

COLLEGE HAPPENINGS

February 4, 2020

FROM THE DEAN

On the road at the Public Policy Colloquium

This week I'm in Washington, D.C. at the 2020 Engineering Deans Public Policy Colloquium. This is an annual event for engineering deans hosted by the ASEE Engineering Deans Council which began in 1991. The Colloquium has a dual role: to strengthen the discussion of engineering education and research issues between the deans of engineering and key public policy makers, and to enable us to refine our public policy agenda. This year's Colloquium focuses on engineering and computer science talent America will need by 2050 and the policies that must be adopted now to ensure those needs are met.

Last night and today the Colloquium includes keynote lectures by funding managers and leaders at NSF and NIH and panels on the topics of funding for research and education, higher education and STEM policy, and immigration, and other key federal issues facing engineering deans. In addition to keynotes, the Colloquium considers these issues from three perspectives:

- Attracting international talent – policy barriers and opportunities
- Promoting an inclusive environment: preventing sexual harassment
- Workforce employer needs

Tomorrow, we will be spending the day on Capitol Hill in individual meetings with members of congress and their staff to discuss ASEE's policy goals. I am looking forward to representing North Dakota State University in these meetings and coming back to campus on Thursday equipped with greater background and understanding of the larger issues facing American engineering education.



IN THE NEWS

[NDSU doctoral student receives Outstanding Student Presentation Award](#)

[Kids Compete At First Lego League Qualifier](#)

[David Grewell talks bioplastics with Prairie Public](#)

[Online graduate programs: Construction management](#)

CONGRATULATIONS

Achintya Bezbaruah from the **Department of Civil and Environmental Engineering** has been awarded a Fulbright Fellowship. The award will support “Environmental Nanotechnology Research and Education for Sustainable Drinking Water Treatment in Rural Rajasthan, India.”

Alissa Kuntz, College of Engineering Business Manager, won the inaugural CoE Staff Luncheon Chili Cookoff.

Qixin Zhou, who earned her Ph. D. from the **Department of Mechanical Engineering**, has been awarded an NSF CAREER Award. Zhou, who’s a faculty member at the University of Akron, is researching green coating development, the same field she studied at NDSU.

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, February 5, **2nd Annual Student Success Summit**. All faculty and staff, interested in discussing, collaborating and learning more about how we can help our students succeed are encouraged to attend. 8:00 a.m. – 12:00 p.m. in the Memorial Union. [Click here to register](#).

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

Wednesday, February 12, **Engineering, Design, Science & Technology Expo (Spring Career Expo)**. 10:00 a.m. to 2:00 p.m. at the FARGODOME.

Tuesday, February 18, **CoE Faculty Council Meeting**. 12:30 p.m. in ECE 125. Agendas, minutes and meeting attachments are [posted here](#).

STAFF AWARD NOMINATIONS

The NDSU Staff Senate, in partnership with the Office of Human Resources, invites you to recognize current broadbanded staff members for their hard work and ingenuity in making NDSU a better place. The awards are given to acknowledge outstanding achievement on the job, exceptional contributions toward effectiveness and efficiency of operations, outstanding service to other employees, students or visitors, and distinguished efforts in staff development.

Nominations will be accepted in two categories: Individual Awards and Team Awards. Award recipients will be announced and presented at the Staff Recognition Dessert Social on Thursday, April 9, 2020.

The 2020 Staff Recognition Award nominations are due March 1st. Please complete the online nomination form on the Staff Senate website: http://www.ndsu.edu/staff_senate/staff_recognition_award/

ADVANCED RESEARCH COMPUTING

The NDSU Center for Computationally Assisted Science and Technology (CCAST) is conducting a series of FREE training sessions to introduce advanced research computing to NDSU faculty, staff, and students. This training series also aims to provide researchers with the basic knowledge to make the best use of local and national high-performance computing (HPC) resources and ultimately to advance their research capabilities.

The training events, offered every other Thursday from 2:00–4:00 p.m. in Quentin Burdick Building (Room 132), will include lectures, demonstrations, and hands-on sessions where participants have opportunities to run simple and not-so-simple programs on CCAST's HPC systems. *There are no prerequisites, except a willingness to learn. Some familiarity with computer programming would also be helpful, but not required.*

The schedule for Spring 2020 is as follows:

- Feb. 13: Introduction to HPC, HPC resources at NDSU (and elsewhere)
- Feb. 27: Linux for HPC: Working with a Linux system, command-line basics
- Mar. 12: How to get your work done faster? Ensemble computing, OpenMP, and MPI
- Mar. 26: How to get your work done faster? Parallel scaling performance
- Apr. 9: Linux for HPC: Text processing and shell scripting
- Apr. 23: HPC for Big Data and machine learning
- May. 7: Cloud computing with OpenStack

Please register before 12:00 midnight on Monday, February 10, by sending an e-mail to CCAST at ndsu.ccast.training@ndsu.edu with the following information: first and last names, e-mail address, department, current status (faculty, staff, postdoc, grad, or undergrad), and the sessions you would like to attend.

ENGINEERING AMBASSADOR RECRUITING

The Engineering Ambassadors are looking for new members! Applications are due to the Dean's office by Friday, February 14th at 5:00 p.m.

Engineering Ambassadors are undergraduate students selected to represent the College of Engineering at events for alumni, industry leaders, prospective students, and current students. New members are selected through an application and interview process based on scholarship, communication skills, enthusiasm, honesty, leadership and knowledge of the college and university.

If you know a student who would make a great Ambassador, please encourage them to apply. New members are needed from each department in the college.

GRAND CHALLENGES SCHOLARS MENTORS

The Grand Challenges Scholar Program is a nationwide program developed by the National Academy of Engineering. It aims to create well-rounded engineers, scientists, and other technical professionals who can contribute to solving society's most pressing problems in the 21st century.

The NDSU GCSP program needs faculty volunteers to serve as mentors to one or more students. If you are willing to volunteer as a mentor, you are invited to make a presentation (an 8-minute pitch) at the Grand Challenges Seminar (ENGR 191) that meets on Tuesdays from 5:00 to 5:50 p.m. in AG Hill 300. This 8-minute pitch is to promote the work you do as a faculty member and entice the students to join your group.

Contact [Achintya Bezbaruah](#) for more information.

PROPOSAL DEVELOPMENT PROGRAM

The purpose of the Proposal Development Program is to provide a professional development opportunity for NDSU faculty new to proposal writing or those seeking a refresher to hone proposal writing skills and knowledge in funding agency opportunities.

Spring 2020 Sessions

Memorial Union Badlands Room | 12:30pm-1:30pm

- February 11 - NSF CAREER Program
- February 25 - NSF Broader Impacts and Intellectual Merit
- March 10 - Meeting Expectations of Funding Agencies: Foundations and NIH
- March 31 - Meeting Expectations of Funding Agencies: USDA
- April 14 - Developing Collaborations

An experienced grant consultant, faculty, and research support staff will lead the sessions. [Register](#) soon to reserve your spot.

FUNDING OPPORTUNITIES

NIH: Development of Innovative Informatics Methods and Algorithms for Cancer Research and Management (R21)

The purpose of this Funding Opportunity Announcement ([FOA / RFA-CA-20-007](#)) is to invite exploratory/developmental research grant applications (R21) for the development of innovative methods and algorithms in biomedical computing, informatics, and data science addressing priority needs across the cancer research continuum including cancer biology, cancer treatment and diagnosis, early cancer detection, risk assessment and prevention, cancer control and epidemiology, and/or cancer health disparities. As a component of the NCI's [Informatics Technology for Cancer Research \(ITCR\)](#) Program, this FOA encourages applications focused on the development of novel computational, mathematical, and statistical algorithms and methods that can considerably improve acquisition, management, analysis, and dissemination of relevant data and/or knowledge. The central mission of ITCR is to promote research-driven informatics technology across the development lifecycle to address priority needs in cancer research. In order to be successful, there must be a clear rationale for how the proposed informatics method or algorithm is novel and how it will benefit the cancer research field. See also: R01 Companion opportunity – [RFA-CA-20-011](#).

Letter of Intent deadline: May 9, 2020

Application deadline: June 9, 2020

DARPA: Wideband Adaptive RF Protection (WARP)

The Defense Advanced Research Projects Agency (DARPA) [seeks innovative proposals](#) to develop wideband, adaptive RF filters and cancellers that selectively attenuate interference and protect wideband digital radios from saturation. When exposed to interference/self-interference, the filters and cancellers will automatically sense and adapt to the electromagnetic environment through the intelligent control of its adaptive hardware. WARP will ultimately enable the use of wideband software defined radios in congested and contested environments.

Proposal Deadline: May 21, 2020

RECENTLY SUBMITTED PROPOSALS

- Ali Amiri (PI), Chad A Ulven (CPI). Investigating Root Cause and Reduce Fogging Behavior of Natural Fiber Filled Thermoplastics. \$44,800 from the Center for Bioplastics and Biocomposites. 01/01/2020 – 12/31/2020.
- Amiy Varma (PI), Gursimran Singh Walia (CPI). Small Aircraft Runway Length Analysis Tool. \$300,000 from the National Academies. 06/01/2020 – 11/30/2021.
- Om Prakash Yadav (PI), Ying Huang (CPI), Di Wi (CPI), Nita Yodo (CPI), Trung Quoc Le (CPI), Saeed Mousa Ahmed Salem (CPI). RII Track-2 FEC: Sustainable Energy Infrastructure Network: Robust, Reliable, and Resilient (SUSTEIN-R3). \$5,957,260 from the National Science Foundation. 09/16/2020 – 09/15/2024.

- Xiangfa Wu (PI), Adam Curtis Gladen (CPI). NDSF-CBET: Direct Ethanol Fuel Cells Based on Nanostructured Ternary Electrocatalysts and High Temperature Polymer Electrolyte Membranes. \$637,405 from the National Science Foundation. 07/01/2020 – 06/30/2023.
- David Grewell (PI). Moisture sensitivity of PLA/PBS blends during Ultrasonic and FDM welding. \$32,013 from the Center for Bioplastics and Biocomposites. 01/20/2020 – 12/31/2020.

RECENT PUBLICATIONS

For 2020, 15 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:

- Fu, Jingyan, Zhiheng Liao, and Jinhui Wang. 2019. “Memristor-Based Neuromorphic Hardware Improvement for Privacy-Preserving ANN.” *IEEE Transactions on Very Large Scale Integration (VLSI) Systems* 27 (12): 2745–54. <https://doi.org/10.1109/TVLSI.2019.2923722>.
- Niaghi, Ali Rashid, and Xinhua Jia. 2019. “New Approach to Improve the Soil Water Balance Method for Evapotranspiration Estimation.” *Water* 11 (12): 2478. <https://doi.org/10.3390/w11122478>.
- Sakib, Ashiq A., Scott C. Smith, and Sudarshan K. Srinivasan. 2019. “Formal Modeling and Verification of PCHB Asynchronous Circuits.” *IEEE Transactions on Very Large Scale Integration (VLSI) Systems* 27 (12): 2911–24. <https://doi.org/10.1109/TVLSI.2019.2937087>.
- Zhang, Mingyi, Wei Zhang, Xianwen Zhu, Qing Sun, Shiaoman Chao, Changhui Yan, Steven S. Xu, Jason Fiedler, and Xiwen Cai. n.d. “Partitioning and Physical Mapping of Wheat Chromosome 3B and Its Homoeologue 3E in *Thinopyrum Elongatum* by Inducing Homoeologous Recombination.” *Theoretical and Applied Genetics*. <https://doi.org/10.1007/s00122-020-03547-7>.
- Zhu, Yazhi, Ravi Kiran, Jihui Xing, Zuanfeng Pan, and Lei Li. 2020. “A Modified Micromechanics Framework to Predict Shear Involved Ductile Fracture in Structural Steels at Intermediate and Low-Stress Triaxialities.” *Engineering Fracture Mechanics* 225 (February): 106860. <https://doi.org/10.1016/j.engfracmech.2019.106860>.

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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