

COLLEGE HAPPENINGS

November 9, 2021

FROM THE DEAN

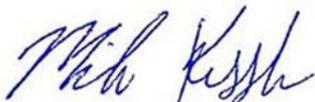
Innovation is Our Status Quo and Invention Disclosures

Last week, David Grewell and I were in Tampa, Florida, for an induction ceremony as Fellows of the National Academy of Inventors (NAI). NAI is an organization founded to recognize inventors with issued US patents, enhance the visibility of academic technology and innovation, and encourage the disclosure of intellectual property. Many of the inductees were from other universities around the country, and I enjoyed talking with several of them and learning about some of the inventions that resulted from their academic research.

One of the [core values](#) that we've identified here in College of Engineering is "Innovation is Our Status Quo." We value our role in creating new knowledge that makes our world better. By many measures, we are making significant progress in our quest to grow innovation. In the past five years we've grown new grant and contract awards received from \$4.3M in FY 2017 to \$12.1M in FY 2021. We've grown PhD enrollments from 149 to 185 over that same time period. And, according to Web of Science, our faculty and staff have published over 1,000 peer reviewed journal papers over the past five years.

However, one measure of innovation where we have seen a decline is in the number of inventions disclosed by our faculty, staff, and students to NDSU's office of Industry Engagement and Intellectual Property (IEIP). In FY 2016 and 2017 we had 18 and 14 invention disclosures, respectively, while in FY 2020 and 2021 we had 7 and 10, respectively. One of the reasons for this, as I've mentioned in a [previous "From the Dean" message](#), may be that research active faculty too often think of technology transfer and commercialization only as an afterthought in their quest to meet funding agency requirements or to communicate their research through journal papers and presentations. Another may be that we are not effectively communicating to faculty that patents are viewed very favorably by the College of Engineering when considering annual reviews as well as tenure and promotion cases.

I would like to encourage our faculty and research staff to be thinking about technology transfer from the beginning of your research projects and to take advantage of the resources at NDSU to help protect the intellectual property that develops. More information about the process for disclosing an invention is available [online](#). You can also reach out to [Saurabhi Satam](#) (701-231-8173), Business Development and Licensing Associate for NDSU's IEIP Office, to discuss your research and get guidance about completing an invention disclosure.



IN THE NEWS

[NDSU students win regional construction competition](#)

[NDSU students earn high marks at computing competition](#)

[NDSU to host Bison Cyber Saturday](#)

[Faculty member discusses cybersecurity best practices on local TV show](#)

[NDSU 'supercharges your ability to learn'](#)

CONGRATULATIONS

Rui Miao, a Ph.D. student in the **Department of Civil, Construction and Environmental Engineering**, has been selected to receive the 2021 Cutting Edge Scholarship to cover the expenses to attend the Cutting Edge Conference organized by North American Tunneling Journal and the Underground Construction Association.

Biraj Saha, a Ph.D. student in the **Department of Civil, Construction and Environmental Engineering**, won an essay competition and received a full scholarship to participate in the International Solid Waste Association-Solid Waste Institute for Sustainability (ISWA-SWIS) Winter School at The University of Texas at Arlington.

Please let [College Happenings](#) know about honors, awards, new grants and other announcements so we can share them with other faculty and staff.

NEW HIRES

Mikki Eken has joined the **Department of Civil, Construction and Environmental Engineering** as the Academic and Student Services Coordinator.

Breanna Larson will join the **Department of Electrical and Computer Engineering** on November 22 as the Business Coordinator.

UPCOMING EVENTS

Tuesday, November 9, **Faculty Council meeting**. 12:30 – 1:30 p.m. FLC 122 or Zoom.

Monday, November 15, **Donuts with the Deans (Staff)**. 9:00 – 10:00 a.m. Engineering Administration room 106.

Thursday, November 18, **Listening Session with NDSU Vice President for Research and Creative Activity Colleen Fitzgerald**. 9:00 – 9:50 a.m. Morrill 103 and on Zoom.

Monday, November 22, **Listening Session with NDSU Vice President for Research and Creative Activity Colleen Fitzgerald**. 2:00 – 2:50 p.m. Morrill 103 and on Zoom.

Thursday, December 16, **College of Engineering Ring and Pin Ceremony**. This ceremony is a blending of two significant and celebratory events, the Order of the Engineer and the Pledge of the Computing Professional. 5:30 p.m. AG Hill 112. Get more information [here](#).

Friday, December 17, **2021 Winter Commencement**. 2:00 p.m. in the SHAC. Faculty and staff who wish to participate in the academic procession along with our graduation class can sign up here:

<https://www.ndsu.edu/commencement/facstaff/>

NEW NAVIGATION FOR BLACKBOARD

Coming for the Spring semester, the ND University System (NDUS) is updating Blackboard to incorporate the new Ultra Base Navigation (Blackboard homepage). This new homepage has a simpler look and includes easier and quicker ways to access your courses and other important information.

What is Ultra Base Navigation (UBN)?

It is a more modern navigation menu that lives outside of your courses, kind of like the My NDSU page. It includes links to new pages such as the Activity Stream, Calendar, Messages, etc. in addition to Courses, Organization, that provide quick access to the most critical information consolidated from all your courses.

How does this affect me?

- The navigation within your courses will not change. They will look and operate exactly as they do now.
- In early January, you will see the new navigation as soon as you log into Blackboard.

Why are we changing?

- Works well on mobile devices - This navigation is designed to work well regardless of which device you're using.
- Aggregates important information - All your course and organization information, like calendar, messages, and grades – is now consolidated into one global view, minimizing the time spent navigating into each course.
- Only one click away - See something that needs your attention? Just click on it and you will be taken directly there, minimizing clicks and saving time.

Where can I find more information?

- Ultra Base Navigation – A Better Way to Navigate Blackboard: <https://kb.ndsu.edu/114488>
- LAIC will have several UBN Demo sessions. Please visit <https://kb.ndsu.edu/97982> for the schedule.

RCA PROPOSAL RESUBMISSION PROGRAM

In order to better support NDSU researchers, an RCA Pilot Proposal Resubmission program is being launched to provide proposal consultations to investigators for improving an already highly-rated proposal for resubmission. The program is for reviews received within the past 6 months.

This is a pilot project, subject to demand and measured impact of the investments. We encourage individuals with highly rated but unfunded proposals of all sizes and in all disciplines to apply. The awards will be for up to 5 hours of consultation time with an experienced grant writer and proposal support from research development staff.

To apply, the following information is needed:

- PI and key investigator(s) – name and contact information.
- Timeline for planned resubmission.
- List of limitations in original application identified by reviewers.
- Funding agency and program to which the PI plans to resubmit.
- Copies of the proposal and reviews (must be attached to application).

Contact ndsu.researchdev@ndsu.edu with questions. [Apply here.](#)

FUNDING OPPORTUNITIES

NSF: Computer and Information Science and Engineering

The National Science Foundation (NSF) Directorate for Computer Information Science and Engineering (CISE) has a number of open solicitations with upcoming deadlines:

- **Cyberinfrastructure for Sustained Scientific Innovation** [[NSF 21-617](#)]
Deadline: December 8, 2021
- **Core Programs** [[NSF 21-616](#)]
Deadline for Medium and OAC Core Projects: December 22, 2021. Small Project proposals are accepted anytime.
- **Cyber-Physical Systems** [[NSF 21-551](#)]
Deadline: December 31, 2021
- **CISE Community Research Infrastructure** [[NSF 22-509](#)]
Deadline: January 11, 2022
- **Computer and Network Systems – Core Programs, Large** [[NSF 22-511](#)]
Deadline: January 18, 2022
- **Broadening Participation in Computing** [[NSF 21-571](#)]
Deadline: January 20, 2022
- **Internet Measurement Research – Methodologies, Tools, and Infrastructure** [[NSF 22-519](#)]
Deadlines vary by track
- **Principles and Practice of Scalable Systems** [[NSF 22-507](#)]
Deadline: January 24, 2022
- **Designing Accountable Software Systems** [[NSF 22-512](#)]
Deadline: January 28, 2022

DARPA: Information Innovation Office

The mission of the Information Innovation Office (I2O) is to ensure enduring advantage for the U.S. and its allies across a broad range of information technologies through the advancement of core technical foundations, as well as the design of novel application concepts based on these foundations. I2O's core technical work ranges from artificial intelligence and data analysis to secure engineering and formal methods. Building on its core technical work, I2O programs also focus on overcoming technical challenges in bringing these technologies to the mission, addressing topics such as network security, cyber and multi-domain operations, human-system interaction, and assured autonomy. I2O programs are organized into four thrust areas:

- Proficient Artificial Intelligence (AI)
- Advantage in Cyber Operations
- Confidence in the Information Domain
- Resilient, Adaptable, and Secure Systems

[View the complete Broad Agency Announcement \[HR001122S0003\] >>](#)

RECENTLY FUNDED GRANTS

- Zhibin Lin (PI), Trung Bao Le (CPI), Yan Zhang (CPI). Development of corrosion/erosion threat assessment methodologies and enriched preventive and mitigative measures to promote safety of gas gathering pipelines. \$377,830 from Pipeline and Hazardous Materials Safety. 10/01/2021 - 09/30/2023.
- 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.
- 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.

- Jordi Estevadeordal (PI), Yan Zhang (CPI), Yildirim Bora Suzen (CPI). Scientific-Grade Wind Tunnel for Advanced Unsteady Aerodynamics Research. \$171,753 from the Department of Defense. 08/16/2021 – 08/15/2030.
- Ravi Kiran Yellavajjala (PI). Novel Soy-protein and Ionic Liquid based Coating Materials for Corrosion Protection: Phase-2. \$20,000 from the ND Soybean Council. 07/01/2021 – 06/30/2022.

RECENTLY SUBMITTED PROPOSALS

- Syeed Md Iskander (PI). Collaborative Research: CAS-MNP: Investigating degradation of food waste-derived microplastics and interconnections with antibiotic resistance in anaerobic membrane bioreactors. \$209,510 from the National Science Foundation. 01/01/2022 – 12/31/2024.
- Yao Yu (PI), Qifeng Zhang (CPI), Abdulaziz Ali H Banawi (CPI), Youjin Jang (CPI). Development of a Stationary Sensor Station for Real-Time, Long-Term Indoor Air Quality (IAQ) Monitoring in Homes and School Classrooms. \$24,998 from the Environmental Protection Agency. 09/01/2022 – 08/31/2023.

RECENT PUBLICATIONS

For 2021, 192 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, Babak, Omid Bozorg-Haddad, and Xuefeng Chu. 2021. “Uncertainty Analysis of Model Inputs in Riverine Water Temperature Simulations.” *Scientific Reports* 11 (1): 19908. <https://doi.org/10.1038/s41598-021-99371-0>.
- Li, Mingli, and Zhibin Lin. 2021. “Numerical Study of the Feasibility of Coupling Vacuum Isolation Panels with Phase Change Material for Enhanced Energy-Efficient Buildings.” *Energy and Buildings* 251 (November): 111369. <https://doi.org/10.1016/j.enbuild.2021.111369>.
- Ludwig, Simone A. 2022. “Performance Analysis of Data Fusion Methods Applied to Epileptic Seizure Recognition.” *Journal of Artificial Intelligence and Soft Computing Research* 12 (1): 5–17. <https://doi.org/10.2478/jaiscr-2022-0001>.
- Petersen, Derek, Zhibin Lin, and Jian Zhao. 2021. “Experiments of Cast-in Anchors under Simulated Seismic Loads.” *Engineering Structures* 248 (December): 113197. <https://doi.org/10.1016/j.engstruct.2021.113197>.
- Roy, Souradip, Juan Li, Bong-Jin Choi, and Yan Bai. 2022. “A Lightweight Supervised Intrusion Detection Mechanism for IoT Networks.” *Future Generation Computer Systems-the International Journal of eScience* 127 (February): 276–85. <https://doi.org/10.1016/j.future.2021.09.027>.
- Straub, Jeremy. 2021. “Machine Learning Performance Validation and Training Using a ‘perfect’ Expert System.” *Methodsx* 8: 101477. <https://doi.org/10.1016/j.mex.2021.101477>.
- Xie, Yanmei, Zhiming Zhang, and Huojun Yang. 2021. “Ratios of Siding Depth to Cavity Depth in Mixed Convection of Air Cavity behind Vinyl Siding for Building Envelopes.” *Journal of Energy Engineering* 147 (6): 04021044. [https://doi.org/10.1061/\(ASCE\)EY.1943-7897.0000795](https://doi.org/10.1061/(ASCE)EY.1943-7897.0000795).
- Yang, Xinyi, Yihao Ren, Liuqing Hu, Ying Huang, and Pan Lu. 2021. “Evaluating the Impact of Road Quality in Driving Behavior of Autonomous Vehicles.” In *Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems 2021*, edited by Daniele Zonta, Haiying Huang, and Zhongqing Su, 3. Online Only, United States: SPIE. <https://doi.org/10.1117/12.2583641>.
- Zeng, Lan, and Xuefeng Chu. 2021. “A New Probability-Embodied Model for Simulating Variable Contributing Areas and Hydrologic Processes Dominated by Surface Depressions.” *Journal of Hydrology* 602 (November): 126762. <https://doi.org/10.1016/j.jhydrol.2021.126762>.

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.

