

COLLEGE HAPPENINGS

March 19, 2024

FROM THE INTERIM DEAN

College Award Nominations

Each year, the College of Engineering recognizes outstanding faculty members, graduate students and staff for their contributions in meeting our goals of excellence in teaching, research and service. The college recognizes both senior level faculty (Excellence in Teaching and Excellence in Research awards) as well as early-career faculty members who have recently joined NDSU (Early Career Teaching Excellence and Early Career Research Excellence awards). In addition, the exceptional contributions of our graduate students are recognized through the Graduate Teaching Assistant of the Year and Graduate Research Assistant of the Year awards. While the outstanding contributions by staff are honored with awards for the Professional Level and Paraprofessional/Office Support Level.

We have many dedicated faculty members, graduate students and staff who deserve to receive special recognition for their efforts, but each department may only submit one nominee in each category. Please consider nominating a staff, faculty or graduate student colleague for these prestigious awards to your department chair, so that their contributions can be recognized and honored by the college. The criteria for each award and nomination forms can be found [here](#).

The deadlines for submitting nominations for some of these awards are quickly approaching. Specifically, the deadline for nominations for the graduate student awards is Friday, March 29, and the faculty nominations must be received by Friday, April 12. Nominations for outstanding staff awards are due by August 9, 2024. Thank you for your efforts to recognize and reward the outstanding contributions of our dedicated faculty, graduate students and staff!

Alan R. Kallmeyer, Ph.D.

Interim Dean | College of Engineering

IN THE NEWS

[‘Stay up to date with what’s new’](#)

[NDSU student shares how A.I. minor has impacted his education](#)

[NDSU water researchers present at ND legislative committee hearing](#)

CONGRATULATIONS

Achintya Bezbaruah, Gehrts Presidential Professor and interim chair of Civil, Construction and Environmental Engineering, has been selected as **NDSU’s 63rd Faculty Lectureship**. He’ll present “**From Rainfall to Snowfall: Nanotech Innovations for Shared Sustainability**” on Thursday, April 4, 3:00 pm, in the Memorial Union Anishinaabe Theatre. [The Faculty Lectureship](#), one of the oldest and most prestigious of the University’s awards,

recognizes sustained professional excellence in teaching, scholarly achievement, and service among current faculty at NDSU. The Faculty Lectureship is conferred on an individual who has demonstrated excellence in all three areas.

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, March 28, **Exploring Paths to Research Leadership**. This second session “Positioning Your Research Program in the Scientific Community” is scheduled from 11:30 a.m. – 1:00 p.m. in the Memorial Union Nueta Room. All sessions are free, but [registration](#) is required.

Thursday, April 4, **63rd Faculty Lectureship**. “From Rainfall to Snowfall: Nanotech Innovations for Shared Sustainability,” by Dr. Achintya Bezbaruah, Gehrts Presidential Professor and interim chair of Civil, Construction and Environmental Engineering, on Thursday, April 4, 3:00 pm, in the Memorial Union Anishinaabe Theatre.

Thursday, May 2, **Spring Senior Design Expo**. The Spring Senior Design Expo will showcase capstone projects from all departments in the College of Engineering and give you the chance to interact with our amazing students and learn more about their work. 12 – 3 p.m. in the NDSU Oceti Sakowin Ballroom.

Friday, May 10, **Spring Ring and Pin Ceremony**. The biannual Ring and Pin Ceremony is a blending of two significant and celebratory events, the [Order of the Engineer](#) and the [Pledge of the Computing Professional](#).

Saturday, May 11, **Spring Commencement**. 2:00 p.m. at the Fargodome. Faculty and staff who wish to participate in the academic procession along with our graduation class will wear caps and gowns. [Register to participate](#).

STUDENT RESEARCH DAYS

NDSU Student Research Days is a two-day event dedicated to providing NDSU graduate and undergraduate students an opportunity to present their research and creative works. Scheduled for April 9-10, 2024, Student Research Days is a collaboration among NDSU EXPLORE, Gamma Sigma Delta, and the Graduate Student Council.

- The NDSU Office of Research and Creative Activity hosts NDSU EXPLORE, an annual showcase in which undergraduate students in all disciplines present their research and creative projects.
- Gamma Sigma Delta is an agricultural honor society that encourages and rewards excellence in agriculture, and the NDSU chapter hosts an annual symposium during which undergraduate and graduate students present their research.
- The NDSU Graduate Student Council hosts an annual research symposium in which graduate students in all disciplines present their research.

Schedule

Tuesday, April 9, 2024:

- Undergraduate student poster session and oral presentations.

Wednesday, April 10, 2024:

- Graduate student poster session and oral presentations.

NDSU UAS NETWORK

Inspired by robots, drones, autonomous systems and artificial intelligence for your research? Your talent is needed! Join the NDSU UAS Network, where cutting-edge technology meets collaborative excellence.

The NDSU UAS Network is a collaborative community organized by NDSU Associate Professor and RCA UAS Faculty Fellow Rex Sun. Its goal is to gather individuals who are interested in uncrewed autonomous systems (UAS), artificial intelligence (AI), and cutting-edge technology to enrich innovation, research, and interdisciplinary collaboration. [Learn more and register.](#)

WATER RESOURCES RESEARCH INSTITUTE FELLOWSHIP PROGRAM

All NDSU and UND graduate students studying in water resources areas are invited to apply for the 2024 NDWRRI Fellowship Program. Applicants must be a current NDSU or UND graduate student conducting thesis/dissertation research in water resources areas. Recipients of a 2023 NDWRRI fellowship may apply for continuous funding in 2024.

Applications must be submitted electronically to Xinhua.Jia@ndsu.edu by 5:00 PM on April 5, 2024. [Learn more and apply >>](#)

GUNKELMAN AWARD NOMINATIONS

The Mary McCannel Gunkelman Recognition Award was established in January 1987, by the late John L. Gunkelman and his family in memory of Mrs. Gunkelman, who was a 1942 graduate of the College of Home Economics.

The purpose of this award is to honor the late Mary McCannel Gunkelman. Mary was firmly dedicated to the principle that a student would be more apt to attain their full potential if they were working and living in an enjoyable environment. She further believed that the more enjoyable the campus and programs of NDSU, the better university it would be in the future.

You are invited to nominate a student or employee of NDSU who you believe has made the most significant and unselfish contributions to creating a happy environment for the enjoyment of NDSU students. Nomination information can be found [here](#). Please provide specific examples of how this individual has had a direct impact on making NDSU a pleasant, cheerful campus during the current academic year. Nomination forms will be shared with the nominee.

Nominations must be submitted by **Sunday, March 31, 2024.**

STAFF RECOGNITION AWARD NOMINATIONS

The NDSU Staff Senate, in partnership with the Office of Human Resources, invites you to recognize current broadbanded staff members for hard work and ingenuity in making NDSU a better place. The awards are given to acknowledge outstanding achievement on the job; exceptional contributions toward effectiveness and efficiency of operations; outstanding service to other employees, students, or visitors; and distinguished efforts in staff development.

Staff eligible for nomination are those who serve within the five broadbanded categories at NDSU: Administrative/Professional, Technical/Paraprofessional, Office Support, Crafts/Trades, and Services. Nominations will be accepted in two categories: Individual Awards and Team Awards.

Award recipients will be announced at the Staff Recognition Social on April 18th from 1– 2:30pm in the Memorial Union Ballroom.

The deadline for nominations is March 22, 2024. For more information and to complete the online nomination form please go to: https://www.ndsu.edu/staff_senate/recognition/staff_recognition_award/.

NDSU EXPLORE UNDERGRADUATE RESEARCH PROGRAM

The NDSU EXPLORE Undergraduate Research Program (EXPLORE UR) aims to provide experiential learning opportunities and transformative education and training for undergraduate students through innovative research within the NDSU strategic priority areas:

- Food, Energy and Water Security
- Cybersecurity, Computer Science and Software Engineering
- Life Sciences
- Entrepreneurship and Innovation

In 2024, the NDSU EXPLORE UR program will fund up to ten NDSU undergraduate students for an 8-week summer undergraduate research experience. Participating students are expected to conduct research for up to 40 hours per week mentored by faculty and project leaders, and attend workshops, trainings, and other activities organized by the program. Each undergraduate researcher in this program will receive:

- Student hourly pay of \$15/hour for up to 40 hours per week. Overtime is not allowed;
- Up to \$200 to print research poster and purchase consumable research materials.

Each faculty mentor will also identify their student at the time of application. No more than two proposals from a faculty mentor will be accepted. Preferences will be given to the junior faculty and sophomore or junior students. [Learn More and Apply](#).

The deadline to apply is Wednesday, April 3, 2024. Notifications will be sent out by Friday, April 12, 2024.

FUNDING OPPORTUNITIES

Air Force Fiscal Year 2025 Young Investigator Program

The Fiscal Year 2025 Air Force Young Investigator Research Program (YIP) intends to support individual early in career scientists and engineers who have received Ph.D. or equivalent degrees by 01 April 2017 or later showing exceptional ability and promise for conducting basic research. The program objective is to foster creative basic research in science and engineering; enhance early career development of outstanding young investigators; and increase opportunities for the young investigator to recognize the Air Force and Space Force mission and related challenges in science and engineering.

Individual awards are made to U.S. institutions of higher education, industrial laboratories, for-profit, or non-profit research organizations where the principal investigator (PI) is employed on a full-time basis and holds a regular, non-contractor position. A YIP PI must be a U.S. citizen, national, or permanent resident. Researchers working at a Federally Funded Research and Development Center, or a Department of Defense (DoD) Laboratory are not eligible for this competition.

Deadline: June 21, 2024 | [Learn more and apply >>](#)

DOE: Reaching a New Energy Sciences Workforce

Reaching a New Energy Sciences Workforce (RENEW) aims to build foundations for Office of Science (SC) research through traineeships at academic institutions that have been historically underrepresented in the SC portfolio. RENEW leverages SC's unique national laboratories, user facilities, and other research infrastructure to provide training opportunities for students and postdoctoral researchers from these institutions. The hands-on experiences gained through RENEW will open new career avenues for trainees, forming a nucleus for a future pool of talented young scientists, engineers, and technicians with the critical skills and expertise needed for the full breadth of SC research activities.

Deadline: July 23, 2024 | [Learn more and apply >>](#)

RECENTLY SUBMITTED PROPOSALS

- Armstrong Aboah (Principal Investigator). Early-Career Development to Enhance Teaching and Research. \$5,000 from the NDSU Foundation. 6/1/2024 - 5/31/2025.
- Clairmont Clementson (Principal Investigator), Kenneth Hellevang (Co-PI), David J Boehm (Co-PI), Shane Mueller (Co-PI). Assessment of cold storage transit of soybeans in the Northern States. \$69,829 from Northern Soy Marketing, LLC. 7/1/2024 - 6/30/2025.
- Danling Wang (Principal Investigator). A miniaturized ultra-sensitive and selective breath ketone sensor employing novel nanomaterials and smart MEMS readout techniques for diabetes and DKA warning. \$184,000 from the National Institutes of Health. 8/1/2024 - 7/31/2026.
- Jeremy A Straub (Principal Investigator). Submission to USAF SBIR X24.5 Phase I. \$23,000 from the U.S. Air Force. 7/1/2024 - 9/30/2024.
- Jeremy A Straub (Principal Investigator). Submission to USAF STTR X24.D Phase I. \$61,500 from the U.S. Air Force. 7/1/2024 - 9/30/2024.
- Jeremy A Straub (Principal Investigator). Google Cyber Clinic Program Submission. \$1,000,000 from Google Inc. 7/1/2024 - 6/30/2030.
- Jiale Xu (Principal Investigator). Novel Carbon Quantum Dots (CQD) for Efficient and Low-cost Remediation of Brine Spills to Protect Soil and Water Qualities. \$142,746 from the Natural Resources Conservation Service. 9/1/2024 - 8/31/2027.
- Kelsey Griesheim (Principal Investigator), Xiaoyu Feng (Co-PI). Fate of ¹⁵N-labeled urea split-applied for a row crop production in North Dakota. \$600,399 from the Natural Resources Conservation Service. 9/30/2024 - 9/29/2027.
- Kelsey Griesheim (Principal Investigator), Xiaoyu Feng (Co-PI). Fate of ¹⁵N-labeled urea split-applied for a row crop production in North Dakota. \$469,797 from the Natural Resources Conservation Service. 9/30/2024 - 9/29/2027.
- Lu Liu (Principal Investigator). Enhancing Sparse Single-cell Chromatin Interaction Data and Integrating Bulk Chromatin Interactions and Epigenetic Data for Differential Analysis. \$417,592 from the National Institutes of Health. 1/1/2025 - 12/31/2027.
- Pan Lu (Principal Investigator), Ying Huang (Co-PI). INdigenous Flourishing and Rural Autonomous Technology (INFRA Tech). \$1,499,999 from the Department of Transportation. 5/1/2024 - 4/30/2030.
- Sandro Steinbach (Principal Investigator), Siew Hoon Lim (Co-PI), Thomas Krumel (Co-PI), Simone Ludwig (2455) (Co-PI). Cultivating Tomorrows Women Leaders through a Transformative Agribusiness and Data Analytics Workforce Pipeline for Rural Prosperity. \$750,000 from the National Institute of Food & Agriculture. 5/16/2025 - 5/15/2029.
- Sudarshan Kumar Srinivasan (Principal Investigator). SHF: Small: Formal Verification For Quantum Circuits: 1,000 Qubits and Beyond. \$276,633 from the National Science Foundation. 9/1/2024 - 8/31/2027.
- Sulaymon Eshkabilov (Principal Investigator), Joao Paulo Cassol Flores (Co-PI), Ahmed Mohamed Harb Rabia (Co-PI), Erik Drevlow Hanson (Co-PI), Rob Proulx (Co-PI). Advancing Sustainable Organic Farming through the Integration of AI-based Weed Control and Precision Agriculture Technologies. \$1,000,000 from the National Institute of Food & Agriculture. 9/1/2024 - 8/31/2027.
- Sumitha George (Principal Investigator). FuSe2 Topic 1: Device-Architecture Co-Design of Chiplet-based Heterogeneous Reconfigurable Chips. \$325,463 from the National Science Foundation. 9/1/2024 - 8/31/2027.
- Syeed Md Iskander (Principal Investigator). Cost-effective remediation of PFAS-contaminated agricultural soil in North Dakota - enhanced uptake by cover crops using electrokinetics. \$164,430 from the Natural Resources Conservation Service. 10/1/2024 - 9/30/2027.
- Xiaoyu Feng (Principal Investigator), Clairmont Clementson (Co-PI), Leon George Schumacher (Co-PI), Ademola Ayodeji Ajayi-Banji (Co-PI). Techno-economic analysis of a novel hydrothermal carbonization pre-treatment technology for methane production. \$71,941 from the ND Department of Agriculture. 1/1/2024 - 12/31/2024.

- Yechun Wang (Principal Investigator). The Migration of Cell-Enclosing Droplets in the Fringe Electric Field of Parallel-Plate Electrodes. \$5,000 from the NDSU Foundation. 6/1/2024 - 5/31/2025.
- Ying Huang (Principal Investigator), Wen Wang (Co-PI), Armstrong Aboah (Co-PI). Autonomous Vehicles for Americans in Tribes And Rurality (AVATAR). \$300,000 from the Department of Transportation. 8/19/2024 - 8/18/2025.

RECENT PUBLICATIONS

For 2024, 37 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:

- Ahmed, Hafiz Usman, Salman Ahmad, Xinyi Yang, Pan Lu, and Ying Huang. 2024. "Safety and Mobility Evaluation of Cumulative-Anticipative Car-Following Model for Connected Autonomous Vehicles." *SMART CITIES* 7 (1): 518–40. <https://doi.org/10.3390/smartcities7010021>.
- Amiri, Maryam, Juan Li, and Wordh Hasan. 2023. "Personalized Flexible Meal Planning for Individuals With Diet-Related Health Concerns: System Design and Feasibility Validation Study." *JMIR FORMATIVE RESEARCH* 7: e46434. <https://doi.org/10.2196/46434>.
- Etezadi, Hamed, and Sulaymon Eshkabilov. 2024. "A Comprehensive Overview of Control Algorithms, Sensors, Actuators, and Communication Tools of Autonomous All-Terrain Vehicles in Agriculture." *AGRICULTURE-BASEL* 14 (2): 163. <https://doi.org/10.3390/agriculture14020163>.
- Huda, Md Sanaul, Michael Odegaard, Niloy Chandra Sarker, Dean C. Webster, and Ewumbua Monono. 2024. "Enhancing Recovery Yield of Vegetable Oil Methyl Ester for Bioresin Production: A Comparison Study Using Acid Neutralization." *CHEMENGINEERING* 8 (1): 16. <https://doi.org/10.3390/chemengineering8010016>.
- Malik, Amanda, Billy Ram, Dharanidharan Arumugam, Zhao Jin, Xin Sun, and Minwei Xu. 2024. "Predicting Gypsum Tofu Quality from Soybean Seeds Using Hyperspectral Imaging and Machine Learning." *FOOD CONTROL* 160 (June): 110357. <https://doi.org/10.1016/j.foodcont.2024.110357>.
- Mukaila, Taofeek, Adewale Adeniyi, Ibrahim Bello, Niloy Chandra Sarker, Ewumbua Monono, and Ademola Hammed. 2024. "Synthesis and Characterization of Polylactic Acid-Lecithin-Starch Bioplastic Film." *JOURNAL OF APPLIED POLYMER SCIENCE*, February. <https://doi.org/10.1002/app.55345>.

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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