

COLLEGE HAPPENINGS

May 11, 2021

FROM THE DEAN

Strategic Plan Video

Last year, after an extensive and collaborative planning effort, we officially rolled out the [2020-2025 strategic plan](#). To remind all of us of that plan and help keep it front of mind, I've created a short doodle video summarizing our mission, vision, core values, strategic pillars, and strategic initiatives. Click the image below to watch a five-minute walkthrough of the NDSU College of Engineering Strategic Plan.



I hope you all have a great final week of the spring semester and find some time to relax and enjoy the warming weather in the weeks ahead. After a pandemic altered academic year, you deserve it. Thanks for all the hard work you do to contribute to our collective mission of preparing innovative problem solvers and creating new knowledge to improve lives in North Dakota and beyond.

IN THE NEWS

[STEM Kids Camp returning to NDSU](#)

[Mechanical engineering assistant professor of practice receives Odney Teaching Award](#)

[Spring grads share memorable NDSU experiences](#)

[North Dakota State University Professor Ravi Kiran Yellavajjala Receives NSF CAREER Award](#)

CONGRATULATIONS

Milka Singha, academic student services coordinator in the **Department of Civil and Environmental Engineering**, was selected as a recipient of the 2021 Staff Recognition Award from the NDSU Staff Senate.

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, May 13, **NDSU Celebration of Excellence**. 3:00 – 4:30 p.m. on Zoom. [REGISTER HERE](#)

Friday, May 14, the **College of Engineering 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 112 and simultaneously on Zoom.

Saturday, May 15, **NDSU Spring Commencement** at 10:00 a.m. in the FargoDome. Please complete and submit the [Faculty/Staff Commencement Participation Form](#) by **Friday, April 30 at 5:00 p.m.** if you plan to participate in commencement.

Wednesday, May 19, **Using the Accessibility Checker Tools: Microsoft and Acrobat Pro DC**. This training opportunity is part of Global Accessibility Awareness Day. 10:00 – 11:00 a.m. on Zoom.

Thursday, May 20, **Improve Course Accessibility with Blackboard Ally**. This training opportunity is part of Global Accessibility Awareness Day. 2:00 – 3:00 p.m. on Zoom.

Tuesday, May 25, **Office of Teaching and Learning Mini-Virtual Conference**. This free conference goes from 9:00 a.m. to noon via Zoom and will offer [three learning tracks](#). The conference is open to any instructor interested in attending. [Register Now](#)

STEM KIDS CAMP

Our popular [STEM Kids Camp](#) program is returning to campus this summer!

The fun, hands-on learning camps are for students in grades K-2, 3-5, 6-8 and 9-12 and are offered mornings and afternoons two different weeks during July.

- Session 1 – Monday, July 12 – Thursday, July 15
- Session 2 – Monday, July 19 – Thursday, July 22

Camp topics this year include everything from computer coding, robotics and crime scene science to the science of music and a mission to Mars.

Registration is now open online and camps are expected to fill quickly. Registration before June 15 costs \$100 per course for K-8 and \$200 per course for 9-12.

NSF VIRTUAL GRANTS CONFERENCE

The National Science Foundation (NSF) Spring 2021 Virtual Grants Conference will be held the week of June 7-11, 2021. Registration will be free of charge and opens on Wednesday, May 5 at 11:00 a.m. Sessions typically reach capacity very quickly, so we encourage you to register as soon as possible once the portal opens.

In the meantime, please feel free to check nsfpolicyoutreach.com for the most up-to-date information and view [recordings](#) of sessions from previous years. You may also view the Fall 2020 Virtual Grants Conference recordings on our [YouTube](#) page. For those who cannot attend the live conference, all recorded conference sessions will be available on-demand shortly after the event and posted on our [website](#) and our [YouTube](#) page.

If you have any logistical questions about this virtual conference, please contact grants_conference@nsf.gov.

NDSU ADVANCING INCLUSION AWARD

The Advancing Inclusion Award is given annually to an NDSU department, committee, group, or unit that has worked collaboratively to promote an inclusive culture by enhancing or contributing to the overall environment of the community or university. The award recognizes the implementation of practices, programs, procedures, and similar actionable processes which result in a mutually identified sense of belonging and thriving for all people across any number of axes of diversity including: race, class, sex, ability, sexual orientation, gender identity/expression, national origin, religion, age, and veteran status among others.

All NDSU departments, committees, groups, units, etc. are eligible for this nomination. Nominations may be made by any NDSU student, staff, faculty, or administrator. A nomination form can be accessed [online](#) or requested from Julie Nash (Julie.nash@ndsu.edu).

Nominations will be reviewed by members of the President's Council for Diversity, Inclusion, and Respect Awareness and Recognition of Best Practices work group. The award winner will be recognized at the Inclusion Fair in the Fall.

CULTURAL DIVERSITY AND SAFE ZONE TRAINING

The Office of the Vice Provost for Faculty and Equity will be offering a series of the Cultural and Cultural Diversity Trainings as part of the Community of Respect series and the Safe Zone Training series via Zoom.

Cultural and Cultural Diversity Trainings:

- Module 1 Cultural and Cultural Diversity, June 10 from 10 am - noon
- Module 2, Redefining Diversity, June 17 from 10 am- noon
- Module 3, Microaggressions, June 24 from 10 am- noon
- Module 4, Confronting Bias, July 1 from 10 am- noon

Safe Zone Training:

- Level 1 "Becoming an Ally", June 8, 2021 from 1-3 pm
- Level 2 "Gender Identity and Expression", June 15, 2021 from 1-3 pm
- Level 3 "Upstander", June 22, 2021 from 1-3 pm

Register for either program here: https://www.ndsu.edu/equity/education_and_training/

Registrants will be emailed the Zoom link a few days prior to the training dates

FUNDING OPPORTUNITIES

NSF: Biosensing

The Biosensing program [PD 20-7909] supports fundamental engineering research in the monitoring, identification and / or quantification of biological analytes and phenomena using innovations that exist at the intersection of engineering, life sciences, and information technology. Projects submitted to the program must advance both engineering and life sciences.

The Biosensing program encourages proposals that, in addition to advancing biosensing technology, address critical sensor needs in biomedical research, public health, food safety, agriculture, forensics, environmental protection, and homeland security. Proposals to this program are accepted at any time.

NSF / Amazon: Fairness in Artificial Intelligence

NSF and Amazon are partnering to jointly support computational research focused on fairness in Artificial Intelligence (AI) [NSF 21-585], with the goal of contributing to trustworthy AI systems that are readily accepted and deployed to tackle grand challenges facing society. Specific topics of interest include, but are not limited to transparency, explainability, accountability, inclusivity, potential adverse biases (including social biases) and effects, mitigation strategies, algorithmic advances, fairness objectives, validation of fairness, participatory design, and advances in broad accessibility and utility. Funded projects will enable broadened acceptance of AI systems, helping the U.S. to further capitalize on the potential of AI technologies. Although Amazon provides partial funding for this program, it will not play a role in the selection of proposals for award.

Deadline: August 3, 2021

RECENTLY FUNDED GRANTS

- Xuefeng Chu (CPI). Wetlands for reduction of sediment and nutrient loadings in impaired watersheds. \$322,828 from the Environmental Protection Agency. 01/01/2021 - 12/31/2023.
- Fardad Azarmi (PI). Additively Manufactured High Temperature Friction Stir Tooling through Thermal Spray Techniques. \$599,683 from the Department of Defense. 10/01/2020 - 09/30/2023.

RECENTLY SUBMITTED PROPOSALS

- Zhibin Lin (PI), Trung Bao Le (CPI), Yan Zhang (CPI). Development of corrosion/erosion threat assessment methodologies and enriched preventive and mitigative measures to promote safety of gas gathering pipelines. \$377,830 from Pipeline and Hazardous Materials Safety. 10/01/2021 - 09/30/2023.
- Farhad Shirani Chaharsooghi (PI). Collaborative Research: CIF: Small: A New Paradigm for Distributed Information Processing, Simulation and Inference in Networks: The Promise of Law of Small Numbers. \$249,962 from the National Science Foundation. 10/01/2021 - 09/30/2024.
- Jessica Lynne Lattimer Vold (PI), Ali Amiri (CPI), Yildirim B Suzen (CPI). M2M X-Hab 2022 Academic Innovation Challenge Power Rover Project. \$26,000 from the National Aeronautics and Space Administration. 08/01/2021 - 05/31/2022.
- Umamaheswara Rao Tida (PI). RII Track-4: NSF: Opportunistic MIV-device Placement in Monolithic Three-dimensional Integrated Circuits. \$176,579 from the National Science Foundation. 05/01/2022 - 04/30/2024.
- Shafiqur Rahman (CPI). Effects of bedding type on equine behavior and air quality during transport. \$30,577 from the Waltham Foundation. 09/01/2021 - 07/01/2023.
- Muhammad Z Malik (PI). RII-Track4: Kronos: A Static Analysis Tool to Help Port Application Code to Distributed Fault-Oblivious Stateful Workflow Framework. \$214,625 from the National Science Foundation. 01/03/2022 - 12/29/2023.
- Muhammad Z Malik (CPI). FMSG: ECO: Sustainable Manufacturing of Plant-Based Thermoplastics. \$199,465 from the National Science Foundation. 01/02/2022 - 01/01/2024.

- Inbae Jeong (PI). Collaborative research: NRI: Autonomous Underwater Infrastructure Inspection Robot. \$823,668 from the National Science Foundation. 12/01/2021 - 11/30/2025.
- Achintya Bezbaruah (PI). A new portable and real-time biosensor using molecularly imprinted polymer combined with surface plasmon resonance-based fiber optic sensor to detect swine viral pathogens in feces. \$150,536 from the National Institute of Food & Agriculture. 01/01/2022 - 12/31/2025.

RECENT PUBLICATIONS

For 2021, 88 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:

- Bozorg-Haddad, Omid, Babak Zolghadr-Asli, Xuefeng Chu, and Hugo A. Loaiciga. n.d. "Intense Extreme Hydro-Climatic Events Take a Toll on Society." *Natural Hazards*. <https://doi.org/10.1007/s11069-021-04749-y>.
- Davila-Frias, Alex, and Om Prakash Yadav. n.d. "All-Terminal Network Reliability Estimation Using Convolutional Neural Networks." *Proceedings of the Institution of Mechanical Engineers Part O-Journal of Risk and Reliability*, 1748006X20969465. <https://doi.org/10.1177/1748006X20969465>.
- Hill, Christopher B., Om P. Yadav, and Eakalak Khan. 2021. "Hydraulic Fracturing Chemical Disclosure Policy and Data Analysis: Metrics and Trends in Transparency." *Environmental Science & Technology* 55 (6): 3918–28. <https://doi.org/10.1021/acs.est.0c08151>.
- Jasuja, Haneesh, Sumanta Kar, Dinesh R. Katti, and Kalpana Katti. 2021. "Perfusion Bioreactor Enabled Fluid-Derived Shear Stress Conditions for Novel Bone Metastatic Prostate Cancer Testbed." *Biofabrication* 13 (3): 035004. <https://doi.org/10.1088/1758-5090/abd9d6>.
- Li, Huanhuan, Wenhui Geng, Xin Sun, Wenya Wei, Xuefan Mu, Waqas Ahmad, Md Mehedi Hassan, Qin Ouyang, and Quansheng Chen. 2021. "Fabricating a Nano-Bionic Sensor for Rapid Detection of H₂S during Pork Spoilage Using Ru NPs Modulated Catalytic Hydrogenation Conversion." *Meat Science* 177 (July): 108507. <https://doi.org/10.1016/j.meatsci.2021.108507>.
- Mitra, Dipankar, Sayan Roy, Ryan Striker, Ellie Burczek, Ahsan Aqueeb, Henry Wolf, Kazi Sadman Kabir, Shengrong Ye, and Benjamin D. Braaten. 2021. "Conductive Electrified and Nonconductive NinjaFlex Filaments Based Flexible Microstrip Antenna for Changing Conformal Surface Applications." *Electronics* 10 (7): 821. <https://doi.org/10.3390/electronics10070821>.
- Nguyen, Quyen N. T., Toan Le, Quyen B. T. Huynh, Arveity Setty, Toi V. Vo, and Trung Q. Le. 2021. "Validation Framework for Sleep Stage Scoring in Wearable Sleep Trackers and Monitors with Polysomnography Ground Truth." *Clocks & Sleep* 3 (2): 274–88. <https://doi.org/10.3390/clockssleep3020017>.
- Rony, Rajib Uddin, and Adam Gladen. 2021. "Parametric Study and Sensitivity Analysis of a PV/Microchannel Direct-Expansion CO₂ Heat Pump." *Solar Energy* 218 (April): 282–95. <https://doi.org/10.1016/j.solener.2021.02.006>.
- Zhang, Jiafei, Liang Wan, C. Igathinathane, Zhao Zhang, Ya Guo, Dawei Sun, and Haiyan Cen. 2021. "Spatiotemporal Heterogeneity of Chlorophyll Content and Fluorescence Response Within Rice (*Oryza Sativa* L.) Canopies Under Different Nitrogen Treatments." *Frontiers in Plant Science* 12 (March): 645977. <https://doi.org/10.3389/fpls.2021.645977>.

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.

