NDSU | COLLEGE OF ENGINEERING

COLLEGE HAPPENINGS

August 4, 2020

FROM THE DEAN

Otto's Aphorisms of Leadership

One of the strategic pillars (the areas of focus that drive program excellence) identified in our 2020-2025 strategic plan is "Preparing Leaders." We have identified building leadership and innovation skills in our students, as well as our faculty and staff, as a significant initiative for the college, because creative problems solvers with the skills to motivate and inspire can change the world.

Likewise, in turbulent times, characterized by rapid, constant, and unpredictable change (like now because of the coronavirus), leaders at all levels are needed to step up and help others lead. As an engineering dean, leadership development is an area that I find fascinating. And, developing my own leadership skills, as well as those of the College Leadership Team (chairs, associate dean, directors, etc.) is one of my ongoing priorities.

With that in mind, I'd like to share with you a list of leadership adages that I keep posted on the wall next to my desk and review frequently. These pithy observations are not my own, they were given to me three years ago on my first day as dean at NDSU by then long serving Assistant to the Dean, Marcia Pepper. The one-page list, with the heading "Otto's Aphorisms of Leadership", were prepared by the late Otto Helweg, who served as Dean of Engineering at NDSU from 1996 to 2005. I hope you find them as insightful as I have.

Otto's Aphorisms of Leadership

1. Faulty (or lack of) communication within any group is always worse than your worst fear.
2. You must frequently walk backwards to see if anyone is following.
3. Successful leaders never have to remind others that they are leaders.
4. You don't have to vote, and all don't have to have 100% agreement, but you do have to have a consensus.
5. Always make sure the "movers and shakers" are in agreement with you before you suggest any major changes. The one-on-one meetings prior to the group meeting are important in these instances.
6. Visions can never come solely from top down. They must be matched by agreement and input from the bottom up.
7. Failing to use the wisdom of a group produces non-optimal decisions.
8. You can't get feedback while you are talking.
9. Never say in 5 minutes what you can say in one.
10. In any leadership position, over time, enemies accumulate and friends evaporate.
11. You must continually cultivate your friends and supporters to slow the evaporation process.
12. Once you have made an enemy, you can never win him back.
13. Be a person of character.
14. Know those you lead and meet their needs.

Phil Kessh

IN THE NEWS

[NDSU receives grant for high-performance computing technology](#)

CONGRATULATIONS

Please let _College Happenings_ know about honors, awards, new grants and other announcements so we can share them with other faculty and staff.

RESTART INFO/Q&A SESSIONS

Please mark your calendars for Noon-1 p.m. starting Wednesday, Aug. 5, through Friday, Aug. 14, for Restart Info/Q&A sessions. The format will be for the subject matter experts to provide an overview of the topic for the day, followed by Q&A from participants.

Use this link for all eight daily sessions:
https://ndsu.zoom.us/j/95888952134?pwd=U0hLZmRJVFhtdlhGZ2xWM0FyQUJpQT09&from=msft

The meetings will be recorded, in case we exceed the 300 participants allowed per session.

HyFlex - **Wednesday, Aug. 5, noon**:

Margaret Fitzgerald, Interim Provost

There's some understandable confusion on expectations for in-person vs. HyFlex (synchronous) vs. traditional (asynchronous) delivery. One, two or all? That will be covered and we think you'll like the answer. The HyFlex course design model provides a flexible structure for students and faculty to attend classes in the physical classroom or simultaneously through remote participation. This session focuses on how HyFlex design will be used at NDSU this fall to "break down the boundary between the virtual classroom and the physical one" (Educause, 2010).

Building and infrastructure – Thursday, Aug. 6, noon:

Mike Ellingson, Director of Facilities Management

Learn about measures underway in buildings across campus to help minimize risk.

Testing -- Friday, Aug. 7, noon:

Mike Borr, Director, University Police and Safety; Laura Oster-Aaland, Vice Provost for Student Affairs and Enrollment Management, and Patty Dirk, Director of Student Health Service

The North Dakota Department of Health in cooperation with the North Dakota University System is arranging for multiple testing events to occur across the state of North Dakota leading up to the beginning of the fall semester. We are strongly encouraging our community members including faculty and staff as well as the students to get tested for COVID-19 on one of the available dates. This session will also cover some of the processes that NDSU will follow for positive cases.

Classroom capacity -- Monday, Aug. 10, noon:

Registrar Philip Hunt and Interim Provost Margaret Fitzgerald

Open Forum to discuss the updated plan for fall 2020 classroom capacities and the process for faculty to request changes to their fall 2020 section schedules.

Remote work -- Tuesday, Aug. 11, noon:

Jen Quenette, Associate Director, Public Health and Safety, and Patricia Hanson, Director of Payroll

The remote worksite agreement platform is used to communicate with department supervisors, Human Resources and the University Police and Safety Office. It is used to capture information as to how the worker will function in their remote work locations and address any ergonomic issues. Depending on the remote site location, it also allows for NDSU to arrange for Workers Compensation and handle any payroll tax implications.

Wednesday, Aug. 12: TBA

Student affairs -- Thursday, Aug. 13, noon:

Laura Oster-Aaland, Vice Provost for Student Affairs and Enrollment Management; and Casey Peterson, Dean of Students

The session will describe changes to the way students will engage with the campus outside the classroom, mechanisms in place to support students including outreach through the Dean of Students office and the newly formed Care Team. We will also address what we might expect regarding student risk reduction behaviors including social distancing and face coverings.

Teach, work, learn -- Friday, Aug. 14, noon:

Marc Wallman, Vice President for Information Technology

Teaching, working, and learning, on campus and remotely for fall 2020.

HYFLEX TRAINING AND OPEN FORUMS

HyFlex Part 3 Training, presented by our Learning and Applied Innovation Center (LAIC) staff

- Wednesday, August 5, 9-10 a.m.
- Covers assessment strategies, best practices, and tools available in the NDSU HyFlex teaching environment.
- https://ndsu.zoom.us/j/95072390804?pwd=c203S3pIeTRFMTcyRmNMS2F0cUFFUT09, Passcode: 895253

NDSU HyFlex Discussion: Beyond the Basics with Dr. Brian J. Beatty

- Thursday, August 13, 1:30 - 3 p.m.
- NDSU has scheduled a HyFlex Discussion with Dr. Brian J. Beatty to go beyond the basics of the model and into some questions specific to NDSU instructors. In this session you will get answers to some of the most commonly asked questions regarding implementing this model. All NDSU instructors, staff, and graduate teaching assistants are encouraged to attend.
    - Dr. Brian Beatty is Associate Professor of Instructional Technologies, Department of Equity, Leadership Studies and Instructional Technologies at San Francisco State University. Dr. Beatty's primary areas of interest and research include social interaction in online learning, flipped classroom implementation, and developing instructional design theory for Hybrid-Flexible learning environments. Beatty pioneered the development and evaluation of the HyFlex course design model for blended learning environments, implementing a student-directed hybrid approach to better support student learning. An OER book entitled Hybrid-Flexible Course Design: Implementing Student-Directed Hybrid Classes was just released and can be downloaded for free.
- https://ndsu.zoom.us/j/98409295512?pwd=Q0JnMHpMdHM3ckZDa0NuWG1EK29rUT09, Passcode: 448028

Weekly Open Forums

The NDSU IT Division will host weekly open forums for all faculty and staff to attend to answer questions and share resources related to fall instruction. Registration not required—join us when you're able.

https://ndsu.zoom.us/j/96644216953?pwd=YkxPZlRKRkZYNjV2THNLdHdFK0R2Zz09, Meeting ID: 966 4421 6953, Password: 963181

- Thursday, August 6, 1:00 p.m.
- Tuesday, August 11, 10:00 a.m.
- Tuesday, August 18, 10:00 a.m.

NDSU CARE TEAM

The Behavior Intervention Team will officially transition to the NDSU Care Team at the beginning of the 2020-2021 academic year. The team will continue to assess risk and threat, but will also partner with additional members of the NDSU community to offer a higher level of contact and referral for students who may not reach a threshold for threat intervention, but could use a variety of additional support services during the semester. This transition will increase contact with students of concern and will offer additional support to connect with resources that assist students to navigate challenges and achieve success.

To refer a student to the NDSU Care Team, please complete the following form https://cm.maxient.com/reportingform.php?NorthDakotaStateUniv&layout_id=1 or contact the Dean of Students Office at 701-231-7701.

ANNUAL FACULTY AND STAFF CONFERENCE AND NEW FACULTY ORIENTATION

Due to the work underway for preparing NDSU spaces for the new academic year and recommended precautions because of COVID-19**,** this year the Office of the Provost/Faculty Affairs is planning a virtual **New Faculty Orientation on Tuesday August 18** and a virtual **Faculty and Academic Staff Conference on Wednesday August 19.** Please register for these events and indicate topics you are interested in HERE.

FUNDING OPPORTUNITIES

Research Development Travel and Conference Support Awards help defray expenses for faculty presenting at national conferences (virtual or on-site) or for supporting travel to visit archives or special collections. International opportunities may be accommodated if required for discipline-specific research. As this pool of funding is limited, please consider allowing individuals who do not have other sources of travel funding to apply for this opportunity.

Research Support Services Awards help defray the costs of support services required for research, creative, or scholarly activity. For example, funds may be used in one of the NDSU Core Facilities, another recharge / service center, or for transcription services.

More information and application instructions are posted on the RCA website.

Defense Established Program to Stimulate Competitive Research

The Department of Defense (DoD) announces the fiscal year 2020 (FY20) Defense Established Program to Stimulate Competitive Research (DEPSCoR). The aim of DEPSCoR is to improve the research capabilities at institutions of higher education (IHE) in eligible States/Territories to perform competitive basic research in science and engineering that is relevant to the DoD mission and reflect national security priorities. The Basic Research Office anticipates approximately $7.2 million in total funding will be made available for this program to fund approximately twelve (12) awards up to

$600,000 (total cost) each. Each award will be funded up to $200,000 (total cost) per year for three (3) years in the form of a grant.

The FY20 DEPSCoR competition seeks proposals addressing multiple topic areas, including:

- Cognitive and Computational Neurosciences;
- Materials with Extreme Properties;
- Computational Architectures and Visualization;
- Probability and Statistics;
- Molecular Structure and Dynamics;
- Social and Behavioral Science;
- Biotronics;
- Machine Learning, Reasoning, and Intelligence; and
- Power Electronics & Electromagnetism, Adaptive & Machinery Controls and Advanced Machinery Systems.

Registration Deadline: September 14, 2020
Whitepaper Deadline: September 21, 2020

Slides from a recent DEPSCoR webinar and answers to questions about the program are posted in the [Grants.gov funding opportunity announcement](), under "Related Documents."

NSF: Research Traineeship (NRT)

The National Science Foundation (NSF) Research Traineeship (NRT) program [[NSF 19-522]()] is designed to encourage the development and implementation of bold, new, and potentially transformative models for STEM graduate education training. The NRT program seeks proposals that explore ways for graduate students in research-based masters and doctoral degree programs to develop the skills, knowledge, and competencies needed to pursue a range of STEM careers. The program is dedicated to effective training of STEM graduate students in high priority interdisciplinary research areas, through the use of a comprehensive traineeship model that is innovative, evidence-based, and aligned with changing workforce and research needs. The NRT program addresses workforce development, emphasizing broad participation, and institutional capacity building needs in graduate education. Strategic collaborations with the private sector, non-governmental organizations (NGOs), government agencies, national laboratories, field stations, teaching and learning centers, informal science centers, and academic partners are encouraged.

NSF NRT is a limited submission grant program. [Notify RCA]() by 9/15/2020, 5:00 p.m. if you are interested in submitting to this program.

RECENTLY FUNDED PROPOSALS

- Halis Simsek (PI). Effects of Different Water Table Depth on Plant Water Consumption, Yield, Quality Parameters and Antioxidant Enzyme Activities in Wheat Plant: A Lysimeter Study. $18,540 from the ND Wheat Commission. 07/01/2020 – 06/30/2021.
- Wenjie Xia (CPI). Guided Energy Absorption in Crumpled Polymer Sheets. $306,605 from the U.S. Army. 08/21/2020 – 08/20/2023.

RECENTLY SUBMITTED PROPOSALS

- Wenjie Xia (PI). CAREER: An Integrated Investigation towards Deciphering the Structure-Property Relationships of Architectured Polymers. $423,212 from the National Science Foundation. 07/01/2021 – 06/30/2026.

- Fardad Azarmi (PI). Cross-property Connections for Quantitative Characterization and In-situ Control of Metals-based Additive Manufacturing. $981,659.37 from the National Institutes of Standards and Technology. 12/01/2020 – 11/30/2022.
- Danling Wang (PI). An Innovative sensing technology based on 2D nanomaterial, Ti3C2 MXene to guide lung cancer therapy and management. $119,993 from the Edward Mallinckrodt Jr Foundation. 10/01/2020 – 09/30/2022.
- Todd L Sirotiak (PI). Innovative Novel Products through Thermal Conductivity. $39,875 from the NDSU Foundation and Alumni Association. 09/14/2020 – 09/13/2021.
- Fardad Azarmi (PI). SUSTAINABLE ENGINEERING. $55,750 from the NDSU Foundation and Alumni Association. 10/15/2021 – 10/15/2023.
- Umamaheswara Rao Tida (PI), Sudarshan Kumar Srinivasan (CPI). Embedded AI Initiative: Framework Development, Verification, and Deployment. $39,000 from the NDSU Foundation and Alumni Association. 01/01/2021 – 12/31/2021.
- Xiangqing Wang Tangpong (PI). Promoting Biomedical Engineering at NDSU. $54,000 from the NDSU Foundation and Alumni Association. 10/15/2020 – 10/14/2023.
- Shafiqur Rahman (PI). Microbial Fuel Cell (MFC) for Pollutants Removal from Wastewater. $12,416 from the NDSU Foundation and Alumni Association. 11/01/2020 – 10/31/2021.
- Yan Zhang (PI). A Portable Laser Doppler Velocimetry System for Enhanced Thermo-Fluid Laboratory and Engineering Capstone Projects. $70,000 from the NDSU Foundation and Alumni Association. 11/01/2020 – 10/31/2021.
- Danling Wang (PI), Qifeng Zhang (CPI), Dali Sun (CPI). Rapid environmental risk assessment of airborne transmission for COVID-19 pandemic control on campus through novel IoT based smart sensors. $57,230 from the NDSU Foundation and Alumni Association. 10/01/2020 – 09/30/2022.
- Qifeng Zhang (PI), Danling Wang (CPI). Training Students in Renewable Energy Technologies. $56,416 from the NDSU Foundation and Alumni Association. 11/01/2020 – 08/14/2022.
- Kelly Ann Rusch (PI), Achintya Bezbaruah (CPI). Enhancement of Student Success in Environmental Engineering and Opportunities for Global Exposure through Supplemental Virtual Laboratory Learning Modules and Atmospheric Water Capture Project. $59,771 from the NDSU Foundation and Alumni Association. 10/09/2020 – 10/08/2023.
- Xinhua Jia (CPI). Filling the Pipeline- Preparing the Next Generation of Watershed Management Extension Professionals. $57,568 from the National Institute of Food and Agriculture. 01/01/2021 – 12/31/2025.

RECENT PUBLICATIONS

For 2020, 109 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:

- Ahmadi, Mojtaba, Oksana Zholobko, and Xiang-Fa Wu. 2020. "Circumferential Wrinkling of Polymer Nanofibers." *Physical Review E* 102 (1): 013001. https://doi.org/10.1103/PhysRevE.102.013001.
- Azarmi, Fardad, and X. W. Tangpong. n.d. "Evaluation of Microstructural Characteristics in Alumina Produced by Selective Laser Stereolithography and Detonation Gun Spraying." *Metallography Microstructure and Analysis*. https://doi.org/10.1007/s13632-020-00658-x.
- Ghiasy-Oskoee, Mehdi, Harlene Hatterman-Valenti, Ewumbua Monono, and Majid AghaAlikhani. 2020. "Blessed Thistle a Promising Species on North Dakota, USA Marginal Lands: Agronomic Productivity, Oil Properties and Biodiesel Potential." *Ecological Engineering* 155 (August): 105908. https://doi.org/10.1016/j.ecoleng.2020.105908.
- Le, Trung Q., Vibhuthi Chandra, Kahkashan Afrin, Sanjay Srivatsa, and Satish Bukkapatnam. 2020. "A Dynamic Systems Approach for Detecting and Localizing of Infarct-Related Artery in Acute Myocardial Infarction Using Compressed Paper-Based Electrocardiogram (ECG)." *Sensors* 20 (14): 3975. https://doi.org/10.3390/s20143975.

- Ramzanpour, Mohammadreza, Mohammad Hosseini-Farid, Jayse McLean, Mariusz Ziejewski, and Ghodrat Karami. n.d. "Visco-Hyperelastic Characterization of Human Brain White Matter Micro-Level Constituents in Different Strain Rates." *Medical & Biological Engineering & Computing.* https://doi.org/10.1007/s11517-020-02228-3.
- Sun, Dali, Li Yang, Christopher J. Lyon, and Tony Hu. 2020. "Simulation-Directed Amplifiable Nanoparticle Enhanced Quantitative Scattering Assay under Low Magnification Dark Field Microscopy." *Journal of Materials Chemistry B* 8 (25): 5416–19. https://doi.org/10.1039/d0tb00350f.
- Zhang, Z., C. Igathinathane, J. Li, H. Cen, Y. Lu, and P. Flores. 2020. "Technology Progress in Mechanical Harvest of Fresh Market Apples." *Computers and Electronics in Agriculture* 175 (August): 105606. https://doi.org/10.1016/j.compag.2020.105606.

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.