

COLLEGE HAPPENINGS

November 12, 2019

FROM THE DEAN

Career Setbacks

About 18 months ago I shared in [College Happenings](#) about the faculty member who compiled an alternative CV of failures containing a log of unsuccessful applications, refused grant proposals, and rejected papers as a way to remind oneself and others that failure and rejection is an essential part of what it means to be an academic. Last week, I came across another article in Nature Communications about academic failures that suggests that an early-career setback is often associated with greater academic success in the long run, even after accounting for attrition. The paper, titled "[Early-career setback and future career impact](#)", is a gift to those of us who have experienced set-backs. The article, which examines the career trajectory of faculty whose early career proposals for NIH R01 grants fell just below and just above the funding threshold, and found that "Individuals with near misses systematically outperform those with narrow wins...early-career setback appears to cause performance improvement among those who persevere."

These results fly against conventional wisdom that early-career success, not failure, leads to future success (i.e. "the rich get richer"). They offer empirical evidence consistent with "what doesn't kill me makes me stronger." Failure can create valuable lessons, and, for those willing to persevere, be a source of motivation to succeed on future efforts. I find these results particularly encouraging, and a must read for any junior faculty deep in the struggle of getting a first grant, because they reinforce the notion that one can get stronger if allowed to fail and improve.



IN THE NEWS

[Challey Institute to search for five tenure-track faculty](#)

[NDSU team wins construction management competition](#)

[NDSU students participate in cybersecurity competition](#)

[Virtual reality and cybersecurity collide](#)

[Fargo scientists search for next generation of plant-based plastics](#)

CONGRATULATIONS

Rajesh Kavasseri from the **Department of Electrical and Computer Engineering** has been named 2019-20 RCA Faculty Fellow by the Office of Research and Creative Activity.

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, November 13, **CoE Faculty Council Meeting**. 3:00 – 4:00 p.m. CME Auditorium.

Thursday, November 14, **Vettel IME Family Fellowship Announcement**. 4:15 p.m. in the McGovern Alumni Center.

Friday, November 15, **ABEN Seminar**. “My Career Experience in the Ag Equipment Industry” presented by Andrew Week from RDO Equipment Company. 3:00 p.m. in ABEN 201.

Friday, December 20, **2019 Winter Commencement**. 2:00 p.m. at the SHAC. Please complete and submit the [Faculty/Staff Commencement Participation Form](#) by **Monday, December 2 at 5 p.m.** if you plan to participate in the Commencement procession.

NEW FACULTY FELLOWSHIP

IME alumnus Matt Vettel (BSIE '90) and his wife, Jenna, have recently established the Vettel IME Family Fellowship. This fellowship will support faculty and educational excellence in the Department of Industrial and Manufacturing Engineering. Faculty fellowships are awarded to faculty to advance research, education and outreach.

Investing in faculty is one of the most transformative ways that philanthropy can impact our college. That's why gifts like this one are so important to our college mission, and why we've made securing endowed chairs, professorships and faculty fellowships a fundraising priority.

Please mark your calendar now and plan to join us as we celebrate the generosity of Matt and Jenna Vettel at a recognition event on Thursday, November 14 at 4:15 p.m. in the McGovern Alumni Center.

COLLEGE OF ENGINEERING RESEARCH AWARDS

Nominations are now being accepted for the 2020 College of Engineering Researcher of the Year Awards. Each year the College of Engineering recognizes the achievements of faculty and graduate students by awarding the Excellence in Research Award, Early Career Research Award and Graduate Research Assistant of the Year Award.

The nomination deadline is 5:00 p.m. on Friday, April 3, 2020. Nomination documents for each award can be viewed on the [College Awards page](#).

AI-DRIVEN INNOVATION IN AGRICULTURE AND THE FOOD SYSTEM

The Research and Creative Activity Office will be hosting a Lightning Talk event focused on AI-Driven Innovation in Agriculture and the Food System. This is in response to a recent [NSF Solicitation](#) requesting proposals and planning grant ideas around various AI themes. This funding program is a joint effort with USDA-NIFA, DHS, DOT, and the VA. Researchers will present briefly about their expertise as it relates to AI, or how their expertise could partner with AI. The goal is to facilitate the formation of interdisciplinary teams who have an interest in developing a planning grant proposal for this solicitation.

Event details:

Wednesday, November 20, 2019

11:30AM-1:30PM

Memorial Union Meadow Lark Room

[Register to Attend >>](#)

FUNDING OPPORTUNITIES

Microsoft: AI for Earth Grants

[AI for Earth](#) awards grants to support projects that use AI to change the way people and organizations monitor, model, and manage Earth's natural systems. There are four areas of focus for this program:

1. **Climate:** The changing climate threatens human health, infrastructure, and natural systems. AI can give people more accurate climate predictions to help reduce the potential impacts.
2. **Agriculture:** By 2050, farmers must produce more food, on less arable land, and with less environmental impact to feed the world's increasing population. AI can help people monitor the health of farms in real time.
3. **Biodiversity:** Species are going extinct at an alarming rate. AI can help accelerate the discovery, monitoring, and protection of biodiversity across our planet.
4. **Water:** In the next two decades, demand for fresh water is predicted to dramatically outpace supply. AI can help people model Earth's water supply to help us conserve and protect fresh water.

AI for Earth grants provide access to Microsoft resources to support projects that change the way people and organizations monitor, model, and manage Earth's natural systems. Microsoft can support projects in three ways:

1. Data Labeling Grants
2. Azure compute credits grants
3. Special Grants with partner organizations

See the [AI for Earth](#) website for more information.

Proposal deadlines: January 6, 2020; April 6, 2020; July 6, 2020; October 5, 2020

RECENTLY FUNDED GRANTS

- Dharmakeerthi Nawarathna (PI). Biomanufacturing of safe and non-viral CAR T-cells for cancer immunotherapy. \$24,999 from the National Institutes of Health. 03/01/2019 – 08/31/2019.
- Long Jiang (PI), Mijia Yang (CPI), Zhibin Lin (CPI). A novel durable, healable & conveniently removable pavement marking material suitable for both permanent & temporary making uses. \$149,871 from The National Academies. 08/01/2019 – 07/31/2020.
- Chad A Ulven (PI). ZILA Works Technology Demonstrator. \$2,000 from Zila Works. 04/15/2019 – 12/31/2019.

RECENTLY SUBMITTED PROPOSALS

- Trung Bao Le (PI). Computational Biomechanics Models of Blood Flow and Thrombogenicity in a Fourteen Chamber Human Heart. \$75,000 from the National Science Foundation. 09/01/2020 – 08/31/2022.
- Dali Sun (PI). Using the Secondary structure (beta-sheet) of exosomal proteins for noninvasive pancreatic cancer detection. \$145,000 from the National Institutes of Health. 02/01/2020 – 01/31/2022.
- Long Jiang (PI). UV Curable Soy-Based Resin as a Versatile Platform for Chemical Delivery. \$33,132 from the ND Soybean Council. 07/01/2020 – 06/30/2021.

- Ravi Kiran Yellavajjala (PI). Novel Soy-Protein and Ionic Liquid Based Coating Materials for Corrosion Protection. \$30,430 from the ND Soybean Council. 07/01/2020 – 06/30/2021.
- Ravi Kiran Yellavajjala (PI). Automatic Detection and Mapping of an Invasive Weed in Soybean Fields Using Machine Vision Algorithms. \$29,630 from the ND Soybean Council. 07/01/2020 – 06/30/2021.
- Zhao Zhang (PI), John F Nowatzki (CPI). Evaluation of field rolling effects at different soybean growth stages in terms of germination rate, stand loss and yield using two methods. \$25,400 from the ND Soybean Council. 07/01/2020 – 06/30/2021.
- Jessica Lynne Lattimer Vold (PI). Individualized Internships for Entrepreneurial Minded Students. \$30,000 from VentureWell. 03/01/2020 – 02/28/2023.
- Yao Yu (PI). A High-Efficiency and Low-Cost Heat Pump System Design For Maximizing the Use of Renewable Energy. \$19,962 from Yale University. 01/01/2020 – 06/30/2021.
- Xinhua Jia (PI). The Life Cycle of Prairie Snow: Implications of Land-use and Climate Change for Snow Evolution and Runoff. \$155,060 from the National Aeronautics and Space Administration. 04/01/2020 – 03/31/2023.
- Jeremy A Straub (PI). Enhancing Cybersecurity Education with a New Apprenticeship-Based Paradigm. \$1,566,394 from the Charles G. Koch Charitable Foundation. 02/01/2020 – 01/31/2023.
- Joao Paulo Cassol Flores (PI). Using UASs For Site Specific Weed Management in Corn. \$17,971 from the ND Corn Utilization Council. 07/01/2020 – 06/30/2021.

RECENT PUBLICATIONS

For 2019, 120 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:

- Shojaeiarani, Jamileh, Dilpreet S. Bajwa, Sreekala G. Bajwa, Alimohammad Shirzadifar, and Pankaj Pandey. 2019. "A Numerical Model Approach to Predict Moisture Absorption in Densified Solid Biomass during Storage." *Industrial Crops and Products* 140 (November): UNSP 111529. <https://doi.org/10.1016/j.indcrop.2019.111529>.
- Wang, Xingyu, Fujian Tang, Xiaoning Qi, and Zhibin Lin. 2019. "Mechanical, Electrochemical, and Durability Behavior of Graphene Nano-Platelet Loaded Epoxy-Resin Composite Coatings." *Composites Part B-Engineering* 176 (November): UNSP 107103. <https://doi.org/10.1016/j.compositesb.2019.107103>.
- Zhang, Qingchen, Man Lin, Laurence T. Yang, Zhikui Chen, Samee U. Khan, and Peng Li. 2019. "A Double Deep Q-Learning Model for Energy-Efficient Edge Scheduling." *IEEE Transactions on Services Computing* 12 (5): 739–49. <https://doi.org/10.1109/TSC.2018.2867482>.
- Zhou, De, Zhulu Lin, and Siew Hoon Lim. 2019. "Spatial Characteristics and Risk Factor Identification for Land Use Spatial Conflicts in a Rapid Urbanization Region in China." *Environmental Monitoring and Assessment* 191 (11): 677. <https://doi.org/10.1007/s10661-019-7809-1>.

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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