

COLLEGE HAPPENINGS

April 4, 2023

FROM THE INTERIM DEAN

A Helping Hand

I recently came across a quote that I believe can be a good reminder for all of us: *“Be kind, for everyone you meet is fighting a hard battle.”* The final few weeks of the semester are always a challenging time for our students. With the pressure of completing term projects, studying for final exams, and preparing for summer internships, the ‘battles’ can be overwhelming for some, particularly those who are worried about their final grades. This year, many of us have noticed an increased sense of anxiety and exhaustion among our students. This may be due to personal matters like relationship stress, family dynamics, finances or health issues. It may be due to external factors like post-pandemic fatigue or the winter that will never end. But regardless of the cause, all of our students can likely benefit from a little extra kindness, encouragement and support from each of us.

As we approach the end of the semester, I would ask that we all keep the well-being of our students in mind, and provide extra support or guidance to those in need. Even small interactions can have a big impact on the mental health and well-being of our students. Visiting with a student before or after class or during office hours, making eye contact and greeting each other in the hallways or around campus, or offering a simple smile or word of encouragement can go a long way. For those needing additional assistance, the NDSU Counseling Center (<https://www.ndsu.edu/counseling/>) is an excellent resource.

Thank you for all that you do in support of our students. As we suffer through yet another blizzard-induced campus closure, I want to express my appreciation for your dedication and commitment to our educational mission, especially during these challenging times. Enjoy the extra snow days and the holiday break.

Alan R. Kallmeyer, Ph.D.

Interim Dean | College of Engineering

IN THE NEWS

[NDSU, area businesses introduce girls to engineering](#)

[Great Plains I-Corps Hub to host first five-week cohort](#)

CONGRATULATIONS

The NDSU GeoWall team led by undergraduates Lexie Rennemo, Sawyer Aleckson, Jon Oelkers, and Meghan Smude won the GeoWall National Championship at the Annual Geo-Congress conference organized by the American Society of Civil Engineers in Los Angeles, California.

The College of Engineering was the winner of the 12th annual Battle of the Cents-es competition against the College of Health Professions. This year's event raised \$9,193.46 to support Aaron Erickson and his family. Aaron is the son of former College of Engineering outreach coordinator Holly Erickson. He was born with a rare heart defect and received a transplant in November.

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, April 5, **IEEE Webinar: All-DC Wind Generation Systems**. Omid Beik from the Department of Electrical and Computer Engineering will present a case for an all-DC scheme for wind generation systems. This free event goes from 10 – 11:30 a.m.. [Register here](#).

Tuesday, April 18, **Student Research Day**. NDSU Student Research Day is a one-day event dedicated to providing graduate and undergraduate students an opportunity to present their research and creative works. [Learn more and register](#). Registration closes March 23 at noon.

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.

PRIDE MONTH ACTIVITIES

In April, NDSU will be recognizing Pride Month and you are welcome to participate in multiple ways.

Fridays will be “Wear your Pride Days” and students, faculty, and staff are encouraged to wear rainbow or other pride gear.

April 10-14 will be an office decorating contest. This can be individual or department offices. Offices should be decorated by Tuesday the 11th for judging on the 12th and 13th. Winners will be announced Friday the 14th at 5pm at the Breaking the Silence event, Prairie Room of Memorial Union.

Please use the following form to let judges know to visit your office <https://forms.gle/o2sYQxjTTcDwMGHT7>

April 14th NDSU will be participating in National Day of Silence. This is an event where individuals choose to remain silent for the day in recognition of the way LGBTQ+ students are silenced. Everyone is welcome to participate. We'll Break the Silence together at 5 p.m. in the Prairie Room of the Memorial Union.

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

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

- Fardad Azarmi (PI). Demonstration of Dynamic Adhesion Strength for Maintenance and Sustainment Environments. \$896,405 from the U.S. Army. 11/11/2022 - 11/10/2024.
- David Grewell (PI). Production of Cellulose Films. \$36,223 from the Center for Bioplastics and Biocomposites. 1/3/2023 - 12/31/2023.
- Sumitha George (PI). CRII: SHF: FET: Ferroelectric FET based flexible circuits and system design. \$174,999 from the National Science Foundation. 2/1/2023 - 1/31/2025.
- Jordi Estevadeordal (PI). Experimental Investigation of Dynamic Stall Mitigation Using Leading Edge Micro-Cavity Passive Flow Control. \$10,000 from the Ohio Aerospace Institute. 2/15/2023 - 8/15/2023.

- Changhui Yan (PI). Creating weed tolerant corn (Phase 2). \$33,000 from the ND Corn Utilization Council. 7/1/2022 - 6/30/2023.
- Joao Paulo Cassol Flores (CPI). SOYGEN3: Building Capacity to Increase Soybean Genetic Gain for Yield and Composition through Combining Genomics-Assisted Breeding with Characterization of Future Environments. \$57,383 from the North Central Soybean Research Program. 10/1/2022 - 9/30/2023.

RECENTLY SUBMITTED PROPOSALS

- Youjin Jang (PI), Inbae Jeong (CPI). STEM distancing learning in Metaverse. \$5,000 from the NDSU Foundation. 5/15/2023 - 5/15/2024.
- Clairmont Clementson (PI), Kenneth Hellevang (CPI), Ewumbua Monono (CPI). Assessment of cold storage transit of soybeans in the Northern States. \$57,010 from the Northern Soy Marketing, LLC. 7/1/2023 - 6/30/2024.
- Jiale Xu (PI). Efficient control of pesticide contamination in rinsate by KrCl* excimer lamps to protect farmer health and ecosystems. \$15,000 from the NDSU Foundation. 6/1/2023 - 5/31/2024.
- Jiale Xu (PI). Coupling Sterilization and Pesticide Removal by Far-UVC System for Juice and Milk Production. \$1,000 from the NDSU Foundation. 8/21/2023 - 2/2/2024.
- Jiale Xu (PI). Control Uptake of Per-and Polyfluoroalkyl Substance (PFAS) by Crops via Precision Nutrient Management. \$6,000 from the NDSU Foundation. 6/1/2023 - 5/31/2024.
- Di Wu (PI). Grid Strength Assessment for Sub-synchronous Oscillation Stability Analysis in Renewable Rich Power Systems. \$1,000 from the NDSU Foundation. 6/1/2023 - 5/31/2024.
- Ivan T Lima, Jr. (PI). Software and Hardware integration for the Development of a Device Prototypes for the Monitoring of Surgery Patients. \$4,082 from the NDSU Foundation. 8/22/2023 - 10/31/2024.
- Yechun Wang (PI). Mitigation of Clogging at Microchannel Contractions via Thermocapillary Forces. \$5,000 from the NDSU Foundation. 5/15/2023 - 5/14/2024.
- Syeed Md Iskander (PI). Faculty development: fifteen days summer salary support for Syeed Md Iskander to advance his research at NDSU. \$5,000 from the NDSU Foundation. 5/16/2023 - 5/31/2023.

RECENT PUBLICATIONS

For 2023, 53 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:

- Gopalakrishnan, Keerthy, Aakriti Adhikari, Namratha Pallipamu, Mansunderbir Singh, Tasin Nusrat, Sunil Gaddam, Poulami Samaddar, et al. 2023. "Applications of Microwaves in Medicine Leveraging Artificial Intelligence: Future Perspectives." *Electronics* 12 (5): 1101. <https://doi.org/10.3390/electronics12051101>.
- Jannat, Tofatun, Ying Huang, Zhi Zhou, and Dawei Zhang. 2023. "Influences of CNT Dispersion Methods, W/C Ratios, and Concrete Constituents on Piezoelectric Properties of CNT-Modified Smart Cementitious Materials." *Sensors* 23 (5): 2602. <https://doi.org/10.3390/s23052602>.
- Liao, Yangchao, Zhaofan Li, Long Chen, Andrew B. Croll, and Wenjie Xia. n.d. "Crumpling Defective Graphene Sheets." *Nano Letters*. Accessed April 4, 2023. <https://doi.org/10.1021/acs.nanolett.2c04771>.
- Pan, Danguang, Jinpeng Tan, Xiangqiu Fu, Ying Huang, and Xueju Li. 2023. "Modal Analysis and Extraction Method for the Frame Structure Considering Soil-Structure Interaction Effect." *Computers and Geotechnics* 157 (May): 105332. <https://doi.org/10.1016/j.compgeo.2023.105332>.
- Quader, Raihan, Evan Dramko, David Grewell, Jed Randall, and Lokesh Karthik Narayanan. 2023. "Characterizing the Effect of Filament Moisture on Tensile Properties and Morphology of Fused Deposition Modeled Polylactic Acid/Polybutylene Succinate Parts." *3D Printing and Additive Manufacturing*, March, 3dp.2022.0222. <https://doi.org/10.1089/3dp.2022.0222>.

- Rai, Nitin, Yu Zhang, Billy G. Ram, Leon Schumacher, Ravi K. Yellavajjala, Sreekala Bajwa, and Xin Sun. 2023. “Applications of Deep Learning in Precision Weed Management: A Review.” *Computers and Electronics in Agriculture* 206 (March): 107698. <https://doi.org/10.1016/j.compag.2023.107698>.
- Raza, Md Basit, Siba Prasad Datta, Debasis Golui, Mandira Barman, Tapas Kumar Das, Rabi Narayan Sahoo, Devi Upadhyay, Mohammad Mahmudur Rahman, Biswaranjan Behera, and A Naveenkumar. 2023. “Synthesis and Performance Evaluation of Novel Bentonite-Supported Nanoscale Zero Valent Iron for Remediation of Arsenic Contaminated Water and Soil.” *Molecules* 28 (5): 2168. <https://doi.org/10.3390/molecules28052168>.

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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