COLLEGE HAPPENINGS

July 6, 2021

FROM THE DEAN

Supporting our Chinese-American Colleagues

The United States has benefited tremendously in the last century by attracting the world's best and brightest scientists and engineers. This positive "brain drain" has attracted and retained technically talented individuals who have made significant economic, social, and scientific contributions to our country. Coming from the most populous nation, Chinese immigrants have added immensely to our scientific and technical excellence. In the past, most US-educated Chinese scholars have chosen to stay in this country because we have been at the forefront of many areas of science and because of our freedoms. Our faculty are no exception; 29% of our faculty in the College of Engineering are Chinese Americans and over half of our faculty (52%) are of Asian descent. In addition, 9% of our graduate students are Chinese citizens, and almost half (49%) are ethnically Asian.

When I was a graduate student at the University of Illinois at Urbana-Champaign (UIUC), I traveled while on holiday to Xi'an, Beijing, and Hong Kong with two Chinese graduate students that I had befriended at UIUC. I stayed in their homes and visited various Chinese universities. That trip began a series of collaborations and connections with scientists and students from China, and I have benefitted tremendously from these relationships throughout my scientific career. Our free and open partnership has allowed our scientific creativity to flourish and be shared in open scientific literature.

In 2018, the Department of Justice (DOJ) initiated the China Initiative, which sought to increase the focus on investigating and prosecuting trade secret theft and economic espionage by the Chinese government. As part of that effort, DOJ increased its scrutiny of academia. Owing to our tradition of openness and international collaborations in the academy, there is a perceived vulnerability to exploitation by the government of China. However, I have been deeply troubled by the reported racial profiling by the DOJ of Chinese American scientists because it has a chilling effect on the Chinese American scientific community and is crippling the broader U.S. research enterprise.

Last week, members of Congress held a roundtable entitled "Researching while Chinese American: Ethnic Profiling, Chinese American Scientists and a New American Brain Drain." The roundtable shined a light on the alleged targeting and scrutiny of Chines American scientists and discussed several high-profile racial profiling cases and harassment. It also had testimony from Stanford Professor Stephen Chen, Nobel Laureate and former Secretary of the Department of Energy, who explained that,

> "Many of my Chinese-American faculty colleagues feel that they are under increased and unjustified scrutiny by the U.S. government. The Department of Justice's 'China Initiative' and statements by U.S. funding agencies are creating an atmosphere of fear and intimidation."

Panelist Randy Katz, Vice Chancellor for Research at UC Berkley, explained that,

"These investigations and related actions – such as the increased interrogation of Chinese-American researchers by Customs and Border Patrol officers at airports – have resulted in a chilling effect on our Chinese-American research community in particular, and America's international collaborations and our continued ability to attract the world's best and brightest…. This will have ramifications for America's research enterprise for many years to come."

The Asian American Scholar Forum (AASF) provided a statement for the congressional roundtable, which I encourage you to read. In the statement, AASF expresses remorse that the China Initiative criminalizes

"what in some cases are routine academic activities and what in other cases are reporting errors and falsehoods which can be dealt with by universities and funding agencies using administrative remedies and sanctions. The federal prosecutions of Chinese American scientists have created an atmosphere of fear and undermined America's research environment and competitiveness."

The combination of racial hostility towards Chinese Americans because of COVID-19 (epitomized by phrases like "the China Virus" or "Kung Flu") with "the racial profiling to prosecute Asian American scholars behind the guise of national security" creates a double whammy of unwelcome racist vitriol that saddens my heart for my colleagues. To my Chinese colleagues and students at NDSU, I am glad that you are part of our community, and you have my support and appreciation.

IN THE NEWS

BisonCyber event for local high school students scheduled

College of Engineering announces new department

Study abroad offers different worldview

CONGRATULATIONS

Michael Chu has been appointed interim chair of the newly merged **Department of Civil, Construction and Environmental Engineering**. Chu served as the interim chair of the Department of Civil and Environmental Engineering during the 2017-2018 academic year and has served as the Director of the North Dakota Water Resources Research Institute since 2018. An expert in hydrologic engineering, he is a fellow of the Environmental & Water Resources Institute of the American Society of Civil Engineers and a former NSF CAREER award winner.

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 8, 2021, **NSF CAREER: Budgets and Proposal Documents**. This virtual program will provide helpful information to you about developing proposal budgets and making sure your submission is in compliance with the program solicitation. 10:00 – 11:00 a.m. Register here.

Tuesday, August 17, **New Faculty Orientation**. The event runs from 8:30 a.m. to 4:00 p.m. Register here.

Wednesday, August 18, **Annual Faculty and Academic Staff Conference**. Presentations will include demonstrating best practices for research, instruction, advising, assessment, campus climate, inclusion, mentoring, leadership, and classroom technologies. Register here.

Monday, August 23, **College of Engineering Welcome Week Event**. 8:30 – 10:30 a.m. at the Bentson-Bunker Fieldhouse.

COE STAFF AWARD NOMINATIONS

In 2019 we began the tradition of recognizing our staff with the creation of the outstanding staff award for the College of Engineering, presented at our annual scholarship and awards reception. This award identifies and honors unusual dedication and exceptional contributions by a staff member in the College of Engineering.

Any NDSU staff member, faculty member, or student may submit a nomination. The nomination consists of just a letter of two pages or less describing the nominee's contributions to the success of the College of Engineering.

Nominations for outstanding staff awards should be submitted to Angela Thomassen (angela.thomassen@ndsu.edu). The nomination deadline is **Wednesday, July 15** at 5:00 p.m.

Two awards will be considered, one for paraprofessional and office support staff and one for professional staff. The nominations, however, do not need to specify the job band.

FUNDING OPPORTUNITIES

ND EPSCoR: Emerging Areas Seed Awards

ND EPSCoR seeks to provide emerging areas seed awards of up to $25,000 to researchers from the NSF EPSCoR RII Track-1 New Discoveries in the Advanced Interface of Computation, Engineering, and Science (ND-ACES) participating institutions in areas of emerging high impact and transformative research related to the Center for Cellular Biointerfaces in Science and Engineering (CCBSE).

Applications must be made by a researcher from Cankdeska Cikana Community College (CCCC), Dickinson State University (DSC), Mayville State University (MaSU), Minot State University (MiSU), Nueta Hidatsa Sahnish College (NHSC), North Dakota State University (NDSU), Sitting Bull College (SBC), Turtle Mountain Community College (TMCC), University of North Dakota (UND), or Valley City State University (VCSU) who is not currently associated with the 2020-2025 ND-ACES cooperative agreement or who did not receive a 2021 ND-ACES emerging seed award. Please see the Request For Applications for details.

Application Deadline: Noon, September 1, 2021

NDSU Foundation: Impact Fund

The NDSU Foundation Grants Committee is accepting applications for the 2021 Impact Fund Grant Program.

The NDSU Impact Fund Grant Program provides funding for projects that make a significant impact on excellence and the educational experience for students at North Dakota State University. The Impact Fund Grant Program offers grants of $20,000 to $75,000 and is supported by annual contributions from alumni and friends of the University.

Applications are accepted from faculty, staff, and recognized student groups.

For additional information and to apply, go to: https://www.ndsufoundation.com/impact-fund.

The application deadline for the 2021 Impact Fund Grant Program has been extended to Monday, Aug. 2, 2021, by 5 p.m.

RECENTLY FUNDED GRANTS

- Nurun Nahar (PI). Flax Shive as Alternative Raw Material for Particleboard Production. $15,905 from AmeriFlax. 07/01/2021 – 06/30/2022.
- Ivan T Lima Jr (PI). Development of Device Prototypes for the Monitoring of Surgery Patients. $3,000 from the NDSU Foundation and Alumni Association. 05/16/2021 – 10/31/2022.

RECENTLY SUBMITTED PROPOSALS

- Danling Wang (PI). A novel ultrasensitive sensor for real-time cancer treatment guidance and early cancer detection. $199,508 from the National Science Foundation.11/01/2021 - 10/31/2023.
- Abdulaziz Ali Banawi (PI). Developing a Proactive Model to Eliminate Supply Chain Bottlenecks of Construction Materials Post COVID-19 Using Deep Learning. $183,503 from the National Science Foundation. 01/01/2022 - 12/31/2023.
- Syeed Md Iskander (PI). ERI: Physicochemical degradation of food waste microplastics during aerobic composting and the effect of microplastics on antibiotic resistance proliferation. $199,993 from the National Science Foundation. 01/01/2022 - 12/31/2023.
- Yan Zhang (PI). ERI: Oscillatory Flow Rectification through Bio-inspired Hazelhoff Loops. $199,913 from the National Science Foundation. 01/01/2022 - 12/31/2023.
- Jeremy A Straub (PI). Student Short Term Research Immersion Experience. $18,957 from the National Science Foundation. 09/01/2021 - 03/31/2023.
- Mijia Yang (PI), Chad A Ulven (CPI), Long Jiang (CPI). Bioprocessing and Bioengineering PARTNERSHIP: Development of multifunctional and environment-friendly biochar concrete using agriculture waste. $800,000 from the National Institute of Food & Agriculture. 01/01/2022 - 12/31/2025.
- Chad A Ulven (PI). Manufacturing and Integration of Lightweight Composite Structures in Ground Vehicle Applications. $658,300 from the National Center for Manufacturing Science. 08/01/2021 - 07/31/2023.
- Farhad Shirani Chaharsooghi (PI). Privacy in Growing Networks: Statistical Models and Constructive Algorithms. $50,000 from the Facebook Corporation. 09/01/2021 - 08/31/2022.
- Alan R Kallmeyer (PI). Acquisition of Supplies to Support Robotics Education at NDSU. $4,944 from the PMMI Foundation. 06/30/2021 - 03/31/2022.
- Nita Yodo (PI). Process development for vehicle level design loads mapping using MBSE. $205,824 from the National Center for Manufacturing Science. 09/01/2021 - 08/31/2023.

RECENT PUBLICATIONS

For 2021, 129 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:

- Abdi-Dehkordi, Mehri, Omid Bozorg-Haddad, and Xuefeng Chu. n.d. "Development of a Combined Index to Evaluate Sustainability of Water Resources Systems." *Water Resources Management*. https://doi.org/10.1007/s11269-021-02880-w.
- Ahmadianfar, Iman, Ali Asghar Heidari, Amir H. Gandomi, Xuefeng Chu, and Huiling Chen. 2021. "RUN beyond the Metaphor: An Efficient Optimization Algorithm Based on Runge Kutta Method." *Expert Systems with Applications* 181 (November): 115079. https://doi.org/10.1016/j.eswa.2021.115079.
- Ahmed, Mohammed Raju, DeMetris D. Reed, Jennifer M. Young, Sulaymon Eshkabilov, Eric P. Berg, and Xin Sun. 2021. "Beef Quality Grade Classification Based on Intramuscular Fat Content Using Hyperspectral Imaging Technology." *Applied Sciences-Basel* 11 (10): 4588. https://doi.org/10.3390/app11104588.

- Bozorg-Haddad, Omid, Pouria Yari, Mohammad Delpasand, and Xuefeng Chu. n.d. "Reservoir Operation under Influence of the Joint Uncertainty of Inflow and Evaporation." *Environment Development and Sustainability*. https://doi.org/10.1007/s10668-021-01560-4.
- Dong, Chuanzhi, Liangding Li, Jin Yan, Zhiming Zhang, Hong Pan, and Fikret Necati Catbas. 2021. "Pixel-Level Fatigue Crack Segmentation in Large-Scale Images of Steel Structures Using an Encoder-Decoder Network." *Sensors* 21 (12): 4135. https://doi.org/10.3390/s21124135.
- Du, Jing, Dinesh Katti, and Hendrik Heinz. n.d. "Multiscale Experiments and Modeling in Biomaterials and Biological Materials, Part II." *JOM*. https://doi.org/10.1007/s11837-021-04758-z.
- Fu, Jingyan, Zhiheng Liao, Jianqing Liu, Scott C. Smith, and Jinhui Wang. 2021. "Memristor-Based Variation-Enabled Differentially Private Learning Systems for Edge Computing in IoT." *IEEE Internet of Things Journal* 8 (12): 9672–82. https://doi.org/10.1109/JIOT.2020.3023623.
- Hill, Christopher B., Om P. Yadav, and Eakalak Khan. 2021. "Systemic Risk Analyses for Potential Impacts of Onshore Unconventional Oil and Gas Development on Public Health and the Environment: A Critical Review." *Science of the Total Environment* 786 (September): 147512. https://doi.org/10.1016/j.scitotenv.2021.147512.
- Kariyawasam, Gayan K., Nathan Wyatt, Gongjun Shi, Sanzhen Liu, Changhui Yan, Yongchao Ma, Shaobin Zhong, et al. 2021. "A Genome-Wide Genetic Linkage Map and Reference Quality Genome Sequence for a New Race in the Wheat Pathogen Pyrenophora Tritici-Repentis." *Fungal Genetics and Biology* 152 (July): 103571. https://doi.org/10.1016/j.fgb.2021.103571.
- Kiran, Ravi, and Dayakar L. Naik. 2021. "Novel Sensitivity Method for Evaluating the First Derivative of the Feed-Forward Neural Network Outputs." *Journal of Big Data* 8 (1): 88. https://doi.org/10.1186/s40537-021-00480-4.
- Li, Yuzhan, Veronica Ambrogi, Pierfrancesco Cerruti, Monojoy Goswami, Zhou Yang, Michael R. Kessler, and Orlando Rios. n.d. "Functional Liquid Crystalline Epoxy Networks and Composites: From Materials Design to Applications." *International Materials Reviews*. https://doi.org/10.1080/09506608.2021.1937811.
- Zhang, Dawei, Ying Huang, and Yechun Wang. 2021. "Bonding Performances of Epoxy Coatings Reinforced by Carbon Nanotubes (CNTs) on Mild Steel Substrate with Different Surface Roughness." *Composites Part A-Applied Science and Manufacturing* 147 (August): 106479. https://doi.org/10.1016/j.compositesa.2021.106479.
- Zhu, Yazhi, Shiping Huang, and Hizb Ullah Sajid. 2021. "Micro-Mechanisms and Modeling of Ductile Fracture Initiation in Structural Steel after Exposure to Elevated Temperatures." *Metals* 11 (5): 767. https://doi.org/10.3390/met11050767.

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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