

# COLLEGE HAPPENINGS

January 5, 2021

## FROM THE DEAN

### Enrollment Plan

Happy New Year! I hope 2021 is off to a terrific start for you and that you've had a chance to relax some during the holiday break.

Since the 2017-18 academic year, NDSU's enrollment has declined by 10.5%, and the College of Engineering's enrollment drop has been similar (10.7%) over that time, with the largest decline occurring in 2019-2020. Over the past month, the College Leadership Team, with leadership from Associate Dean Pryor, has been working on an enrollment plan for the College of Engineering. This plan, which we will finalize and share in the coming weeks, includes some context for the decline, examines many of the College's existing enrollment activities, and proposes some new efforts to address enrollment.

Our three-pronged existing enrollment efforts highlighted in the plan have focused on K-12 outreach, recruiting, and retention. Our ongoing **K-12 outreach activities** include

- hosting FIRST Lego League (FLL) competitions and FIRST Tech Challenge (FTC) robotics competition,
- running STEM Kids camps every summer for 300+ local students in grades K-8 (In response to the COVID pandemic, we developed nine different STEM Kids themed activity kits and sent out 690 kits with NDSU and COE branding in summer 2020.), and
- annually hosting Introduce a Girl to Engineering Day, which brings over 250 local middle school girls to NDSU.

Ongoing **recruiting activities** in the College include

- investing in communications and marketing to improve the quality of web, print, video, and social media materials,
- advertising the COE with targeted social media ads,
- developing our Engineering Ambassadors program, which has become a model student recruiting organization on campus, and
- creating new programs such as the Environmental Engineering major and the Robotics minor to attract new students and meet industry needs.

Finally, ongoing **retention efforts** include

- changing the 100-level intro courses for multiple departments for more hands-on projects, foundational skills, and departmental "on-boarding,"
- developing and promoting the Engineering Leadership Learning Community, and
- creating a strategic initiative related to student leadership and innovation.

However, in light of the declining enrollments, more needs to be done. As you will see in the forthcoming plan, we plan several new efforts in terms of K-12 outreach, recruiting/yield, and retention. These plans include the following activities.

- Fund Bison Robotics members as event volunteers and NDSU ambassadors at Minnesota and North Dakota FIRST Robotics Competition events for advanced HS students (approximately 6,000 students in Minnesota and North Dakota participating in these regional and state competitions).
- Work with our Engineering Ambassadors to reach out to admitted students to increase the yield rate.
- Streamline and improve consistency for on-campus visits
- Organize recruiting 'tours' in western North Dakota
- Develop a distance ed/dual credit offering of the 1-credit Introduction to Engineering course (ENGR 111) for high school students. This dual credit course will establish a connection with NDSU and allow prospective students to hear more from our faculty, students, and alumni about what each field offers and what career opportunities exist.
- Develop combined/accelerated BS/MS and BS/MEng programs to grow graduate enrollment.
- Develop and cultivate a 1+3 program with Bangalore-based university Nitte Meenakshi Institute of Technology (NMIT) to bring in 50-100 students per year, with the first cohort arriving in 2022.

National Student Clearinghouse data shows a 4.2% decline in engineering enrollment nationally over the last three years. Two years ago, the University of Minnesota launched a plan to grow engineering enrollment by 25 percent over the next six years ([Link](#)). There are also several new engineering programs in the region. In light of these national and regional factors, it will be important for everyone to do their part in reversing the declining enrollment trend. For most of our faculty, that role is primarily on the retention side, by facilitating an outstanding educational experience for our existing students and fostering relationships through responsive advising.



## IN THE NEWS

[Commencement speaker shares her NDSU experience](#)

[Jeremy Straub on the Russian Hack](#)

[NDSU Professor Pratap Kotala Interview on "Down the Road with Joel."](#)

## 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

Thursday, January 7, 2021, **Open Forum for Spring Instruction – Ally**. The final open forum for spring instruction will focus on Ally, the accessibility tool that has launched within Blackboard for spring courses. 11:00 a.m. on Zoom: <https://ndsuzoom.us/j/92923323427>

Monday, January 11, 2021, **SPIN by InfoEd Global training**. To assist with the transition to a new funding opportunity database, a representative from InfoEd will be providing a SPIN training webinar from 10:00-11:15 a.m. [Register](#) to attend.

Wednesday, January 13, 2021, **NDSU Day of Honor**. NDSU Day of Honor commemorates the lives of NDSU students, faculty, and staff who have died during the previous calendar year. The event will be held at 2:30 p.m. via Zoom. If you

know of a member of our campus community who died in 2020, please visit the [NDSU Day of Honor webpage](#) to complete a submission form.

## **BUILDING MENTORING RELATIONSHIPS AT NDSU**

Can you remember your first days as a faculty member, with a graduate student sitting across the desk, both of you eager to make graduate school work?! Maybe that was just a few months ago, or perhaps a bit longer, yet you find you're still working to grow as a mentor.

Mentoring graduate students can be a daunting yet rewarding experience. How can we overcome the challenges for more rewarding mentoring relationships?

Join Warren Christensen, Ph.D., Associate Professor, NDSU Department of Physics and Jenni Momsen, Ph.D., Associate Professor, NDSU Department of Biological Sciences, for the pilot of a cohort-based workshop series to develop reflective mentoring practices that better meet students' needs. They are currently accepting applications from faculty with some experience mentoring graduate students, whether here at NDSU or elsewhere, and who are interested in expanding their mentoring expertise through reflective writing and discussion.

The workshop series will help you (1) create/articulate a mentoring philosophy that centers students, (2) connect with a network of like-minded faculty, and (3) develop reflective practices to support sustained development as a mentor. Workshop activities will include readings, discussion, and writing activities.

Workshops will take place Thursdays, 8:15-9:15 on Zoom, starting January 28 and continuing February 11, February 25, March 11 (and potentially extending to March 25).

If interested in participating, please fill out this brief [application](#). Applications close January 15 with notification of selection on or about January 19. Please direct questions to Warren Christensen ([warren.christensen@ndsu.edu](mailto:warren.christensen@ndsu.edu)) or Jenni Momsen ([jennifer.momsen@ndsu.edu](mailto:jennifer.momsen@ndsu.edu)).

## **ALLY FOR BLACKBOARD**

As a reminder, NDSU implemented a new digital accessibility tool within Blackboard called Ally. Ally was turned on in all Blackboard courses on December 23. Instructors do not need to do anything to enroll—you'll see the accessibility gauges on your course content on that date.

### **What does Ally do?**

- Evaluates content in Blackboard courses to identify how accessible the content is.
- Provides specific instructions for making your content more accessible.
- Generates alternative formats of that content for all varieties of learners (including audio files to listen to, or web files to view on mobile devices)
- More information at: [https://help.blackboard.com/Ally/Ally\\_for\\_LMS/Instructor/Quick\\_Start](https://help.blackboard.com/Ally/Ally_for_LMS/Instructor/Quick_Start)

### **Benefits**

- Ally automatically generates alternative formats for students. Content that is uploaded which is not accessible generates alternative formats that are also not accessible.
- Your students will benefit from having their content available in many different formats that will meet their learning preferences (without you doing any extra work!).
- The NDSU campus community will benefit by learning from your experience as we create a support model and a more inclusive student experience.

### **Support for Instructors**

- IT and Disability Services will provide resources for content remediation
- Recorded training from Blackboard is available at: <https://kb.ndsu.edu/104459>
- IT invites you to their final open forum for spring instruction on Thursday, January 7 at 11:00 a.m. to learn more about Ally, the accessibility tool that has launched within Blackboard for spring courses. LAIC staff will give a demo/overview of Ally, and have plenty of time for questions/discussion from instructors.  
<https://ndsu.zoom.us/j/92923323427>

## NEW FUNDING OPPORTUNITY DATABASE

On January 1, 2021, NDSU transitioned to a new funding opportunity database subscription: SPIN by InfoEd Global. SPIN is free for current NDSU faculty, staff, and students. [Learn more about SPIN.](#)

### SPIN Training

To assist with the transition to a new funding opportunity database, a representative from InfoEd will be providing a SPIN training webinar on **Monday, January 11, 2021** from **10:00-11:15 a.m.** Please [register](#) to attend. Zoom connection information will be shared with registrants prior to the event.

### Accessing SPIN

To log into the system at <https://spin.infoedglobal.com/Authorize/Login>, select “Sign in using institutional credentials” on the right side of the screen and select North Dakota State University from the dropdown list. This will allow you to log in through the NDSU Central Authentication Service (CAS). **The first time you log into SPIN, you will need to click “create profile” in the pop-up window.**

If you have questions, please contact [ndsu.researchdev@ndsu.edu](mailto:ndsu.researchdev@ndsu.edu).

## FUNDING OPPORTUNITIES

### Upcoming Limited Submission Program Deadlines

[Limited submission grant programs](#) are those that indicate a limit on the number of proposals that may be submitted by an institution for a particular deadline. A selection process becomes necessary if more applicants express interest in applying than NDSU can submit to the grant program. Email notifications of interest to [ndsu.researchdev@ndsu.edu](mailto:ndsu.researchdev@ndsu.edu).

- [NSF: EPSCoR Track 4 Research Fellows](#)  
*Notification Deadline: 01/13/2021*
- [Retirement Research Foundation](#)  
*Notification Deadline: 01/20/2021*

There are several limited submission grant programs with upcoming agency deadlines for which we did not receive any notifications of interest. For those interested in applying to the programs listed below, approval to move forward with a full proposal submission to the funder will be given on a first come, first served basis. Email notifications of interest to [ndsu.researchdev@ndsu.edu](mailto:ndsu.researchdev@ndsu.edu).

- [DOE: Scientific Discovery Through Advanced Computing - Partnerships in Basic Energy Sciences](#)  
Agency deadline: January 19, 2021
- [DOE: Materials and Chemical Sciences Research for Quantum Information Science](#)  
Agency deadline: January 27, 2021

- [CDC: Reducing Inequities in Cancer Outcomes through Community-Based Interventions on Social Determinants of Health](#)  
Agency deadline: February 10, 2021
- [NEA: Grants for Arts Projects](#)  
Agency deadline: February 11, 2021
- [NSF: Ethical and Responsible Research](#)  
Agency deadline: February 22, 2021
- [USDA-NIFA: Biotechnology Risk Assessment](#)  
Agency deadline: February 24, 2021
- [NSF: Scholarships in STEM](#)  
Agency deadline: March 31, 2021

## RECENTLY FUNDED GRANTS

- Achintya Bezbaruah (PI). Recruiting Students and Early Career Researchers as Participants in the Ninth Nano Conference 2020. \$10,000 from the National Science Foundation. 11/01/2020 – 10/31/2021.

## RECENTLY SUBMITTED PROPOSALS

- Ghodrat Karami (PI). ND Space Grant Concertium -NASA Rover Challenge 2020-2021. \$5,000 from the National Aeronautics and Space Administration. 12/01/2020 – 05/31/2021.
- Dharmakeerthi Nawarathna (PI). Integration of AC electric fields and machine learning for developing universal single-cell molecular expression profiling. \$656,096 from the National Science Foundation. 06/01/2021 – 05/31/2025.

## RECENT PUBLICATIONS

For 2021, 7 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:

- Ajayi-Banji, A. A., S. Sunoj, C. Igathinathane, and S. Rahman. 2021. "Kinetic Studies of Alkaline-Pretreated Corn Stover Co-Digested with Upset Dairy Manure under Solid-State." *Renewable Energy* 163 (January): 2198–2207. <https://doi.org/10.1016/j.renene.2020.10.110>.
- Ali, Sahibzada Muhammad, Muhammad Jawad, M. Usman S. Khan, Kashif Bilal, Jacob Glower, Scott C. Smith, Samee U. Khan, Keqin Li, and Albert Y. Zomaya. 2020. "An Ancillary Services Model for Data Centers and Power Systems." *IEEE Transactions on Cloud Computing* 8 (4): 1176–88. <https://doi.org/10.1109/TCC.2017.2700838>.
- Al-Tarawneh, Mu'ath, Ying Huang, Pan Lu, and Raj Bridgelall. 2020. "Weigh-In-Motion System in Flexible Pavements Using Fiber Bragg Grating Sensors Part A: Concept." *IEEE Transactions on Intelligent Transportation Systems* 21 (12): 5136–47. <https://doi.org/10.1109/TITS.2019.2949242>.
- Li, Yuzhan, Monojoy Goswami, Yuehong Zhang, Tuan Liu, Jinwen Zhang, Michael R. Kessler, Liwei Wang, and Orlando Rios. 2020. "Combined Light- and Heat-Induced Shape Memory Behavior of Anthracene-Based Epoxy Elastomers." *Scientific Reports* 10 (1): 20214. <https://doi.org/10.1038/s41598-020-77246-0>.
- Ma, Qian, Damian Mohawk, Babak Jahani, Xinnan Wang, Yanlin Chen, Andrew Mahoney, J. Y. Zhu, and Long Jiang. 2020. "UV-Curable Cellulose Nanofiber-Reinforced Soy Protein Resins for 3D Printing and Conventional Molding." *ACS Applied Polymer Materials* 2 (11): 4666–76. <https://doi.org/10.1021/acsapm.0c00717>.
- Madbouly, Samy A., Ying Xia, and Michael R. Kessler. 2020. "Sustainable Polyurethane-Lignin Aqueous Dispersions and Thin Films: Rheological Behavior and Thermomechanical Properties." *ACS Applied Polymer Materials* 2 (11): 5198–5207. <https://doi.org/10.1021/acsapm.0c00954>.
- Ravi, Preetham, Surya Pratap Singh, Jeon Woong Kang, Sarah Tran, Ramachandra R. Dasari, Peter T. C. So, Dorian Liepmann, et al. 2020. "Spectrochemical Probing of MicroRNA Duplex Using Spontaneous Raman

Spectroscopy for Biosensing Applications.” *Analytical Chemistry* 92 (21): 14423–31.  
<https://doi.org/10.1021/acs.analchem.0c02401>.

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*.

Follow the College of Engineering on social media.

