NDSU | COLLEGE OF ENGINEERING

COLLEGE HAPPENINGS

April 18, 2023

FROM THE INTERIM DEAN

Engineering Centralized Application Service

This week, the College of Engineering officially joined the Engineering Centralized Application Service or EngineeringCAS. EngineeringCAS launched in 2017 as a comprehensive marketplace for prospective graduate engineering students to learn more about graduate level engineering programs. The service was developed in collaboration with American Society of Mechanical Engineers (ASME) and the American Society of Agricultural and Biological Engineers (ASABE) as a way to streamline graduate degree application processing for participating colleges.

Membership in EngineeringCAS will provide the college several benefits including test score and foreign credential evaluation, applicant support, document authentication and marketing services. There are likely to be some bumps in the road during the transition to this new system, but I believe in the long run this service will help us build a deep, high-quality applicant pool for our graduate programs.

The Graduate School has developed a new landing page for engineering program applicants that includes more information about EngineeringCAS, our programs and some FAQs. Links directing prospective graduate students to new application page have been added to the college and department websites.

The Graduate School is also holding an EngineeringCAS information session on Zoom this Thursday from 3-4 p.m. A calendar invite was sent out to chairs, graduate coordinators and staff but everyone from the college is welcome to attend, reach out to the graduate program leaders in your department to get the calendar invite and Zoom link.

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

IN THE NEWS

NDSU GeoWall team wins national competition

Fundraising competition raises $9,000 for Moorhead student

Recent NDSU graduates welcomed into job market

CONGRATULATIONS

Chau Le, assistant professor in the **Department of Civil, Construction and Environmental Engineering**, was selected as an Outstanding Reviewer for the calendar year 2022 by the ASCE Journal of Management in Engineering, one of the top journals in engineering management.

Kelly Rusch, professor in the **Department of Civil, Construction and Environmental Engineering**, has been appointed a member of the 2023-2024 ABET Engineering Accreditation Commission. In addition to attending the Commission Meetings, she will serve as the Team Chair for ABET Site Visits during the 2023-2024 visit cycle.

Ali Amiri, assistant professor of practice in mechanical engineering, **Zahid Anwar**, associate professor in computer science, **David Froslie**, lecturer in computer science, **Igathinathane Cannayen**, associate professor in ag & biosystems engineering, **Lan Hu**, lecturer in computer science, **Roger Green**, professor in electrical and computer engineering, **David Steward**, professor in civil and environmental engineering, and **Zhibin Lin**, associate professor in civil and environmental engineering were all recently honored with Innovation in Teaching Awards 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, April 20, **EngineeringCAS Information Session**. The NDSU Graduate School is hosting an information session to provide more details about the new Engineering Centralized Application Service requirements. 3-4 p.m. on Zoom.

Wednesday, April 26, **NDSU Takeover Day at StartupBrew**. Get ready to wear your green and yellow gear and connect with entrepreneurs and community members. StartupBREW Fargo is a weekly event held at Brewhalla on Wednesday mornings from 8 a.m. to 9:30 a.m. The NDSU takeover day will feature two NDSU graduates and a current student talking about their businesses.

Wednesday, May 3, **Gunkelman Award Recognition Ceremony**. The reception honors the 2022-2023 nominees and the recipient of the 34th annual Mary McCannel Gunkelman Award. 3:00 p.m. at the Harry D. McGovern Alumni Center.

Thursday, May 4, **College of Engineering Senior Design Expo**. The Spring Senior Design Expo will showcase capstone projects from all departments in the College of Engineering and give you the chance to interact with our amazing students and learn more about their work. 12:00 – 3:00 p.m. in the Oceti Sakowin Ballroom.

Friday, May 12, **Spring Ring and Pin Ceremony**. This ceremony is a blending of two significant and celebratory events, the Order of the Engineer and the Pledge of the Computing Professional. The ceremony begins at 3:00 p.m. in AG Hill Room 122.

Saturday, May 13 **NDSU Spring Commencement**. You are encouraged to participate in the 2023 Spring Commencement ceremonies. Graduates of the College of Engineering will be honored in the Fargodome at 10:00 a.m.

NATURE SUNDAY ACADEMY

The ND EPSCoR NATURE Sunday Academy Program (https://www.ndepscor.ndus.edu/programs/nature/sunday-academy/) is soliciting applications from faculty members for the 2023-2024 academic year. NATURE Sunday Academy engages tribal middle-to-high school students in half-day long active-learning STEM modules. Selected faculty will present and refine their modules during a summer workshop on the NDSU campus scheduled from June 14-16 and travel to Tribal Colleges in North Dakota on four Sundays during the academic year (between Sept – March, exact dates TBD) to present their lessons. The detailed RFP is attached to this message.

You can look at past modules here: https://www.ndepscor.ndus.edu/ndep/nature/sunday-academy/stem-module-topics/

Proposal preparation guidance

Proposals should consist of no more than 500 words and include the following:

1. Name of faculty member(s), department, and university
2. Description of the topic
3. Learning goals or outcomes
4. Description of the hands-on activities

Proposal submission deadline

Please submit proposals to: Britt Heidinger, ND EPSCoR NATURE Sunday Academy, Coordinator at: britt.heidinger@ndsu.edu by 5 pm April 24th, 2023.

Questions regarding a proposal submission should be directed to Britt Heidinger (britt.heidinger@ndsu.edu)

FUNDING OPPORTUNITIES

NSF: Division of Chemical, Bioengineering, Environmental and Transport Systems Programs

The National Science Foundation (NSF) Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET) has a number of opportunities available.

CBET research and education investments contribute significantly to the knowledge base and to the development of a 21st century workforce for major components of the U.S. economy, including chemicals, pharmaceuticals, medical devices, forest products, metals, petroleum, natural gas, food, textiles, energy utilities, alternative energy sources, microelectronics, and other sectors. Support for environmental research encompasses pollution prevention and remediation as well as life-cycle analysis.

- Biophotonics
- Electrochemical Systems
- Environmental Sustainability
- Interfacial Engineering
- Nanoscale Interactions
- Particulate and Multiphase Processes
- Thermal Transport Processes (TTP)

*Deadline: Proposals Accepted **ANYTIME** for all Funding Opportunities above.*

For a full list of opportunities from the NSF CBET Division please visit: https://www.nsf.gov/funding/programs.jsp?org=CBET

DARPA: Multi-objective Engineering and Testing of Alloy Structures (METALS)

The Defense Sciences Office (DSO) at the Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals in the area of material testing and design optimization.

METALS aims to enable continuum material structures by leveraging recent advances in material testing and materials informatics. Novel full-field characterization methods now exist that can track test specimen behavior (e.g., deformation) with precise temporospatial detail. Applying these methods to non-conventional test specimens will enable the

simultaneous extraction of multiple properties aided by inverse analysis techniques. In this approach, material properties are learned based on observed specimen response rather than attempting to model response based on traditional curated material property curves. METALS aims to demonstrate rapid acquisition of design-relevant properties through the combination of novel specimen designs, state-of-the-art full-field characterization techniques, and inverse analysis.

Deadline: June 9, 2023

RECENTLY FUNDED GRANTS

- Jun Kong (PI). Usable Security and Privacy. $5,000 from the ND University System Office. 2/14/2023 - 5/1/2023.

RECENTLY SUBMITTED PROPOSALS

- Inbae Jeong (PI), Youjin Jang (CPI). FW-HTF-RM: Real-Time Trust-Aware Human-Robot Collaboration in Construction. $900,019 from the National Science Foundation. 10/1/2023 - 9/30/2027.
- Jeremy A Straub (PI). GenCyber 2024 Co-Ed Camp. $49,153 from the National Security Agency. 1/1/2024 - 12/31/2024.
- Jeremy A Straub (PI). 2024 GenCyber - Girls Camp. $49,153 from the National Security Agency. 1/1/2024 - 12/31/2024.
- Jeremy A Straub (PI). GenCyber 2024 - Research Camp. $20,270 from the National Security Agency. 1/1/2024 - 12/31/2024.
- Jeremy A Straub (CPI). Feasibility of Electronic Screening to Identify Risk of Opioid Misuse and Overdose. $176,473 from the National Institutes of Health. 12/1/2023 - 11/30/2024.
- Kalpana Katti (PI), Dinesh R Katti (CPI). Effect of microgravity and higher radiation on healing and metastasis potential of omentum. $82,148 from the National Aeronautics and Space Administration. 7/1/2023 - 6/30/2026.
- Mijia Yang (PI), Long Jiang (CPI). Large Scale Soluble Salt Detection and Flash Rust Prevention Prior to Coating. $336,473 from the U.S. Army. 7/1/2023 - 12/31/2025.
- Umamaheswara Rao Tida (PI). FMSG:BIO: Disposable Microfluidics Device with Integrated RF Electric Fields and Machine Learning for Biomanufacturing of mRNA-based CAR T-cells. $158,317 from the National Science Foundation. 11/1/2024 - 10/31/2025.

RECENT PUBLICATIONS

For 2023, 59 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:

- Huynh, Phat P., Arveity Setty, Quan Q. Tran, Om Yadav, Nita Yodo, and Trung Le. 2022. “A Domain-Knowledge Modeling of Hospital-Acquired Infection Risk in Healthcare Personnel from Retrospective Observational Data: A Case Study for COVID-19.” *PLOS One* 17 (11): e0272919. https://doi.org/10.1371/journal.pone.0272919.
- Jasuja, Haneesh, Farid Solaymani Mohammadi, Jiha Kim, Anu Gaba, Dinesh R. Katti, and Kalpana S. Katti. 2023. “Patient-Derived Breast Cancer Bone Metastasis In Vitro Model Using Bone-Mimetic Nanoclay Scaffolds.” *Journal of Tissue Engineering and Regenerative Medicine* 2023 (March): 5753666. https://doi.org/10.1155/2023/5753666.
- Rezaee, Alireza, Omid Bozorg-Haddad, and Xuefeng Chu. n.d. “Comparison of Data-Driven Methods in the Prediction of Hydro-Socioeconomic Parameters.” *Aqua-Water Infrastructure Ecosystems and Society*. Accessed April 10, 2023. https://doi.org/10.2166/aqua.2023.161.
- Thapa, Keshab B., Kalpana S. Katti, and Dinesh R. Katti. 2023. “Influence of the Fluid Polarity on Shear Strength of Sodium Montmorillonite Clay: A Steered Molecular Dynamics Study.” *Computers and Geotechnics* 158 (June): 105398. https://doi.org/10.1016/j.compgeo.2023.105398.

- Wang, Yang, Wenjian Nie, Liang Wang, Dawei Zhang, Kangmin Niu, and Wenjie Xia. 2023. “Understanding the Graphene-Polymer Interfacial Mechanical Behavior via Coarse-Grained Modeling.” *Computational Materials Science* 222 (April): 112109. https://doi.org/10.1016/j.commatsci.2023.112109.
- Yasoda, Ratna Divya, Ying Huang, Ravi Kiran, and Xiaoning Qi. n.d. “Post-Fire Performance of Wire-Arc-Sprayed Zn-15Al Coatings.” *Journal of Thermal Spray Technology*. Accessed April 5, 2023. https://doi.org/10.1007/s11666-023-01577-3.

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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