NDSU | COLLEGE OF ENGINEERING

COLLEGE HAPPENINGS

July 9, 2019

FROM THE DEAN

Welcoming Computer Science to the College of Engineering

About this time last year, I shared in our College Happenings that we were considering the possibility of the Department of Computer Science moving from the College of Science and Math to the College of Engineering. I noted that there were several advantages to such a move, including the natural fit that computer science has with our other engineering disciplines, the fact that computer science already offers software engineering graduate degrees (and is interested in expanding software engineering to the undergraduate level), and the growing overlap between traditional engineering and computer science in the evolution of various cyber-physical systems (such as autonomous vehicles, smart grids, monitoring of medical sensors, process control systems, and robotics).

After a year of considering the move, obtaining the appropriate approvals and buy-in, and working through the logistics of the move, I'm very pleased to announce that effective July 1, 2019 the Department of Computer Science is now housed in the College of Engineering. I am looking forward to seeing the interdisciplinary connections between our departments grow as a result of this move. In addition, I'm eager to grow the college's relationships with important industry partners, such as Microsoft, and greater involvement in key state initiatives in cyber security, big data, and high performance computing.

Please join me in welcoming the faculty and staff from the Department of Computer Science to the College of Engineering family.

IN THE NEWS

[NDSU Joins NSF-funded Center for Bioplastics and Biocomposites](#)

[NDSU's Elliott Stone Repeats as First-Team Academic All-American](#)

CONGRATULATIONS

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

Thursday, July 11, **Department of Civil and Environmental Engineering Ph. D. defense**. "Iron waste based point-of-use device to treat pesticides in water," by Tauqeer Abbas. 3:00 p.m. in COE 106.

FACULTY AWARD NOMINATIONS

Nominations are now being accepted for 2019-20 faculty awards processed through the Office of the Provost.

Nominations may be submitted by faculty, staff, students, alumni, and administrators, materials should be sent by email to ndsu.provost@ndsu.edu. For descriptions of each award, criteria, and nomination materials, please see the awards web page.

The Faculty Awards and Recognition Committee will review all nominations and select finalists for each award based upon the candidate's nomination materials after the stated deadline. Award recipients will be honored at the annual Celebration of Faculty Excellence.

FUNDING OPPORTUNITIES

NSF: Critical Aspects of Sustainability

This funding opportunity includes the following:

- Division of Chemistry (CHE)
- Division of Materials Research (DMR)
- Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET)
- Division of Civil, Mechanical and Manufacturing Innovation (CMMI)
- Division of Earth Sciences (EAR)

Economic development and human progress have led to a proliferation of manufactured chemicals and materials made from limited resources found in nature (i.e., minerals and metals, petroleum-based products and natural gas). Long-term sustainability requires consideration of the availability of specific natural resources, energy, and water usage. NSF continues to support efforts that seek to improve the efficiency with which natural resources are used to meet human needs for products and services. Sustainability research encompasses the design, manufacture and use of efficient, effective, safe and more environmentally-benign products and processes; stimulates innovation across all sectors to design and discover new chemicals and materials, production processes, and product stewardship practices; and, increases performance and value while meeting the goals of protecting and enhancing human health and the environment.

This program seeks to support basic research through core disciplinary programs aimed at improving the sustainability of resources for future generations while maintaining or improving current products in order to offer technologically-advanced, economically competitive, environmentally-benign and useful materials to a global society. In order to address these challenges, the program aims to identify opportunities for innovation in a wide range of contributing disciplines as well as integrative activities. This program encourages the development of new experimental and theoretical/modeling approaches that will aid in both reductionist and whole-systems approaches.

Proposal due dates vary by Division. Please see the funding announcement [NSF PD 19-9102] for detailed submission information.

RECENTLY SUBMITTED PROPOSALS

- Beena D Ajmera (PI), Wenjie Xia (CPI). Data-Enabled Prediction of Shear Behavior of Fine-Grained Soils under Cyclic Loading. $352,967 from the National Science Foundation. 01/01/2020 – 12/31/2022.
- Ying Huang (PI), David Ray Steward (CPI). NDDOT 2020 NSTI NDSU Host Site Statement of Work. $49,349 from the ND Department of Transportation. 09/01/2019 – 09/01/2020.
- Yao Yu (PI). An Innovative Hybrid Heat Pump System Design for High Efficiency and Low Cost. $56,802 from Thomas Geothermal Engineering, LLC. 02/01/2020 – 01/31/2021.
- Dharmakeerthi Nawarathna (PI). CAREER: Ultrafast molecular separation and integrated near-field light-metal-flurophore interactions for biomarker detection at point-of care. $499,885 from the National Science Foundation. 01/01/2020 – 01/01/2025.
- Long Jiang (PI). Upcycling of CFRP Waste: Viable Eco-friendly Chemical Recycling and Manufacturing of Novel Repairable and Recyclable Composites. $298,562 from the Department of Energy. 01/01/2020 – 12/31/2023.
- Xinhua Jia (CPI), Zhulu Lin (CPI). Filling the Pipeline-Preparing the Next Generation of Watershed Management Extension Professionals. National Institute of Food and Agriculture. 04/01/2020 – 03/31/2025.

RECENT PUBLICATIONS

For 2019, 68 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:

- Afrin, Tanzina, and Nita Yodo. 2019. "A Concise Survey of Advancements in Recovery Strategies for Resilient Complex Networks." *Journal of Complex Networks* 7 (3): 393–420. https://doi.org/10.1093/comnet/cny025.
- Fu, Jingyan, Zhiheng Liao, Na Gong, and Jinhui Wang. 2019. "Mitigating Nonlinear Effect of Memristive Synaptic Device for Neuromorphic Computing." *IEEE Journal on Emerging and Selected Topics in Circuits and Systems* 9 (2): 377–87. https://doi.org/10.1109/JETCAS.2019.2910749.
- Kabir, Md Faisal, Daniel Schulman, and Abu S. Abdullah. 2019. "Promoting Relational Agent for Health Behavior Change in Low and Middle - Income Countries (LMICs): Issues and Approaches." *Journal of Medical Systems* 43 (7): 227. https://doi.org/10.1007/s10916-019-1360-z.
- Ludwig, Simone A. 2019. "Applying a Neural Network Ensemble to Intrusion Detection." *Journal of Artificial Intelligence and Soft Computing Research* 9 (3): 177–88. https://doi.org/10.2478/jaiscr-2019-0002.
- Niaghi, Ali Rashid, Xinhua Jia, Thomas Scherer, and Dean Steele. 2019. "Measurement of Unirrigated Turfgrass Evapotranspiration Rate in the Red River Valley." *Vadose Zone Journal* 18 (1): 180202. https://doi.org/10.2136/vzj2018.11.0202.
- Oh, Myungkeun, Qian Ma, Senay Simsek, Dilpreet Bajwa, and Long Jiang. 2019. "Comparative Study of Zein- and Gluten-Based Wood Adhesives Containing Cellulose Nanofibers and Crosslinking Agent for Improved Bond Strength." *International Journal of Adhesion and Adhesives* 92 (July): 44–57. https://doi.org/10.1016/j.ijadhadh.2019.04.004.
- Wang, Guanzhong, Huanhai Xin, Di Wu, Ping Ju, and Xichen Jiang. 2019. "Data-Driven Arbitrary Polynomial Chaos-Based Probabilistic Load Flow Considering Correlated Uncertainties." *IEEE Transactions on Power Systems* 34 (4): 3274–76. https://doi.org/10.1109/TPWRS.2019.2908089.
- Wu, Libing, Lei Nie, Samee U. Khan, Osman Khalid, and Dan Wu. 2019. "A V2I Communication-Based Pipeline Model for Adaptive Urban Traffic Light Scheduling." *Frontiers of Computer Science* 13 (5): 929–42. https://doi.org/10.1007/s11704-017-7043-3.

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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