

# COLLEGE HAPPENINGS

January 24, 2023

## FROM THE INTERIM DEAN

We are fortunate in the College of Engineering to have such a talented and hard-working group of faculty, staff and students who consistently exceed our expectations in the performance of their duties. Whether they are exploring novel techniques to educate the next generation of engineers, computer scientists and construction managers, developing innovative solutions to global challenges, or providing outstanding service to our college and institution, our people make a difference in the lives of so many others. We are grateful for their contributions, and their efforts do not go unnoticed.

One way the College strives to recognize the accomplishments of our members is through the awards that are given annually to outstanding faculty, staff, and graduate students. Each year, the COE recognizes outstanding teaching activities of faculty and graduate students by awarding the Teacher of the Year awards; the unique research accomplishments of faculty and graduate students by conferring the Researcher of the Year awards; and the dedication and contributions of our staff members through the presentation of the Outstanding Staff Awards.

Nominations for each of these awards are now being accepted for 2023. The eligibility requirements and nomination documents for each award can be found at the following link: [https://www.ndsu.edu/coe/faculty\\_staff/college\\_awards/](https://www.ndsu.edu/coe/faculty_staff/college_awards/). In consultation with your department chair, I would like to encourage all of you to identify and nominate your colleagues who you feel are most deserving of these awards. We are proud to recognize and reward our faculty, staff and students for their achievements and the impacts they have on the success of the College of Engineering.

**Alan R. Kallmeyer, Ph.D.**

**Interim Dean | College of Engineering**

## IN THE NEWS

[Engineering assistant professor receives NSF CAREER Award](#)

[Computer science faculty member quoted in MoneyGeek stories](#)

[NDSU hosts LEGO robotics competition](#)

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

## CONGRATULATIONS

**Jessica Vold**, assistant professor in mechanical engineering, has been awarded an Innovation in Teaching Award from the NDSU Office of Teaching and Learning.

**Wenjie Xia**, assistant professor of civil, construction and environmental engineering, is the lead editor of a new book, "Fundamentals of Multiscale Modeling of Structural Materials."

Recent papers by **Chau Le**, assistant professor of civil, construction and environmental engineering, have earned awards. *Collision Hazard Detection for Construction Worker Safety Using Audio Surveillance* was selected as the Editor's Choice Paper in the ASCE Journal of Construction Management and Engineering. *Risk Identification, Prioritization, and Mapping for Early Construction Cost Contingency Estimation* won the poster competition organized by the Standing Committee on Construction Management at the Transportation Research Board 102nd Annual Meeting.

Please let [College Happenings](#) know about honors, awards, new grants and other announcements so we can share them with other faculty and staff.

## NEW HIRES

**Jill Stromsborg** has joined the Career and Advising Center as an Academic and Career Advisor. She'll be working with 1st and 2nd year Computer Science and Electrical Engineering, Computer Engineering and Software Engineering students.

**Mojahid Saeed Osman** has joined the Department of Industrial and Manufacturing Engineering as an assistant professor.

**Dan Whitney** has joined the Department of Industrial and Manufacturing Engineering as a lab technician and instructor.

**Jared Hineman** has joined the College of Engineering as the Assistant Director of the Great Plains I-Corp Hub.

## UPCOMING EVENTS

Friday, January 27, **Accelerate the Impact of Your Research**. The Great Plains I-Corps is hosting a one-hour virtual seminar to provide graduate students, faculty, and community entrepreneurs an overview of how to make sure their research ideas and/or technologies are aligned with potential customer problems and needs. 2:30 - 3:30 p.m. [REGISTER HERE](#)

Monday, January 30, **Academic Leaders Series: Stress, Burnout and Finding Balance**. In this session, we will talk about how to recognize signs of stress and burnout, and elicit and offer ideas for how we can help ourselves and our colleagues. 3:00 – 4:00 p.m. in the Memorial Union Meadow Lark Room.

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 8, **NDSU Day of Honor**. The NDSU Day of Honor commemorates the lives of NDSU students, faculty, and staff who have passed away during the previous calendar year. 2:00 p.m. Oceti Sakowin Ballroom and via Zoom.

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>>](#)

## PROFESSIONAL DEVELOPMENT OPPORTUNITIES

The Learning and Applied Innovation Center has several professional development opportunities for instructors. See the full offering at: <https://kb.ndsu.edu/page.php?id=103166>.

February sessions include:

- Course Design & Development Series (Sessions 3 and 4)
- Alternative Assessment, Thinking Beyond the Test
- Zoom: Engaging Students with Zoom
- Simple Course Design
- Improve Course Accessibility with Blackboard Ally
- NEW - YuJa Video Quizzes

[See the full list of offerings and get the Zoom link to join here.](#)

## CHANGES TO NSF PROPOSAL SUBMISSIONS

The National Science Foundation (NSF) has released the updated Proposal and Award Policy and Procedure Guide ([PAPPG 23-1](#)) which will be effective for proposals with deadlines on or after January 30, 2023. There are a number of major changes introduced with this update:

- **FastLane will be Decommissioned.** NSF is preparing to transition the preparation and submission of all new proposals from FastLane to Research.gov on January 30, 2023. Previously submitted FastLane proposals and supplemental funding requests will be available for the research community to access until Friday, September 29, 2023.
- **New Certification Requirements for Biographical Sketches and Current and Pending Support.** Senior Personnel will be required to certify that the information provided in their Biographical Sketch and Current and Pending Support documents are accurate, current, and complete. This certification will be included in both SciENcv and the NSF fillable format for proposals submitted or due on or after January 30, 2023.
- **Effective October 2023, SciENcv will be required for preparation of biographical sketches and current and pending support.** Other formats, including the fillable PDF form, will no longer be accepted.

## FUNDING OPPORTUNITIES

### NDSU RCA Funding Opportunities

**Research Development Travel and Conference Support Awards** help defray expenses for faculty presenting at national conferences (virtual or on-site) or for supporting travel to visit archives or special collections. As this pool of funding is limited, please consider allowing individuals who do not have other sources of travel funding to apply for this opportunity.

**Research Support Services Awards** help defray the costs of support services required for research, creative, or scholarly activity. For example, funds may be used in one of the NDSU Core Facilities, another recharge / service center, or for transcription services.

**Research Development Funding Agency Visit Travel Awards** help defray expenses for faculty traveling to meeting with Program Officers / Program Directors at funding agencies. This program requires a 1:1 match from the applicant's department and / or college.

More information and application instructions are posted on the [RCA website](#).

### DoD: Science Technology Engineering & Mathematics (STEM) Education and Workforce Program

This Funding Opportunity Announcement (FOA) [N00014-23-S-FO01] is for STEM education programs and activities, which is formal or informal education that is primarily focused on physical and natural sciences, technology, engineering, social sciences, and mathematics disciplines, topics, or issues (including environmental science education or stewardship).

STEM education programs and activities that could be supported by this FOA include one or more of the following as the primary objective:

- Develop learners' knowledge, skill, or interest in STEM.
- Attract students to pursue certifications, licenses, or degrees (two-year degrees through post-doctoral degrees) or careers in STEM fields.
- Provide growth and research opportunities for post-secondary, college and graduate students in STEM fields, such as working with researchers or conducting research that is primarily intended to further education.
- Improve mentor / educator (K-12 pre-service or in-service, post-secondary, and informal) quality in STEM areas.
- Improve or expand the capacity of institutions to promote or foster STEM fields.

*Deadline: April 14, 2023*

## RECENTLY FUNDED GRANTS

- Omid Beik (PI). Study of Multiphase Magnetics and Controls for MW-Scale Generator An Extension from: Multiphase MW Generator for Improved Power Density and Increased Reliability by Reduced DC Capacitive Filtering. \$37,584 from the National Aeronautics and Space Administration. 8/16/2022 - 8/15/2023.
- Omid Beik (PI). A Series Hybrid Electric Propulsion for an eVTOL Using a Fault Tolerant 9-phase Generator. \$82,739 from the National Aeronautics and Space Administration. 8/16/2022 - 8/15/2023.
- Surya Sarat Chandra Congress (PI). Best Practices to Monitor Public Facilities and Conduct 360° Inspection of Highway Bridges using Un-crewed Aerial Vehicles (UAVs). \$121,975 from the Alaska Dept of Trans & Public Facilities. 12/22/2022 - 2/29/2024.
- Syeed Md Iskander (CPI), Jiale Xu (CPI). Phase 2: Reclamation Resource Development and Utilization. \$1,987,724 from Meadowlark. 10/1/2023 - 12/31/2027.

## RECENTLY SUBMITTED PROPOSALS

- Yan Zhang (PI). The pulmonary visceral pleura (PVP) aortic valve. \$379,715 from the National Institutes of Health. 9/1/2023 - 8/31/2028.
- Xinhua Jia (PI). Enhance controlled environment agriculture research program through education and demonstration. \$101,156 from the ND Department of Agriculture. 10/1/2023 - 9/30/2025.
- Xinhua Jia (PI). Predicting and controlling tomato blossom end rot in high tunnels. \$105,951 from the Agricultural Marketing Service. 10/1/2023 - 9/30/2025.
- David Grewell (PI). Production of Cellulose Films. \$36,223 from the Center for Bioplastics and Biocomposites. 1/3/2023 - 12/31/2023.
- Jeremy A Straub (PI). Support for Open Courseware Creation for Ethical Hacking. \$5,000 from the ND University System Office. 1/16/2023 - 5/1/2024.
- Changhui Yan (CPI). Hyperspectral Imaging-Based Pulse Sorting Technology for Distinct Usage of Pulse Seeds. \$267,394 from the Agricultural Marketing Service. 10/1/2023 - 9/30/2025.

## RECENT PUBLICATIONS

For 2023, 19 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:

- Arumugam, Dharanidharan, and Ravi Kiran. 2023. "Interpreting Denoising Autoencoders with Complex Perturbation Approach." *Pattern Recognition* 136 (April): 109212. <https://doi.org/10.1016/j.patcog.2022.109212>.
- Awuku, Bright, Eric Asa, Edmund Baffoe-Twum, and Adikie Essegbey. n.d. "Conceptual Cost Estimation of Highway Bid Items - A Systematic Literature Review." *Engineering Construction and Architectural Management*. Accessed January 11, 2023. <https://doi.org/10.1108/ECAM-03-2022-0266>.
- Chen, Ling, Yuan-Kui Leng, Shi Qiu, Bin Liu, Juan Liu, Sheng-Peng Wan, Tao Wu, et al. 2023. "Ultrahigh-Sensitivity Label-Free Singlemode- Tapered No Core-Singlemode Fiber Immunosensor for Listeria Monocytogenes Detection." *Sensors and Actuators B: Chemical* 376 (February): 132930. <https://doi.org/10.1016/j.snb.2022.132930>.
- Daghighi, Amirreza, Gerardo M. Casanola-Martin, Troy Timmerman, Dejan Milenkovic, Bono Lucic, and Bakhtiyor Rasulev. 2022. "In Silico Prediction of the Toxicity of Nitroaromatic Compounds: Application of Ensemble Learning QSAR Approach." *Toxics* 10 (12): 746. <https://doi.org/10.3390/toxics10120746>.
- Ghazanfari, Sarah, H. M. Nasrullah Faisal, Kalpana S. Katti, Dinesh R. Katti, and Wenjie Xia. 2022. "A Coarse-Grained Model for the Mechanical Behavior of Na-Montmorillonite Clay." *Langmuir* 38 (16): 4859–69. <https://doi.org/10.1021/acs.langmuir.2c00005>.
- Jaswandkar, Sharad V., Kalpana S. Katti, and Dinesh R. Katti. 2022. "Molecular and Structural Basis of Actin Filament Severing by ADF/Cofilin." *Computational and Structural Biotechnology Journal* 20: 4157–71. <https://doi.org/10.1016/j.csbj.2022.07.054>.
- Kar, Sumanta, Sharad Jaswandkar, Kalpana S. Katti, Jeon Woong Kang, Peter T. C. So, Ramasamy Paulmurugan, Dorian Liepmann, Renugopalakrishnan Venkatesan, and Dinesh R. Katti. 2022. "Label-Free Discrimination of Tumorigenesis Stages Using in Vitro Prostate Cancer Bone Metastasis Model by Raman Imaging." *Scientific Reports* 12 (1): 8050. <https://doi.org/10.1038/s41598-022-11800-w>.
- Karbasi, Masoud, Mehdi Jamei, Mumtaz Ali, Shahab Abdulla, Xuefeng Chu, and Zaher Mundher Yaseen. 2022. "Developing a Novel Hybrid Auto Encoder Decoder Bidirectional Gated Recurrent Unit Model Enhanced with Empirical Wavelet Transform and Boruta-Catboost to Forecast Significant Wave Height." *Journal of Cleaner Production* 379 (December): 134820. <https://doi.org/10.1016/j.jclepro.2022.134820>.
- Katti, Kalpana S., Haneesh Jasuja, Sharad Jaswandkar, Sibantwita Mohanty, and Dinesh R. Katti. 2022. "Nanoclays in Medicine: A New Frontier of an Ancient Medical Practice." *Materials Advances* 3 (20): 7484–7500. <https://doi.org/10.1039/d2ma00528j>.
- Kim, Kinam, Inbae Jeong, and Yong K. Cho. 2023. "Signal Processing and Alert Logic Evaluation for IoT-Based Work Zone Proximity Safety System." *Journal of Construction Engineering and Management* 149 (2): 05022018. <https://doi.org/10.1061/JCEMD4.COENG-12417>.
- Kundu, Krishna, Sharad V. Jaswandkar, Dinesh R. Katti, and Kalpana S. Katti. 2022. "Initial Upsurge of BMPs Enhances Long-Term Osteogenesis in in-Vitro Bone Regeneration." *Materialia* 26 (December): 101576. <https://doi.org/10.1016/j.mtla.2022.101576>.
- Li, Xueju, Danguang Pan, Ying Huang, Ye Cheng, and Xiangqiu Fu. 2023. "Shaking Table Test and Numerical Simulation of Free Field in Sand-Sawdust Mixed Soil." *Soil Dynamics and Earthquake Engineering* 165 (February): 107707. <https://doi.org/10.1016/j.soildyn.2022.107707>.
- Lin, Tong, Zhulu Lin, Siew Hoon Lim, Xinhua Jia, and Xuefeng Chu. 2022. "A Spatial Agent-Based Model for Hydraulic Fracturing Water Distribution." *Frontiers in Environmental Science* 10 (November): 1025559. <https://doi.org/10.3389/fenvs.2022.1025559>.
- Sandhurst, Eric S., Sharad Jaswandkar, Krishna Kundu, Dinesh R. Katti, Kalpana S. Katti, Hongli Sun, Daniel Engebretson, and Kevin R. Francis. 2022. "Nanoarchitectonics of a Microsphere-Based Scaffold for Modeling Neurodevelopment and Neurological Disease." *ACS Applied Bio Materials* 5 (2): 528–44. <https://doi.org/10.1021/acsabm.1c01012>.

- Thapa, Keshab B., Kalpana S. Katti, and Dinesh R. Katti. 2022. “Evolution of Nanomechanical and Macroscale Mechanical Responses of Expansive Clay during Swelling.” *International Journal of Geomechanics* 22 (11): 04022191. [https://doi.org/10.1061/\(ASCE\)GM.1943-5622.0002563](https://doi.org/10.1061/(ASCE)GM.1943-5622.0002563).

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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