NDSU | COLLEGE OF ENGINEERING

COLLEGE HAPPENINGS

September 1, 2020

FROM THE DEAN

College Awards

Early each fall semester, the College of Engineering presents several awards to our faculty and staff. For the past several years, these awards have been presented at our annual scholarship and awards desert reception. This year, we are not hosting that reception as a live event, due to the COVID-19 pandemic. Instead, the College of Engineering is celebrating our scholarship recipients and donors (but not our faculty and staff award winners) in a recorded virtual event featuring messages from donors and scholarship recipients on our College of Engineering Facebook page on September 11, 2020 at 3:00 p.m. That scholarship celebration video will celebrate the nearly 400 scholarships totaling over $1 million that are being awarded to undergraduate students from the College of Engineering this academic year.

To honor our faculty and staff award winners, we will be recognizing them in a live Zoom-based reception at 3:00 p.m. on Wednesday, September 23 (preceding our first faculty council meeting of the semester). All faculty and staff will be invited to the event at 3:00 (the Zoom link will be forthcoming). Following the awards recognitions, Provost Fitzgerald will present the results from my 3rd year review to the faculty and staff, and then staff will be invited to leave while the faculty continue with their faculty council meeting.

This year's awards recipients represent some of our best efforts to meet the College of Engineering's important mission of preparing innovative problem solvers and creating new knowledge to improve lives in North Dakota and beyond. It is my pleasure to announce the award winners here.

- *Outstanding Staff Award* (professional staff) – **Joel Hanson**

- *Outstanding Staff Award* (paraprofessional and office support staff) – **Kayla Dewey**

- *Excellence in Teaching Award* - **Dr. Kalpana Katti**

- *Early Career Teaching Excellence Award* – **Dr. Ali Amiri**

- *Graduate Teaching Assistant of the Year* – **Hizb Ullah Sajid**

- *Excellence in Research Award* – **Dr. Xiangfa Wu**

- *Early Career Research Excellence Award* – **Dr. Dharmakeerthi Nawarathna**

- *Graduate Research Assistant of the Year* – **Xingyu Wang**

Please join me in congratulating this year's faculty and staff award winners, and please plan join me in recognizing them at our Zoom-based reception on September 23. You can read more about the College of Engineering Awards, and see a listing of previous award winners, on our College Awards webpage.

IN THE NEWS

Associate professor receives course assessment award

Celebration of Excellence to be held via Zoom

NDSU's Nice Center names 2020 faculty fellows

CONGRATULATIONS

Mijia Yang from the **Department of Civil and Environmental Engineering** won the 2020 Award for Excellence in Course Assessment from the NDSU Office of Teaching and Learning.

Beena Ajmera from the **Department of Civil and Environmental Engineering** won the 2021 Outstanding Younger Member Award from the Embankments, Dams, and Slopes Technical Committee of the American Society of Civil Engineers' Geo-Institute.

Please let *College Happenings* know about honors, awards, new grants and other announcements so we can share them with other faculty and staff.

COVID-19 UPDATES

Instructor Notification

The Dean of Students Office is working closely with North Dakota Department of Health to provide access to instructor contact information in cases where a student who has tested positive for COVID-19 has been present in a classroom. More information about the process can be found on this website under "Instructor Notification."

Case Reporting Website

University Relations has added some new details and are continue to work on adding more information to the Cases and Reporting page.

INSTRUMENTED CLASSROOMS UPDATE

NDSU ITS has created a dynamic table of installation progress that is updated within a day of installs being completed. Please visit: https://kb.ndsu.edu/100854 to see progress on your specific classroom.

Updated FAQ document

ITS has compiled some of the Frequently Asked Questions from instructors.

Document Camera/Whiteboard Options in Temporary Classrooms

ITS is exploring options to improve technology in temporary classrooms. For those of you who need to replicate the use of a whiteboard when teaching in these spaces, they have a help page that outlines some options that you have: https://kb.ndsu.edu/105257

UPCOMING EVENTS

Friday, September 11, **College of Engineering Virtual Scholarship Celebration**. The program will be held on Facebook at 3:00 p.m. An RSVP is not required. We encourage you to "Like" and "Follow" our College of Engineering Facebook page to receive updates.

Wednesday, September 23, **College of Engineering Faculty and Staff Awards Presentation**. 3:00 p.m. via Zoom (link forthcoming).

TIECON 2020

NDSU alumnus Vish Mishra has invited deans, faculty and alumni to attend TiECon 2020, a virtual conference on September 2 and 3, as his guests.

TiE Silicon Valley, a global not-for-profit organization focused on fostering and enabling entrepreneurship through inspiring, educating, preparing and funding entrepreneurs. TiEcon the group's annual flagship conference attracting 5,000+ attendees from around the globe.

Get more information and register at www.tiecon.org. **Use the code: CMGUESTVISH for complimentary registration.**

IDEAS RESEARCH WORKSHOP

The IDEAS Research Workshop invites internationally-renowned scholars from universities across the country to present their research and engage with the NDSU community. All students, faculty and staff are invited to attend, virtually or in-person. You can register to attend on Zoom or join us in the Barry Hall Mezzanine, where speakers will present in-person or through a broadcast.

Learn more about the speakers and register for events at www.thenicecenter.org/challeyideas.

Upcoming Seminars:

Edward Timmons, occupational regulations
Sept. 11 | 1:30 - 2:30 p.m.
Dr. Edward Timmons is a professor of economics and director of the Knee Center for the Study of Occupational Regulation at Saint Francis University. He will present the paper, "Too Much License?: How Occupational Licensing Affects Economic Mobility and Opportunity."

James Caton, macroeconomics
Sept. 25 | 1:30 - 2:30 p.m.
Dr. James Caton is an assistant professor of economics and a faculty fellow of the Center for the Study of Public Choice and Private Enterprise at North Dakota State University. He will present the paper, "Speech Acts, Constitutional Moments, and the Constructions of Social Contract."

Wenhong Chen, media studies and sociology
Oct. 9 | 1:30 - 2:30 p.m.
Dr. Wenhong Chen is an associate professor of media studies and sociology at the University of Texas at Austin.

Bradford Wilcox, sociology
Oct. 23 | 1:30 - 2:30 p.m.
Dr. Bradford Wilcox is director of the National Marriage Project and a professor of sociology at the University of Virginia.

Rajshree Agarwal, entrepreneurship
Nov. 6 | 1:30 - 2:30 p.m.
Dr. Rajshree Agarwal is the Rudolph P. Lamone Chair and Professor in Entrepreneurship at the University of Maryland and director of the Ed Snider Center for Enterprise and Markets.

Jan Pfister, accounting and finance
Nov. 20 | 1:30 - 2:30 p.m.
Dr. Jan Pfister is a senior lecturer at the Department of Accounting and Finance at Turku School of Economics and a research fellow at the House of Innovation at Stockholm School of Economics.

Adam Thierer, technology and innovation
Dec. 4 | 1:30 - 2:30 p.m.
Adam Thierer is a senior research fellow at the Mercatus Center at George Mason University.

ADVANCED RESEARCH COMPUTING

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

The online training events, offered **every other Tuesday** from **2:00–4:00 p.m.** via Zoom video conference, will include lectures, demonstrations, and hands-on sessions where participants have opportunities to perform simple and not-so-simple tasks 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 Fall 2020 is as follows:

Sep. 15: Introduction to high-performance computing
Basics of HPC, computer clusters, parallel computing, research computing resources at NDSU and elsewhere
Sep. 29: Linux for HPC: Working with Linux-based HPC systems
Basics of UNIX/Linux, job scheduler, queue policies, running and monitoring jobs on HPC systems
Oct. 13: HPC with graphical interfaces using Open OnDemand
Working with files, running jobs, etc. on HPC systems with a minimal knowledge of Linux and scheduler commands
Oct. 27: How to get your work done faster? Parallel computing (1)
OpenMP and MPI for shared- and distributed-memory computer architectures, ensemble/high-throughput computing
Nov. 10: How to get your work done faster? Parallel computing (2)
Work distribution among CPU cores, parallel scaling performance, tips on requesting resources for parallel jobs
Nov. 24: Linux for HPC: Text processing and shell scripting
Linux utilities for searching texts and manipulating text files, Bash shell scripting to automate tasks
Dec. 8: HPC for machine learning and big data
Basics of machine learning and big data, running TensorFlow, Keras, Spark, etc. on CPU/GPU compute nodes

The training is FREE; however, <u>pre-registration is required</u>. Please register <u>by September 11</u> by sending an email to CCAST at <u>ndsu.ccast.training@ndsu.edu</u> with your info: first and last names, email address, campus, department, current status (faculty, staff, postdoc, grad, or undergrad), and the sessions you would like to attend. Prospective participants can register for any sessions they are interested in; however, *registering and attending the entire series is strongly recommended because the sessions are sequential.*

EQUITY AND INCLUSION FELLOWSHIPS FOR FACULTY AND STAFF

The NDSU Office of Institutional Research and Analysis welcomes nominations for the Equity & Inclusion fellowships for spring 2021 (January 11-May 7, 2021). Two fellowships are available (1 for faculty or instructor; 1 for staff), each with a stipend of up to $4,000.

<u>Full details of OIRA Equity & Inclusion fellowship, including job description, qualifications, and hiring timeline can be found at the OIRA website at</u> <u>https://www.ndsu.edu/oira/fellowships/#c671165</u>

How to apply

- Self and colleague nominations may be submitted using the following form via Qualtrics: <u>https://ndstate.co1.qualtrics.com/jfe/form/SV_bIzHvSZ1d7LBtk1</u>.
- We encourage nominations of faculty, instructors, and staff from *any* job band or rank/tenure status.
- Nominations will be accepted until 11:59 pm CST, September 18th, 2020. Finalists will be notified no later than October 2nd, 2020.

Please contact Emily Berg, Director of Institutional Research and Analysis (<u>emily.a.berg@ndsu.edu</u>), with questions.

FUNDING OPPORTUNITIES

Amazon Research Awards

Amazon has opened a <u>call for proposals</u> in the following categories:

- AI for Information Security
- Alexa Fairness in AI
- Amazon Web Services (AWS) AI
- AWS Automated Reasoning
- Robotics

Awards are structured as unrestricted gifts to the principal investigator's academic institution or organization and as such, Amazon retains no intellectual property rights to the resulting work. Recipients are encouraged to publish outcomes and commit related code to open-source repositories. Recipients are assigned an Amazon research contact who offers consultation and advice along with opportunities to participate in Amazon events and training sessions.

Application window: August 17, 2020 – October 11, 2020

Defense Established Program to Stimulate Competitive Research

The Department of Defense (DoD) announces the fiscal year 2020 (FY20) <u>Defense Established Program to Stimulate Competitive Research (DEPSCoR)</u>. The aim of DEPSCoR is to improve the research capabilities at institutions of higher education (IHE) in <u>eligible States/Territories</u> to perform competitive basic research in science and engineering that is relevant to the DoD mission and reflect national security priorities. The Basic Research Office anticipates approximately $7.2 million in total funding will be made available for this program to fund approximately twelve (12) awards up to

$600,000 (total cost) each. Each award will be funded up to $200,000 (total cost) per year for three (3) years in the form of a grant.

The FY20 DEPSCoR competition seeks proposals addressing multiple topic areas, including:

1. Cognitive and Computational Neurosciences;
2. Materials with Extreme Properties;
3. Computational Architectures and Visualization;
4. Probability and Statistics;
5. Molecular Structure and Dynamics;
6. Social and Behavioral Science;
7. Biotronics;
8. Machine Learning, Reasoning, and Intelligence; and
9. Power Electronics & Electromagnetism, Adaptive & Machinery Controls and Advanced Machinery Systems.

This funding opportunity aims to create basic research collaborations between a pair of researchers, namely 1) Applicant/Principal Investigator (PI), a full-time faculty member who has never served as a PI on a prior DoD-funded award and 2) Collaborator/co-Principal Investigator (co-PI) who will provide mentorship to the Applicant and has served as a PI on a DoD-funded research award actively between 1 October 2013 and 30 September 2020. Both investigators must be in a tenure-track or tenured position at an IHE in an eligible State / Territory.

Registration Deadline: September 14, 2020
Whitepaper Deadline: September 21, 2020

Slides from a recent DEPSCoR webinar and answers to questions about the program are posted in the [Grants.gov funding opportunity announcement](#), under "Related Documents."

RECENTLY SUBMITTED PROPOSALS

- Qifeng Zhang (PI). Exploring a MXene-based new material for advanced high-speed and high-frequency devices. $32,099 from the National Aeronautics and Space Administration. 09/16/2020 – 08/15/2021.
- Di Wu (PI). Dynamic oscillation stability analysis in power systems under uncertain renewable generation. $40,000 from the National Aeronautics and Space Administration. 09/16/2020 – 08/15/2021.
- Jordi Estevadeordal (PI), Yildirim B Suzen (CPI), Ali Amiri (CPI). High-Speed and High-Temperature Diagnostics for Supersonic/Hypersonic Flight Research at NASA. $39,977 from the National Aeronautics and Space Administration. 09/01/2020 – 08/31/2021.
- Trung Bao Le (PI). Flow inference from satellite images in flooding events. $33,833 from the National Aeronautics and Space Administration. 09/16/2020 – 08/15/2021.
- Farhad Shirani Chaharsooghi (PI). An Algebraic Framework for Network Communications: The Promise of, Quasi Structured Codes. $40,000 from the National Aeronautics and Space Administration. 09/16/2020 – 08/15/2021.
- Xinhua Jia (PI). Filling up the Gap for Accurate Estimates of Soil Moisture and Snow in the Red River of the North Basin. $39,975 from the University of North Dakota. 09/15/2020 – 09/14/2021.
- Om Prakash Yadav (PI) Shafiqur Rahman (CPI). REU Site: Research Experience for Undergraduates on Big Data Analytics and Machine Learning. $509,267 from the National Science Foundation. 02/01/2021 – 01/31/2024.
- Xiangfa Wu (PI), Adam Curtis Gladen (CPI). NSF-CBET: Direct Ethanol Fuel Cells Based on High-Temperature Polymer-Inorganic Proton Exchange Membranes. $637,405 from the National Science Foundation. 07/01/2020 – 06/30/2023.

RECENT PUBLICATIONS

For 2020, 125 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:

- Chia, Leonard, Gina Blazanin, Ying Huang, Umma Salma Rashid, Pan Lu, Senay Simsek, and Achintya N. Bezbaruah. 2020. "Surface Treatment of Carbon Nanotubes Using Modified Tapioca Starch for Improved Force Detection Consistency in Smart Cementitious Materials." *Sensors* 20 (14): 3985. https://doi.org/10.3390/s20143985.
- Shaukat, N., S. Shuja, S. K. Srinivasan, and S. Jabeen. 2020. "Improved Efficiency of Object Code Verification Using Statically Abstracted Object Code." *Scientific Programming* 2020 (July): 6791891. https://doi.org/10.1155/2020/6791891.
- Singh, John-Luke, Yechun Wang, Yan Zhang, Julie A. Melbye, Amanda E. Brooks, and Benjamin D. Brooks. 2020. "Dynamics of a Viscous Droplet in Return Bends of Microfluidic Channels." *Journal of Fluids Engineering-Transactions of the ASME* 142 (9): 091401. https://doi.org/10.1115/1.4047119.
- Yadav, S. K., O. P. Yadav, and D. K. Yadav. 2019. "Dexterous Estimation of Population Mean in Survey Sampling Under Non-Response Error." *International Journal of Mathematical Engineering and Management Sciences* 4 (6): 1307–24. https://doi.org/10.33889/IJMEMS.2019.4.6-103.

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.