

COLLEGE HAPPENINGS

March 3, 2020

FROM THE DEAN

Fireside Chats on Strategic Initiatives

Over the past two months Associate Dean Prior and I attended faculty meetings in each departmental to talk about our [2020-25 Strategic Plan](#). We also had a staff chili potluck and talked about parts of the strategic plan. As I mentioned at those meetings, next I will be hosting four “fireside chats”, one for each of the four strategic initiatives, with the first starting next week.

- 1. Fireside Chat #1 - Cultivate a culture of collaborative excellence.*
 - Date/Time: Monday, March 9 at 10:00 -11:30 a.m.
 - Location: Room of Nations – Memorial Union
 - Light refreshments served
- 2. Fireside Chat #2 - Integrate industry with research and education.*
 - Date/Time: Monday, March 23 at 1:00 -2:30 p.m.
 - Location: Crary Lounge – Alumni Center
 - Light refreshments served
- 3. Fireside Chat #3 - Build leadership and innovation skills of students.*
 - Date/Time: Wednesday, April 8 at 2:00 -3:30 p.m.
 - Location: Crary Lounge – Alumni Center
 - Light refreshments served
- 4. Fireside Chat #4 - Increase philanthropy through engagement with donors, alumni and other stakeholders.*
 - Date/Time: Thursday, April 23 at 11:30 a.m. -1:30 p.m.
 - Location: Crary Lounge – Alumni Center
 - Lunch provided

All College of Engineering faculty and staff are invited to attend. The focus of these discussions will be on what we can do together to succeed in these initiatives over the next 5 years, and we will talk about the key performance indicators we should be using to measure our success.

Our first strategic initiative, to cultivate a culture of collaborative excellence, may be our most ambitious and important initiative. A popular management book titled “Culture eats strategy for lunch” posits that you can have the best plan in the

world, but if the culture is poor, it will die on the vine. That is why we are starting with a discussion about how we can go about cultivating a culture where collaboration moves us to excellence. Through this initiative, we want to increase the percentage of faculty and staff who rate the college climate as good or extremely good; we want to cultivate an inclusive and diverse environment in our departments; and we want to grow collaborations across the college.

I hope you will be able to join me for these important discussions.



IN THE NEWS

[Making big data practical](#)

[College of Engineering earns diversity award](#)

[Water Resources Research Institute awards graduate research fellowships](#)

[Pharmaceutical sciences student wins Three Minute Thesis competition](#)

[NDSU Places 14 on the Academic All-Big 12 Wrestling Team](#)

[Kids celebrate National Engineers Week](#)

[Products made from hemp-based plastics enter consumer market](#)

CONGRATULATIONS

Dayakar Lavadiya, a graduate student in the **Department of Civil and Environmental Engineering**, received the ASCE Structural Engineering Institute Student Scholarship for attending the Structures Congress 2020. SEI selects about 40 promising students from around the world for this scholarship.

The **NDSU GeoWall** team placed 3rd at the 2020 National GeoWall Competition held during GeoCongress 2020.

Several College of Engineering graduate students competed in the Three Minute Thesis and Graduate Student Showcase. **Babak Jahani from Mechanical and Engineering** and **Hizb Ullah Sajid from Civil and Environmental Engineering** both made the finals of Three Minute Thesis. **Hafiz Usman Ahmed from Civil and Environmental Engineering** won the People's Choice for Best Poster at the Graduate Student Showcase.

Six College of Engineering graduate students have been awarded research fellowships from the North Dakota Water Resources Research Institute: **Berkay Koyuncu**, Civil and Environmental Engineering, **Kristen Almen**, Agricultural and Biosystems Engineering, **Lan Zeng**, Civil and Environmental Engineering, **Tong Lin**, Agricultural and Biosystems Engineering, **Tonoy K Das**, Civil and Environmental Engineering, and **Uday Bhanu Prakash Vaddevolu**, Agricultural and Biosystems Engineering.

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, March 4, **Mechanical Engineering Seminar: “Atomic Force Microscopy Based Nanomechanical Characterization of Kenaf Fibers and Cellulose Nanofibrils”** presented by M. Subbir Parvej. 9:00 – 9:50 p.m. in Dolve 117.

Friday, March 6, **ABEN Seminar: “Working Toward More Ecologically-based Agricultural Production: USDA-ARS Cropping Systems Research in the MonDak”** presented by Bart Stevens. 3:00 p.m. in ABEN 224.

Tuesday, March 10, **NDSU Campus Climate Survey results.** 1:00 – 2:30 p.m. in the Memorial Union Century Theater.

Wednesday, March 11, **NDSU Campus Climate Survey results.** 10:00 – 11:30 a.m. in the Memorial Union Century Theater. (Same presentation as Tuesday event)

Wednesday, March 11, **College of Engineering Faculty Council meeting.** 3:00 p.m. in FLC 124. Agendas, minutes and meeting attachments are [posted here](#).

Friday, March 27, **Discover NDSU Junior Day.**

COLLEGE AWARD NOMINATIONS

Nomination deadlines have been set for the College of Engineering’s Teaching, Research and Staff awards.

- Teacher of the Year – Friday, April 3, 2020
- Researcher of the Year – Friday, April 3, 2020
- Outstanding Staff Award – Wednesday, July 15, 2020

You can find more information about the awards, nomination documents and submission information at the [College Awards page](#).

WHO MAKES NDSU SMILE?

The Mary McCannel Gunkelman Recognition Award was established in January 1987, by the late John L. Gunkelman and his family in memory of Mrs. Gunkelman, who was a 1942 graduate of the College of Home Economics.

You are invited to nominate a student or employee of NDSU who you believe has made the most significant and unselfish contributions to creating a happy environment for the enjoyment of NDSU students. Nomination information can be found [here](#). Please provide specific examples of how this individual has had direct impact on making NDSU a pleasant, cheerful campus during the current academic year. Nomination forms will be shared with the nominee.

Nominations must be submitted by **Tuesday, March 31st, 2020.**

2020 NDSU EXPLORE

Registration is open for the 2020 NDSU EXPLORE Showcase of Undergraduate Research and Creative Activity. Encourage your undergraduate students to present their research or creative work at this annual showcase event.

NDSU EXPLORE Annual Showcase

Wednesday, April 22 | 9-11:15am | NDSU Memorial Union

Learn more:

www.ndsu.edu/research/EXPLORE

FUNDING OPPORTUNITIES

Open Educational Resources

Open Educational Resources are materials for teaching and learning that are available to students for free or at a substantially lower cost than traditional textbooks.

As textbook costs have skyrocketed in the past decade more and more students are forced to make difficult decisions. To combat this, NDSU Student Government has developed the two grants for faculty who wish to adapt their courses to use Open Educational Resources. One of our grant programs, [Textbook Review](#), simply asks professors to review an open textbook for a \$250 grant. The other, the [Progressive Education Grant](#), asks for a more specific budget request but can be upwards of \$3000 to reward the time taken to implement Open Educational Resources in courses.

DoD: Defense University Research Instrumentation Program

The Department of Defense (DoD) announced the Fiscal Year 2021 Defense University Research Instrumentation Program (DURIP). DURIP is designed to improve the capabilities of accredited United States (U.S.) institutions of higher education to conduct research and to educate scientists and engineers in areas important to national defense, by providing funds for the acquisition of research equipment or instrumentation. The Air Force Office of Scientific Research (AFOSR), the Army Research Office (ARO), and the Office of Naval Research (ONR) all participate in this Program:

- [AFOSR: FOA-AFRL-AFOSR-2020-0001](#)
- [ARO: W911NF-20-S-0006](#)
- [ONR: N00014-20-S-F004](#)

Inquiries and Questions Deadline: April 24, 2020

Application Deadline: May 15, 2020

NSF: Cyberinfrastructure for Emerging Science and Engineering Research

The Cyberinfrastructure for Emerging Science and Engineering Research ([CESER](#)) program aims to catalyze new science and engineering discovery pathways through early-stage collaborative activities between disciplinary scientists and engineers as well as developers / implementers of innovative cyberinfrastructure (CI) capabilities, services, and approaches.

Science/engineering-driven collaboration. A central feature of successful CESER projects is a strong, mutually-dependent collaborative team comprising expertise in the target science / engineering discipline(s) and expertise in CI development and implementation.

Exploratory and pilot activities. CESER supports early-stage exploratory efforts that may comprise analysis, community planning, and pilot-level activities that are preparatory or informative for eventual future development and deployment of science/engineering-driven CI. Proposals for full-scale technical efforts leading to development/deployment should be directed to other appropriate NSF programs.

Integrative and accelerative approaches. Proposals are particularly welcomed that address identified common needs across multiple research disciplines; leverage and accelerate the impact of existing CI investments in resources and services in one or more application domains; aim to reduce barriers to broader adoption of CI-enabled science/engineering approaches; and integrate different aspects and elements of CI to achieve holistic solutions with transformative science/engineering impact.

Requirement to contact NSF Cognizant Program Officers. CESER is an inherently collaborative science / engineering-CI program. Successful CESER projects typically involve co-funding from the relevant disciplinary research programs within NSF. Consequently, before submitting a proposal to CESER, proposers **must** discuss their project idea with a cognizant CESER Program Officer **and** with the relevant NSF disciplinary research program(s) to ensure that CESER is the appropriate venue and that there is adequate disciplinary interest in the proposed effort.

CESER accepts proposals pursuant to this Program Description year-round.

RECENTLY FUNDED GRANTS

- Kalpana Katti (PI), Dinesh R Katti (CPI). Next generation solutions for bone regeneration. \$200,000 from the ND Department of Commerce. 03/01/2020 – 06/15/2021.
- Kalpana Katti (PI), Dinesh R Katti (CPI). Next generation solutions for bone regeneration. \$13,000 from Fortus Medical. 03/01/2020 – 06/15/2021.
- Marjura Fortunatus Selekwu (PI). Functional Coatings for Vehicle Autonomy - Phase II Development of a Robotic Vehicle for Testing PPG Coatings. \$142,142 from Department of Defense. 12/06/2019 – 12/06/2020.
- Benjamin Davis Braaten (PI), Ewumbua Monono (CPI), Xin Sun (CPI). Development of an RF Sensing Platform for Grain Detection - Phase 3. \$138,714 from John Deere & Company. 01/20/2020 – 12/31/2020.

RECENTLY SUBMITTED PROPOSALS

- Yan Zhang (PI). Hydrodynamics and Locomotion of Mini-Capsule Robots in Cardiovascular Flows: Towards a New CVD Treatment Paradigm. \$200,000 from the American Heart Association. 07/01/2020 – 06/30/2022.
- Dali Sun (PI), Wenjie Xia (CPI). A novel treatment for pancreatic cancer aided by AI. \$5,000 from the NDSU Foundation and Alumni Association. 05/08/2020 – 04/12/2021.
- Trung Bao Le (PI), Yan Zhang (CPI). A novel map to predict the efficacy of flow diverter implantation to brain aneurysms. \$326,250 from the National Institutes of Health. 09/01/2020 – 08/31/2023.
- Yiwen Xu (CPI). Using epitope modeling and high-throughput SPR characterization of antibody: antigen binding to provide interdisciplinary student training. \$417,504 from the National Institutes of Health. 01/01/2021 – 12/31/2023.
- Nita Yodo (PI), Zhibin Lin (CPI). Incorporating Resilience Concepts and Strategies in Transportation Planning. \$300,000 from the National Academies. 01/01/2021 – 06/30/2022.

RECENT PUBLICATIONS

For 2020, 28 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:

- Edstrom, Jonathon, Hritom Das, Yiwen Xu, and Na Gong. 2020. "Memory Optimization for Energy-Efficient Differentially Private Deep Learning." *IEEE Transactions on Very Large Scale Integration (VLSI) Systems* 28 (2): 307–16. <https://doi.org/10.1109/TVLSI.2019.2946128>.
- Hosseini-Farid, Mohammad, Mohammadreza Ramzanpour, Jayse McLean, Mariusz Ziejewski, and Ghodrati Karami. 2020. "A Poro-Hyper-Viscoelastic Rate-Dependent Constitutive Modeling for the Analysis of Brain Tissues." *Journal of the Mechanical Behavior of Biomedical Materials* 102 (February): UNSP 103475. <https://doi.org/10.1016/j.jmbbm.2019.103475>.
- Johnson, Qifeng Zhang, and Wang. 2020. "KxWO Is a Novel Ferroelectric Nanomaterial for Application as a Room Temperature Acetone Sensor." *Nanomaterials* 10 (January): 225. <https://doi.org/10.3390/nano10020225>.
- Liu, Liming, De Zhou, Xiao Chang, and Zhulu Lin. n.d. "A New Grading System for Evaluating China's Cultivated Land Quality." *Land Degradation & Development*. <https://doi.org/10.1002/ldr.3547>.

- Liu, Yuan, Yongchao Ma, Evan Salsman, Frank A. Manthey, Elias M. Elias, Xuehui Li, and Changhui Yan. 2019. “An Enrichment Method for Mapping Ambiguous Reads to the Reference Genome for NGS Analysis.” *Journal of Bioinformatics and Computational Biology* 17 (6): 1940012. <https://doi.org/10.1142/S0219720019400122>.
- Nasab, Mohsen Tahmasebi, and Xuefeng Chu. 2020. “Macro-HyProS: A New Macro-Scale Hydrologic Processes Simulator for Depression-Dominated Cold Climate Regions.” *Journal of Hydrology* 580 (January): 124366. <https://doi.org/10.1016/j.jhydrol.2019.124366>.
- Oh, Myungkeun, Vidura Jayasooriya, Sung Oh Woo, Dharmakeerthi Nawarathna, and Yongki Choi. 2020. “Selective Manipulation of Biomolecules with Insulator-Based Dielectrophoretic Tweezers.” *ACS Applied Nano Materials* 3 (1): 797–805. <https://doi.org/10.1021/acsanm.9b02302>.
- Wu, Xiang-Fa, Zhengping Zhou, Oksana Zholobko, Jeremy J. Jenniges, Brandon Baatz, Mojtaba Ahmadi, Jiahui Chen, and Affi Liations. 2020. “Critical Condition of Electrohydrodynamic Jetting from a Polymer-Solution Droplet on a Conductive Wire.” *Journal of Applied Physics* 127 (5): 054303. <https://doi.org/10.1063/1.5132313>.

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.

