

# COLLEGE HAPPENINGS

December 22, 2020

## FROM THE DEAN

### 2020 Highlights

The year 2020 has been a challenging year for our community, our country, and our world. Over 1.7 million people have died around the globe from COVID-19, with more than three hundred thousand in the United States alone. Undoubtedly, some of you have a friend or loved one who has died from this horrible disease. At NDSU, the pandemic forced us to transition to teaching, learning, and working remotely in the spring, and then to adapt to HyFlex teaching starting this fall. And, some of our most important events, like commencement and homecoming, were cancelled or moved online. Concurrently, in 2020 our society faced a national reckoning over issues of race and justice in the aftermath of the killings of George Floyd, Breonna Taylor and other African Americans at the hands of police officers. Even on our own campus, we found that we were not immune to racially motivated hate speech, for which we grieve.

But even in the midst of those challenges and grief, we also have much to be thankful for and to be proud of. Above all, we can take pride in the success we've had in our mission to prepare and graduate innovative problem solvers equipped with a 21<sup>st</sup> century technical education gained from the College of Engineering. Here are some of our collective and individual accomplishments from 2020.

### ***We graduated 594 students in 2020***

- 500 baccalaureate degrees
- 68 MS degrees
- 26 PhD degrees

### ***Our faculty, staff and students earned honors and awards***

- Dharmakeerthi Nawarathna, associate professor in the Department of Electrical and Computer Engineering, received a National Science Foundation CAREER Award and was the College of Engineering Early Career Researcher of the Year.
- Achintya Bezbaruah from the Department of Civil and Environmental Engineering was awarded a Fulbright Fellowship.
- The NDSU GeoWall team won the 2020 Midwest Regional GeoWall Competition, bringing home the coveted Sand Cone Trophy for the 2nd year in a row.
- The Bison Robotics VEX U team qualified for the VEX U World Championships.
- Dayakar Lavadiya, a graduate student in the Department of Civil and Environmental Engineering, received the ASCE Structural Engineering Institute Student Scholarship.
- Mohammad Hadi Bazrkar, a doctoral student in the Department of Civil and Environmental Engineering, was inducted into NDSU's Tapestry of Inclusion.
- Dinesh Katti, Jordan A. Engberg Presidential Professor and professor of civil engineering, was selected to give the 59th Faculty Lectureship, one of NDSU's oldest and most prestigious awards.

- Ravi Kiran Yellavajjala from the Department of Civil and Environmental Engineering was one of three NDSU faculty members awarded an Impact Fund Grant from the NDSU Foundation and Alumni Association.
- Long Jiang from the Department of Mechanical Engineering was recognized as the 2019-2020 recipient of the Excellence in Teaching Award by Pi Tau Sigma.
- Michael Kessler, dean of the NDSU College of Engineering, was named a fellow of the American Association for the Advancement of Science and a fellow of the National Academy of Inventors.
- Beena Ajmera from the Department of Civil and Environmental Engineering was awarded the 2020 Collingwood Prize, the 2020 Thomas A. Middlebrooks Award and was selected as the inaugural recipient of the Oldrich Hungr Award.
- Kalpana Katti, University Distinguished Professor and professor of civil and environmental engineering, was named the 2020 recipient of the CoE Excellence in Teaching Award and won First Place for Oral Presentations at the 149th annual TMS conference.
- Ali Amiri, assistant professor of practice of in the Department of Mechanical Engineering, was awarded the CoE Early Career Excellence in Teaching Award.
- Hizb Ullah Sajid, a civil engineering doctoral student, was named the 2020 Graduate Teaching Assistant of the Year.
- Xiangfa Wu, professor of mechanical engineering, was named the 2020 NDSU College of Engineering Researcher of the Year.
- Xingyu Wang, a doctoral student in the Department of Civil and Environmental Engineering, was named Graduate Student Researcher of the Year.
- Kayla Dewey was named the Outstanding Staff Award recipient for the paraprofessional or office support level.
- Joel Hanson was named the Outstanding Staff Award recipient for a staff member at the professional level.
- A team of students from the Department of Construction Management and Engineering won 1st Place in the Construction 1 division at the North Central Region of the Associated Schools of Construction virtual student competition.
- Eric Asa, associate professor of construction management and engineering, Achintya Bezbaruah, associate professor of civil and environmental engineering, and Jeremy Straub, assistant professor of computer science, have been named to the 2020-21 class of Challey Institute Faculty Fellows.
- A student research team was selected as one of seven national winners in the 2021 Moon to Mars eXploration Systems and Habitation Academic Innovation Challenge sponsored by NASA.

### ***We celebrated new initiatives***

- The College of Engineering received a Bronze Award from the American Society for Engineering Education Diversity Recognition Program. The honor means the NDSU College of Engineering is among the nation's leaders in inclusive excellence.
- In Fall 2020 we began offering a Bachelor of Science in Environmental Engineering degree. The new degree is the first in the state of North Dakota and will help better meet the needs of students and employers.
- We created the [Academy of Faculty Fellows](#), which lists those faculty who have been elected Fellows of various professional organizations. The purpose of the Academy of Faculty Fellows is to increase recognition of these honors and track progress of our goal to double the number of professional society Fellows in the college by 2025.

### ***Several faculty members earned promotions this year***

- Shafiqur Rahman, Gursimran Walia and Xiangfa Wu were promoted to Full Professor.
- Dharmakeerthi Nawarathna was awarded tenure and promoted to Associate Professor.
- Jordi Estevadeordal was awarded tenure.
- Simone Ludwig was named the interim department chair in Computer Science.
- Pratap Kotala was promoted to assistant professor of practice.

### ***We also made some outstanding new hires***

- Sumitha George and Farhad Shirani joined the Department of Electrical and Computer Engineering as assistant professors.
- Syeed Md Iskander joined the Department of Civil and Environmental Engineering as the first new faculty member supporting the new B.S. program in Environmental Engineering.
- Inbae Jeong joined the Department of Mechanical Engineering as an assistant professor supporting the college's new Robotics Minor.

- Youjin Jang was hired as a new assistant professor in the Department of Construction Management and Engineering.
- Hong Pan joined the Department of Civil and Environmental Engineering as a postdoctoral research fellow.
- Dan Kahn was hired as a lecturer in the Department of Computer Science.
- Lacey Nohrenberg joined the Department of Mechanical Engineering as an account technician.
- Francisco Valenzuela joined the Department of Mechanical Engineering as a fabrication technician.

***And we said goodbye to several colleagues***

- Brian Slator died unexpectedly after a long and distinguished career as a faculty member in the Department of Computer Science.
- Joleen Gunderson left her position in ME.
- ECE said goodbye to Rajesh Kavasseri, Samee Khan, Quinn Las, Matthew Noah, Blane Tschida, and Casey Vukelich.
- David Rogers retired from ECE.
- Dean Knudson retired from Computer Science.
- Kendall Nygard retired as chair of the Department of Computer Science.
- Gursimran Walia left his position in Computer Science.
- Val Marinov retired from IME.
- CEE said goodbye to Amiy Varma.

***Innovation is our status quo and our efforts to create new knowledge were awarded millions of dollars***

Totals for FY 2020

- Awards Received – \$5.80 million
- Expenditures – \$6.30 million

Totals for FY 2021 (as of December 21)

- Awards Received – \$6.54 million
- Expenditures – \$2.47 million

***We served our community through K-12 outreach programs***

- We brought hundreds of 8<sup>th</sup> grade girls to campus for Introduce a Girl to Engineering Day.
- We created the STEM Kids Take Home program and sent kits filled with fun, hands-on learning activities to hundreds of kids around the country.
- College of Engineering researchers were awarded a grant to increase the engagement, involvement and success of American Indian and Alaska Native students in STEM.
- Beena Ajmera, assistant professor of civil and environmental engineering, is the principal investigator on an NSF grant to provide research experiences for middle and high school teachers.

Thank you all for your hard work in rising to the challenges of 2020. With the COVID-19 vaccine being rolled out, there is hope on the horizon, and better times are yet to come. As we wait and adapt entering the holiday break, I hope we can all step back and rest as we seek to heal in 2021. I wish you the very happiest and healthiest of holidays.



**IN THE NEWS**

[NDSU students are hacking toys so kids can play](#)

[NDSU engineering student killed in crash awarded posthumous degree](#) (Forum)

[Posthumous degree awarded during NDSU's virtual winter commencement ceremony](#) (KVLV)

[Posthumous degree awarded during virtual winter commencement celebration](#) (NDSU News)

[Winter commencement: Students have resources and support](#)

## CONGRATULATIONS

**Ying Huang**, associate professor in the **Department of Civil and Environmental Engineering**, has been selected as a new NDSU RCA Faculty Fellow. Huang will provide leadership for the development of a multi-year undergraduate research program with a focus on biotechnology research.

**Umma Rashid**, a Ph. D. candidate in civil engineering, won the third place in the poster competition at the 9th NANO Conference of the Sustainable Nanotechnology Organization.

**Tonoy Das**, a Ph. D candidate housed in the Department of Civil and Environmental Engineering, was selected to receive one of the College of Graduate and Interdisciplinary Studies Dissertation Fellowships.

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, January 13, 2021, **NDSU Day of Honor**. NDSU Day of Honor commemorates the lives of NDSU students, faculty, and staff who have passed away during the previous calendar year. The event will be held at 2:30 p.m. via Zoom. If you know of a member of our campus community who died in 2020, please visit the [NDSU Day of Honor webpage](#) to complete a submission form.

## ALLY FOR BLACKBOARD

As a reminder, NDSU is implementing a new digital accessibility tool within Blackboard called Ally. Ally will be turned on in all Blackboard courses on December 23. Instructors do not need to do anything to enroll—you'll see the accessibility gauges on your course content on that date.

### What does Ally do?

- Evaluates content in Blackboard courses to identify how accessible the content is.
- Provides specific instructions for making your content more accessible.
- Generates alternative formats of that content for all varieties of learners (including audio files to listen to, or web files to view on mobile devices)
- More information at: [https://help.blackboard.com/Ally/Ally\\_for\\_LMS/Instructor/Quick\\_Start](https://help.blackboard.com/Ally/Ally_for_LMS/Instructor/Quick_Start)

### Benefits

- Ally automatically generates alternative formats for students. Content that is uploaded which is not accessible generates alternative formats that are also not accessible.
- Your students will benefit from having their content available in many different formats that will meet their learning preferences (without you doing any extra work!).
- The NDSU campus community will benefit by learning from your experience as we create a support model and a more inclusive student experience.

## Support for Instructors

- IT and Disability Services will provide resources for content remediation
- Recorded training from Blackboard is available at: <https://kb.ndsu.edu/104459>

## COMMUNITY OF RESPECT TRAINING

The Office of the Vice Provost for Faculty and Equity will be offering a series of the Community of Respect Trainings via Zoom.

Dates offered will be:

- Module 1, January 20 from 9-11 am
- Module 2, January 27 from 9-11 am
- Module 3, February 3, from 9-11 am
- Module 4, February 10 from 9-11 am

To Register go to follow link: [https://www.ndsu.edu/equity/education\\_and\\_training/](https://www.ndsu.edu/equity/education_and_training/)

The objective of the Community of Respect seminar is to teach individual participants about cultural differences and to encourage them to think critically about the impact of their cultural values in their relationships with others. The curriculum is organized into four separate modules with distinct learning outcomes outlined in each.

## SAFE ZONE TRAINING

The Office of the Vice Provost for Faculty and Equity will be offering the Safe Zone Training series via Zoom.

Dates offered:

- Level 1, February 17 from 9-11 am
- Level 2, February 24 from 9-11 am
- Level 3, March 3 from 9-11 am

To Register please go to the following link: [https://www.ndsu.edu/equity/education\\_and\\_training/](https://www.ndsu.edu/equity/education_and_training/)

Safe Zone is a program designed to:

- Educate people about sexual orientation and gender identity/expression issues.
- Create a visible network of Allies to provide support to the NDSU lesbian, gay, bisexual, transgender, queer, and questioning (LGBTQ) community.
- Provide accurate information about sexual orientation and gender identity/expression diversity, issues, and resources within the community.

## NEW FUNDING OPPORTUNITY DATABASE

On January 1, 2021, NDSU will be transitioning to a new funding opportunity database, InfoEd SPIN. This change is in response to campus feedback and budget considerations. Search functionality in SPIN is very similar to Pivot, so we hope this change will be seamless. However, the faculty expertise profiles that were part of the Pivot system are not included in the SPIN product.

Training opportunities and information about how to log in to SPIN will be announced soon.

Things to do before the transition:

1. If you have saved searches in Pivot that you would like to replicate in SPIN, review and record the search criteria now. [Learn how >>](#)
2. If you have tracked programs in Pivot that are of particular interest to you, you can export the list of those programs to help you replicate the list in SPIN. [Learn how >>](#)

If you have questions, please contact [ndsurresearchdev@ndsurredu](mailto:ndsurresearchdev@ndsurredu).

## FUNDING OPPORTUNITIES

### NSF: Designing Materials to Revolutionize and Engineer our Future

Designing Materials to Revolutionize and Engineer our Future (DMREF) [[NSF 21-522](#)] is the primary program by which NSF participates in the [Materials Genome Initiative \(MGI\) for Global Competitiveness](#). MGI recognizes the importance of materials science and engineering to the well-being and advancement of society and aims to "deploy advanced materials at least twice as fast as possible today, at a fraction of the cost." MGI integrates materials discovery, development, property optimization, and systems design with a shared computational framework. This framework facilitates collaboration and coordination of research activities, analytical tools, experimental results, and critical evaluation in pursuit of the MGI goals. Consistent with the [MGI Strategic Plan](#), DMREF highlights four sets of goals:

- Leading a culture shift in materials science and engineering research to encourage and facilitate an integrated team approach;
- integrating experimentation, computation, data-intensive / data-driven approaches, and theory, and equipping the materials science and engineering communities with advanced tools and techniques;
- making digital data findable, accessible, interoperable, and reusable, and useful to the community; and
- creating a world-class materials science and engineering workforce that is trained for careers in academia or industry.

Proposal submission window: January 11-25, 2021

### DoD: Air Force Office of Scientific Research BAA

The Air Force Office of Scientific Research (AFOSR) plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force. Additionally, the office fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support U.S. Air Force needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national war fighting and peacekeeping capabilities. These areas are organized and managed in two scientific Departments, each with specific topic areas of interest.

### Engineering and Information Science

- Dynamic Materials and Interactions
- GHz-THz Electronics
- Energy, Combustion, and Non-Equilibrium Thermodynamics
- Unsteady Aerodynamics and Turbulent Flows
- High-Speed Aerodynamics
- Aerospace Composite Materials
- Multiscale Structural Mechanics and Prognosis
- Space Propulsion and Power
- Agile Science of Test and Evaluation

## Physical and Biological Sciences

- Computational Cognition and Machine Intelligence
- Computational Mathematics
- Dynamical Systems and Control Theory
- Dynamic Data and Information Processing
- Information Assurance and Cybersecurity
- Mathematical Optimization
- Science of Information, Computation, Learning, and Fusion
- Trust and Influence
- Complex Networks
- Cognitive and Computational Neuroscience

[Download the Broad Agency Announcement \(BAA\) >>](#)

## RECENTLY FUNDED GRANTS

- Jeremy A Straub (PI). Enhancement of Security+ and Ethical Hacking Outreach Courses for Synchronous Facilitated and Asynchronous Delivery. \$5,000 from the Department of Treasury. 12/01/2020 – 11/30/2021.

## RECENTLY SUBMITTED PROPOSALS

- Zhibin Lin (PI). AI-Enabled Precision Pavement Performance Condition for Airport Pavement Maintenance and Management. \$449,585 from the Federal Aviation Administration. 05/16/2021 – 05/15/2024.
- Ravi Kiran Yellavajjala (PI), Simone Ludwig (CPI). AI INSTITUTE: SOFT MODULAR AUTONOMOUS ROBOTICS TECHNOLOGY. \$2,500,000 from the National Science Foundation. 07/01/2021 – 06/30/2026.
- Ali Amiri (PI), Chad A Ulven (CPI). Investigating root-cause and reduce fogging behavior of natural fiber-filled thermoplastics. \$54,345 from the National Science Foundation. 01/01/2021 – 12/31/2021.
- Huojun Yang (PI). Co-curricular collegiate student competition advising and evaluation to improve undergraduate construction education. \$300,000 from the National Science Foundation. 06/01/2021 – 05/31/2024.
- David Grewell (PI), Chad A Ulven (CPI), Alan R Kallmeyer (CPI). IUCRC Phase II at North Dakota State University: Center for Bioplastics and Biocomposites [CB2]. \$755,000 from the National Science Foundation. 07/01/2021 – 06/30/2026.
- Wenjie Xia (PI). Collaborative Research: Multiscale Mechanics of Adsorption-Deformation Coupling in Soft Nanoporous Materials. \$206,661 from the National Science Foundation. 07/01/2021 – 06/30/2024.

## RECENT PUBLICATIONS

*For 2020, 163 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:*

- Davila-Frias, Alex, Om Prakash Yadav, and Val Marinov. 2020. "A Review of Methods for the Reliability Testing of Flexible Hybrid Electronics." *Ieee Transactions on Components Packaging and Manufacturing Technology* 10 (11): 1902–12. <https://doi.org/10.1109/TCPMT.2020.3029250>.
- Naik, Dayakar L., Hizb Ullah Sajid, Ravi Kiran, and Genda Chen. 2020. "Detection of Corrosion-Indicating Oxidation Product Colors in Steel Bridges under Varying Illuminations, Shadows, and Wetting Conditions." *Metals* 10 (11): 1439. <https://doi.org/10.3390/met10111439>.

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](mailto:kyle.bosch@ndsu.edu) to submit items for *College Happenings*.

Follow the College of Engineering on social media.

