

COLLEGE HAPPENINGS

May 12, 2020

FROM THE DEAN

Support for Technology Transfer

The end of the spring semester is one of my favorite times of the year. This year, however, the anticipation of those warm long summer evenings is especially welcome, against the challenges we have faced over the past few months dealing with the coronavirus pandemic. Of course, those challenges have not passed, and the next few months will be critical as we prepare for a return to campus in the fall semester in a way that protects the health and safety of students, faculty, and staff.

Earlier this semester, before the COVID-19 outbreak, Saurabhi (Sau) Satam, Business Development and Licensing Associate from the new NDSU Office of Industry Engagement and Intellectual Property (IEIP), spoke at our faculty council meeting. I want to return to that topic now.

I've made a habit of sending congratulatory emails out to our faculty when they publish new journal papers (I'm alerted of the new papers when they are indexed by Web of Science). These research papers are an important part of the scientific enterprise, and they offer important recognition in academia. However, they seldom serve as a platform to protect or transition the research into new products and services. Opportunities to identify groundbreaking research as intellectual property and taking timely steps to protect it are often lost once the research is published. That is where the Office of IEIP comes in. IEIP works with NDSU Research Foundation to facilitate technology transfer at NDSU, enabling protection and commercialization of NDSU innovations. In other words, IEIP guides researchers so they don't have to choose between publication and protection.

Technology transfer involves assessment, protection, marketing and ultimately, commercialization of NDSU's Intellectual Property. Protected IP is marketed and typically licensed to businesses that can commercialize and sell to the private sector. The process is initiated when the researcher submits an invention disclosure for an invention.

IEIP and NDSU Research Foundation are involved in activities such as:

INITIAL ASSESSMENT	PROTECTION	COMMERCIALIZATION
<ul style="list-style-type: none"> • Meetings with researchers to discuss research • Facilitate invention disclosures • Evaluate technologies • Implement effective patent strategies 	<ul style="list-style-type: none"> • Patent filing and IP management • Identify potential licensees • Marketing technologies 	<ul style="list-style-type: none"> • Execute, negotiate and manage agreements (license, material transfer, sponsored research, confidentiality) • Manage legal fees • Collect and distribute royalties and other licensing income • Promote industry collaboration

I encourage our researchers to contact Saurabhi Satam (saurabhi.satam@ndsu.edu, 701-231-8173) to discuss their research and secure guidance to determine if they have enough data to complete an invention disclosure. Visit <https://www.ndsu.edu/research/> for more information.



IN THE NEWS

[NDSU engineering adapts to remote courses](#)

[The most memorable part of the NDSU experience, according to new grads](#)

CONGRATULATIONS

Several College of Engineering faculty members have been awarded promotions this year.

Promoted to Full Professor:

- Shafiqur Rahman, Agricultural and Biosystems Engineering
- Gursimran Walia, Computer Science
- Xiangfa Wu, Mechanical Engineering

Promoted to Associate Professor and Awarded Tenure:

- Dharmakeerthi (Keerthi) Nawarathna, Electrical and Computer Engineering

Awarded Tenure:

- Jordi Estevadeordal, Associate Professor, Mechanical Engineering

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.

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

REMOTE TEACHING SUPPORT

LAI Staff Virtual Office Hours: Ask questions – get answers! No pre-registration needed

Tuesday Afternoons

1:00 – 2:00 PM

May 12, May 19, May 26

Thursday Mornings

10:00 – 11:00 AM

May 14, May 21, May 28

[Connect via Blackboard Collaborate](#)

REMOTE DEVELOPMENT OPPORTUNITIES FROM STAFF SENATE

The Staff Senate - Staff Development Committee has been collaborating with Human Resources to provide some online development opportunities during the remote working period. No registration is required! Sessions will be offered via Zoom and are limited to the first 300 participants to join.

Effective Communication

Are you an effective communicator? Effective communication helps us better understand a person or situation and enables us to resolve differences and build trust and respect. During this session we will review the elements of effective communication and how you can utilize these elements to enhance your communication skills. You will have the opportunity to complete a Behavioral Communication Style Evaluation** to see if you are open, guarded, direct, or indirect when you communicate.

**The Behavioral Communication Style Evaluation document can be found [here](#) and you should complete it before the start of this session.

Wednesday, May 13th: 1:00pm – 2:30pm

Conflict Management

Is conflict healthy or unhealthy? It depends on the type of conflict. During this session we will look at the different types of conflict and the appropriate methods to use to address it. The key to conflict is not avoiding it; the key is dealing with it effectively.

Sessions:

Tuesday, May 19th: 1:00pm – 2:30pm

Thursday, May 28th: 10:00am – 11:30am

**Note: both sessions are identical, so attend the one that works best with your schedule*

Emotional Intelligence

Did you know that 90% of top performers have high emotional intelligence? How would you rate yourself when it comes to emotional intelligence? Emotional intelligence (EQ) is your ability to recognize and understand emotions in yourself and others, and your ability to use this awareness to manage your behavior and relationships. During this session we will review the four quadrants of emotional intelligence and look at ways to help you increase your emotional intelligence.

Sessions:

Thursday, June 4th: 10:00am – 11:30am

Monday, June 8th: 1:00pm – 2:30pm

**Note: both sessions are identical, so attend the one that works best with your schedule*

Zoom Information: <https://ndsu.zoom.us/j/91484834933?pwd=RzNMWXRCMkZlZWJEOXhvK3MzUT09>

30 YEARS OF STAFF SENATE

In the 30 years Staff Senate has existed, staff at NDSU have accomplished amazing things. There is so much to share and so many stories to tell. To help plan a fall celebration event, organizers are looking for submissions to showcase some of the amazing people who served in Staff Senate and the wonderful things that were accomplished.

If you have ever served on Staff Senate, please complete [this short questionnaire](#) in preparation for the 30th Anniversary event which will be held in September.

NOVELUTION ELECTRONIC PROPOSAL ROUTING TRAINING SESSIONS

Sponsored Programs Administration will be conducting 4 training sessions in May related to the Novelution Electronic Research Management System. The software system features electronic proposal routing, non-financial award management and storage of information about proposals, awards, subawards. Faculty and staff are invited to join over Zoom; registration details are provided below.

The initial training sessions will provide an introduction of the Novelution system and focus on how to sign into the system and search records as well as create and route a proposal for internal approval.

All of the sessions will be the same content.

- Wednesday, May 13, 2020 | 2:00pm-3:00pm | Zoom Online Meeting
- Wednesday, May 20, 2020 | 2:00pm-3:00pm | Zoom Online Meeting
- Wednesday, May 27, 2020 | 2:00pm-3:00pm | Zoom Online Meeting

The link to join the Zoom meeting will be sent to registrants ahead of the event.

[Register to attend >>](#)

RCA FACULTY FELLOW APPLICATIONS OPEN

The Research and Creative Activity Faculty Fellows program provides established faculty members the opportunity to enhance their academic leadership skills, bring a faculty voice and expertise to administrative offices, and gain insight into administrative practices and offices. This particular opportunity is intended to enhance research support with a focus on early career faculty research mentoring.

The program seeks to appoint one Faculty Fellow with a term of up to two years. The Faculty Fellow will report to the Vice President for Research and Creative Activity and will primarily work with the Research Development unit. The Fellow will be expected to spend approximately four hours per week working on program development, attending regular meetings, and implementing the focus area project. In return, the Fellow will receive \$7,500 in compensation for the 2020-2021 appointment. The Fellow must be eligible to receive such compensation in order to be selected. Applicants may be from any discipline at NDSU but must be at the rank of a tenured senior associate or full professor who has been at NDSU for at least five years. Appointments are for the 2020-2021 academic year with the opportunity for a one-year extension.

The position will join Faculty Fellow Rajesh Kavasseri, electrical and computer engineering professor, who is completing his first term with the RCA team.

To apply, send a CV and a statement of interest providing details about your experiences in research mentoring, particularly with early career faculty, and leadership role experience to ndsu.researchdev@ndsu.edu. Applications must be received by May 15, 2020. A selection is anticipated to be made by June 15, 2020.

FUNDING OPPORTUNITIES

Facebook: Explorations of Trust in AR, VR, and Smart Devices

Facebook is soliciting proposals to help accelerate research in Augmented Reality (AR), Virtual Reality (VR), and Smart Devices with the hope of helping to foster a world of trustworthy mixed-reality and smart device products. We are interested in a broad range of topics relating to applications like AR glasses, VR headsets, other AR or VR form-factors, smart home products, and more.

Applicants should submit a proposal detailing what contribution their research is expected to make, how the research domain will benefit from the work, a project timeline, and a budget overview of how the proposed funding will be used.

Proposals are highly encouraged to focus funding of project personnel, especially PhD students. Proposals from small collaborative teams, particularly with PIs bridging necessary technical areas, are also encouraged.

A total of up to four awards are available, up to \$75,000 each, depending on the specific requirements. Payment will be made to the proposer's host university as an unrestricted gift. For full details and to apply, visit the [Explorations of Trust in AR, VR, and Smart Devices RFP Page](#).

Deadline: June 12, 2020

NSF / Amazon: Fairness in Artificial Intelligence

NSF and Amazon are partnering to jointly support computational research focused on fairness in AI, with the goal of contributing to trustworthy AI systems that are readily accepted and deployed to tackle grand challenges facing society (NSF 20-566). Specific topics of interest include, but are not limited to, transparency, explainability, accountability, potential adverse biases and effects, mitigation strategies, algorithmic advances, fairness objectives, validation of fairness, and advances in broad accessibility and utility. Funded projects will enable broadened acceptance of AI systems, helping the U.S. further capitalize on the potential of AI technologies. Although Amazon provides partial funding for this program, it will not play a role in the selection of proposals for award.

Advancing AI is a highly interdisciplinary endeavor drawing on fields such as computer science, information science, engineering, statistics, mathematics, cognitive science, and psychology. As such, NSF and Amazon expect these varied perspectives to be critical for the study of fairness in AI. NSF's ability to bring together multiple scientific disciplines uniquely positions the agency in this collaboration, while building AI that is fair and unbiased is an important aspect of Amazon's AI initiatives. This program supports the conduct of fundamental computer science research into theories, techniques, and methodologies that go well beyond today's capabilities and are motivated by challenges and requirements in real systems.

Deadline: July 13, 2020

RECENTLY SUBMITTED PROPOSALS

- Benjamin Davis Braaten (PI). Support for Medium Voltage Gate Driver Design and Development. \$12,329 from UT-Battelle, LLC. 05/23/2020 – 08/07/2020.
- Jessica Lynne Lattimer Vold (PI). M2M X-Hab 2021 Academic Innovation Challenge Pathbuilder Project. \$31,647 from the National Aeronautics and Space Administration. 08/01/2020 – 05/31/2021.
- Long Jiang (PI), Zhibin Lin (CPI). Advancing Cured-in-Place Pipeline (CIPP) Technology to Enable Self-Repairability and Smart Damage Tractability, Localization and Diagnosis in Rehabilitated Pipeline. \$1,447,530 from the Department of Energy. 01/01/2021 – 12/31/2023.
- Dean D Steele (PI), Thomas Scherer (CPI), Xinhua Jia (CPI). Building NRCS Technical Capacity in Irrigation Water Management for Variable Rate Irrigation. \$194,316 from the Natural Resources Conservation Service. 09/01/2020 – 08/31/2023.
- Dharmakeerthi Nawarathna (PI). Scalable and microfluidics-free single-cell molecular expression profiling for biomedical applications. \$373,520 from the National Science Foundation. 09/01/2020 – 08/31/2023.

RECENT PUBLICATIONS

For 2020, 58 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:

- Alesadi, Amirhadi, and Wenjie Xia. 2020. "Understanding the Role of Cohesive Interaction in Mechanical Behavior of a Glassy Polymer." *Macromolecules* 53 (7): 2754–63. <https://doi.org/10.1021/acs.macromol.0c00067>.
- Azarmi, Fardad, and Igor Sevostianov. 2020. "Comparative Micromechanical Analysis of Alloy 625 Coatings Deposited by Air Plasma Spraying, Wire Arc Spraying, and Cold Spraying Technologies." *Mechanics of Materials* 144 (May): 103345. <https://doi.org/10.1016/j.mechmat.2020.103345>.
- Dey, Arup, and Kais Zaman. 2020. "A Robust Optimization Approach for Solving Two-Person Games under Interval Uncertainty." *Computers & Operations Research* 119 (July): 104937. <https://doi.org/10.1016/j.cor.2020.104937>.
- Faisal, H. M. Nasrullah, Kalpana S. Katti, and Dinesh R. Katti. 2020. "Modeling the Behavior of Organic Kerogen in the Proximity of Calcite Mineral by Molecular Dynamics Simulations." *Energy & Fuels* 34 (3): 2849–60. <https://doi.org/10.1021/acs.energyfuels.9b03980>.
- Johnson, Michael E., Qifeng Zhang, and Danling Wang. 2020. "KxWO Is a Novel Ferroelectric Nanomaterial for Application as a Room Temperature Acetone Sensor." *Nanomaterials* 10 (2): 225. <https://doi.org/10.3390/nano10020225>.
- Li, Yuzhan, Yuehong Zhang, Monojoy Goswami, Dan Vincent, Liwei Wang, Tuan Liu, Kai Li, et al. 2020. "Liquid Crystalline Networks Based on Photo-Initiated Thiol-Ene Click Chemistry." *Soft Matter* 16 (7): 1760–70. <https://doi.org/10.1039/c9sm01818b>.
- Mitra, D., S. B. Hamidi, P. Roy, C. Biswas, A. Biswas, and D. Dawn. 2020. "Radio Frequency Reliability Studies of CMOS RF Integrated Circuits for Ultra-Thin Flexible Packages." *Electronics Letters* 56 (6): 280–82. <https://doi.org/10.1049/el.2019.3420>.
- Putnam-Duhon, L. A., J. R. White, R. P. Gambrell, and K. A. Rusch. 2020. "Treatment of Wastewater Ammonium under Varying Salinity Conditions within the Marshland Upwelling System." *Environmental Technology* 41 (12): 1504–13. <https://doi.org/10.1080/09593330.2018.1540660>.
- Sajid, Hizb Ullah, Dayakar L. Naik, and Ravi Kiran. 2020. "Microstructure-Mechanical Property Relationships for Post-Fire Structural Steels." *Journal of Materials in Civil Engineering* 32 (6): 04020133. [https://doi.org/10.1061/\(ASCE\)MT.1943-5533.0003190](https://doi.org/10.1061/(ASCE)MT.1943-5533.0003190).
- Zhao, Muxin, Yang Lan, Leqi Cui, Ewumbua Monono, Jiajia Rao, and Bingcan Chen. 2020. "Physical Properties and Cookie-Making Performance of Oleogels Prepared with Crude and Refined Soybean Oil: A Comparative Study." *Food & Function* 11 (3): 2498–2508. <https://doi.org/10.1039/c9fo02180a>.

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.

