will initiate activities towards increasing contributions by NDSU to this developing ecosystem in our state and to increase outreach and visibility of our accomplishments. The program seeks to appoint one or more Faculty Fellows with a term of up to two years.

To apply, send the documents outlined below to [ndsu.rcasearch@ndsu.edu](mailto:ndsu.rcasearch@ndsu.edu). Applications must be received by end of day March 14, 2023. A selection is anticipated to be made by April 1, 2023.

1. Cover letter (1-2 pages) describing experience and interest that have prepared the applicant to carry out the proposed work.
2. Description of what applicant hopes to accomplish as an Autonomous Systems Faculty Fellow.
3. Abbreviated Curriculum Vitae.
4. Contact info for a reference that can speak to your potential for carrying out the proposed work.

## **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.

## RECENTLY FUNDED GRANTS

- Dali Sun (PI). CAREER: Novel Elliptical Dichroism Microscopy for Cellular Stereochemistry Analysis. \$504,759 from the National Science Foundation. 9/1/2023 - 08/31/2028.
- Ali Amiri (PI), Chad A Ulven (CPI). Utilizing Hemp Hurd. Improving Hemp Hurd Performance as Filler in Plastic Manufacturing. \$34,364 from the Center for Bioplastics and Biocomposites. 1/1/2023 - 12/31/2023.

## RECENTLY SUBMITTED PROPOSALS

- Dali Sun (PI), Wenjie Xia (CPI). Fast Analysis of Protein Structural for Cancer Research. \$1,307,100 from the National Institutes of Health. 1/1/2024 - 12/31/2026.
- Ying Huang (PI), Xingyu Wang (CPI). All-In-One Data Collection Station for Real-time Traffic and Pavement Bottom-up Cracking Monitoring. \$80,000 from the ND Department of Transportation. 2/15/2023 - 2/14/2025.
- Mijia Yang (PI), Ewumbua Monono (CPI). A New Soy Wax Modified Multifunctional Asphalt to Extend Road Service Life. \$50,260 from the ND Soybean Council. 7/1/2023 - 6/30/2024.
- Ademola Monsur Hammed (PI), Ewumbua Monono (CPI), Niloy Chandra Sarker (CPI). Bioconversion and bioaugmentation of soybean meal for sustainable biofertilizer production. \$65,150 from the ND Soybean Council. 7/1/2023 - 6/30/2024.
- Yao Yu (PI). NSF Seed Grant Phase I: Multi-source/Thermal-storage Heat-pump Design and Universal Controller (MTHDUC). \$86,159 from the National Science Foundation. 9/1/2023 - 8/31/2024.
- Chau Le (PI). Uncovering Critical Barriers to the Adoption of Suicide Ideation Detection Technologies in the Construction Workplace. \$9,181 from the CPWR Ctr for Const Research & Training. 5/1/2023 - 4/30/2024.
- Xiaoyu Feng (PI), Ademola Ayodeji Ajayi-Banji (CPI). Anaerobic Digestion of Defatted Soybean Meal for Biogas and Biofertilizer Productions. \$35,124 from the ND Soybean Council. 7/1/2023 - 6/30/2024.
- Xinhua Jia (PI), Dongqing Lin (CPI). Soybean sprouts production affected by varieties, temperatures, and seed ages. \$36,998 from the ND Soybean Council. 7/1/2023 - 6/30/2024.
- Ajay Kumar Jha (PI). Summer software engineering research for minorities in computer science. \$5,000 from the NDSU Foundation. 5/16/2024 - 8/15/2024.
- Mijia Yang (PI), Shuvashis Dey (CPI). Development and systems integration of low-cost RFID sensors to track the survivability of road signs. \$120,510 from the National Academies. 9/1/2023 - 2/28/2025.
- Jordi Estevadeordal (PI). Experimental Investigation of Dynamic Stall Mitigation Using Leading Edge Micro-Cavity Passive Flow Control. \$10,000 from the Ohio Aerospace Institute. 2/15/2023 - 8/15/2023.
- Omid Beik (PI). Motor Design and Sensorless Control: A Partnership with CorVent. \$309,604 from Corvent Medical, Inc. 3/1/2023 - 2/28/2025.
- Ewumbua Monono (PI), Ademola Monsur Hammed (CPI), Niloy Chandra Sarker (CPI). Improving and optimizing the thermal and tribological properties of soybean oil-based biolubricant. \$64,225 from the ND Soybean Council. 7/1/2023 - 6/30/2024.

- Danling Wang (PI). A miniaturized ultra-sensitive and selective breath ketone sensor employing novel nanomaterials and smart MEMS readout techniques for Type 1 diabetes and DKA warning. \$199,224 from the National Institutes of Health. 8/1/2023 - 7/31/2025.
- Chau Le (PI), Grant Lebahn (CPI). Evaluating the Associations of Paid Sick Leave, Occupational Injuries and Illnesses, and Mortality from Suicide in the Construction Industry. \$49,297 from the CPWR Ctr for Const Research & Training. 5/1/2023 - 4/30/2024.
- Changhui Yan (CPI). A Novel Soybean Selection Method for Tofu Production Using Machine Learning. \$49,897 from the ND Soybean Council. 7/1/2023 - 6/30/2024.

## RECENT PUBLICATIONS

For 2023, 30 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:

- Ayaz, Muhammad, Adnan Iftikhar, Benjamin D. Braaten, Wesam Khalil, and Irfan Ullah. 2023. "A Composite Right/Left-Handed Phase Shifter-Based Cylindrical Phased Array with Reinforced Particles Responsive to Magneto-Static Fields." *Electronics* 12 (2): 306. <https://doi.org/10.3390/electronics12020306>.
- Backer, Michael, and Adam Gladen. 2023. "Impact of Salt Composition and Temperature on Low-Temperature Torrefaction of Pine in Molten Nitrate Salts." *Energy* 263 (January): 126044. <https://doi.org/10.1016/j.energy.2022.126044>.
- Bista, Namrata, Fangzheng Yuan, Yao Yu, Rui Miao, Xiaoou Hu, and Mijia Yang. 2023. "Parameter Study of Financial Analysis for Implementing Solar Photovoltaics Structural Snow Fences." *Sustainability* 15 (2): 1599. <https://doi.org/10.3390/su15021599>.
- Shen, Huazhen, Zhilei Guo, Wenjie Xia, Xiaowei Zhang, Zhiwei Huang, Huawang Zhao, Xiaomin Wu, Chung-shin Yuan, and Guohua Jing. n.d. "Au Single Atom Supported on TiO<sub>2</sub> Drives Hole Mitigation for the Enhanced Photooxidation of Hg<sub>0</sub>." *Journal of Physical Chemistry C*. Accessed February 13, 2023. <https://doi.org/10.1021/acs.jpcc.2c07462>.
- Tan, Wei, Parnaz Boodagh, Prakash Parthiban Selvakumar, and Sean Keyser. 2023. "Strategies to Counteract Adverse Remodeling of Vascular Graft: A 3D View of Current Graft Innovations." *Frontiers in Bioengineering and Biotechnology* 10 (January): 1097334. <https://doi.org/10.3389/fbioe.2022.1097334>.
- Tang, Caiming, Yizhe Zhu, Yutao Liang, Yan-Hong Zeng, Xianzhi Peng, Bi-Xian Mai, Jiale Xu, Qingguo Huang, and Hui Lin. n.d. "First Discovery of Iodinated Polyfluoroalkyl Acids by Nontarget Mass-Spectrometric Analysis and Iodine-Specific Screening Algorithm." *Environmental Science & Technology*. Accessed February 21, 2023. <https://doi.org/10.1021/acs.est.2c07976>.
- Yang, Weikang, S. M. Mazharul Hoque Chowdhury, and Wei Jin. 2022. "Finding Hidden Relationships Between Medical Concepts by Leveraging Metamap and Text Mining Techniques." In *Advanced Data Mining and Applications (ADMA 2022), Pt I*, edited by W. Chen, L. Yao, T. Cai, S. Pan, T. Shen, and X. Li, 13725:41–52. Cham: Springer International Publishing Ag. [https://doi.org/10.1007/978-3-031-22064-7\\_4](https://doi.org/10.1007/978-3-031-22064-7_4).
- Zhang, Da-Wei, Leonard Chia, and Ying Huang. n.d. "Effect of Carboxymethyl Cellulose (CMC) Functionalization on Dispersion, Mechanical, and Corrosion Properties of CNT/Epoxy Nanocomposites." *Chinese Journal of Polymer Science*. Accessed February 13, 2023. <https://doi.org/10.1007/s10118-023-2928-0>.

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*.

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