

COLLEGE HAPPENINGS

January 10, 2023

FROM THE INTERIM DEAN

I am honored and excited to be leading the College of Engineering during this time of transition, until a new permanent Dean is named. Having served as a faculty member in the Mechanical Engineering Department for over 27 years, and 17 years as chair of that department, I have developed a strong passion and commitment for the College of Engineering. I greatly appreciate the warm welcome I have received since being named Interim Dean, and I look forward to working with the faculty, staff and students in the coming months to build on our tradition of excellence in education, research, and service to our constituents.

While NDSU currently faces some notable challenges, I am confident that with thoughtful planning and innovative problem solving, we will emerge as a stronger institution that is better positioned to serve the needs of the state and region into the future. In the coming years, we will seek to grow our enrollments to meet workforce demands, identify and implement budgetary efficiencies, and seek out new opportunities to expand our educational and research programs in high-impact areas that align with state and national priorities.

At the forefront of the needs of the College of Engineering is a new facility that is designed to promote hands-on learning in a collaborative, student-centered environment, with state-of-the-art teaching and research laboratories that will provide our students and faculty the space and resources to foster cooperation and explore innovative ideas. President Cook strongly supports our vision for a new building and will be advocating for this facility as NDSU's top capital project priority in the upcoming legislative session. This week, I will be joining Dr. Cook in Bismarck to meet with lawmakers about securing funding from the state to support our critical needs at NDSU.

As we work through this transformational time, I welcome your ideas and feedback, and my door is open. Please don't hesitate to reach out to me to share your thoughts about how we can continue to improve the College of Engineering and advance our mission as the state's land-grant institution. I wish you all the best as we start a new semester, and I look forward to visiting with you over the next few weeks to share my vision for our College.

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

IN THE NEWS

[NDSU shines at cybersecurity competitions](#)

[NDSU faculty member edits book on structural materials](#)

[Football student-athletes named to Academic All-Star Team](#)

[Meet five of John Deere's high-tech stars](#)

CONGRATULATIONS

Trung Le, assistant professor of **Civil, Construction and Environmental Engineering**, has received a National Science Foundation CAREER Award, considered the agency's most prestigious award in support of early-career faculty. Le's project *On the Hydrodynamics of River Ice* will use field measurement, theoretical analysis, and numerical simulation as a holistic approach to understanding the key factors that govern the river ice processes.

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, January 12, **The Purpose of Education: Reflections on an Essay Written by Dr. Martin Luth King, Jr.** The campus community is invited to this event as part of celebrations of Martin Luther King, Jr. Day. 3:00 p.m. in the Memorial Union Prairie Rose Room.

Thursday, January 19, **CoE Faculty Council Meeting.** 12 – 1 p.m. at the Memorial Union Sahnish room. Pizza will be served.

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>>](#)

OPEN CALL: MOST CRITICAL PROBLEM FOR ENGINEERING RESEARCH TO SOLVE

The [Engineering Research Visioning Alliance \(ERVA\)](#) is an NSF-funded effort to help to identify and develop bold and transformative new engineering research directions by engaging experts in visioning events. **UIDP is an ERVA core partner and manages this initiative.**

ERVA has issued a call for **Big Ideas—research problems for ERVA visioning.** Would you share your insight on ideas that can shape exciting future engineering research with impacts that affect our entire ecosystem? Please help ERVA identify bold new engineering research problems that are:

- Emerging or nascent research areas that are currently under-resourced;
- Challenges that engineering can solve;
- Capable of major societal impact;
- Involve broad engagement of the engineering research community;
- Distinct from the previous ERVA visioning themes: [The Role of Engineering to Address Climate Change](#), [Leveraging Biology to Power Engineering Impact](#), [Engineering R&D Solutions for Unhackable Infrastructure](#), and [Sustainable Transportation Networks](#)

Ideas received by January 26, 2023 will receive full consideration: [Submit your ideas](#)

EQUITY AND ON-CAMPUS CHILD-CARE SUPPORT

Join a virtual discussion on the equity issues faced by campus communities due to inadequate child care and caregiver support. This event is part of the [ADVANCE Midwest Partnership - Joining Forces](#), a partnership of four research-intensive institutions funded by NSF ADVANCE.

Thursday, January 26, 12:00 p.m. CST
Campus Childcare and Family Support
by Drs. Wendy Wagner Robeson and Autumn Green
Register [here](#).

This discussion will be inclusive of all members of the community: undergraduate and graduate students, staff and faculty. Feel free to share this announcement with your students, colleagues, networks.

Drs. Wendy Wagner Robeson and Autumn Green will discuss the factors that make up family-friendly campuses as well the problems faced by student caregivers/parents. This session will focus on equity with respect to child care and the problems families and children face when they have inadequate or no child care. The trilemma of care—affordability, availability and high quality—will be examined with respect to the needs of a campus community.

FACULTY AWARD NOMINATIONS

Nominations are due by January 27, 2023 for the [Odney Excellence in Teaching Award](#), [Waldron Excellence in Research Award](#), and [Peltier Innovation in Teaching Award](#). *Self-nominations will be accepted to ensure that there are multiple and inclusive pathways to nomination.*

For information on faculty awards please see the awards page at <https://www.ndsu.edu/facultyaffairs/awards/>

FUNDING OPPORTUNITIES

NSF: Addressing Systems Challenges through Engineering Teams (ASCENT)

The Electrical, Communications and Cyber Systems Division (ECCS) supports enabling and transformative engineering research at the nano, micro, and macro scales that fuels progress in engineering system applications with high societal impact. ECCS, through its ASCENT program [[NSF 23-541](#)], offers its engineering community the opportunity to address research issues and answer engineering challenges associated with complex systems and networks that are not achievable by a single principal investigator or by short-term projects and can only be achieved by interdisciplinary research teams. ECCS envisions a connected portfolio of transformative and integrative projects that create synergistic links by investigators across its three ECCS clusters: Communications, Circuits, and Sensing-Systems (CCSS), Electronics, Photonics and Magnetic Devices (EPMD), and Energy, Power, Control, and Networks (EPCN), yielding novel ways of addressing challenges of engineering systems and networks. ECCS seeks proposals that are bold and ground-breaking, transcend the perspectives and approaches typical of disciplinary research efforts, and lead to disruptive technologies and methods or enable significant improvement in quality of life.

- ASCENT supports fundamental research projects involving at least three collaborating PIs and co-PIs, up to four years in duration, with a total budget between \$1 million and \$1.5 million.
- ASCENT proposals must highlight the engineering leadership focus of the proposal within the scope of ECCS programs.

- ASCENT proposals must articulate a fundamental research problem with compelling intellectual challenge and significant societal impact. The topic at the heart of the proposal must lie within the scope of at least one of the three ECCS clusters (CCSS, EPMD, EPCN). Research proposals spanning multiple clusters are highly encouraged.
- ASCENT proposals must demonstrate the need for a concerted research effort by an integrated and interdisciplinary team, and strongly justify the interdisciplinary nature of the proposed work. They should include a timeline for research activities, with a strong justification of the explicit mechanisms for frequent communication between team members and effective assessment to achieve proposed goals.

LOI deadline: February 1, 2023

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

This Funding Opportunity Announcement (FOA) [[N00014-23-S-FOO1](#)] 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

- Trung Le (PI). CAREER: On The Hydrodynamics of River Ice. \$500,000 from the National Science Foundation. 1/15/2023 – 12/31/2027.

RECENTLY SUBMITTED PROPOSALS

- Jeremy A Straub (PI). CASTLE - DARPA I20 HR001123S0002 - TA3 (Red). \$5,486,196 from the Office of the Secretary of Defense. 4/1/2023 - 3/31/2027.
- Danling Wang (PI). NERC-NSF-GEO Fiber optic microsensor for in situ determination of dissolved inorganic carbon in aquatic environments. \$313,009 from the National Science Foundation. 10/1/2023 - 3/31/2027.
- Ali Amiri (PI), Chad A Ulven (CPI). Utilizing Hemp Hurd. Improving Hemp Hurd Performance as Filler in Plastic Manufacturing. \$34,364 from the Center for Bioplastics and Biocomposites. 1/1/2023 - 12/31/2023.

RECENT PUBLICATIONS

For 2023, 4 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:

- Awuku, Bright, Eric Asa, and Edmund Baffoe-Twum. n.d. “Conceptual Cost Estimation of Highway Bid Unit Prices Using Ordinary Kriging.” *International Journal of Construction Management*. Accessed January 5, 2023. <https://doi.org/10.1080/15623599.2022.2156844>.
- Maul, Jared, and Jeremy Straub. 2022. “Assessment of the Use of Patient Vital Sign Data for Preventing Misidentification and Medical Errors.” *Healthcare* 10 (12): 2440. <https://doi.org/10.3390/healthcare10122440>.
- Samaddar, Poulami, Anup Kumar Mishra, Sunil Gaddam, Mansunderbir Singh, Vaishnavi K. Modi, Keerthy Gopalakrishnan, Rachel L. Bayer, et al. 2022. “Machine Learning-Based Classification of Abnormal Liver Tissues Using Relative Permittivity.” *Sensors* 22 (24): 9919. <https://doi.org/10.3390/s22249919>.
- Yuan, Hui, Huanhai Xin, Di Wu, Wei Wang, and Yuhan Zhou. 2022. “Small-Signal Stability Assessment of Multi-Converter-Based-Renewable Systems With STATCOMs Based on Generalized Short-Circuit Ratio.” *IEEE Transactions on Energy Conversion* 37 (4): 2889–2902. <https://doi.org/10.1109/TEC.2022.3209906>.

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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