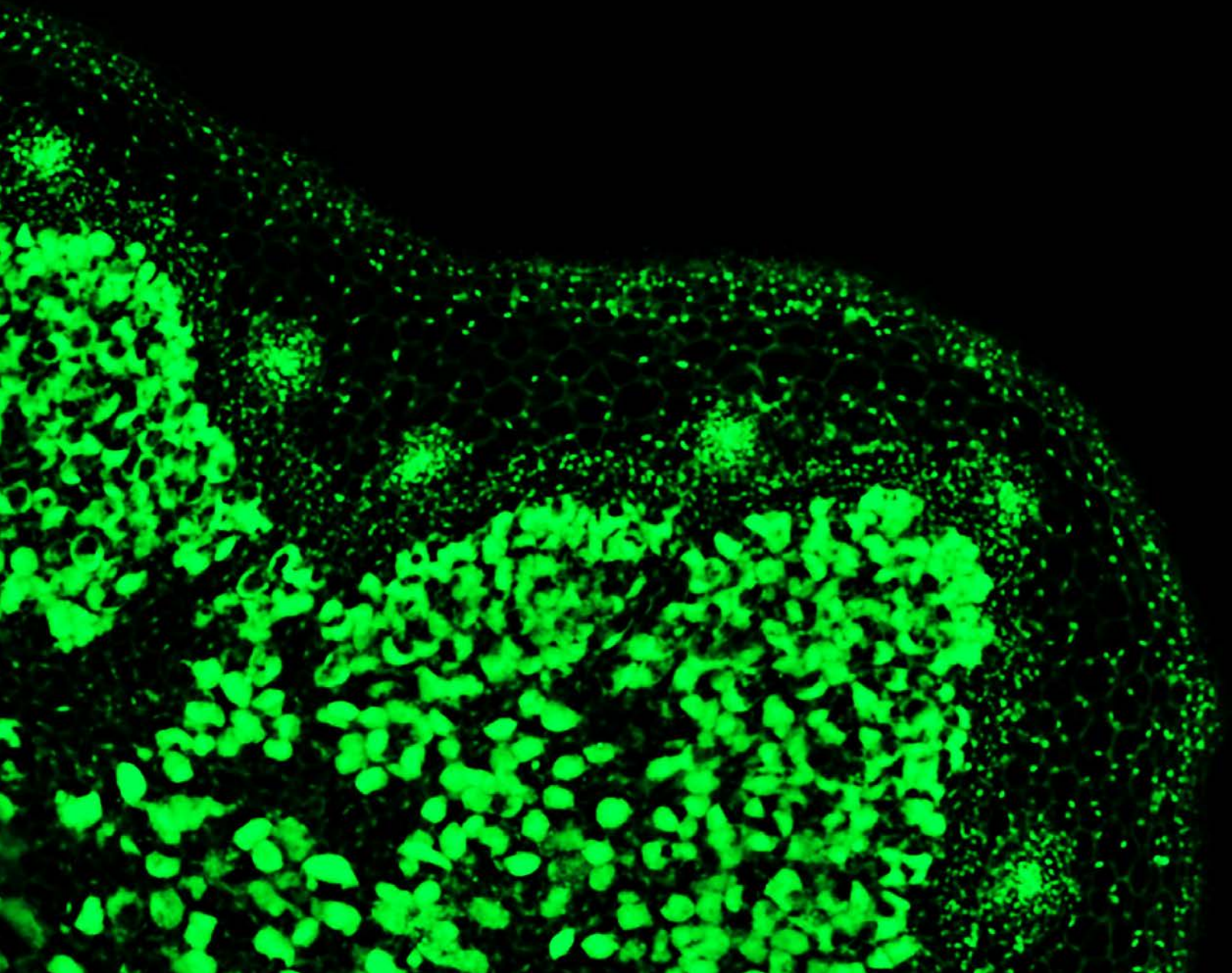


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to read stories online.

Last fall, the NDSU Foundation Magazine shared the story of NDSU engineering, highlighting impact while also making a case for why the College of Engineering needs updated facilities to take it to another level in making a difference. Alumni and corporate partners have responded to our call to action with more than \$40 million in private support to match the State of North Dakota's \$59 million appropriation from the 2023 legislative session, thus transforming the educational environment for NDSU engineering.

In February 2024, electrical engineering alumnus Richard Offerdahl '65 made a \$25 million gift to catalyze the engineering project, accelerating the construction timeline by one year. This fall's freshman class of engineering students will enjoy their last two years at NDSU in the modernized facility.

The entire engineering complex will be named in Richard's honor. He wasn't alone. Doosan Bobcat, Mortenson, Marvin, Catalyst Foundation, and other generous

benefactors stepped up to respond to the legislature's call to action to transform NDSU engineering in short order. Thank you!

I'd also like to give a special thanks to the North Dakota Legislature. If they don't go first, the private sector doesn't follow. Philanthropy is a valuable partner in moving causes forward, and we are truly grateful to the NDSU engineering community for responding in less than 10 months to create the Richard Offerdahl '65 Engineering Complex.

In today's world of recruiting and retaining student and faculty talent, facilities matter. Most importantly, NDSU is delivering the next generation of technical talent that will drive solutions, innovation, and leadership to our state and beyond. Bison engineers matter for North Dakota's future workforce.

We hope you enjoy reading, learning, and retelling these stories to others who will listen — and if you're not retelling the NDSU story, now is the time!



John R. Glover
John R. Glover
President/CEO
NDSU Foundation

"I like the thought of making the world a better place because we're here. You know, you stop and think,

'Well, what if I hadn't been here? Would these things have happened?'"



**RICHARD
OFFERDAHL
'65**

ANNOUNCING A NEW HOME FOR THE COLLEGE OF ENGINEERING

The Richard Offerdahl '65 Engineering Complex will propel NDSU engineering and computational sciences into the future, elevating the student experience with a collaborative design studio, flexible teaching and research labs, college commons, and precision agriculture headquarters. Construction is anticipated to begin in fall 2024.

Learn more about the project by scanning the QR code or visiting [ndsu.edu/coe/cecs](https://www.ndsu.edu/coe/cecs).



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AGRICULTURE'S MIRACLE BACTERIA

Rhizobium allow legumes to produce their own nitrogen, reducing the cost of fertilizer for farmers and eliminating harmful runoff into the environment. The possibility of transferring this symbiotic relationship to other crops is within reach – and **philanthropy is quadrupling the pace of its progress.**

Story by Micaela Gerhardt | Photos by Kensie Wallner

Pull a legume — beans, lentils, alfalfa, or peas — from the ground, and you'll find small pinkish-white nodules, almost pearl-like, clustered on the roots. Each node is a dedicated organ containing millions of bacteria called rhizobium, which form symbiotic, or mutual, relationships with legumes, allowing them to do what no other crop has yet evolved to do: produce their own nitrogen.

Seen under a microscope in Barney Geddes' lab, where he and a team of microbiology students are diligently working toward a new evolutionary event — the symbiosis of rhizobium in cereal crops, like wheat, corn, and rice — these nodules might appear fluorescent, dyed to demonstrate the activation of symbiotic genes.

"As we [humans] breathe in, we're taking in almost all nitrogen, but we can't do anything with that nitrogen — nor can [most] plants," Barney, an assistant professor of plant systems and microbial ecology, said. "These bacteria have evolved the ability to take that nitrogen and change it into a natural form of fertilizer that they can supply directly to the plant."

Without nitrogen-fixing bacteria like rhizobium, most modern crops require the use of nitrogen fertilizers to meet the desired yield and nutritional needs of a world population rapidly approaching 9 billion. In fact, nearly half of the world's caloric intake is dependent on nitrogen fertilizer, according to Erisman et al. and processed by Our World in Data.

ABOUT THE COVER

Photo by Ahmad Al-Amad '26, a Ph.D. student in the Geddes Lab, depicting plant cells in a cowpea nodule filled with rhizobium bacteria. Engineering new symbiotic relationships between cereal crops and rhizobium could reduce the global dependence on nitrogen fertilizers in agricultural production.



MAKING PROGRESS: Nitrogen nodules forming on a Lotus japonicus plant indicate the successful symbiosis of rhizobium bacteria and plant cells.



The work Barney and his students are doing is part of an ongoing global effort. Broadly speaking, their research goals are to support farmers by reducing spending on nitrogen fertilizers, which are the main expenditure in many farming operations, while also alleviating harmful effects on the environment.

“Nitrogen fertilizers have been truly incredible and transformative, but they don’t come without their costs,” Barney said. “They have a lot of issues that, as we think about global warming, as we think about ecology, a lot of the major issues facing the earth today ... a lot of those are heavily impacted by the use of nitrogen fertilizers.”

One of the most notable repercussions of nitrogen fertilizer runoff is the occurrence of dead zones in major bodies of water. Dead zones are areas where there is a reduced level of oxygen in the water due to nutrient pollution, and according to the National Ocean Service, the Gulf of Mexico is the second largest dead zone in the world. Low oxygen levels in the water cause the ecological system to collapse, forcing marine life to escape the millions of affected acres or die.

Additionally, the manufacturing and application of nitrogen fertilizers contributes to a warming planet. Deteriorating fertilizer releases nitrous oxide into the atmosphere, as stated by the MIT Climate Portal, and fossil fuels like coal and methane gas are used to produce ammonia, a nitrogen-containing compound.

“We’re actually doubling the input into the nitrogen cycle through applications in agriculture, which has massive

ecological consequences,” Barney said. “Yet farmers need [nitrogen fertilizers] to get the yields they need to feed the world, to keep the family farm, to keep the economy going ...”

Projects in Barney’s lab span different areas of microbial research; part of his program aims to improve legume agriculture by making existing rhizobium symbiosis as efficient as possible. Simultaneously, he and his students are working toward a more futuristic outcome. Their ultimate objective is to one day see fields of cereal crops capable of producing their own nitrogen through a new-to-nature association developed, at least in part, in a small lab in NDSU’s Van Es Hall.

Barney’s enthusiasm for this scientific breakthrough is matched by Richard ’65 and Linda Offerdahl, who recently invested more than \$1.1 million to establish a named faculty position in the department of microbiological sciences at NDSU, providing funds to support research and innovation. Now, Barney is known as the Richard and Linda Offerdahl Faculty Fellow.

“When we first talked to Barney, he was talking about something that would take 20 years,” Richard, an electrical engineering alumnus, said. “I said, ‘Well, in 20 years, I’m going to be 100. I’d like something a little sooner. What do you need to make it sooner?’”

Barney estimated he

could quadruple the pace of progress in his lab with the right resources, including state-of-the-art technology that can accelerate the rate of reading, writing, and engineering DNA and more research assistance in the form of undergraduate, graduate, and post-doctoral students. Richard and Linda were eager to invest. As highly active philanthropists and humanitarians, they are motivated by the potential to make the world a better place.

“The work Barney is doing has a global impact, so that makes it highly worthwhile,” Richard said. “It’s our honor and privilege to contribute in our own small way.”

Together, the Offerdahls have

invested in the development of pulmonary vests for cystic fibrosis patients — which resulted in a product that aids people with chronic obstructive pulmonary disease as well — and a prosthesis for peripheral neuropathy in the feet, which is numbness often caused by diabetes or old age. These investments yielded financial success that has enabled the Offerdahls to philanthropically support impactful initiatives in areas such as higher education, social services, and more.

“We both have an innate curiosity and an eagerness to see what’s next in our life,” Linda said. “From that standpoint, I think we are both

continuously evolving — we’re finding new things to engage

in our community with ...”

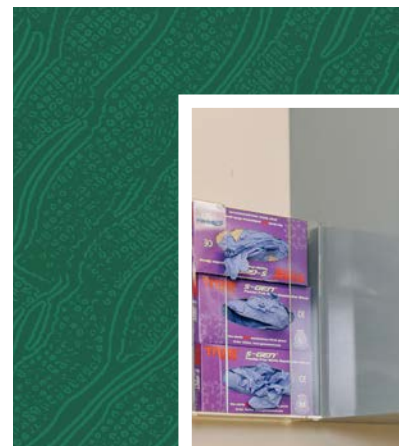
As an entrepreneur, lifelong learner, and earnest reader, Richard believes in backing ideas that have strong market potential and the ability to help as many people as possible. When he and Linda began discussing where they wanted to invest at NDSU, they considered impact, originality, feasibility, and leadership.

“You know, the leadership aspect is very important,” Richard said. “I’ve become convinced that in the world there’s no shortage of ideas. There’s no shortage of people who want to work ... There’s no shortage of money to back good ideas, and there’s no shortage of management ... The real shortage is leadership.”

In Barney, both Richard and Linda found a leader with intellect, drive, global connections, and a shared care and concern for the agricultural community.

Barney grew up on a small family farm in south central Manitoba, Canada. His parents tended cattle, alfalfa, and grain crops and instilled the principles of sustainable agriculture in Barney and his brother long before it was a trending topic.

These principles set the stage for Barney’s career trajectory. He earned his Ph.D. in microbiology from the University of Manitoba, where he studied symbiotic nitrogen fixation, and later completed two postdocs, one at McMaster University and one at the University of Oxford. While at Oxford, leading scientists in the field introduced Barney to the cutting-edge concept of engineering nitrogen fixation in cereals. He was energized and inspired, but after years spent in the lab, Barney felt pulled to reconnect with the family farm. He took a small career break and returned home to farm for a year.



PICKING UP THE PACE: New technology accelerates the rate of reading, writing, and engineering DNA.



“After that year, I realized I really need to be a scientist. That’s such a core of my being now that that’s what I want to do in life. When I came back to science, though, there was always this desire to be more closely connected to agriculture than some academic settings are,” Barney said, which is why he found NDSU and its statewide Extension offices so appealing.

Since late 2020, Barney has been teaching, researching, and mentoring students at NDSU. Along with the Geddes Lab, Barney established NDSU’s inaugural iGEM (international genetically engineered machine) team, which consists of undergraduate and graduate students who participate in an annual worldwide synthetic biology competition. He also oversees NDSU’s partnership with local high schools in the Plant the Moon Challenge, which explores the potential for lunar agriculture applications.

“What Barney does that’s special is he takes these really interesting science ideas, and he applies them to important problems where you can follow the process of getting to the end application,” former iGEM president Mia Haugan ’24, ’25 said.

As a freshman at NDSU, Mia was one of the first two students to join Barney’s research team. Now, she’s working towards an accelerated master’s degree in microbiology. Getting involved in research early in her academic journey has expedited her understanding of important scientific concepts.

“I learned to do a DNA extraction before we talked about it in class,” she said. “I’ve gone out to the field to collect samples. I’ve done work in the wet lab ... and we also do field trials, so we see how the science works in the field and helps people.”

Ahmad Al-Amad ’26 is one of

the graduate students supported by the Offerdahls’ gift. He came to NDSU specifically to be a part of Barney’s lab, which he first learned about while attending McMaster University. There, Ahmad took a synthetic biology course and discovered a new passion for science. Coincidentally, his synthetic biology professor knew Barney from McMaster, where they were once postdoctoral students in the same lab.

As Ahmad learned more about Barney’s research and his goal to produce nitrogen fixation in cereal crops, he felt moved, describing it as a “noble pursuit.” Today, Ahmad works closely with *Sinorhizobium meliloti*, a bacterium that successfully produces nitrogen in alfalfa plants. Using software to design new genetic sequences, Ahmad extracts small sections of DNA from other microbes and integrates them into the DNA of his model microbe, *S. meliloti*, in an effort to increase its degree of interaction with other plants.

“The nature of what I’m doing — every day is a brand-new day ... especially when you come up with new ways of doing the fundamentals and then you prove that it works,” Ahmad said. “It’s like, ‘Oh my goodness, this was just from pure imagination.’”

The technology purchased with funding from the Offerdahls’ investment will help Barney’s team pursue research and education at the highest level, accelerating processes in the lab and hands-on learning in the classroom.

“I think philanthropy can be super impactful by being able to come in and really funnel a lot of resources into one specific area,” Barney said. “It’s letting me do things at a stage of my career I never thought I’d be able to do. I wanted to be a world leader in this space when I came to NDSU, and this [fellowship] is making that a reality.” 🌱

“WHEN WE FIRST TALKED TO BARNEY, HE WAS TALKING ABOUT SOMETHING THAT WOULD TAKE 20 YEARS. I SAID ‘WELL, IN 20 YEARS, I’M GOING TO BE 100. I’D LIKE SOMETHING A LITTLE SOONER. WHAT DO YOU NEED TO MAKE IT SOONER?’”

RICHARD OFFERDAHL ’65



2024

AWARD RECIPIENTS

Celebrate outstanding alumni and industry leaders whose experiences with NDSU have inspired trailblazing research, workforce development, community enrichment, and more.

Photos by Studio 46



MAGAN LEWIS PH.D. ’12

Horizon Award

Magan Lewis Ph.D. ’12

from Hankinson, North Dakota, traces her journey to becoming a global STEM leader back to her late father’s science lab. Her parents fostered her leadership spark and love of research by serving as educators and community trailblazers.

“I focus on the next evolution of agriculture research,” Magan, the equipment and automated field sensing lead at Bayer Crop Science, said. “New technologies that we develop allow farmers to make their operation as sustainable and productive as possible, while protecting our natural resources.”

Magan chose to pursue her Ph.D. in plant sciences at NDSU because of “the amazing scientists and leaders that inspire me to continually grow as a

scientist, leader, and community champion.”

She has gone on to do great things as a pioneer of agriculture science, winning awards such as Seed World’s 2022 Future Leader of the Seed Industry and an ambassadorship for the American Association for the Advancement of Science in 2019.

Magan has invested in the Dr. Magan Lewis Scholarship at NDSU, which was created to help young female scholars in their pursuit of academic excellence and future careers in agriculture.

“If women are empowered to courageously unleash their creativity and innovation, then our communities and the world will change for the better,” Magan said.

By Kooper Shagena ’24

As a high school senior, **Jane Willenbring '99** and a group of young scholars embarked on a month-long residential program led by former NDSU geology professor Allan Ashworth. They collected beetles from the summits of the Appalachian Mountains, New York state, and Newfoundland. Jane, who grew up west of Mandan, North Dakota, says she had such an impactful experience traveling outside of the Midwest for the first time that, when she set her sights on college, she only applied to one school: NDSU.

Now an associate professor at Stanford University, Jane is a leading global expert on the use of cosmogenic nuclides to date rocks and sediments. She earned her bachelor's degree in geosciences from NDSU, a Master of Arts in earth sciences from Boston University, and a Ph.D. in earth sciences from Dalhousie

University in Nova Scotia, Canada.

While conducting graduate research in Antarctica in 1999, Jane experienced verbal and physical harassment from her research advisor. Concerned that reporting the situation would cost her career, Jane remained silent about her experience until 2016. She ultimately chose to report the abuse to protect future generations of women in science. Her bravery led to changes in policy within the National Science Foundation.

"I'm proud that I have been, for others, the person I needed when I was younger," Jane said.

As well as a passionate advocate for women in science, Jane is the recipient of many prestigious awards, and her research has been published in leading peer-reviewed scientific journals. Jane fondly remembers her time at NDSU



JANE WILLENBRING '99

as a McNair Scholar, rugby player, geology club member, and oboist in the band. Today, she finds joy in research and teaching, cooking, gardening, and spending time with her daughter.

By Micaela Gerhardt

Henry L. Bolley Academic Achievement Award

AgCountry Farm Credit Services is a farmer-owned cooperative that provides competitive access to credit and financial services for farmers, ranchers, and agribusinesses. Through customer education, community outreach, volunteerism, and philanthropy, AgCountry delivers on its mission to support agriculture and rural America.

During a long and dedicated partnership, AgCountry and NDSU have worked together to bridge the gap between education

Partner in Excellence Award



and employment in the agricultural sector, ensuring a pipeline of skilled and knowledgeable professionals who will contribute to the continued growth and prosperity of the agriculture industry.

Together, AgCountry and NDSU collaborate to provide workforce and rural economic solutions. AgCountry actively participates in NDSU's career fairs, offers hands-on internship experiences, works with faculty and staff to tailor curriculum to industry demands, and partners with the Career and Advising Center to connect qualified graduates with open positions within the company and broader agribusiness sector.

AgCountry has also made significant

philanthropic investments in NDSU scholarships, programs, and facilities. Its most significant philanthropic commitment to NDSU is the AgCountry Endowed Chair in Agribusiness, which was established in the fall of 2023. Designed to tackle key challenges in agribusiness finance and risk analysis, the AgCountry Endowed Chair in Agribusiness will be housed within the NDSU Center for Trading and Risk and will leverage the state-of-the-art Commodity Trading Room.

Howard Olson, senior vice president of government and public affairs for AgCountry, said, "Partnerships such as AgCountry and NDSU offer a mutually beneficial exchange of resources, expertise, and talent that fosters innovation, economic growth, and community development."

By Micaela Gerhardt



DAN JOHNSON '87

Alumni Achievement Award

Dan Johnson '87, a construction engineering graduate, started at Mortenson in 1986 and hasn't looked back since. He held various positions in estimating, operations, and business development before being promoted to vice president in 1996, senior vice president in 1999, chief operating officer in 2008, president in 2015, and president and CEO in 2017. He currently serves as the CEO.

Dan has helped grow Mortenson into a top 25 construction industry leader with more than \$5 billion in annual revenue and 7,000 team members. He's pioneered their renewable energy sector and expanded their development business. In his tenure as CEO, Mortenson has grown during several economically challenging times. Dan is committed to safety, leadership development, and diversity, equity, and inclusion work.

He credits his education at NDSU as his "ticket to the dance." He is a passionate alumnus who gives back as a board member for the NDSU College of Engineering Advisory and Advancement Board and who was integral in securing a leadership gift from Mortenson for NDSU's upcoming Richard Offerdahl '65 Engineering Complex.

Dan serves on the executive committees and is chair for Construction Inclusion Week and Construction Safety Week. He is also on the board of directors for the ACE Mentor Program, Fastenal, the Greater MSP, and the Construction Industry Roundtable and is a member of the National Academy of Construction.

He is "most proud of the people and careers [he's] been able to help along the way."

By Cody Goehring '24

John Erickson '80 grew up on a small farm 10 miles north of Moorhead. When he left home to play college baseball and earn a degree in agricultural economics, he didn't have to go far.

"My dad was a professor and researcher in animal science at NDSU," John said. "Our family has always been Bison fans." This family legacy is what led him to attend NDSU.

After graduation, John found his professional home with Otter Tail Corporation. While wearing multiple hats for Otter Tail, including president and CEO, John has remained deeply dedicated to NDSU and his community.

"Rare can one find an individual who is so humble, unassuming, yet so committed to advancing the ideals of our alma mater," Steve Swiontek '77, '06, Gate City Bank board chair and former chair of the NDSU Foundation Executive Governing Board, said.

John served as a member of the Alumni Association Board of Directors and then as chair while this organization merged with the Development Foundation Trustees to form the NDSU Foundation. John served on the Executive Governing Board as vice

chair and treasurer during the *In Our Hands* campaign, which raised \$586.7 million to support NDSU students, faculty, programs, and facilities.

In honor of the significance of NDSU, agriculture, agribusiness, and athletics in the Erickson family history, John and his wife, Kim, have invested in the John and Kim Erickson Agribusiness Scholarship Endowment, the Duane and Joan Erickson Scholarship Endowment, and the Erickson Family Athletics Scholarship Endowment, among other impactful initiatives.

By Kooper Shagena '24



JOHN ERICKSON '80

Distinguished Service Award



BUILD THE BRIDGE, MAKE THE CHANGE

NDSU's Bison Bridge program supports first-year multicultural students who are first-generation or Pell-eligible in making NDSU feel like a home away from home. Participants are paying it forward by building community on campus and beyond.

Story by Kayla Jones '22, '24 | Photos by Justin Eiler



As I sat around the table with my family at an NDSU Welcome Dinner for freshmen in the fall of 2018, I anxiously waited for the part where I would be on my own. Finally, the speaker encouraged the students' families to "let go," because we would be taken care of at NDSU and because he knew every single one of us could handle this journey. Unsure if I was scared or inspired, I chose to believe him.

I'm originally from St. Louis and Kansas City, Missouri, but I made my way to Fargo, North Dakota, to attend NDSU because I wanted to experience

a new area and I have family here. It felt like taking a big leap — but with a parachute.

My family in Missouri certainly had their concerns about me going to school so far away. As a first-generation, Pell-eligible student of color, my family knew that I needed additional support to attend college. Months prior to my first day on campus, my mother spent hours on the phone asking about resources, from "Who can she go to for support if she falls behind in classes?" to "Where can she find community on campus?" The academic stressors of college paired with the social adjustment weighed heavily on my mother's heart and, secretly, mine too.

Then, shortly after my acceptance to NDSU, I received a letter inviting me to join Bison Bridge, a program established in 2013 to assist first-year multicultural students who are first-generation and/or Pell-eligible with the transition between high school and college.

Bison Bridge is a campus-wide effort. The week before classes started, my freshman cohort was introduced to a wealth of campus resources such as tutoring, TRIO Student Support Services, the library, counseling center, and more. We connected with the campus partners who presented as we asked question after question to alleviate our nerves. Each time, we were met with patience and a smile as they helped us learn more

were through Bison Bridge," Frederick (Fred) Edwards '18, '21 said. "I'm thankful because it helped me get to know campus with other people who looked like me."

After graduating with his bachelor's degree in psychology, Fred earned his master's degree in educational leadership and served as a graduate assistant in the Office of Multicultural Programs at NDSU. Today, Fred is the co-executive director of Umoja

Inc. and a local changemaker and leader in the Fargo-Moorhead area.

Like Fred, I chose to continue my education at NDSU because I had found my home away from home. After earning my bachelor's degree in psychology with minors in creative writing and women and gender studies in 2022, I went on to pursue my master's degree in educational leadership because I felt there was great potential for increased programming in higher education focused on retention and access.

Bison Bridge relaunched in the fall of 2023 after a brief hiatus as part of the University's strategic plan to support diversity, inclusion, and respect as well as student retention and access. Forty-three students were each awarded a \$1,000

scholarship and received mentoring throughout the three-day pre-semester program which shifted into weekly mentoring meetings throughout the academic year.

"Programming was influenced by the needs that we currently see for our students," Michelle Pearson, the assistant director of Learning Services, said. "Belonging, connection, resources, and academic and personal skills were all thoughtfully built and timed into programming to best help empower each student."

Bison Bridge is supported by NDSU's Office of Multicultural Programs, Learning Services, and the Office of Admissions. While working alongside Bison Bridge advisors and campus partners to develop new programming — including community-building workshops and campus tours — I was met with nothing but enthusiasm and helpfulness. I felt that same familiarity I experienced with campus partners as a freshman when I was the one asking the questions.

Bison Bridge helped me learn how to navigate my studies and the environment of higher education, but I also knew who I could reach out to if I ever needed help. Without a program like Bison Bridge, I wonder if I would have found my favorite study spot at the library, turned to the Career and Advising Center to continuously work on my resume, or met my lifelong best friend. Bison Bridge was more than a chance to learn about the resources I have here — it was a chance to make NDSU my home.

In May 2024, I will be

BISON BRIDGE WAS MORE THAN A CHANCE TO LEARN ABOUT THE RESOURCES I HAVE HERE — IT WAS A CHANCE TO MAKE NDSU MY HOME.

- KAYLA JONES

graduating with my master's degree in educational leadership. I hope to keep working in higher education to encourage, support, and implement more policies and programming like Bison Bridge that will create better access and retention for future generations of college students.

Kaelen says that she would love to see Bison Bridge become a two-week pre-semester program that includes early-move-in and a one-credit course that covers skills for studying, hands-on learning about specific majors, and more. Michelle imagines Bison Bridge starting as early as middle school and ushering students all the way through college.

Bison Bridge is part of a bigger vision that puts students first. Growing the program gives me hope for more access for first-generation students, increased retention, and a greater sense of belonging campuswide. I can see the effects of Bison Bridge already at NDSU. Students find themselves in Kaelen's, Michelle's, and my offices to catch up, say hi, and take a break from the stressors of college. They are finding community here because of Bison Bridge.

I once needed a home away from home, and this program gave me that. To pay it forward, plus more, means the world. I am so grateful to be a part of it. 🍷



Kayla Jones '22, '24 with Bison Bridge campus partners Kaelen Napoleon (center) and Michelle Pearson (right)



5 COLLEGES, 3 QUESTIONS

Wondering where NDSU is headed? Curious about what's happening in your favorite College?

Five campus leaders cast their transformative vision for the future and share how NDSU alumni, friends, and industry partners can get involved in the University's continued success.

Edited by Micaela Gerhardt | Photos by Kensie Wallner



NDSU leadership photographed with student representatives from each academic College (from left to right: Engineering; Arts and Sciences; Business; Health and Human Sciences; and Agriculture, Food Systems, and Natural Resources)



LEARN MORE
AND GET
INVOLVED!

What is your College's greatest strength, and where do you see exciting opportunities for growth as you look toward the future?

What is a hidden gem within your College — something alumni and friends might not know about?

How can alumni, friends, and industry partners get involved with your College?

**COLLEGE OF AGRICULTURE,
FOOD SYSTEMS, AND NATURAL
RESOURCES (CAFSNR)**

*Greg Lardy,
Joe and Norma Peltier Vice
President for Agriculture*



The CAFSNR has a strong history of serving stakeholder needs. We will continue to evolve our teaching, research, and Extension programs to meet the changing needs of the industries we serve. The agricultural industry in the state is increasingly reliant on data science, precision agriculture, and technology in general. Our core programs need to reflect this, and we need to be leaders in that evolution!

NDSU Extension has a presence in all 53 counties in North Dakota. We also have seven Research Extension Centers located strategically throughout the state. Because of these links, we have a built-in channel to better understand the needs of the state, especially in rural communities. We also have strong linkages to the indigenous people of North Dakota. We hope to continue to build on that presence to better serve those communities going forward.

There are a variety of board service opportunities throughout our campus-based departments, Research Extension Centers, and NDSU Extension. In addition, our students are seeking mentors (formal and informal), and most of our majors have internship options or requirements.

**COLLEGE OF ARTS
AND SCIENCES
(CAS)**

*Kimberly Wallin,
Dean*



Our strength is our diversity of disciplines, which offer faculty wonderful opportunities to collaborate on teaching and research. Our research portfolio is the largest on campus in terms of subject matter and grants funded. We will build upon our successes by identifying previous barriers to collaboration and begin fresh conversations on old and new ideas.

The CAS is a leader in discipline-based education research. Faculty who are experts in a certain discipline research the best methods to improve student learning outcomes, then educate based on the results. When curriculum is based on evidence, it increases student success rates, retention, and research activity across the University. Our students acquire skills that are transferable to many professions.

Alumni who are interested in serving on the College's advisory board can apply at any time — we typically interview in the fall and bring on new members in the spring. Our students are also highly involved in research days, theater productions, and musical events that alumni and friends are encouraged to attend.

**COLLEGE OF
BUSINESS
(CoB)**

*Kathryn Birkeland,
Ronald G. and Kaye S. Olson Dean
of Business*



As an accredited business college in a fast-growing metro area, we have an opportunity and obligation to contribute to workforce development. Two areas primed for enrollment growth include the new Bachelor of Science in supply chain management and the online expansion of our Master of Business Administration program, which allows us to offer the program to professionals in North Dakota, Minnesota, and across the country.

The Business Connections mentoring program is one of the highlights of the CoB. Students in all majors and all years can participate. Mentorship meetings have included virtual sessions, one-on-one coaching, book discussions, team meetings at the mentor's office, board meetings, and community events. Both students and mentors rave about the experience.

Alumni and industry professionals can meet CoB students at recruiting fairs and hire them as interns. We also invite alumni to present to classes and student groups, participate on an advisory board, and elevate the CoB brand by sharing their experience. Alumni can also return for their graduate degree or send their colleagues!

**COLLEGE OF
ENGINEERING
(CoE)**

*Alan Kallmeyer,
Interim Dean*



I hear from companies every day about their critical workforce needs. As the largest contributor to the engineering and computer science workforce in North Dakota, the CoE knows we have a responsibility to do our part. To maximize our impact, the upcoming Richard Offerdahl '65 Engineering Complex will provide the space and resources needed to increase enrollment in high-demand areas and enhance the educational experience.

The Engineering Leadership Learning Community is a group of first-year engineering students who live in Sevrinson Hall, where they can interact closely with other students who are driven to succeed and interested in professional development. All members participate in a one-credit Engineering Leadership Seminar where they meet alumni, from recent graduates to top executives at companies including Doosan Bobcat and Mortenson.

The CoE hosts numerous K-12 outreach events throughout the year. We often need volunteers to help facilitate events, judge competitions, and recruit students. Most events are local, but there are also options for people living in the region who are willing to visit their local high school and promote NDSU engineering.

**COLLEGE OF HEALTH AND
HUMAN SCIENCES
(CHHS)**

*Ron Werner-Wilson,
Interim Dean*



The CHHS does critical work serving the citizens of North Dakota and conducts important research that has implications for well-being. The merging of health with human sciences creates a synergy to understand the impact of human development on health care and health issues on individual growth and family relationships.

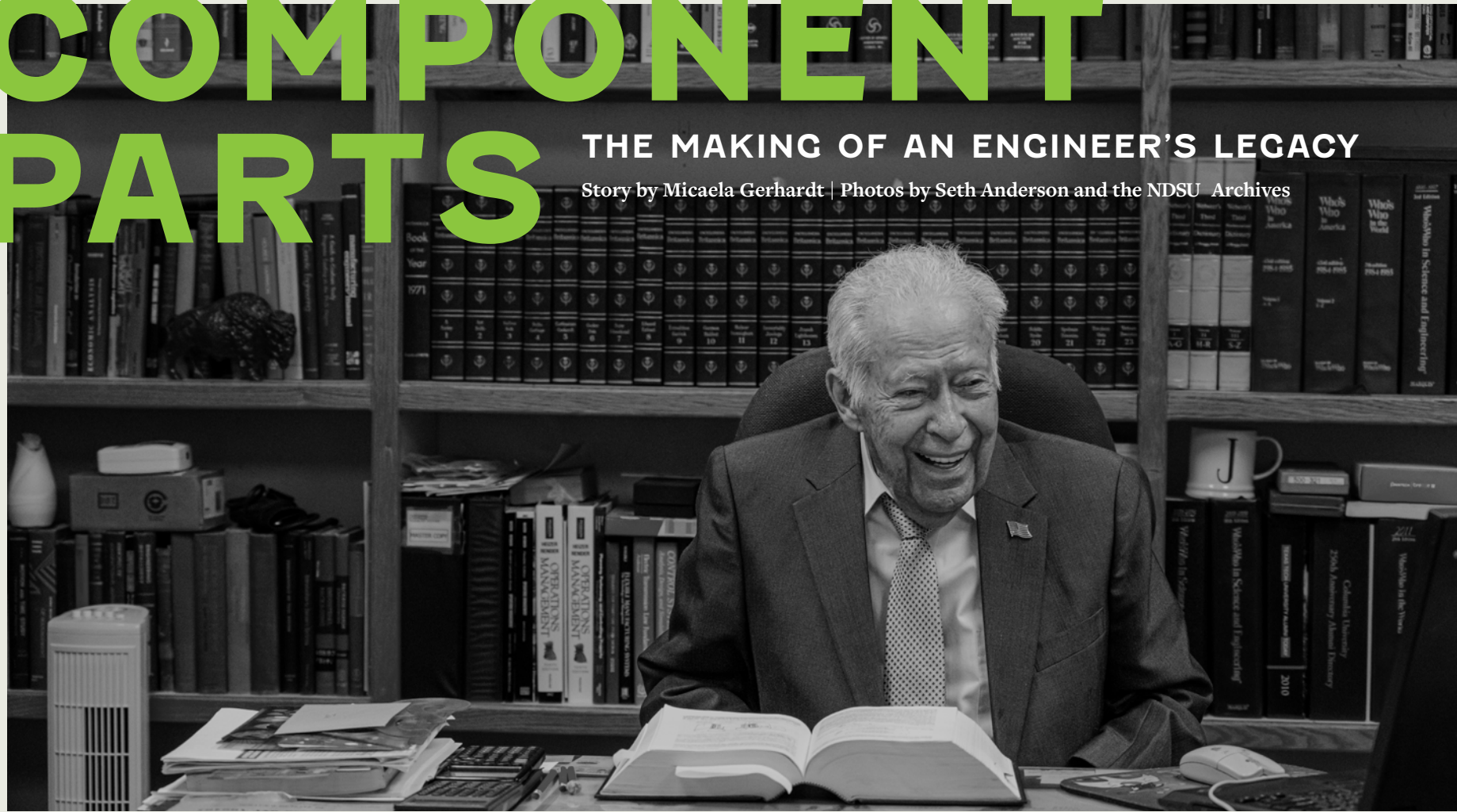
The human development and family science (HDFS) department has been a pioneer in establishing collaborative programs in the North Dakota University System. Students can earn a degree in HDFS from NDSU while earning a degree in elementary education from Valley City State University or a degree in social work from Minot State University. Understanding relationships and family dynamics will better prepare NDSU students to become teachers and social workers.

We invite alumni and friends to reach out to us and let us know how students can gain internship experience. We don't always know what opportunities are out there, and the internship experience is invaluable. Additionally, almost every department within the College has an alumni advisory group.

COMPONENT PARTS

THE MAKING OF AN ENGINEER'S LEGACY

Story by Micaela Gerhardt | Photos by Seth Anderson and the NDSU Archives



Joe Stanislaw, 1977

His middle school principal said he wasn't cut out for high school. The U.S. Marine Corps said he was too small to enlist. But no matter how often people told him no, Joseph Stanislaw found a way to achieve the impossible and make greater access to education his legacy.

At the age of 95, Joseph (Joe) Stanislaw, P.E., stands at 5 foot 2 inches — small in stature, but big in ambition. He grew up in Manchester, Connecticut, a first-generation American born of Italian immigrants. Among his earliest memories are visits to the local fire department, where he would sit and play pretend in the driver's seat of a fire engine, the enormity of the steering wheel forever cementing itself in his memory.

He had a pleasant childhood. He laughs as he recalls critiquing the little homes his classmates built out of blocks, sensing at a very early age what his engineering education would later affirm, that the toy structures were not designed properly. But in the seventh grade, tragedy struck, and Joe lost both of his parents.

"I had to care for myself. I had to figure out a way where I

was going to live," Joe said. "I was somewhat of an orphan, but I wouldn't tell anyone for fear that they would put me in some kind of home or lock me up ... I was totally on my own."

He continued going to school. A year after the death of his parents, when Joe was in the eighth grade, the assistant principal told Joe he wasn't cut out for high school because his speech and grammar were inadequate; he recommended Joe attend trade school instead.

"I said, 'Before I make that decision, I need to go home and talk to my parents.' I didn't tell them I didn't have any parents," Joe said. "A couple of weeks later, I came back and said, 'We had a very intensive discussion. [My parents] recommended, and I agreed, that I should go both to high school and trade school.'"

"Well, Joseph," the school administrators said, "it's not possible. You can't do that."

But it was, and he could. In 1948, Joe graduated with a high school diploma and a certificate in trade. Shortly after, he began his career as a tool and die maker and a draftsman, making detailed technical sketches for Pratt & Whitney, a manufacturer of aircraft engines.

"Si puo' togliere tutto ma non l'istruzione," Joe's mother had often reminded him, in her native Italian and in English, "They can take everything away from you, but they can't take your education."

Joe's commitment to education

led him to serve as the dean of NDSU's College of Engineering (then known as the College of Engineering and Architecture) for 18 years, from 1975-1993. He has since established himself as a major benefactor of the College, with a legacy plan to provide scholarships for students in all six engineering disciplines at NDSU.

When Joe first arrived on campus, then-president L.D. Loftsgard asked, "Now that you're here, what are you going to do for us?"

Joe replied, "I plan to fill the classrooms with outstanding students and bring industry to NDSU's campus." With the goal of increasing enrollment, Joe began traveling across North Dakota and Minnesota to talk to high school students about the opportunities at NDSU. Often, he partnered with NDSU Extension to visit rural communities and give lectures on topics like tractor design right on the farm.

"It's why I like North Dakota — the people were always very gracious," Joe said. "For a guy who started off in seventh grade ... I didn't know where I was going to sleep that night or what I was going to eat ... To have people treat me the way they did made me feel like a king."

Joe believed deeply in bridging education and industry. In 1983, Joe and the economic development director for North Dakota, Sylvan Melroe '57, steered the purchase of a

\$650,000 Control Data computer to help support manufacturing across the state.

At the time, many small manufacturing plants in North Dakota did not have access to a computer or a full-time engineer. By establishing the Robert Perkins Center for Computer Technology at NDSU and providing access to computer and mechanical engineering students, Joe and Sylvan supported regional businesses in the design and manufacturing of equipment. One major manufacturing company in the state used NDSU's computer for nearly 10 years.

"The thing I liked about Joe — he could take the theory, he understood that, and make it practical," Sylvan said.

Joe's efforts and genuine relationship-building resulted in more than twice the number of faculty, double the number of degree programs, and nearly four times as many students in the College.

One of those students was Jenny Hopkins '83, an industrial engineering graduate who currently serves as an NDSU Foundation Trustee. When Jenny came to NDSU, she attended an informational meeting in the College of Engineering, where there were maybe five other female students in the room. There, she met Joe — short, but a force of nature, she remembers. When he told Jenny she should be an engineer, she trusted him and said, "OK, I'll give it a try."

Joe continued to support Jenny throughout her four years in the industrial engineering program. When Jenny struggled with calculus, Joe called her professor and arranged for her to sit outside his office every day and do her homework. He found money for Jenny and her fellow industrial engineering students to attend a regional conference. He nominated her to speak at commencement.

"He was just a really hands-on dean, always," Jenny said. "He was very pro-women when it wasn't that cool to be pro-women ... I believe he had a fundamental belief that women should be in engineering or that women could do whatever anybody else could do."

Being challenged and championed by Joe helped Jenny stay the course — even when engineering was "miserably hard." Jenny's experience at NDSU empowered her to pursue a master's degree in industrial engineering at Stanford University and helped prepare her for a highly successful career, which began with the technology company Hewlett Packard and evolved into owning and growing businesses as an entrepreneur. She and her husband, Mark, support NDSU engineering students with an endowed scholarship and a pledged gift to the Richard Offerdahl '65 Engineering Complex.

As Jenny thinks about where she started — washing blackboards in Minard Hall every night to help pay for tuition — to today, she can't think of anyone at NDSU who deserves more thanks than "Dr. Stanislaw."

Joe maintains a career as an engineering consultant, taking on one client at a time. He says he isn't the first person anybody calls these days, but when someone has an engineering challenge that can't be overcome, they eventually

SI PUO' TOGLIERE TUTTO MA NON L'ISTRUZIONE.



They can take everything away from you, but they can't take your education.



find him — though he doesn't have email, a cell phone, or a phone in his office.

His workspace is intentionally quiet and secluded, lined with every book he collected during his education, from freshman year to his postdoc. It's a place he goes to think, draw, innovate, and find solutions for his clients.

"That's the way I make my money to pay for the scholarships," Joe said cheerfully.

In 2020, Joe's wife, Bettie, passed away, and Joe began reflecting on their life together and how to best honor their passion for education. He was determined to invest in students, because he knows from experience that earning a college degree requires grit.

After leaving his first job at Pratt & Whitney, Joe enrolled at the University of Connecticut, but didn't meet the math requirements, even with a high school diploma. Discouraged, he decided to enlist in the U.S. Marine Corps, which promised to pay for his college degree after three years of military service — but the Marine Corps, too, turned him away, saying Joe was simply "too small."

"Sir," I said, "a bullet does the same to small people as big people," Joe said. "Finally, they were convinced that maybe I was sincere, so I found myself in

boot camp in South Carolina."

When he was discharged after three years of service, Joe enrolled in a junior college, then transferred to Texas Tech University for his bachelor's degree. After Texas Tech, he moved on to Penn State for his master's. There, Joe was awarded his first scholarship, worked for the Navy designing torpedoes in the underwater laboratory, and met Bettie, a fellow graduate student with bright red hair who helped him rewrite his thesis. After Penn State, he attended Columbia University, where he earned his Ph.D. in industrial engineering. For years, he zigzagged all over the U.S. in his 1953 Buick Super in an ongoing pursuit of the one thing no one could ever take away: his education.

His cross-country travels continued after earning his degrees; Joe served as a faculty member or administrator at five different universities over a 57-year period.

"Of all the schools I've been associated with, NDSU was the one that gave me the most exciting opportunities to express myself professionally as well as personally," Joe said of what inspired him to make NDSU a philanthropic priority. "I want to thank everyone at

NDSU and the people of North Dakota for making my tenure so rewarding."

Meredith Jenkins '25, an industrial engineering and management major with a minor in Spanish, is a recipient of the Dean Joseph Stanislaw Scholarship. As a full-time student, member of the Gold Star Marching Band, and an intern at Marvin, the windows and doors manufacturer, Meredith appreciates how scholarships help her afford tuition while she works to cover living expenses.

Meredith had the opportunity to meet Joe at a Homecoming Week scholarship luncheon in 2023. He told her stories about courses he and Bettie taught; being in the Marine Corps; and the consulting work he continues to do.

"Meeting someone who's just so passionate about not only engineering, but life in general ... it's contagious," Meredith said. "I think [one thing] that's really great about Joe is that he started as an ordinary guy ... Everybody in college, we're all getting a degree, right? But it's really impressive how much he did with it, and that you can do that [too]."



A room full of entrepreneurs is a room full of big ideas. The air is charged. The personalities are bright. The job titles are long. The pitches are short.

The entrepreneurs in question? Ambitious NDSU students and local business owners, CEOs, educators, and forward-thinkers who have shaped the region with their own big ideas.

The conversations are future focused. The pitches are innovative. An app that tracks homeownership tasks. A bio-agricultural inoculant that will save local farmers thousands of dollars. A device that captures and reuses humidity from a household appliance. A service that "democratizes genetic engineering" by helping researchers evaluate the ability to manipulate microbes.

"Commercialize," "demographic," "field trials," "for the price of a grad student." A raised eyebrow. A squint. An approving nod.

An enterprising fly on the wall would have heard and seen all this and more in December 2023 at a pitch meeting for the Possibility Fellowship Program, where 12 students in four teams pitched their business ideas to mentors for an evening of inspiration, curiosity, and constructive feedback.

But an event or program like this is akin to any big idea: some assembly is required. It takes time, passion, and a solid foundation.

NDSU associate professor of management and director of the Center for Entrepreneurship Onnolee Nordstrom is interested in what drives entrepreneurial success and, with it, societal growth.

When she arrived at NDSU in 2016, there were no entrepreneurship classes — students could only take them through the University of North Dakota. Later that year, a donor who wished to remain classified established a \$4.5 million endowment to spur entrepreneurial activity at NDSU, with

\$1.5 million of the funds coming from the North Dakota Challenge Grant program.

These private funds established the President Jim Ozbun Endowed Chair of Entrepreneurship in honor of Jim Ozbun, who served as NDSU's president from 1988 to 1995, and Onnolee was named the inaugural recipient.

After being named the endowed chair, Onnolee utilized her resources to create courses on entrepreneurship and managing family businesses. Over the following years, NDSU's entrepreneurship classes became increasingly popular. Onnolee and other faculty found that there were students whose tenacity and innovation stood out, who wanted more opportunities. She thought, what if we created a group to give them those opportunities? What if we embed those students in the community, give them the tools and resources they need, and push them to new heights?

Enter: the Possibility Fellowship Program, an opportunity for select students to meet monthly for lectures and discussions; read and discuss entrepreneurial books; meet business leaders and get involved in the

community; brainstorm, research, and develop a project for the year and set their findings in motion; and hone skills like prioritization, time management, leadership, interviewing, and relationship-building.

Philanthropic funding helped get the Possibility Fellowship Program off the ground. The Ozbun endowment, with support from other benefactors, provided a \$5,000 scholarship for each fellow.

In September 2023, the first cohort of Possibility Fellows met in NDSU's Barry Hall. The intentionally diverse group spans from undergraduate to Ph.D. students at NDSU, across disciplines like microbiology, electrical engineering, and economics.

"I'm a huge believer that diversity on teams creates better outcomes," Onnolee said. "And so, when you have students from different departments, I think it gives us more opportunity to create great teams and create great ideas, too."

Onnolee and co-advisors Jessica Vold and Dongwook (Jimmy) Kim work to engender in the cohort a holistic understanding of entrepreneurship. Onnolee says that her definition of entrepreneurship is more inclusive than the formation of new businesses that create economic wealth. Many types of entrepreneurs drive outcomes that are socially motivated, says Onnolee.

"I think entrepreneurship is about ... creating newness. So [in lectures] I would talk a lot about ... newness and value creation, but that newness and that value creation can be social, it can be institutional, it can be economic," Onnolee said. "So maybe it's not about profit in the traditional sense of 'we've made so much money,' but maybe 'we've ... made a change. It helped to change an institution. To address a problem in the community.'"

Doctor of Pharmacy and Possibility Fellow Elizabell Delgado '26 has a keen understanding of how this program can improve not only her career but also non-economic outcomes for society and the health care system as a whole.

She sees the ins and outs of the health care industry — the burnout, the quickly evolving medical technologies, the health care crises. To her, having an entrepreneurial mindset is all about making improvements to support patient-centered treatment and provide health care access.

"When I think about entrepreneurship, I think about taking risks in hope of profit," Elizabell said. "Many people think of profit in terms of monetary value. As a health care professional, I think of profit as a benefit or an improvement."

An essential element of the program is connecting students with the entrepreneurial ecosystem within an educational space. The fellows have real-world opportunities to learn and build relationships with business leaders and peers across various industries.

Onnolee describes an entrepreneurial ecosystem as an understanding of a community, considering the stakeholders, government policies, private businesses, and other elements that are needed to have an environment that drives entrepreneurship.

"We're ... trying to test students' assumptions," Onnolee said. "They

assume that they have a market, they assume that customers are going to buy this. And so then I said to them, 'OK, now go talk to some people and find out, are your ... assumptions or hypotheses correct?'"

MBA student Cam Landis '24 is the Jim and Cheri Buus Venture Capitalist Fellow. Coming to NDSU for his MBA after an undergraduate degree at the University of Pennsylvania, Cam had academic experience with business and entrepreneurship concepts and wanted to test his theories.

"I've met people, whether it's local business leaders or students, that I would have never met," Cam said of his opportunities in the program. "I don't know that ... if you were going to try to get on the phone with somebody who is in a position of authority in a business in Philadelphia, that they would really take you seriously. [B]ut here we have not been turned down for a single meeting."

The naturally entrepreneurial spirit of Fargo makes it an ideal setting for these connections between students and business leaders.

"We have amazing family businesses in this area,"

Onnolee said, referencing local companies like Scheels and Bell Bank. Across the country, family businesses are the dominant form of business, she says. According to the U.S. Chamber of Commerce, there are 5.5 million family businesses in the U.S., which account for 57% of America's gross domestic product and 63% of the workforce.

To Onnolee, the benefits of connecting students with Fargo's entrepreneurial ecosystem are clear.

"I think it helps the community see what our students are doing, and it gets the students ... involved in and embedded in the community," she said.

This spring, the groups will continue their market research, testing, and interviews, and in April 2024, a showcase will be held at Barry Hall, where the groups will present their pitches to campus leadership, local entrepreneurs and business leaders, family, and venture capitalists.

After their fellowships, Onnolee says she hopes the students will stay in the area and become the next generation of entrepreneurs and business leaders. But most importantly, the goal is that

they develop and use the skills and relationships fostered in the program.

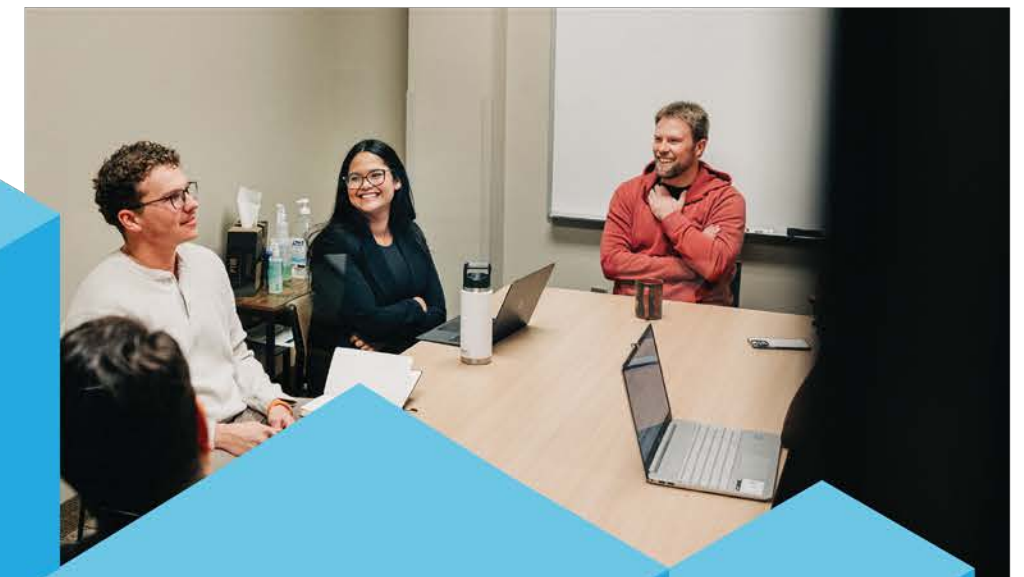
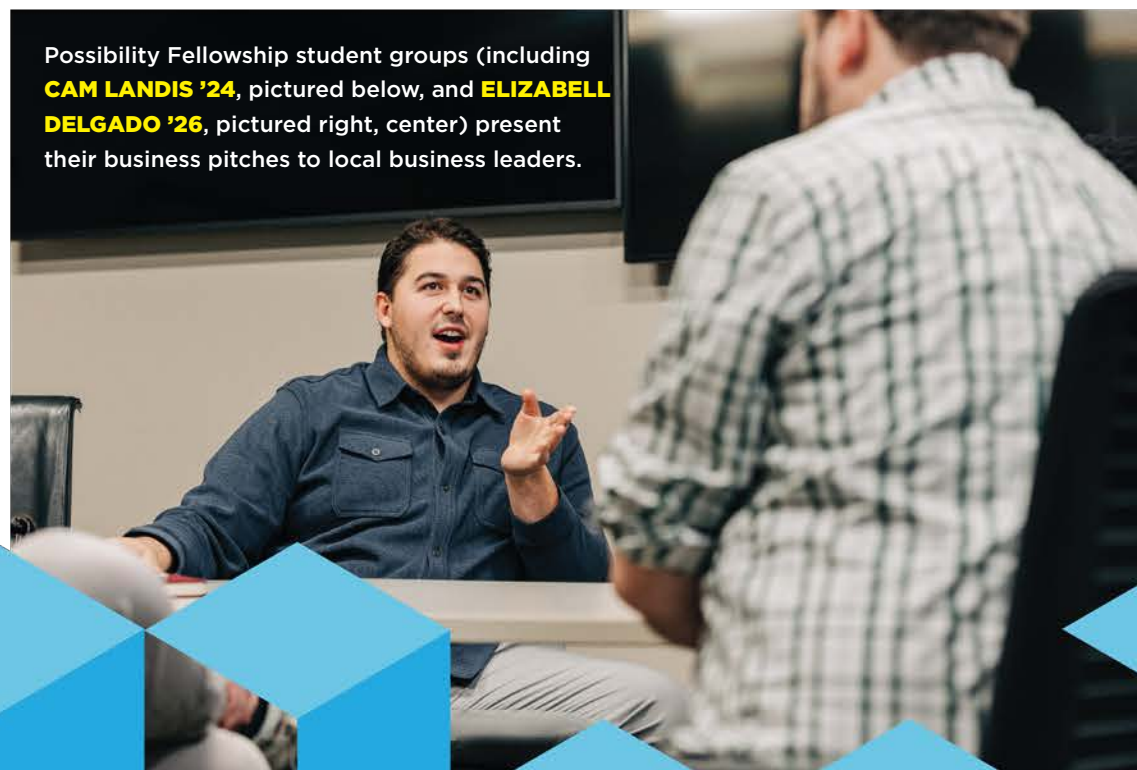
"I think that the Fellowship has provided me with ... the tools and the resources to enhance my leadership abilities. It has given me a lot of different ... relationships that I know will be lasting. It's given me a lot of different opportunities and so I'm super grateful for that," Elizabell said.

In the future, growth for the Possibility Fellowship Program may look like involvement in national pitch competitions, a dedicated facility for ideating and creating, or the next entrepreneurial success story for the Bison community.

"A lot of times it's not necessarily the idea ... or the business, it's the ... founders [of a company or organization] that really propel it," Cam said. "So if the founders ... are ... tenacious people who are honest in business and ... know how to ask questions and know how to network ... that's really what's going to carry people forward."

This is just the beginning of possibility. It's time to build. 🦋

Possibility Fellowship student groups (including **CAM LANDIS '24**, pictured below, and **ELIZABELL DELGADO '26**, pictured right, center) present their business pitches to local business leaders.



McGovern Alumni Center
North Dakota State University
PO Box 5144
Fargo, ND 58105

NDSU researchers in the Geddes Lab

are racing toward a new evolutionary event with major economic and environmental benefits: the symbiosis of rhizobium bacteria in cereal crops, which would allow cereal crops to produce their own nitrogen.

