

# COLLEGE HAPPENINGS

July 23, 2024

## FROM THE INTERIM DEAN

### The Value of Internships

Yesterday I had the opportunity to listen to presentations by interns from the College of Engineering who are working at Marvin this summer. These students described the projects they were working on, provided an update on their progress to date, and then fielded questions from a diverse group of NDSU and Marvin employees. I was truly impressed by the quality of the work of these students. The mentorship and knowledge they gained while working as interns at Marvin reinforced my opinion of the value of an internship experience. These opportunities provide benefits that enhance and transcend the educational experience they receive at NDSU.

Marvin is just one of dozens of companies that hire our students each year for internship and co-op opportunities. Through these experiences, students gain a broader understanding of the engineering, construction, and computer science professions and the variety of jobs that are available with a degree from our college. At the same time, these internships allow our industry partners to evaluate students for potential employment within their companies. Many of our interns end up with job offers from the companies that they worked for. And almost all of our employers look for some type of industry experience when making hiring decisions.

In your role as an advisor to our students, please reinforce the value of seeking an internship or co-op opportunity from one of our industry partners. These experiences provide tremendous educational and professional benefits that cannot be realized in the classroom. The industry connections developed by participating in an internship, along with the practical work experience our students gain, afford them excellent growth opportunities that will positively impact them both personally and professionally.

**Alan R. Kallmeyer, Ph.D.**  
Interim Dean | College of Engineering

## IN THE NEWS

[NDSU's AI robot revolutionizes North Dakota agriculture](#)

[Alan Kallmeyer, interim dean of the College of Engineering, joined the Jay Thomas Show](#)

[NDSU student selected for Astronaut Scholarship](#)

['I'm most excited about the future of agriculture in North Dakota'](#)

## CONGRATULATIONS

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

Monday, July 29, **Explore Engineering High School Camp**. This week-long camp introduces students to the different disciplines of engineering. Mornings will be spent on campus working with NDSU faculty in the labs and in the afternoons students will be going out on engineering industry visits.

Friday, August 2, **Summer Poster Session**. You're invited to an afternoon of research presentations from undergraduate and high school students who have conducted research at NDSU this summer. 1:00 - 3:00 p.m. in Oceti Sakowin Ballroom B.

## COLLEGE OF ENGINEERING STAFF AWARD NOMINATIONS

Nominations for our 2024 College of Engineering Staff Awards are still open. Any NDSU staff member, faculty member, or student may submit a nomination. The nomination consists of just a letter of two pages or less describing the nominee's contributions to the success of the College of Engineering.

Nominations for outstanding staff awards can be submitted to [alissa.k.kuntz@ndus.edu](mailto:alissa.k.kuntz@ndus.edu) until 5:00 p.m. on Friday, August 9, 2024.

The College of Engineering introduced an Outstanding Staff Award in 2019 to honor dedication and outstanding contributions by staff members to the success of the college. Each year two staff members are recognized, one at the paraprofessional/office support level and one at the professional level.

## OFFERDAHL HALL CONSTRUCTION UPDATES

We've received some updates regarding the Engineering Administration building demolition and construction timelines. Here are the latest tentative dates:

- **Week of July 22<sup>nd</sup>** – Removal of vegetation and roots in the construction zone.
- **Week of July 29<sup>th</sup>** – Temporary shoring of tunnels in the construction zone (several underground tunnels run through the courtyard around the Engineering Admin Building).
- **Week of August 5<sup>th</sup>** – Skywalks are demolished.
- **Week of August 12<sup>th</sup>** – Engineering Administration Building is demolished.

## 2024 FARGO-MOORHEAD AREA DIVERSION PROJECT CONFERENCE

The Fargo-Moorhead Area Diversion Project provides an active local learning environment for faculty and students conducting research related to water resources. The project will provide a permanent solution to protect our communities and is expected to be completed in 2027. More information can be found at: [Home | Metro Flood Diversion Authority \(fmdiversion.gov\)](https://fmdiversion.gov).

Brought to you by the North Dakota Water Resources Research Institute, the 2024 Fargo-Moorhead Area Diversion Project Conference will bring together a multi-discipline audience of experts from agencies, industry, and academia to learn about the project's status, social impact, and unique engineering design.

## AGENDA HIGHLIGHTS

- 7:30 – 8:00 am **Breakfast and Registration**

- 8:30 - 9:15 am **Overview of FM Diversion Engineering**
- 9:15 - 10:15 am **FM Diversion Social Impact**
- 12:00 - 1:15 pm **Lunch and keynote** - Karen Ryberg, Deputy Director of USGS Dakota Water Science Center
- 1:30 - 2:00 pm **Industry Partner Lightning Talks**
- 2:00 - 2:30 pm **Academia Lightning Talks**
- 3:15 - 4:15 pm **FM Diversion Innovations**
- 4:45 - 5:00 pm **Recap and follow-up actions**

The 2024 Fargo-Moorhead Area Diversion Project Conference will be a great opportunity for students and faculty researchers in water resources, engineering, and natural resources to discover more about the project. While there is no cost for the event, seating is limited, and [registration is required](#).

## FUNDING OPPORTUNITIES

### Interdisciplinary Research Planning Grants

Proposals will be accepted on an ongoing basis until all funds are obligated. Pending continued availability of funds, the competition will continue into FY2025 with a final proposal deadline of October 1, 2024

This planning grant program seeks to initiate early-stage project development to help catalyze collaborative, interdisciplinary teams among diverse disciplines in order to pursue innovative, ambitious solutions to impactful research questions that fit within NDSU's [strategic priorities](#), or align with prior and/or existing research investments at NDSU. Priority will go to teams without a prior track record of collaboration, or to teams that are expanding to include new disciplinary expertise.

Team composition should be reflective of the nature of the proposed research and the team's approach should rely on the perspective and expertise of multiple disciplines. This program is intended to help teams develop collaborations and prepare to pursue external sponsored research support for the proposed project. North Dakota has made it a priority to invest in the diversification of the state economy through research, and NDSU faculty are uniquely poised to bring their expertise together in teams to address challenges that cannot be solved by a single discipline.

### **NDSU Foundation 2024 Impact Fund Grant Program**

The Impact Fund Grant Program provides funding for projects that make a significant impact on excellence and the educational experience for students at North Dakota State University. This program is supported by annual contributions from alumni and friends of the University.

Applications are accepted from faculty, staff, and recognized student groups. The Impact Fund Grant Program offers grants of \$20,000 to \$75,000. Find more information on the [NDSU Foundation website](#).

The application deadline is Wednesday, July 24, 2024, by 4:30 p.m.

Questions? Email Janna Swanson, Grants Committee Staff Liaison, at [janna.swanson@ndsufoundation.com](mailto:janna.swanson@ndsufoundation.com).

## RECENTLY AWARDED GRANTS

- Md Mukhlesur Rahman (Principal Investigator), Joao Paulo Cassol Flores (Co-PI). Harnessing Data for Accurate Yield and Oil Content Prediction. \$76,413 from the National Institute of Food & Agriculture (Continuation). 6/15/2022 - 6/14/2024.
- Ewumbua Monono (Principal Investigator), Xin Sun (Co-PI). Application of sensors and image analysis to improve phenotyping throughput of sunflower germplasm. \$65,000 from the Agricultural Research Service (Supplement). 8/1/2023 - 7/31/2025.

- Adam Curtis Gladen (Principal Investigator). Ammines for Energy Storage and Ammonia Production Enhancement. \$7,360 from the Bank of North Dakota. 6/24/2024 - 5/31/2026.
- Minwei Xu (Principal Investigator), David J Boehm (Co-PI), Changhui Yan (Co-PI). A Novel Soybean Selection Method for Tofu Production Using Machine Learning. \$18,019 from the ND Soybean Council. 7/1/2024 - 12/1/2024.
- Long Jiang (Principal Investigator), Qian Ma (Co-PI). Transforming Soymeal and Soyhull into Building Materials. \$22,418 from the ND Soybean Council. 7/1/2024 - 6/30/2025.

## RECENTLY SUBMITTED PROPOSALS

- Sulaymon Eshkabilov (Principal Investigator). CAREER: Save Honeybees - Modelling, Identification, and Prediction of Honeybee Responses. \$681,340 from the National Science Foundation. 4/1/2025 - 3/31/2029.
- Carlos Pires (Principal Investigator), Joao Paulo Cassol Flores (Co-PI), Chandler Gruener (Co-PI), Victor Gomes (Co-PI), Brady James Goettl (Co-PI). Dynamic Soil Properties Assessment and Digital Mapping Across Diverse Land Uses in the Northern Great Plains. \$494,120 from the Natural Resources Conservation Service. 9/30/2024 - 9/29/2027.
- Long Jiang (Principal Investigator), Marc L Bauer (Co-PI). Soy-based Bailing Twine with High Digestibility Further Development Extension. \$13,231 from the ND Soybean Council. 7/1/2024 - 11/30/2024.
- Xin Sun (Principal Investigator). Measure and Assess Soil Health with AI and Robotic Technology. \$25,000 from the Agricultural Research Service. 8/1/2024 - 7/31/2025.
- Di Wu (Principal Investigator). Dynamic Analytics and Assessment Tool for IBR-dominant Power Systems. \$475,691 from the Department of Energy. 1/1/2025 - 12/31/2027.
- Dr. Juan Li (Principal Investigator). Application of Machine Learning and Artificial Intelligence for Predicting Type 2 Diabetes Risks and Improving Diabetes Management among Hispanic Population. \$127,508 from the Baptist Health Foundation of San Antonio. 1/1/2025 - 12/31/2029.

## RECENT PUBLICATIONS

For 2024, 80 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:

- Ayodele, Tawakalt, Kudirat Alarape, Ibrahim Adebayo Bello, Abodunrin Tijani, Liadi Musiliu, and Ademola Hammed. "Microbial Protein Production Using Lignocellulosic Biomass (Switchgrass) and *Klebsiella Oxytoca* M5A1-A Nitrogen Fixer." *SUSTAINABILITY* 16, no. 13 (July 2024): 5486. <https://doi.org/10.3390/su16135486>.
- Barbosa Junior, Marcelo Rodrigues, Bruno Rafael de Almeida Moreira, Vinicius dos Santos Carreira, Armando Lopes de Brito Filho, Carolina Trentin, Favia Luize Pereira de Souza, Danilo Tedesco, et al. "Precision Agriculture in the United States: A Comprehensive Meta-Review Inspiring Further Research, Innovation, and Adoption." *COMPUTERS AND ELECTRONICS IN AGRICULTURE* 221 (June 2024): 108993. <https://doi.org/10.1016/j.compag.2024.108993>.
- Habib, Muhammad Faisal, Diomo Motuba, and Ying Huang. "Beyond the Surface: Exploring the Temporally Stable Factors Influencing Injury Severities in Large-Truck Crashes Using Mixed Logit Models." *ACCIDENT ANALYSIS AND PREVENTION* 205 (September 2024): 107650. <https://doi.org/10.1016/j.aap.2024.107650>.
- Islam, Md Zahirul, Md Atikur Rahman, Luke Gibbon, Eric Hall, Chad A. Ulven, and John J. La Scala. "Mechanical Characterization and Production of Various Shapes Using Continuous Carbon Fiber-Reinforced Thermoset Resin-Based 3D Printing." *POLYMERS* 16, no. 13 (July 2024): 1828. <https://doi.org/10.3390/polym16131828>.
- Kohlin, Lee, Hayden Pritchard, Adam C. Gladen, Behrooz Dehkordi, and Dilpreet Bajwa. "Molten Salt Biomass Torrefaction - A Sensitivity Analysis of Process Conditions." *INDUSTRIAL CROPS AND PRODUCTS* 219 (November 1, 2024): 118997. <https://doi.org/10.1016/j.indcrop.2024.118997>.
- Salam, Abdul, Oksana Zholobko, and Xiang-Fa Wu. "Roles of Functionalized Nanoparticles in the Performance Improvement of Proton-Exchange Membranes Used in Low- and Intermediate-Temperature Hydrogen Fuel Cells:

A Review.” *PROGRESS IN NATURAL SCIENCE-MATERIALS INTERNATIONAL* 34, no. 3 (June 2024): 437–53.  
<https://doi.org/10.1016/j.pnsc.2024.04.004>.

- Wang, Xingyu, Sampada Koirala, Luyang Xu, Qiaobin Li, Zhibin Lin, Xiaoning Qi, Ying Huang, Zhongyu Yang, and Danling Wang. “Insights in Emerging Ti<sub>3</sub>C<sub>2</sub>T<sub>x</sub> MXene-Enriched Polymeric Coatings for Metallic Surface Protection: Advancements in Microstructure, Anti-Aging, and Electrochemical Performance.” *PROGRESS IN ORGANIC COATINGS* 194 (September 2024): 108606. <https://doi.org/10.1016/j.porgcoat.2024.108606>.
- Zubair, Muhammad Umer, Muhammad Ahmed Javed, Sameer Ud-Din, Muhammad Asif Khan, Asad Ali, and Malik Saqib Mahmood. “High-Profile Convoy Disruptions: Exploring Socioeconomic and Environmental Ramifications of Road Closures.” *SUSTAINABILITY* 16, no. 13 (July 2024): 5278.  
<https://doi.org/10.3390/su16135278>.

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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