

COLLEGE HAPPENINGS

August 9, 2022

FROM THE ASSOCIATE DEAN

Changes for Outreach and Welcome to our New Outreach Coordinator!

Some of you may have had the opportunity to work with Lauren Singelmann over the past 4 years while she worked as the half-time outreach coordinator in the College of Engineering. Lauren did a phenomenal job growing our outreach programs and promoting STEM careers in her role. She completed her PhD this spring and has now moved on to an academic role elsewhere. We are grateful for her contributions and wish her all the best as she starts her faculty career!

K12 outreach is critically important to the College of Engineering, to NDSU, and to our broader community. Industry in our region and beyond needs more engineers and related technical professionals, and fewer students are choosing to pursue careers in these areas. As a land grant university, we have a responsibility to serve the needs of the state through education. While we have plenty of work to do with recruiting and retaining students, too many students never make it this far because they don't understand the tremendous opportunities in these fields. Furthermore, they often don't follow an academic path in high school to help them explore these options.

In recognition of the importance of getting more students into the pipeline that leads to the College of Engineering, I'm thrilled to introduce Angela Gross as the new *full-time* Outreach Coordinator in the College of Engineering. Angela comes to us with many years of experience as a middle school science teacher, most recently at St Joe's in Moorhead. She has a passion for teaching, and has impacted many students in the classroom and as a robotics coach for her school. She will be a great resource within the college and our local community. Her energy, creativity, and passion will help us engage with K12 educators and inspire more students to pursue STEM fields.

Angela will have plenty of work to do supporting or expanding our existing programs like FIRST Lego League and FIRST Tech Challenge robotics competitions, Bison Cyber Camp, STEM Kids Camps, and Introduce a Girl to Engineering Day. Having a full-time coordinator also creates more opportunity to work with faculty on research grants that include an outreach (broader impacts) component. If you would like to engage Angela in that work, please do so early in the process so you can make outreach a strong and integral part of your work. We will also expect that you include some of her time in your budget, so don't forget to incorporate that in your planning. Angela's office is in Engineering Admin room 103 and her email is angela.gross@ndsu.edu.

Angela lives in Moorhead and is married with two daughters, one of whom will be starting an engineering program as a transfer student this month. Welcome, Angela!

Scott Pryor, Associate Dean for Undergraduate Programs

IN THE NEWS

['Join, play and have a great time'](#)

[ND EPSCoR receives funds to work with Indigenous communities on STEM](#)

[Precision Agriculture Team Develops Multifunctional Robotic Platform](#)

CONGRATULATIONS

2022 College Award Winners

The 2022 College of Engineering award winners have been announced.

Teaching

- Excellence in Teaching Award – Mijia Yang
- Early Career Teaching Award – Abdul-Aziz Banawi
- Graduate Teaching Assistant of the Year – Zhaofan Li

Research

- Excellence in Research Award – Zhibin Lin
- Early Career Research Award – Wenjie Xia
- Graduate Research Assistant of the Year – Amirhadi Alesadi

Staff

- Outstanding Staff Award Paraprofessional – Ruth Wirtz
- Outstanding Staff Award Professional – Rob Sailer

Alumni

- Distinguished Alumni Award – Dennis Johnson

The winners will be recognized at the Scholarship and Awards Reception on Thursday, October 13.

Chad Ulven has been appointed the interim chair of the **Department of Mechanical Engineering**, effective August 16. Ulven has been a faculty member at NDSU since 2005 and has established an impressive record of research, teaching, and service to the College of Engineering.

Jen Li, professor in the **Department of Computer Science**, and **Danling Wang**, assistant professor in the **Department of Electrical and Computer Engineering**, have been awarded a \$1.4M NSF grant for building research infrastructure and workforce in edge artificial intelligence. The grant is a collaboration between six universities and several private-sector partners in Alabama, Arkansas, and North Dakota.

Chau Le, assistant professor in the **Department of Civil, Construction and Environmental Engineering**, and his Ph.D. student, **Muhammad Ali Moriyani**, were awarded the Best Paper Award for the paper entitled “Assessing Contractor Competition in Competitive Bidding for Highway Construction Projects Using Network Analysis” at the International Conference on Construction Engineering and Project Management 2022.

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, August 10, **Academic Leaders Orientation and Retreat for Department Chairs/Heads and Deans.**

Friday, August 12, **AI SUSTEIN Program Annual Meeting.** CoE faculty are invited to the closing luncheon to meet faculty from other universities involved in this collaboration with Nueta Hidatsa Sahnish College, University of Arkansas, and University of Nevada, Las Vegas. 12:30 – 2:00 p.m. in the NDSU Memorial Union. [Register Here.](#)

Tuesday, August 16, **New Faculty Orientation.** The New Faculty Orientation is intended for faculty that have started at NDSU since last year's conferences. [Register here.](#)

Wednesday, August 17, **Annual Faculty/Academic Staff Conference.** [Register here.](#)

Thursday, October 13, **College of Engineering Scholarship and Awards Reception.** 3:00 p.m. in the NDSU Memorial Union.

WELCOME WEEK VOLUNTEER OPORTUNITIES

Move-In and Welcome Week are a time when our entire NDSU community can come together to help incoming students know they belong here. To make this transition a positive experience for students and their guests, we need your help.

A variety of offices have come together to develop Welcome Week volunteer opportunities from August 20-August 31.

[Select your volunteer shift\(s\) here](#) and visit the [volunteer website here](#) for more information.

Additional Welcome Week Engagement Opportunities:

- Welcome to the Academy | Monday, August 22 (11:50am, 1:50pm or 3:05pm)
 - Celebrate the Class of 2026 as we cheer them on while they walk through the east campus Gates following their Welcome by President David Cook. This session will occur three times. Volunteers will receive lunch at the Dining Center for a discounted \$5 rate that can be used on the following day, August 23.
- We want to continue the initiatives we began last year to create connections with students on campus. "Focus on 5" means connecting with five students, for five minutes each, for the first five days of the academic year. This small act of outreach has the potential to make a big positive impact on a student's NDSU experience! We would like to challenge you to "Focus on 5" during the first week of the semester.

RESEARCH LEADERSHIP PILOT PROGRAM

The Research and Creative Activity office is piloting a professional development program for up to twelve (12) mid-career faculty interested in leading multidisciplinary research programs. The program will include an 8-session research leadership course led by the [AtKisson Training Group](#) (ATG), which begins October 3, 2022.

Applications and/or nominations are due Friday, August 26, 2022. [Learn more >>](#)

NDSU LATEX THESIS/DISSERTATION CLASS

An upgraded LaTeX package for generating NDSU disquisitions has been [uploaded in CTAN](#) and made available to all.

Upgraded features of this LaTeX package include whole thesis numbered and non-numbered versions, overall justification, document point sizes, fonts options, named appendices, SI units, show frames for layouts, long tables, subfigures, multi-page figures, chapter styles, subfiles, code/algorithm listing, BibTEX and BibLaTeX support, individual chapter and combined bibliography, natbib support, and clever references.

For comments, bug reports, inquiries, and support contact [Igathinathane Cannayen.](#)

FUNDING OPPORTUNITIES

ND EPSCoR: STEM Research, Education, and Outreach

The ND EPSCoR State Office's mission is to support efforts of participating institutions of higher education across the state that result in increased STEM research capacity and competitiveness; a stronger STEM pathway that produces our next generation workforce, educators, and researchers; and an informed citizenry that values the STEM ecosystem and economy.

Thus, the ND EPSCoR State Office is now [accepting proposals](#) to fund STEM activities at EPSCoR participating institutions: research universities (RUs; NDSU and UND), master's college / university (MCU; Minot State University), primarily undergraduate institutions (PUIs; Dickinson, Mayville, and Valley City State Universities), and the tribal colleges/universities (TCUs; Cankdeska Cikana Community College, Nueta Hidatsa Sahnish College, Sitting Bull College, Turtle Mountain Community College, and United Tribes Technical College). For details, see the [Request for Proposals](#).

Deadline: Noon, September 30, 2022

NIST: Professional Research Experience Program (PREP)

NIST PREP [[2022-NIST-PREP-01](#)] is seeking applications from eligible institutions of higher education in the U.S. and its territories that offer two- or four- year degrees in academic science, technology, engineering, and mathematics (STEM) disciplines to establish and manage a program to support collaborative research relationships in the NIST labs. Eligible applicants may apply to establish and manage a program at the relevant NIST campuses in Boulder, Colorado (CO) (PREP Boulder), Gaithersburg, Maryland (MD) (PREP Gaithersburg), and / or Charleston, South Carolina (SC) (PREP Gaithersburg).

Deadline: September 30, 2022

RECENTLY FUNDED GRANTS

- Jordi Estevadeordal (PI). Integrating Advanced Measurement Techniques to Monitor and Mitigate Environmental Factors in Storage Systems to Reduce Postharvest Losses of Perishable Crops. \$10,370 from the Agricultural Research Service. 8/1/2022 - 7/31/2023.
- Danling Wang (PI), Juan Li (CPI). RII Track 2 FEC: Building Research Infrastructure and Workforce in Edge AI. \$1,483,582 from the National Science Foundation. 10/1/2022 - 9/30/2026.

RECENTLY SUBMITTED PROPOSALS

- Dali Sun (PI). CAREER: Novel Elliptical Dichroism Microscopy for Cellular Stereochemistry Analysis Analysis. \$504,759 from the National Science Foundation. 1/1/2023 - 12/31/2027.
- David Grewell (PI), Scott W Pryor (CPI). IUSE/PFE: RED: Key to Enabling Engineering Persistence: early Math Engagement (KEEP ME). \$999,285 from the National Science Foundation. 1/1/2023 - 12/31/2028.
- Di Wu (PI). CAREER: Toward a Network-based Analysis and Control Framework for Inverter-dominated Power Grids. \$500,021 from the National Science Foundation. 1/2/2023 - 12/31/2027.
- Syeed Md Iskander (PI). CAREER: Physicochemical degradation mechanisms of landfilled plastics and their novel application for PFAS capture in landfills. \$549,942 from the National Science Foundation. 8/16/2023 - 8/15/2028.
- Mijia Yang (PI). Detection and Remediation of Soluble Salt Contamination Prior to Coating. \$282,924 from the U.S. Army. 11/1/2022 - 10/31/2024.
- Wenjie Xia (PI). Modeling-Guided Materials-by-Design for Structure and Mechanics of Nano-Crumpled. \$589,486 from the National Science Foundation. 7/1/2023 - 6/30/2028.

- Adam Curtis Gladen (PI). CAREER: Utilizing solar, catalytic torrefaction of biomass for energy storage and value-added products. \$524,325 from the National Science Foundation. 8/1/2023 - 7/31/2028.
- Abdulaziz Ali H Banawi (PI). Implementing Machine Learning Models and Intelligent Cloud Platforms to Integrate Human Expertise for Leveraging Construction Activities. \$588,683 from the National Science Foundation. 1/1/2023 - 12/31/2028.
- Ying Huang (PI), Fardad Azarmi (CPI). Intelligent Thermal Spraying Metallized Polymeric Coating System for Applications in Harsh Environments. \$300,000 from the U.S. Army. 10/17/2022 - 10/16/2024.
- Xinhua Jia (PI). Controlled Environment Agriculture for Future Agriculture in North Dakota. \$47,315 from the NDSU Foundation & Alumni Association. 11/1/2022 - 10/31/2024.
- Yechun Wang (PI), Xinnan Wang (CPI). Service Life Prediction of Coating Systems under the Impact of Fluid Flow. \$299,836 from the U.S. Army. 1/15/2023 - 1/14/2025.
- Leon George Schumacher (PI), Joao Paulo Cassol Flores (CPI), Xin Sun (CPI). Recruitment Tool Kits for Agricultural and Biosystems Engineering. \$73,762 from the NDSU Foundation & Alumni Association. 11/1/2022 - 10/31/2023.
- Jessica Lynne Lattimer Vold (PI). CAREER: Advanced Materials Creation from Local Resources in Extreme Environments. \$517,475 from the National Science Foundation. 9/1/2023 - 8/31/2028.
- Kalpana Katti (PI), Ying Huang (CPI), Dinesh R Katti (CPI). Biomimetic and Bioinspired Infrastructure Coatings. \$300,000 from the U.S. Army. 10/1/2022 - 9/30/2024.
- Achintya Nayan Bezbaruah (CPI). Gray Water Fouling Research - Task 2.1 and Task 2.2. \$400,000 from the Office of the Secretary of Defense. 8/1/2022 - 11/30/2023.
- Joao Paulo Cassol Flores (CPI). ACE PILOT: Accelerated Cultivar Enhancement: Pulse Crops Integration of Low-Cost Omics Technologies. \$1,411,184 from the National Institute of Food & Agriculture. 1/1/2023 - 12/31/2025.

RECENT PUBLICATIONS

For 2022, 81 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:

- Ajayi-Banji, A., and S. Rahman. 2022. "A Review of Process Parameters Influence in Solid-State Anaerobic Digestion: Focus on Performance Stability Thresholds." *Renewable & Sustainable Energy Reviews* 167 (October): 112756. <https://doi.org/10.1016/j.rser.2022.112756>.
- Alenezi, Rafa, and Simone A. Ludwig. 2021a. "Classifying DNS Tunneling Tools For Malicious DoH Traffic." In *2021 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2021)*. New York: IEEE. <https://doi.org/10.1109/SSCI50451.2021.9660136>.
- Alibrahim, Hussain, and Simone A. Ludwig. 2021a. "Image Encryption Algorithm Based on Particle Swarm Optimization and Chaos Logistic Map." In *2021 IEEE Symposium Series on Computational Intelligence (IEEE SSCI 2021)*. New York: IEEE. <https://doi.org/10.1109/SSCI50451.2021.9659975>.
- Du, Jing, Dinesh Katti, and Vinoy Thomas. n.d. "Interactions between Biomaterials and Biological Tissues and Cells, Part I." *JOM*. Accessed August 8, 2022. <https://doi.org/10.1007/s11837-022-05420-y>.
- Han, Leyu, Wenfeng Du, Zhuang Xia, Boqing Gao, and Mijia Yang. 2022. "Generative Design and Integrated 3D Printing Manufacture of Cross Joints." *Materials* 15 (14): 4753. <https://doi.org/10.3390/ma15144753>.

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*.

Follow the College of Engineering on social media.

