

COLLEGE HAPPENINGS

August 22, 2023

FROM THE INTERIM DEAN

This is an exciting time of year, as we welcome our new and returning students back to campus for the fall semester. These first few weeks are particularly important for our incoming first-year and transfer students, as they are adjusting to life on a new campus and, for many, a new city. This can be a challenging time for students who may be leaving home for the first time, making new friends, and adapting to a more rigorous academic environment. I would like to encourage all of you to help make the transition easier for these students. This can be as simple as giving a friendly smile and greeting as you pass students on the sidewalk, providing directions or helping them find their way to a classroom, or spending a few extra minutes after class getting to know your students. By helping these students get off to a good start, they are much more likely to be successful at NDSU.

Our students are the lifeblood of the university, and our future workforce. As academics, our mission is to educate them and provide them with the tools and skills necessary to lead successful careers, both personally and professionally. We all play an important role in their educational development, and many of our graduates will look back on their time here at NDSU with fond memories. I hope you will recognize the significant influence that you have in their personal growth, and accept that great responsibility with compassion and humility. The impact you have on our future generation cannot be overstated.

As we kick off the new school year, I would like to thank each of you for the contributions that you make on behalf of our students. Whether teaching a class, providing academic or career advice, mentoring student groups, or supporting our students in other ways, you all provide a critical service to our most important constituents. I take great pride in the work we do to prepare the next generation for the challenges that lie ahead. I hope you do too.

Have a great semester!

Alan R. Kallmeyer, Ph.D.

Interim Dean | College of Engineering

IN THE NEWS

[NDSU students attend cybersecurity conference](#)

[NDSU hosts cybersecurity camp for high school students](#)

CONGRATULATIONS

Adam Gladen, associate professor of mechanical engineering, has been named the inaugural **KFI Engineers Professor of Energy Stewardship**. This position has been funded by a \$300,000 investment from KFI Engineers with

the goal of building the NDSU College of Engineering into a national leader in energy stewardship focused on the generation, storage, distribution, and conservation of energy.

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, September 28, **Scholarship and Awards Reception**. Join the College of Engineering as we acknowledge our scholarship recipients and donors, and recognize the accomplishments of outstanding faculty and staff. 3:00 - 4:30 p.m. Memorial Union Očeki Šakōwiŋ Ballroom. There is no cost to attend, but please [RSVP by September 21](#).

Thursday, October 26, **KFI Engineers Professor of Energy Stewardship Ceremony**. Please join us for a ceremony honoring Dr. Adam Gladden. 3:00 p.m. in the NDSU McGovern Alumni Center.

UPDATED PROCESS TO ADD TAs AND OTHERS TO BLACKBOARD COURSES

Beginning this semester, instructors, TAs, and other users such as graders, will no longer be able to be added directly to Blackboard, to ensure compliance with FERPA.

The new process to add these roles to your Blackboard courses is:

- **Departments must have the instructors, TAs, and graders complete the NDUS Data Privacy and FERPA training and then submit a Campus Connection Security Access form for each instructor, TA and grader that needs access.** <https://www.ndsu.edu/registrar/facstaff/access/>
- Once the user has been created in Campus Connection, their name will show up for the departments to add them to course sections in CLSS.
- After being added to CLSS they will be assigned to the section in Campus Connection, which will populate them into the Blackboard course.

If you have questions, please reach out to the Office of Registration and Records at 231-7981 or ndsu.rr.scheduling@ndsu.edu.

BISON SPARK TALKS

As part of NDSU's Big Idea Research Initiatives for the 2023-24 year, the Office of Research and Creative Activity (RCA) and the Faculty Research Council are issuing a call for October speakers for BisonSpark Talks.

Nomination packages due September 5, 2023

All NDSU faculty researchers from every discipline across campus, assistant professor to tenured full professor, are invited to submit a nomination package for a BisonSpark Talk. Sign up link below! The nomination package should include a 2-minute zoom recording preview of the talk and include why your discipline matters to solving large economic or social challenges in one of [NDSU's priority research areas](#):

- Food, Energy and Water Security
- Cybersecurity, Computer Science and Software Engineering
- Life Sciences
- Entrepreneurship and Innovation

[Learn more and submit a package >>](#)

NDSU'S FINANCIAL TRANSFORMATION

As part of the transition to the new operating model for financial activities across the university, the [Accounting Service Center Website](#) has been refreshed to provide a more streamlined and user-friendly experience for those seeking financial assistance. This website currently includes:

- Frequently Asked Questions about P-Cards, Purchasing, Travel & Expense, and other items
- Key forms to utilize when completing various financial tasks
- Contact information for the centers and staff
- An outline of reorganization responsibilities.

Additionally, a website featuring details about the [College of Engineering Business Center](#) has been created. Similarly to the Accounting Service Center website, the CoE Business Center page will provide you with pathways of contact for general and specific inquiries related to financial activities specific to our college and departments.

The CoE Business Center page is maintained and updated by NDSU Finance and Administration. Links to it can be found on the College of Engineering website under the Faculty and Staff tab.

FUNDING OPPORTUNITIES

NSF: Research Experiences for Teachers in Engineering and Computer Science

The Research Experiences for Teachers (RET) in Engineering and Computer Science program [[NSF 21-606](#)] supports authentic summer research experiences for K-14 educators to foster long-term collaborations between universities, community colleges, school districts, and industry partners. With this solicitation, the Directorates for Engineering (ENG) and Computer and Information Science and Engineering (CISE) focus on a reciprocal exchange of expertise between K-14 educators and research faculty and (when applicable) industry mentors. K-14 educators will enhance their scientific disciplinary knowledge in engineering or computer science and translate their research experiences into classroom activities and curricula to broaden their students' awareness of and participation in computing and engineering pathways. At the same time, the hosting research faculty (PI) will deepen their understanding of classroom practices, current curricula, pedagogy, and K-14 educational environments.

Deadline: October 11, 2023

NSF: Broadening Participation in Engineering

Through the Broadening Participation in Engineering (BPE) Program [[NSF 22-514](#)], NSF seeks to strengthen the future U.S. engineering workforce by enabling and encouraging the participation of all citizens in the engineering enterprise. The BPE Program seeks to support not only research in the science of broadening participation and equity in engineering, but also collaborative endeavors which foster the professional development of a diverse and well-prepared engineering workforce as well as innovative, if not revolutionary, approaches to building capacity through inclusivity and equity within the engineering academic experience.

To solicit the best ideas for these activities, both in formation and enactment, the BPE Program will support projects at various levels of readiness and complexity through the following four tracks:

- **Track 1: Planning and Conference Grants**
Deadline: Proposals accepted ANYTIME
- **Track 2: Research in Broadening Participation in Engineering**
Deadline: Proposals accepted ANYTIME
- **Track 3: Inclusive Mentoring Hubs (IM Hubs)**
Deadline: November 15, 2023

- **Track 4: Centers for Equity in Engineering (CEE)**
LOI Deadline: September 20, 2023 (Strongly recommended)
Full Proposal Deadline: November 15, 2023

RECENTLY AWARDED GRANTS

- Yechun Wang (PI), Xinnan Wang (Co-PI), Xiaoning Qi (Co-PI). Service Life Prediction of Coating Systems under the Impact of Fluid Flow. \$299,836 from the U.S. Army. 7/21/2023 - 7/21/2025.
- Jiale Xu (PI). Collaborative Research: Enhanced Photolysis and Advanced Oxidation Processes by Novel KrCl* (222 nm) Irradiation. \$200,000 from the National Science Foundation. 8/15/2023 - 7/31/2026.
- Di Wu (PI). Toward a Network-Based Framework for Analysis and Control of Inverter-Dominated Power Grids. \$249,980 from the National Science Foundation. 9/1/2023 - 8/31/2025.
- Ewumbua Monono (PI), Xin Sun (Co-PI). Application of sensors and image analysis to improve phenotyping throughput of sunflower germplasm. \$65,000 from the Agricultural Research Service. 8/1/2023 - 7/31/2024.

RECENTLY SUBMITTED PROPOSALS

- Lu Liu (PI). CAREER: Enhancing and Normalizing Sparse Single-cell Chromatin Interaction Data and Integrating Bulk Chromatin Interactions and Epigenetic Data for Differential Analysis. \$504,755 from the National Science Foundation. 8/16/2024 - 8/15/2029.
- Zhili Gao (PI). Enhancing State DOTs Agility in Project Development and Delivery. \$350,000 from the National Academies. 1/1/2024 - 3/30/2026.
- Syeed Md Iskander (PI). CAREER: Utilizing Waste Shredding and Leachate Recirculation to Reduce PFAS Discharge from Landfills. \$550,000 from the National Science Foundation. 8/16/2024 - 8/15/2029.
- Yao Yu (PI). CAREER: Development of a Next-Generation Building Thermal Model Using Zonal Modeling Approaches. \$552,198 from the National Science Foundation. 6/1/2024 - 5/31/2029.
- Sulaymon Eshkabilov (PI). CAREER: Save Honeybees - Modelling, Identification, and Prediction of Honeybee Responses. \$688,302 from the National Science Foundation. 4/1/2024 - 3/31/2029.
- Ademola Monsur Hammed (PI), Niloy Chandra Sarker (CPI). Developing Bioprocessing for Nitrogen Fixation and Ammonia Production using Nitrogen-Fixing Bacteria in Modular Bioreactors. \$75,000 from the Foundation for Food & Agricultural Research. 1/1/2024 - 12/31/2025.
- Igathinathane Cannayen (PI), Shuning Lu (CPI). Communicating Educational and Research Outcomes Using LaTeX for NDSU Students and Community. \$22,741 from the NDSU Foundation. 11/1/2023 - 10/31/2025.
- Ewumbua Monono (PI), Niloy Chandra Sarker (CPI), Ademola Monsur Hammed (CPI). Optimizing the Microbial Control Methods during Beet Juice Extraction and Purification. \$26,540 from the Beet Sugar Development Foundation. 4/1/2024 - 3/31/2025.
- Syeed Md Iskander (PI). PFAS Contamination in North Dakota's Agricultural Lands: A Comprehensive Statewide Study. \$74,080 from the NDSU Foundation. 1/1/2024 - 6/30/2025.
- Syeed Md Iskander (PI). PFAS Uptake by Sugar Beets Impacted by Soil and PFAS Chemical Properties. \$33,000 from the Beet Sugar Development Foundation. 1/1/2024 - 12/31/2024.
- Yan Zhang (PI). Understanding Pulsatile Helical Flow: Scaling, Turbulence, and Helicity Control. \$304,842 from the National Science Foundation. 1/1/2024 - 12/31/2026.
- Shuvashis Dey (PI). Towards an Integrated Microwave Radiometer and Wireless Sensing system for Precision Agriculture Based Soil Moisture Measurement. \$299,998 from the National Aeronautics and Space Administration. 4/1/2024 - 3/31/2027.
- Long Jiang (PI). Transforming Carbon Fiber Reinforced Polymer Wastes into Recyclable Structural Automotive Components. \$399,479 from the Department of Energy. 1/1/2024 - 12/31/2026.

RECENT PUBLICATIONS

For 2023, 174 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:

- Aldhaleei, Wafa A., Akshaya S. Bhagavathula, Michael B. Wallace, Kenneth R. DeVault, and Stephanie S. Faubion. 2023. "The Association between Menopausal Hormone Therapy and Gastroesophageal Reflux Disease: A Systematic Review and Meta-Analysis." *MENOPAUSE-THE JOURNAL OF THE NORTH AMERICAN MENOPAUSE SOCIETY* 30 (8): 867–72. <https://doi.org/10.1097/GME.0000000000002214>.
- Alikhani, Hamed, Chau Le, H. David Jeong, and Ivan Damjanovic. 2023. "Sequential Machine Learning for Activity Sequence Prediction from Daily Work Report Data." *JOURNAL OF CONSTRUCTION ENGINEERING AND MANAGEMENT* 149 (9): 04023082. <https://doi.org/10.1061/JCEMD4.COENG-13165>.
- Bazrafkan, Aliasghar, Nadia Delavarpour, Peter G. Oduor, Nonoy Bandillo, and Paulo Flores. 2023. "An Overview of Using Unmanned Aerial System Mounted Sensors to Measure Plant Above-Ground Biomass." *REMOTE SENSING* 15 (14): 3543. <https://doi.org/10.3390/rs15143543>.
- Bhushan, Shashi, U. Jayakrishnan, Bharti Shree, Pankaj Bhatt, Sulaymon Eshkabilov, and Halis Simsek. 2023. "Biological Pretreatment for Algal Biomass Feedstock for Biofuel Production." *JOURNAL OF ENVIRONMENTAL CHEMICAL ENGINEERING* 11 (3): 109870. <https://doi.org/10.1016/j.jece.2023.109870>.
- Cao, Zhiqiang, Sara A. Tolba, Zhaofan Li, Gage T. Mason, Yang Wang, Changwoo Do, Simon Rondeau-Gagné, Wenjie Xia, and Xiaodan Gu. 2023. "Molecular Structure and Conformational Design of Donor-Acceptor Conjugated Polymers to Enable Predictable Optoelectronic Property." *Advanced Materials*, July, 2302178. <https://doi.org/10.1002/adma.202302178>.
- Cawley, Jennie L., Brett A. Berger, Adeyemi T. Odudimu, Aarshi N. Singh, Dane E. Santa, Ariana I. McDarby, Aurelia R. Honerkamp-Smith, and Nathan J. Wittenberg. 2023. "Imaging Giant Vesicle Membrane Domains with a Luminescent Europium Tetracycline Complex." *ACS Omega* 8 (32): 29314–23. <https://doi.org/10.1021/acsomega.3c02721>.
- Cheng, Ye, Danguang Pan, Qingjun Chen, Ying Huang, and Dawei Zhang. 2023. "Shaking Table Test on Underground Structure-Soil-Aboveground Structure Interaction." *TUNNELLING AND UNDERGROUND SPACE TECHNOLOGY* 140 (October): 105300. <https://doi.org/10.1016/j.tust.2023.105300>.
- Do, Quan, Muhammad Ali Moriyani, Chau Le, and Tuyen Le. 2023. "Cost-Weighted TF-IDF: A Novel Approach for Measuring Highway Project Similarity Based on Pay Items' Cost Composition and Term Frequency." *JOURNAL OF CONSTRUCTION ENGINEERING AND MANAGEMENT* 149 (8): 04023069. <https://doi.org/10.1061/JCEMD4.COENG-13023>.
- Feng, Xiaoyu, Ward Smith, and Andrew C. C. VanderZaag. 2023. "Dairy Manure Nutrient Recovery Reduces Greenhouse Gas Emissions and Transportation Cost in a Modeling Study." *FRONTIERS IN ANIMAL SCIENCE* 4 (June): 1134817. <https://doi.org/10.3389/fanim.2023.1134817>.
- Ghazanfari, Sarah, Amirhadi Alesadi, Yangchao Liao, Yida Zhang, and Wenjie Xia. 2023. "Molecular Insights into the Temperature and Pressure Dependence of Mechanical Behavior and Dynamics of Na-Montmorillonite Clay." *NANOSCALE ADVANCES*, August. <https://doi.org/10.1039/d3na00365e>.
- Grabowski, Theresa, Ismat Ara, Joncy Thorpe, and Fardad Azarmi. 2023. "Investigation of Microstructural Characteristics of Cobalt Chromium Molybdenum Additively Manufactured Using Laser Directed Energy Deposition Technology." *METALLURGICAL AND MATERIALS TRANSACTIONS A-PHYSICAL METALLURGY AND MATERIALS SCIENCE*, August. <https://doi.org/10.1007/s11661-023-07154-1>.
- Hiloidhari, Moonmoon, Marjia Afroz Sharno, D. C. Baruah, and Achintya N. Bezbaruah. 2023. "Green and Sustainable Biomass Supply Chain for Environmental, Social and Economic Benefits." *BIOMASS & BIOENERGY* 175 (August): 106893. <https://doi.org/10.1016/j.biombioe.2023.106893>.
- Jalal, Asif, and Ravi Kiran. 2023. "Quantifying the Water Donation Potential of Commercial and Corn Starch Hydrogels in a Cementitious Matrix." *JOURNAL OF MATERIALS RESEARCH AND TECHNOLOGY-JMR&T* 24 (June): 4336–52. <https://doi.org/10.1016/j.jmrt.2023.04.031>.

- Jang, Youjin, Inbae Jeong, Moein Younesi Heravi, Sajib Sarkar, Hyunkyun Shin, and Yonghan Ahn. 2023. “Multi-Camera-Based Human Activity Recognition for Human-Robot Collaboration in Construction.” *SENSORS* 23 (15): 6997. <https://doi.org/10.3390/s23156997>.
- Li, Junjie, Junjun Wu, Zexiang Xie, Ganji Zhong, Xueqin Gao, and Long Jiang. 2023. “The Effects of Cellulose Nanocrystal and Dicumyl Peroxide on the Crystallization Kinetics of Polylactic Acid.” *POLYMER ENGINEERING AND SCIENCE*, August. <https://doi.org/10.1002/pen.26439>.
- Mathew, Jithin, Nadia Delavarpour, Carrie Miranda, John Stenger, Zhao Zhang, Justice Aduteye, and Paulo Flores. 2023. “A Novel Approach to Pod Count Estimation Using a Depth Camera in Support of Soybean Breeding Applications.” *SENSORS* 23 (14): 6506. <https://doi.org/10.3390/s23146506>.
- Phakdon, Tenzin, Jiale Xu, and James Farrell. 2023. “Electrolytic Coagulant Generation for Treating Flowback and Produced Water for Reuse.” *ACS ES&T WATER*, August. <https://doi.org/10.1021/acsestwater.3c00065>.
- Sommer, Dominique M., Jennifer M. Young, Xin Sun, Giancarlo Lopez-Martinez, and Christopher J. Byrd. 2023. “Are Infrared Thermography, Feeding Behavior, and Heart Rate Variability Measures Capable of Characterizing Group-Housed Sow Social Hierarchies?” *JOURNAL OF ANIMAL SCIENCE* 101 (January): skad143. <https://doi.org/10.1093/jas/skad143>.
- Sunil, G. C., Cengiz Koparan, Mohammed Raju Ahmed, Yu Zhang, Kirk Howatt, and Xin Sun. 2022. “A Study on Deep Learning Algorithm Performance on Weed and Crop Species Identification under Different Image Background.” *ARTIFICIAL INTELLIGENCE IN AGRICULTURE* 6: 242–56. <https://doi.org/10.1016/j.aiia.2022.11.001>.
- Xie, Xuewen, Jinbo Zhao, Shangtao Liang, Xiong He, Chenghao Yu, Ruzhen Xie, Jiale Xu, Lihui Yang, Dengmiao Cheng, and Hui Lin. 2023. “Electro-Filtration Efficient Oxidation of Herbicide Atrazine by Sb, Ce Co-Doped SnO₂ Membranes.” *Electrochimica Acta* 463 (September): 142819. <https://doi.org/10.1016/j.electacta.2023.142819>.

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*.

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