

COLLEGE HAPPENINGS

January 7, 2020

FROM THE DEAN

Strategic Plan: Resolutions for a New Year and New Decade

Happy New Year everyone! Here we are in 2020, and despite the usual holiday excesses, many of us have made personal resolutions intended to make us better people in the new year.

The start of a new year also marks the start of an exciting time for the College of Engineering. We're officially rolling out the [2020-2025 strategic plan](#). This plan was developed by the leadership team, with input from faculty, staff, students and alumni over the past 18 months, and contains several strategic initiatives and related benchmarks that can be considered as new year resolutions for the college as a whole. The goals for the next 5 years include:

Cultivate a culture of collaborative excellence.

- Grow percentage of faculty and staff who rate climate as good or extremely good.
- Increase recognition of faculty and staff.
- Improve transparency and communication.

Integrate industry with research and education.

- Grow research partnerships with industry by 50%.
- Create an industry-faculty fellowship program.
- Increase the number of industry experiences for students.

Build leadership and innovation skills of students.

- Establish a co-curricular leadership development program.
- Establish a core set of design and innovation experiences.
- Improve graduates' leadership and innovation ratings among employers.

Increase philanthropy through engagement with donors, alumni and other stakeholders.

- Double annual spendable amount for faculty recruitment, retention and research.
- Grow annual spendable amount for student recruitment, retention and support by 50%.
- Build broad support for a new College of Engineering facility.

In your mailboxes today, you will find a hard copy of the strategic plan, which also includes the mission (what we do and why we do it) and 5-year vision (where we are going and who we are becoming), articulates our shared core values and identifies our strategic pillars (the areas of focus that drive our success).

In the coming weeks, I'll be attending faculty meetings in each department to talk more about the strategic plan and discuss how you can get involved in helping achieve these initiatives.

I'll also be hosting four fire-side chats with faculty and staff around each of our four strategic initiatives. The discussion will focus on what we can do together to succeed in these resolutions for the new decade, and I'll share the score cards we've developed to measure our success.

I wish you all the best in the new year and look forward to our coming discussions.



IN THE NEWS

[NDSU to offer online course for new computer science education program](#)

[NDSU hosts Computer Science Education Week speakers](#)

CONGRATULATIONS

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

Monday, January 13, Classes start at 4:00 p.m.

Tuesday, January 14, First full day of classes.

Wednesday, January 15, **Community of Respect Training Module 1: Cultural and Cultural Diversity.** 1:30-3:30 p.m. in the Meadow Lark Room of the Memorial Union. [Register Here.](#)

Thursday, January 16, **Pride Network Lunch.** 12:00 - 1:00 p.m. in the Arikara Room of the Memorial Union. This meeting is brown bag-style, so please bring your lunch to enjoy.

Friday, January 17, **Search Committee Training: Searching for Excellence.** Anyone who plans to be a chair of an academic search (this includes faculty, lecturers and postdocs) is required to attend the in-person training. 1:00 – 3:00 p.m. in the Meadow Lark room in the Memorial Union. [Register Here.](#)

Wednesday, January 29, **Community of Respect Training Module 2: Redefining Diversity.** 1:30-3:30 p.m. in the Meadow Lark Room of the Memorial Union. [Register Here.](#)

Friday, January 31, **College of Engineering Staff Luncheon.** 11:30 a.m. – 1:30 p.m. in Dolve 117. Here is the [Sign Up Genius link](#) to RSVP for the lunch and optional team building event, as well as the option to sign up to bring a chili dish (max of 5 total) and/or other sides/condiments/drinks/desserts/serving ware, etc.

Tuesday, February 11, **Cultivating Inclusion In The Workplace**. 4:30 – 6:00 p.m. at the FARGODOME. [Registration and Event Details](#).

REGISTRATION OPEN FOR SWE EVENTS

The NDSU chapter of the Society of Women Engineers will be holding several outreach events next semester including Dads and Daughters Do Science, Tech Teens and TechKids (co-sponsored by Tau Beta Pi). These events are a great way to get kids excited about engineering and science. For more information on dates, times and registration check out the links on the [College of Engineering Outreach Page](#).

FUNDING OPPORTUNITIES

NASA EPSCoR Research in North Dakota

In response to the [FY 2020 Cooperative Agreement Notice \(CAN\) solicitation](#), the North Dakota NASA Established Program to Stimulate Competitive Research (EPSCoR) is soliciting research proposals from faculty at [Affiliate Institutions](#) specifically designed to promote and expand NASA research in North Dakota. One proposal will be selected by ND NASA EPSCoR for full submission for the CAN. Following preliminary proposal selection by ND NASA EPSCoR, the selected PI must submit an NOI by *January 24, 2020* and a full proposal by *March 6, 2020*.

Details and guidance for pre-proposals can be found on the ND NASA EPSCoR website here: <http://blogs.und.edu/jdosas/2019/12/nd-nasa-can-fy2020-announcement-rfp-2/>

Pre-proposals must be submitted to ND NASA EPSCoR by Noon, January 13, 2020.

NSF: Faculty Early Career Development Program (CAREER)

The National Science Foundation (NSF) has issued a new solicitation ([NSF 20-525](#)) for the Faculty Early Career Development (CAREER) Program. The CAREER program is a Foundation-wide activity that offers the NSF's most prestigious awards in support of early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization.

Integration of Research and Education - All CAREER proposals should describe an integrated path that will lead to a successful career as an outstanding researcher and educator. NSF recognizes that there is no single approach to an integrated research and education plan, but encourages all applicants to think creatively about the reciprocal relationship between the proposed research and education activities and how they may inform each other in their career development as both outstanding researchers and educators. These plans should reflect the proposer's own disciplinary and educational interests and goals, as well as the needs and context of his or her organization. Because there may be different expectations within different disciplinary fields and/or different organizations, a wide range of research and education activities may be appropriate for the CAREER program. In addition, NSF recognizes that some investigators, given their individual disciplinary and career interests, may wish to pursue an additional activity such as entrepreneurship, industry partnerships, or policy that enhances their research and education plans. Proposers are encouraged to communicate with the [CAREER contact](#) or cognizant Program Officer in the Division closest to their area of research to discuss the expectations and approaches that are most appropriate for that area.

Application Deadline: July 27, 2020 for all Directorates

RECENTLY FUNDED GRANTS

- Long Jiang (PI). 3D Printing of Biobased High-Performance Thermosetting Composites with Continuous Cotton Yarn as Reinforcement. \$43,414 from Cotton Incorporated. 01/01/2020 – 12/31/2021.

- Zhao Zhang (PI). Use machine vision technology to recognize and distinguish corn with different foliar diseases. \$4,999 from the ND Corn Utilization Council. 01/01/2020 – 12/30/2020.

RECENTLY SUBMITTED PROPOSALS

- Zhao Zhang (PI). Development and Test of An On-The-Go Weed Detection and Spraying System. \$46,010 from the Sugarbeet Res. & Edu. Board of MN & ND. 04/01/2020 – 03/31/2022.
- Zhao Zhang (PI). Development and Test of a Real-Time Height Monitoring and Adjusting System For Improving Weed Zapper Performance. \$46,260 from the Sugarbeet Res. & Edu. Board of MN & ND. 04/01/2020 – 03/31/2022.
- Zhao Zhang (PI). Development, test, and improvement of a proximal sensing system for infield rock reorganization and location determination based on a RGB-D camera. \$12,325 from TerraClear, Inc. 05/01/2019 – 05/01/2021.
- Shafiqur Rahman (PI). Impact of Nitrogen Management on Canola Production and Carbon Footprint Under North Dakota Management Practices. \$28,384 from the Northern Canola Growers Association. 05/01/2020 – 03/04/2021.
- Ghodrat Karami (PI). Design of a New NASA Rover for 2030 Rover Challenge Competition - ME Senior Design Project. \$8,000 from the University of North Dakota. 12/01/2019 – 05/30/2020.
- Ravi Kiran Yellavajjala (PI). Quantification of Electromagnetic Spectrum Wavelength Ranges for Identification of Waterhemp and Palmer Amaranth in Sugarbeet Fields. \$36,382 from the Sugarbeet Res. & Edu. Board of MN & ND. 07/01/2020 – 06/30/2021.

RECENT PUBLICATIONS

For 2020, 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:

- Cheng, Min, Ying Liu, Bowen Zhong, Hao Wang, Yangchengyi Liu, Xu Liang, Wenxiang Chen, et al. 2019. "Superhydrophobic Surface with Controllable Adhesion for Anti-Roof-Collapse Application in Flexible Microfluidics." *Advanced Materials Interfaces* 6 (22): 1901178. <https://doi.org/10.1002/admi.201901178>.
- Cho, Eunsang, Jennifer M. Jacobs, Xinhua Jia, and Simon Kraatz. 2019. "Identifying Subsurface Drainage Using Satellite Big Data and Machine Learning via Google Earth Engine." *Water Resources Research* 55 (10): 8028–45. <https://doi.org/10.1029/2019WR024892>.
- Wang, Longxuan, Wenfeng Du, Pengfei He, and Mijia Yang. 2020. "Topology Optimization and 3D Printing of Three-Branch Joints in Treelike Structures." *Journal of Structural Engineering* 146 (1): 04019167. [https://doi.org/10.1061/\(ASCE\)ST.1943-541X.0002454](https://doi.org/10.1061/(ASCE)ST.1943-541X.0002454).
- Zhao, Muxin, Yang Lan, Leqi Cui, Ewumbua Monono, Jiajia Rao, and Bingcan Chen. 2020. "Formation, Characterization, and Potential Food Application of Rice Bran Wax Oleogels: Expeller-Pressed Corn Germ Oil versus Refined Corn Oil." *Food Chemistry* 309 (March): 125704. <https://doi.org/10.1016/j.foodchem.2019.125704>.

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.

