

COLLEGE HAPPENINGS

October 16, 2018

FROM THE DEAN

ABET and Named Faculty Fellows

Today is the final day of a site visit by an eleven member review team from the Accreditation Board for Engineering and Technology (ABET). Each of our eight ABET accredited engineering programs is represented by one Program Evaluator (PEV) on the team, as well as a team chair and co-chair and one observer. The review team will be summarizing their accreditation reports this afternoon in a meeting with President Bresciani, Provost Grafton, Associate Dean Pryor, the engineering department chairs and me. I'd like to thank all of the faculty and staff who have worked so hard over the past months preparing for this visit, especially Associate Dean Scott Pryor, all of the department chairs, and the departmental assessment coordinators.

I also wanted to announce some exciting news in the area of philanthropy. I often say that the single most important asset of the College of Engineering is its faculty. They define the quality of the education experience offered by the college, they drive the innovation and impact of our research enterprise, and they serve as mentors for our students to become the next generation of engineering leaders. For this reason, we have made fundraising for endowed chairs, professorships and faculty fellowships a top fund raising priority. The cost for an endowed chair, a professorship and a fellowship is \$3M, \$1.5M, and \$750,000 respectively.

Through generous donations from two of our alumni, I'm pleased to announce the establishment of two new named faculty fellowships. The first is the Spencer G. and Carol A. Duin Endowed Fellowship. Professor Om Yadav will be the inaugural holder of this faculty fellowship and will be known as the Duin Endowed Fellow. Spencer Duin is a 1966 Industrial Engineering graduate from NDSU, and a member of our college advisory and advancement board. The second named faculty fellowship is from the Timothy Welch and Donna LaQua-Welch Faculty Excellence Fund. Professor Ying Huang will be the inaugural holder of this faculty fellowship and will be known as the Welch Faculty Fellow. Tim Welch is a 1986 Civil Engineering graduate from NDSU and also a member of our advisory and advancement board.

We will be holding a ceremony on **Thursday, November 15 at 4:15** in the McGovern Alumni Center to present these fellowships to Om and Ying. The namesakes for the fellowships, Spencer Duin and Tim Welch, will be in attendance, as will members of our College of Engineering Advisory and Advancement Board. I also encourage all of you to attend. I am hopeful that these will be the beginning of many more named chairs, professorships and faculty fellowships yet to come. Our goal is to increase donor and funder relationships and engagement, because philanthropy – both stewardship and development – plays a critical role in helping us to achieve our vision of becoming the engineering college of choice for students, faculty and employers seeking to enhance society through leadership and innovation.



IN THE NEWS

[Engineering faculty honored for outstanding teaching](#)

[College of Engineering recognizes research excellence](#)

[Biomedical engineering grad student aims to make lives better](#)

[Engineering scholarship recipients and donors recognized](#)

[NDSU's herbicide spraying drone covers 33 acres in an hour](#)

CONGRATULATIONS

Dong Cao, Yanchao Li and Xiaofeng Lyu from the Department of Electrical and Computer Engineering won the prestigious **2018 IEEE Journal of Emerging and Selected Topics in Power Electronics** second prize paper award.

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, October 17th, Department of Civil and Environmental Engineering Seminar: **Novel Algorithms and Metrics for Functional Discoveries from Networked Biological Data** by **Lu Liu**. 1:00 – 1:50 p.m. CIE 207.

Tuesday, October 23rd, **American Society of Agricultural and Biological Engineers** section meeting and tour of Cargill. The tour will start at 3:30 p.m. with the meeting and dinner to follow at Speedway Steakhouse and Event Center in West Fargo. [Register by October 19th](#).

Saturday, October 27th, **Research and Practice (RAP) on Blockchain** conference hosted by the NDSU Center for the Study of Public Choice and Private Enterprise. 8:00 a.m. – 4:00 p.m. Memorial Union, Upper Level. Event is free. [Register here](#).

UPCOMING CONFERENCES

2018 North Dakota U.S. Green Building Council Annual Conference

“Performance: The New Way Forward”

- Wednesday, October 24th, 2018
- 1:00 p.m. – 5:00 p.m.
- NDSU Renaissance Hall

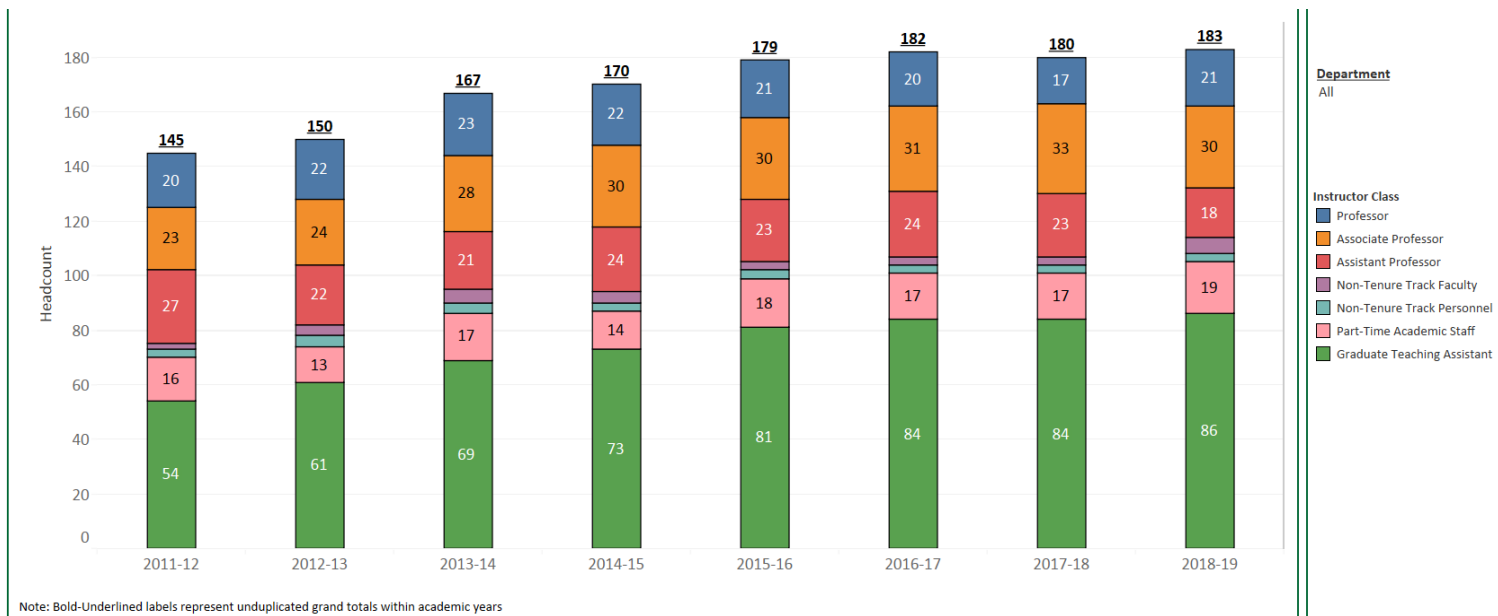
Green Focus ND creates conversation and offers continuing education (GBCI and AIA, 3 credit hours each) in green building, focused on the needs of our region and state, while offering insight into the national and global picture.

Cost: \$20 USGBC Members | \$40 Non-USGBC Members | Full-time Students Free

[Register Here](#)

BY THE NUMBERS

College of Engineering Instructional Personnel by Academic Year and Instructor Class



FUNDING OPPORTUNITIES

DOE: Advanced Technologies for Recovery of Unconventional Oil and Gas Resources

The Department of Energy is providing [advanced notice](#) that it intends to issue a funding opportunity announcement (FOA) titled *Advanced Technologies for Recovery of Unconventional Oil and Gas Resources – DE-FOA-0001990*. Prospective applicants to the FOA should begin developing partnerships, formulating ideas, and gathering data in anticipation of the issuance of this FOA. It is anticipated that this funding opportunity announcement will be posted to Grants.gov and FedConnect (www.fedconnect.net) in November 2018.

NSF: Topical Materials Research Program

Research supported by the National Science Foundation (NSF) [Division of Materials Research \(DMR\)](#) focuses on advancing fundamental understanding of materials, materials discovery, design, synthesis, characterization, properties, and materials-related phenomena. DMR awards enable understanding of the electronic, atomic, and molecular structures, mechanisms, and processes that govern nanoscale to macroscale morphology and properties; manipulation and control of these properties; discovery of emerging phenomena of matter materials; and creation of novel design, synthesis, and processing strategies that lead to new materials with unique characteristics. These discoveries and advancements transcend traditional scientific and engineering disciplines. The Division supports research and education activities in the United States through funding of individual investigators, teams, centers, facilities, and instrumentation. Projects supported by DMR are essential for the development of future technologies and industries that meet societal needs, as well as preparation of the next generation of materials researchers. This solicitation applies to the following six [DMR Topical Materials Research Programs](#) that fund research and educational projects by individual investigators or small groups:

1. Biomaterials (BMAT),
2. Condensed Matter Physics (CMP),
3. Electronic and Photonic Materials (EPM),
4. Metals and Metallic Nanostructures (MMN),
5. Polymers (POL), and

6. Solid-State and Materials Chemistry (SSMC).

It does not apply to the following two DMR Topical Materials Research Programs, which have their own solicitations: Ceramics (CER) ([NSF 16-597](#)) and Condensed Matter and Materials Theory (CMMT) ([NSF 16-596](#)).

Proposals accepted until: November 1, 2018

RECENTLY FUNDED GRANTS

- Ravi Kiran Yellavajjala (PI), Dayakar Naik Lavadiya (CPI). Corn Based Deicers. \$49,991 from multisponsor. 9/15/2018 to 3/15/2020.
- Dilpreet Singh Bajwa (PI), Sreekala G Bajwa (CPI). Biobased Fire Retardant System for Thermoplastic Polymer Composites. \$235,180 from the National Institute of Standards and Tech. 01/02/2019 – 12/31/2021
- Zhibin Lin (PI), Akm Bashir Khoda (CPI). New Bio-inspired 3D Printing Functionalized Lattice Composites for Actively Preventing and Mitigating Internal Corrosion. \$300,000 from the Department of Transportation. 10/01/2018 – 9/30/2021.
- Zhibin Lin (PI). Brain-inspired Learning Framework to Bridging Information and Human-machine Decision-making for Decoding Variance in Pipeline Computational Models. \$300,000 from the Department of Transportation. 10/01/2018 – 9/30/2021.
- Ying Huang (PI). Fluorescent Chemical Sensor Array for Detecting and Locating Pipeline Internal Corrosive Environments. \$300,000 from the Department of Transportation. 9/30/2018 – 9/30/2021.
- Dong Cao (PI). A Ultra Effect Composite Power Delivery Architecture for Solar Farm, Data Center, and Electric Vehicle Charging. \$359,221 from the National Science Foundation. 08/01/2018 – 07/31/2021.

RECENTLY SUBMITTED PROPOSALS

- Achintya Bezbaruah (PI). Technology Enabled Sustainable Agriculture (TESA): Next-generation Hydroponics for Urban and Peri-urban Agriculture. \$9,999,354 from NIFA. 05/01/2019 – 04/30/2024.
- Dharmakeerthi Nawarathna (PI). Integrated Electronic and Plasmonic Device for Low-cost and Rapid Detection of Circulating MiRNA Biomarkers panels for screening Applications at Point-of care. \$435,000 from the National Institutes of Health. 08/01/2019 – 07/01/2022.
- Dharmakeerthi Nawarathna (PI). Electric fields assisted fluorescence enhancement for microRNA biomarker detection in blood samples at point-of-care: early diagnostic strategy for cancer. \$299,386 from the National Science Foundation. 04/01/2019 – 03/31/2022.
- Kalpana Katti (PI). Personalized Biomimetic Tissue Engineered Test Bed for Bone Metastatic Triple Negative Breast Cancer. \$2,356,250 from the National Institutes of Health. 04/01/2019 – 03/31/2024.
- Nurun Nahar (PI). Evaluating Soybean Quality Stored in Commercial Grain Bags. \$5,000 from the ND Soybean Council. 10/08/2018 – 06/30/2019.
- Wenjie Xia (PI). Collaborative Research: Machine Learning Guided Design of Polymer-Grafted Cellulose Nanocomposites to Approach Theoretical limits of Mechanical Properties. \$269,922 from the National Science Foundation. 05/16/2019 – 05/15/2022.

RECENT PUBLICATIONS

For 2018, 97 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:

- Ehresmann, Michael, Ali Amiri, and Chad Ulven. 2018. "The Effect of Different Variables on In-Plane Radial Permeability of Natural Fiber Mats." *Journal of Reinforced Plastics and Composites* 37 (19): 1191–1201. <https://doi.org/10.1177/0731684416646458>.

- Gerber, Benjamin, John-Luke Singh, Yan Zhang, and William Liou. 2018. "A Computer Simulation of Short-Term Adaptations of Cardiovascular Hemodynamics in Microgravity." *Computers in Biology and Medicine* 102 (November): 86–94. <https://doi.org/10.1016/j.compbiomed.2018.09.014>.
- Liu, Chengyun, Junna Xin, Jihuai Tan, Tuan Liu, Michael R. Kessler, and Jinwen Zhang. 2018. "Catalytic Conversion of Biomass-Derived 1,2-Propanediol to Propylene Oxide over Supported Solid-Base Catalysts." *ACS Omega* 3 (8): 8718–23. <https://doi.org/10.1021/acsomega.8b01121>.
- Luo, Jun, Yan Xiang Wang, Jian Sun, Zhi Sheng Yang, and Qi Feng Zhang. 2018. "MnS Passivation Layer for Highly Efficient ZnO-Based Quantum Dot-Sensitized Solar Cells." *Solar Energy Materials and Solar Cells* 187 (December): 199–206. <https://doi.org/10.1016/j.solmat.2018.07.012>.
- Maqsood, Tahir, Nikos Tziritas, Thanasis Loukopoulos, Sajjad A. Madani, Samee U. Khan, Cheng-Zhong Xu, and Albert Y. Zomaya. 2018. "Energy and Communication Aware Task Mapping for MPSoCs." *Journal of Parallel and Distributed Computing* 121 (November): 71–89. <https://doi.org/10.1016/j.jpdc.2018.03.010>.
- Sajid, Hizb Ullah, and Ravi Kiran. 2018. "Influence of Stress Concentration and Cooling Methods on Post-Fire Mechanical Behavior of ASTM A36 Steels." *Construction and Building Materials* 186 (October): 920–45. <https://doi.org/10.1016/j.conbuildmat.2018.08.006>.
- Sharma, Swati, and Halis Simsek. 2018. "Mixed Cultured Algal and Bacterial Remediation of Dissolved Organic Nitrogen under Low Solid Retention Time Condition." *Desalination and Water Treatment* 103 (January): 240–47. <https://doi.org/10.5004/dwt.2018.21985>.
- Zhang, Ruihang, Yan Zhang, Ruihang Zhang, and Yan Zhang. 2018. "An Experimental Study of Pulsatile Flow in a Compliant Aortic Root Model under Varied Cardiac Outputs." *Fluids* 3 (4): 71. <https://doi.org/10.3390/fluids3040071>.

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.

