# NDSU | COLLEGE OF ENGINEERING

# COLLEGE HAPPENINGS

November 26, 2019

## FROM THE DEAN

**Giving Day**

NDSU Giving Day is coming up next Tuesday, December 3rd. I encourage you mark your calendar and participate. It is not the size of your gift that matters, but that you participate in making a gift back to our university. The participation of our faculty and staff sends a strong message of support to our students, alumni and community that we take pride in our university and, on top of the time each of us invests here, we are willing to contribute financially to positively impact the lives of NDSU students.

Our college has had GREAT momentum with this event for the past few years! In 2017, we had a 43% participation rate. In 2018, we ended the day with a 60% participation rate. This year we're hoping that 70% of faculty and staff will join me in making a donation to the college or a department. In addition, I encourage you to spread the word with your social networks about NDSU giving day and share our official NDSU Giving Day hashtag: #Give2NDSU.

To add to the fun and festivities on Giving Day, I invite you all to join me for coffee and donuts...my treat!

**Coffee and Donuts with the Dean**
**Engr. Admin. Room 106**
**Giving Day - Tuesday, December 3rd**
**9:30 – 11:00am**

I hope to see many of you there.

Happy Thanksgiving!

## IN THE NEWS

NDSU student places in top 50 in national cybersecurity competition

NDSU to announce new College of Engineering faculty fellowship

NDSU hosts computer programming competition

NDSU students win 2019 Environmental Challenge

[KFGO Interview: NDSU will offer robotics as a minor](#)

[Kaczor voted to CoSIDA Academic All-District Team](#)

[Project P student group to hold rocket launch](#)

[Transportation institute graduate research assistant receives scholarship](#)

[Engineering students from MN: NDSU is an affordable investment](#)

## CONGRATULATIONS

**Umma Rashid**, a graduate student in the **Department of Civil and Environmental Engineering**, took 2nd place in the NanoPitch Competition at the 2019 Sustainable Nanotechnology Organization Conference. The event challenges students to pitch their research in 100 seconds. Umma's work is focused on aqueous fluoride removal using ceria-graphene nanohybrids.

**Chad Ulven**, associate chair and professor in the **Department of Mechanical Engineering**, has been named Researcher of the Month by the NDSU Office of Research and Creative Activity.

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

Tuesday, December 3, **NDSU Giving Day**. Join fellow faculty and staff from the College of Engineering in supporting our mission to prepare innovative problem solvers and create new knowledge to improve lives around the world. **Donate Here**.

Tuesday, December 10, **Fall 2019 Senior Design Expo**. 11:00 a.m. to 2:00 p.m. in the Memorial Union Great Plains Room.

Thursday, December 12, **Ally Workshop offered by FORWARD Advocates**. 2:00 p.m. to 4:00 p.m. in the Memorial Union Mandan Room. Interested men faculty and men postdoc/graduate students should register here.

Thursday, December 19, **Order of the Engineer Ceremony**. 5:30 p.m. in the Memorial Union Century Theater. All graduating seniors, faculty, staff and guests are invited.

Friday, December 20, **2019 Winter Commencement**. 2:00 p.m. at the SHAC. Please complete and submit the **Faculty/Staff Commencement Participation Form** by **Monday, December 2 at 5 p.m.** if you plan to participate in the Commencement procession.

## COLLEGE OF ENGINEERING RESEARCH AWARDS

Nominations are now being accepted for the 2020 College of Engineering Researcher of the Year Awards. Each year the College of Engineering recognizes the achievements of faculty and graduate students by awarding the Excellence in Research Award, Early Career Research Award and Graduate Research Assistant of the Year Award.

The nomination deadline is 5:00 p.m. on Friday, April 3, 2020. Nomination documents for each award can be viewed on the College Awards page.

## 2020 NSF ENG CAREER PROPOSAL WORKSHOP

An NSF CAREER Proposal Workshop focused on engineering will be held March 31 – April 2, 2020 in Arlington, Virginia. The objective of the 2020 NSF ENG Directorate Workshop is to introduce junior faculty who are interested in submitting NSF CAREER proposals to the Directorate for Engineering. The workshop aims to provide individuals with proposal development insights and a forum in which they can interact with NSF program directors and recent NSF CAREER awardees.

Workshop participation will be by invitation, based on applications, and limited to 300 participants who will be selected from the pool of applicants based on:
a) applicability of the proposed research to the Directorate for Engineering,
b)  timeliness and completeness of the application, and
c) preference given to those who have not previously attended an NSF Engineering CAREER workshop.

Please review the application page for further information.
*Application Deadline: January 6, 2020*

## FUNDING OPPORTUNITIES

**NSF: Addressing Systems Challenges through Engineering Teams**

The National Science Foundation (NSF) Division of Electrical, Communications and Cyber Systems (ECCS), through its ASCENT program [NSF 20-511], offers its engineering community the opportunity to address research issues and answer engineering challenges associated with complex systems and networks that are not achievable by a single principal investigator or by short-term projects and can only be achieved by interdisciplinary research teams. ECCS envisions a connected portfolio of transformative and integrative projects that create synergistic links by investigators across its three ECCS clusters: Communications, Circuits, and Sensing-Systems (CCSS), Electronics, Photonics and Magnetic Devices (EPMD), and Energy, Power, Control, and Networks (EPCN), yielding novel ways of addressing challenges of engineering systems and networks. ECCS seeks proposals that are bold and ground-breaking, transcend the perspectives and approaches typical of disciplinary research efforts, and lead to disruptive technologies and methods or enable significant improvement in quality of life.

- ASCENT supports fundamental research projects involving at least three collaborating PIs and co-PIs, up to four years in duration, with a total budget between $1 million and $1.5 million.
- ASCENT proposals must highlight the engineering leadership focus of the proposal within the scope of ECCS programs.
- ASCENT proposals must articulate a fundamental research problem with compelling intellectual challenge and significant societal impact. The topic at the heart of the proposal must lie within the scope of at least one of the three ECCS clusters (CCSS, EPMD, EPCN). Research proposals spanning multiple clusters are highly encouraged.
- ASCENT proposals must demonstrate the need for a concerted research effort by an integrated and interdisciplinary team, and strongly justify the interdisciplinary nature of the proposed work. They should include a timeline for research activities, with a strong justification of the explicit mechanisms for frequent communication between team members and effective assessment to achieve proposed goals.

*Letter of Intent deadline: January 07, 2020*
*Full Application deadline: February 19, 2020*
*Track this program >>*

## RECENTLY SUBMITTED PROPOSALS

- 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.
- Qifeng Zhang (PI), Danling Wang (CPI). Smart Devices Course Towards Enhancing Engineering Student Creativity and Entrepreneurs. $29,300 from VentureWell. 08/15/2020 – 08/14/2023.
- Jessica Lynne Lattimer Vold (PI). Advanced Materials for Additive Manufacturing. $97,000 from the ND Department of Commerce. 01/01/2020 – 06/30/2021.
- Nurun Nahar (PI), Ewumbua Monono (CPI), Ademola Monsur Hammed (CPI). Improvement of Ethanol Yield Prediction Model for the Corn Grown in North Dakota. $52,316 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2022.
- Ewumbua Monono (PI), Nurun Nahar (CPI). Production and Characterization of Epoxidized Sucrose and Maltose Ester of Corn Oil. $89,954 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2022.
- Shafiqur Rahman (PI), Nurun Nahar (CPI). Green energy from by-products of ethanol processing and manure. $51,636 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2022.
- Matthew J Noah (PI). Cloud Convergence Network. $300,000 from the ND Department of Commerce. 01/01/2020 – 12/31/2020.
- Matthew J Noah (PI). Cloud Convergence Network. $29,989 from Voxtelesys. 01/01/2020 – 12/31/2020.
- Matthew J Noah (PI). Private Cloud Node. $300,000 from the ND Department of Commerce. 09/01/2020 – 06/30/2021.
- Matthew J Noah (PI). Private Cloud Node. $30,082 from Voxtelesys. 09/01/2020 – 06/30/2021.
- Xiangfa Wu (PI), Adam Curtis Gladen (CPI). Catalyst-based Oxidation of Corn-based Bioethanol for High-Efficiency Electricity Generation-Direct Bioethanol Fuel Cell. $118,818 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2022.
- Xiangfa Wu (PI). Low-cost Biodegradable Corn Starch-based Food Packaging Films with Improved Mechanical Properties and Gas Impermeability. $39,270 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2021.
- Gursimran Singh Walia (PI). Collaborative Research: Institutional and Community Transformation - Level 2: Implementing A Change-Focused Faculty Learning Community For Integrating Student Learning and Engagement. $274,780 from the National Science Foundation. 08/15/2020 – 08/14/2025.
- Gursimran Singh Walia (PI). IUSE: Engaged Student Learning Level 2 Testing Tutor - A Inquiry-Based Pedagogy and Supporting Tool to Improve Student Learning of Software Testing Concepts. $202,965 from the National Science Foundation. 08/15/2020 – 08/14/2023.
- Gursimran Singh Walia (PI). IUSE: Engaged Student Learning Level 3: Collaborative Research - Using Data Analytics to Inform and Assess the Adoption of Cyber Learning Infrastructure and Advance the Sciences of Learning. $423,235 from the National Science Foundation. 08/15/2020 – 08/12/2024.
- Zhao Zhang (PI). Can Reflectance Data Collected with an UAVs from Fields that Contain a Nitrogen Rich Strip Be Used to Guide Mid-Season Nitrogen Applications and to Generate Prescription Map for Subsequent Cropping. $70,807 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2022.
- Kelly Ann Rusch (PI), Achintya Bezbaruah (CPI). Field Monitoring and Measurements Education across the Civil and Environmental Engineering Curriculum. $120,000 from the Louisiana Department of Transportation. 05/01/2020 – 04/30/2023.
- Zhili Gao (PI). An update to CII's PDCS Research for the DCC Sector: New Project Delivery and Contract Strategy. $109,992 from Multisponsor. 12/09/2019 – 02/26/2021.
- Ravi Kiran Yellavajjala (PI), Hizb Ullah Sajid (CPI). An Economical Corn-Based Corrosion Inhibitor. $49,080 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2022.
- Ravi Kiran Yellavajjala (PI), Dayakar Naik Lavadiya (CPI). Drone-Based Technology for Early Detection of Paler Amaranth in Corn Fields. $49,080 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2022.

- Halis Simsek (PI), Ademola Monsur Hammed (CPI). Antioxidation mechanisms of corn in different water level and salinity conditions. $57,971 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2022.

## RECENT PUBLICATIONS

*For 2019, 127 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:*

- Ahmadianfar, Iman, Omid Bozorg-Haddad, and Xuefeng Chu. n.d. "Optimizing Multiple Linear Rules for Multi-Reservoir Hydropower Systems Using an Optimization Method with an Adaptation Strategy." *Water Resources Management.* https://doi.org/10.1007/s11269-019-02364-y.
- Annandarajah, Cindu, Amy Langhorst, Alper Kiziltas, David Grewell, Deborah Mielewski, and Reza Montazami. 2019. "Hybrid Cellulose-Glass Fiber Composites for Automotive Applications." *Materials* 12 (19): 3189. https://doi.org/10.3390/ma12193189.
- Asa, Eric, Ahmed Shaker Anna, and Edmund Baffoe-Twum. 2019. "An Investigation of Mechanical Behavior of Concrete Containing Crushed Waste Glass." *Journal of Engineering Design and Technology* 17 (6): 1285–1303. https://doi.org/10.1108/JEDT-01-2019-0020.
- Le, Trung B., Ali Khosronejad, Fotis Sotiropoulos, Nicole Bartelt, Solomon Woldeamlak, and Petronella Dewall. 2019. "Large-Eddy Simulation of the Mississippi River under Base-Flow Condition: Hydrodynamics of a Natural Diffluence-Confluence Region." *Journal of Hydraulic Research* 57 (6): 836–51. https://doi.org/10.1080/00221686.2018.1534282.
- Niaghi, Ali Rashid, Xinhua Jia, Dean D. Steele, and Thomas F. Scherer. 2019. "Drainage Water Management Effects on Energy Flux Partitioning, Evapotranspiration, and Crop Coefficients of Corn." *Agricultural Water Management* 225 (November): UNSP 105760. https://doi.org/10.1016/j.agwat.2019.105760.
- Rashid, Umma S., Senay Simsek, Sushil R. Kanel, and Achintya N. Bezbaruah. 2019. "Modified Tapioca Starch for Iron Nanoparticle Dispersion in Aqueous Media: Potential Uses for Environmental Remediation." *SN Applied Sciences* 1 (11): UNSP 1379. https://doi.org/10.1007/s42452-019-1364-9.
- Sivarajan, Saravanan, Mohammadmehdi Maharlooei, Herman Kandel, Ryan R. Buetow, John Nowatzki, and Sreekala G. Bajwa. n.d. "Evaluation of OptRx (TM) Active Optical Sensor to Monitor Soybean Response to Nitrogen Inputs." *Journal of the Science of Food and Agriculture.* https://doi.org/10.1002/jsfa.10008.

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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