

# COLLEGE HAPPENINGS

December 28, 2022

## FROM THE DEAN

### **Farewell and Year in Review**

The graduation ceremony on December 16 marked my last official duty as the Dean of Engineering. In a few weeks, I will head to Baltimore, where I'll start my new job as the Louis M. Sardella Department Head of Materials Science and Engineering and Professor at Johns Hopkins University. You are in good hands with Alan Kallmeyer as the interim dean until a permanent dean is hired. I trust that you will all work with the new leadership (at the college and the university level) to move our programs forward as NDSU Engineering's next era and its many opportunities unfold.

It has been a real privilege to serve you all as the Dean of the College of Engineering, and I want to thank all of you for making it such a great job for me. I have been excited to come to work each day. We have great educational programs, transformative research, and outstanding faculty and staff dedicated to our students and the college's success. As I mentioned when I announced my resignation, when my family and I arrived in the summer of 2017, we had no idea how much we would enjoy the Fargo community and the NDSU family.

While I've included some of the college's year-end highlights from 2022, I will resist the urge to review my last six years as dean along with lists of achievements, failures and unfinished business: there are plenty of each, and you can all remember your favorites. Instead, I will tell you that there are no leaders — no great, good, or even merely acceptable — without a great team. Whatever the College of Engineering has achieved while I have been the dean is because you — all of you — have worked smart, long, and hard at the job we are here to do. I wish you all the best in the years ahead and a blessed holiday season.

### **2022 Highlights**

#### ***We graduated 652 students in 2022***

- 508 baccalaureate degrees
- 104 MS degrees
- 40 PhD degrees

#### ***Our faculty, staff and students earned honors and awards***

- Rob Sailer, Senior Test Engineer in the Department of Mechanical Engineering, was named the Outstanding Staff Award recipient for a staff member at the professional level.
- Ruth Wirtz, the Office Manager and Administrative Assistant in the Department of Military Science, was named the Outstanding Staff Award recipient for the paraprofessional or office support level.
- The NDSU Clean Snowmobile team finished 2nd in the diesel division of the SAE Clean Snowmobile Challenge and won awards for best handling and best fuel efficiency.

- Computer Science student Amanda Fetzer was awarded the Department of Defense's Science, Mathematics and Research for Transformation Scholarship, known as SMART.
- Kambiz Farahmand, from the Department of Industrial and Manufacturing Engineering, was selected as the recipient of the Chamber of Commerce NDSU Distinguished Faculty Service Award.
- Two students from the Department of Civil, Construction and Environmental Engineering, Ryan Anderson and Himani Yadav, won awards at the 2022 NDSU Research Day event.
- Mijia Yang, professor in the Department Civil, Construction and Environmental Engineering, was named the 2022 recipient of the CoE Excellence in Teaching Award.
- Abdul-Aziz Banawi, assistant professor in the Department Civil, Construction and Environmental Engineering, was awarded the 2022 CoE Early Career Excellence in Teaching Award and was named a finalist for the Peltier Award for Teaching Innovation.
- Zhaofan Li, a graduate student in the Department Civil, Construction and Environmental Engineering, was named the 2022 Graduate Teaching Assistant of the Year.
- Zhibin Lin, professor in the Department Civil, Construction and Environmental Engineering, was named the 2022 CoE Excellence in Research Award winner.
- Wenji Xia, assistant professor in the Department Civil, Construction and Environmental Engineering, was named the 2022 CoE Early Career Research Excellence Award winner.
- Amirhadi Alesadi, a graduate student in the Department of Civil, Construction and Environmental Engineering, was named 2022 Graduate Student Researcher of the Year.
- The Bison Robotics Autonomous Snowplow team placed 1st in the team portion of the 2022 Autonomous Snowplow Competition held in January in Minneapolis.
- Max Salzer, a mechanical engineering student, was awarded the prestigious Astronaut Scholarship for the 2022-2023 academic year.
- Achintya Bezbaruah, professor and interim chair of the Department of Civil, Construction and Environmental Engineering, was elected President of the Sustainable Nanotechnology Organization and was awarded a \$725,925 grant from the USDA to establish the Center for Nanoscale Phosphorus Research and Development (CENAPHORD).
- Xinhua Jia, professor of agricultural and biosystems engineering, was recently named director of the North Dakota Water Resources Research Institute.
- Chau Le, assistant professor of civil, construction, and environmental engineering, and Jeremy Straub, assistant professor of computer science, have been named 2022-2023 Faculty Fellows of the Sheila and Robert Challey Institute for Global Innovation and Growth at NDSU.
- Sumitha George, assistant professor in the Department of Electrical and Computer Engineering, and ECE graduate students Sanjay Das and Arun G won best paper award at the IEEE Computer Society Annual Symposium on VLSI 2022 for their paper "Adaptable Multi-Level Voltage to Binary Converter Using Ferroelectric FETs".
- A team of NDSU engineering students finished 2nd in Robotics Student Design Competition at the 2022 American Society of Agricultural and Biosystems Engineers Annual International Meeting.
- Michael Kessler was selected as a Fellow Member of the American Society of Engineering Education.
- NDSU College of Engineering students took top spots in the spring 2022 National Cyber League individual competition. Eight students placed in the top 10% of more than 3,000 participants and two ranked in the top "Diamond-1" medal category.
- Omid Beik, assistant professor of electrical and computer engineering, was granted a patent by the European Patent Office.

***Several faculty members earned promotions this year***

- Jordi Estevadeordal, Roger Green and Long Jiang were promoted to Full Professor
- Ravi Yellavajjala, Qifeng Zhang and Yan Zhang were promoted to associate professor and awarded tenure.

- Thomas Bon earned an Emeritus Appointment

*Innovation is our status quo and our efforts to create new knowledge were awarded millions of dollars*

Totals for FY 2022

- Awards Received - \$14.3 million
- Expenditures - \$6.8 million

Totals for FY 2023 (as of September 30, 2022)

- Awards Received – \$8.2 million
- Expenditures – \$4.4 million



## IN THE NEWS

[NDSU College of Engineering interim dean selected](#)

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

[‘I hope that it helps people’](#)

## CONGRATULATIONS

**Alex Radermacher**, lecturer of computer science, **G. Nazari**, lecturer of mechanical engineering, and **Danling Wang**, assistant professor in electrical and computer engineering, have been honored with a new monthly **Innovation in Teaching Award** from the Office of Teaching and Learning to recognize instructors for efforts to improve teaching and learning on campus.

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

Wednesday, February 8, **Spring Career Expo**. The Spring Career Expo will feature more than 250 employers allows students to connect with different industries, explore careers, and apply for full-time positions, part-time positions, and internships/co-ops. 11 a.m. – 3 p.m. at the FargoDome.

Wednesday, February 15, **How to Pursue Funding from Mission Agencies**. This virtual workshop will provide insights for researchers on how to approach mission agencies, analyze funding opportunities, and develop white papers, quad charts, and proposals to these agencies. [Learn more>>](#)

## ROBOTICS EVENT VOLUNTEERS

The College of Engineering is hosting 2 robotics competitions for the regional FIRST community and we need your help. **On Saturday, January 14**, we will host **FIRST Tech Challenge (FTC)** teams for the North Dakota State Qualifier. Then, **on Saturday, January 21**, we will host **FIRST LEGO League Challenge (FLL)** teams for their State Qualifier. Both qualifiers will be held at the Bentson Bunker Fieldhouse and **typically go from 9AM-4PM**.

These events are great opportunities to get kids excited about STEM and interact with potential students and their families, but we need volunteers to make these competitions a success. To learn more and to sign up please contact College of Engineering Outreach Coordinator Angela Gross ([angela.gross@ndsu.edu](mailto:angela.gross@ndsu.edu)). Thank you!

## CLASSROOM TECHNOLOGY SESSIONS

Whether you are new to teaching in an NDSU classroom, or returning, NDSU Information Technology Services would like to invite you to register for a 30-minute session the first week of January to learn more about the technology installed in the classrooms. *Tip: If you plan to teach using a personal device, bring it along.*

**New this year**, Zoom Room systems are installed in nearly every classroom. If you plan to use Zoom in your classroom, sign up for a session to learn more about their functionality – and why you might choose to use the Zoom Room option instead of a Zoom Meeting.

### Classroom Technology Overview - The Basics

If you are new to teaching in a general-purpose classroom at NDSU, or needing a refresher, this session is for you. Instructors will acquaint you with the basic presentation technologies available in the classrooms and how to navigate the control panel.

*To register: [Classroom Overview - The Basics](#)*

### Classroom Technology Overview - Advanced

In this session you will learn more about the advanced technology features of the classrooms, such as the technology that supports lecture recording, hybrid/HyFlex teaching, bringing in remote participants, and the new Zoom Room option.

*To register: [Classroom Overview - Advanced](#)*

The Classroom Technology team looks forward to supporting your classroom technology experience!

## FUNDING OPPORTUNITIES

### DoD: Army Research Lab BAA for Foundational Research

This Broad Agency Announcement [[W911NF-23-S-0001](#)] solicits whitepapers and proposals for basic and applied research and, in some cases, advanced technology development and advanced component development and prototypes. View the Army Research Lab's topics of interest [here](#).

*This BAA is open until November 20, 2027.*

### NSF: Designing Materials to Revolutionize and Engineer our Future (DMREF)

DMREF [[NSF 23-530](#)] will support activities that significantly accelerate the materials discovery-to-use timeline by building the fundamental knowledge base needed to advance the design, development, or manufacturability (*i.e.*, properties relevant to manufacturing, process-property relationships, property performance metrics, potential pathways for scale-up, economic feasibility, supply chain considerations, or life cycle issues) of materials with desirable properties or functionality. This solicitation is open to all materials research topics. Projects proposed to this solicitation must be directed by a team of at least two Senior Personnel with complementary expertise. The proposed research must involve a collaborative and iterative 'closed-loop' process wherein theory guides computational simulation, computational simulation guides experiments, and experimental observation further guides theory. The integrated research activities could involve some combination of:

- Strategies to advance fundamental knowledge related to materials design and manufacturability through testing methodology, which may include novel synthetic approaches, innovative processing, or advanced characterization techniques.
- Theory, computation/simulation, and modeling that leverage machine learning (ML), artificial intelligence (AI), data mining, or sparse approximation to predict behavior or assist in simplifying the analysis of multidimensional input data.
- Automated, high-throughput, and/or autonomous experimentation, including cyber-physical systems, that streamline and optimize the search of a materials space.
- Validation through synthesis, growth, processing, characterization, and/or device demonstration.

*Deadline: March 13, 2023*

## RECENTLY FUNDED GRANTS

- Leon George Schumacher (PI), Joao Paulo Cassol Flores (CPI), Kenneth Hellevang (CPI), Xin Sun (CPI). Enhancing educational opportunities for the next generation of precision agriculture practitioners. \$250,000 from the CHS Foundation. 7/1/2022 - 6/30/2023.

## RECENT PUBLICATIONS

*For 2022, 140 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:*

- Fang, Kun, Junbai Wang, Lu Liu, and Victor X. Jin. 2022. "Mapping Nucleosome and Chromatin Architectures: A Survey of Computational Methods." *Computational and Structural Biotechnology Journal* 20: 3955–62. <https://doi.org/10.1016/j.csbj.2022.07.037>.
- Pordesimo, Lester O., C. Igathinathane, Basil D. Bevans, and David P. Holzgraefe. 2022. "Potential of Dimensional Measurements of Individual Pellets for Evaluating Feed Pellet Quality." *Applied Engineering in Agriculture* 38 (5): 777–85. <https://doi.org/10.13031/aea.14845>.
- Spradling, Matthew, and Jeremy Straub. 2022. "Evaluation of the Factors That Impact the Perception of Online Content Trustworthiness by Income, Political Affiliation and Online Usage Time." *Future Internet* 14 (11): 320. <https://doi.org/10.3390/fi14110320>.
- Wang, Yang, Zhaofan Li, Kangmin Niu, and Wenjie Xia. 2022. "Energy Renormalization for Coarse-Graining of Thermomechanical Behaviors of Conjugated Polymer." *Polymer* 256 (September): 125159. <https://doi.org/10.1016/j.polymer.2022.125159>.

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.

