

IME NEWSLETTER



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Dates to Remember for Spring Semester:

- January 8th—Spring Classes begin at 4pm
- January 23rd @ 9am
HDR Company Spotlight
- January 25th @ 2:30pm
On-sight tour at John Deere
- January 29th @ 8:30am
Houston Engineering Spotlight
- February 1st @ 9am Puget
Sound Naval Shipyard Spotlight
- February 7th—Spring Career
Expo
- March 4-8 Spring Break Week
- April 25th -Capstone Presentations
- April 26th—IME Advisory
Board Meeting
- May 11 Commencement

Cover Story: Dennis Steinman

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Dennis Steinman: A Decade of Impact in IME Capstone Education at NDSU

The IME Department is bidding farewell to a seasoned industry professional and educator, Dennis Steinman, who has devoted the last decade to shaping the minds of future industrial and manufacturing engineers through his role as the instructor for our IME 489 Capstone course.

Educational and Professional Journey

Dennis, an NDSU alumnus, received his BSIE in 1984 and embarked on a successful career in the supply chain industry. His journey included roles with a wholesale grocery company in the Twin Cities and a stint in project management consulting in 2000. Currently serving as the General Manager in the UNFI warehouse in Fargo for the past 13 years, Dennis has brought a wealth of practical experience to the classroom.

A Decade of Teaching Excellence

In 2015, Dennis transitioned from industry to academia, taking on the role of adjunct professor for the IME Capstone class. His journey began with guest lecturing for several classes, eventually leading to him taking the reins of the Capstone course. Reflecting on this transition, Dennis acknowledges the support of Dr. Green, the interim IME Chair at the time, and Dr. Yadav, a former faculty member, who played pivotal roles in his success.

Teaching Philosophy and Methodology

Dennis's teaching philosophy is deeply rooted in his business background. Rejecting the conventional lecture-style approach, he transforms the Capstone class into a dynamic business environment. Drawing on his consulting experience, Dennis positions students as consultants, sponsors as clients, and himself as the consulting manager. The emphasis is on professionalism, effective communication, and applying theoretical knowledge to real-world business scenarios.

Influence on Students and Industry Collaboration

The impact of Dennis's teaching extends beyond the classroom. By fostering collaborations with alumni business leaders, he has facilitated sponsorship of Capstone projects, providing students with invaluable industry exposure. Companies, impressed by the caliber of IME students, have become repeat sponsors, creating a beneficial cycle for both education and industry. In the last ten years, Dennis has acquired sponsorships with well over 30 local industries opening doors for future NDSU collaboration, student internships and future job opportunities for our students.

Memorable Projects and Success Stories

One standout project involved students justifying the purchase of a million-dollar CMM and quality testing machine, leading to an immediate acquisition. Such success stories underscore Dennis's commitment to practical, impactful learning experiences. As Dennis prepares to conclude his tenure, he takes pride in the successes of his students, with many transitioning from engineers to senior or VP positions.

Challenges and Adaptation

Facing the challenges posed by the COVID-19 pandemic, Dennis navigated the shift to remote learning, a significant adjustment for a program built around on-site sponsor engagement. Despite the obstacles, Dennis and his students persevered, showcasing resilience in the face of adversity.

Cover Story: Dennis Steinman

A Farewell and Lasting Impact

As Dennis approaches his last semester teaching, he reflects on the diverse array of students who have enriched his classroom. His commitment to each student's success, personalized teaching approach, and dedication to industry-relevant education have left an indelible mark on the IME Capstone program.

Legacy of Learning

In parting, Dennis leaves behind a legacy of not just teaching but mentorship. His memorization technique for learning students' names epitomizes his commitment to forming personal connections. As he bids farewell to the classroom, Dennis Steinman leaves an enduring impact on NDSU's IME program, his students, and the intersection of education and industry.

Looking Forward

While Dennis may be closing this chapter of his career, his influence will undoubtedly endure through the many students he has guided and the indomitable spirit of learning he has instilled in them. NDSU expresses gratitude for a decade of exceptional dedication, wishing Dennis Steinman continued success in all his future endeavors.



Department News



Fall Semester

To start the new academic year off right, the IME department held a picnic to welcome students back to campus. Due to poor weather, the event was held indoors, but that didn't stop us from having fun. It was wonderful to see faculty, students, and staff together again ready to begin a new semester.



Behind the Scenes: IME in Action

All work and no play? IME faculty and staff in action!

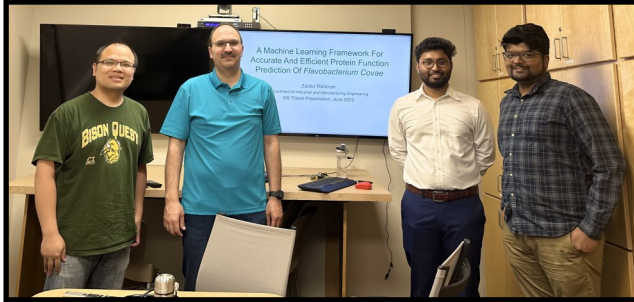


Department News Cont'd

Congratulations are in order!

Congratulations to Zaidur Rahman on successfully defending his industrial engineering thesis, *A Machine Learning Framework for Accurate and Efficient Protein Function Prediction of Flavobacterium Covae*. We wish Zaidur well in his future endeavors!

Congratulations to our former IME PhD student, Md Mahbubar Rahman! He has accepted a position as Assistant Professor of Engineering Technology in the School of Engineering, Math, & Technology at Navajo Technical University in Crownpoint, New Mexico. Congratulations Mahbubar!



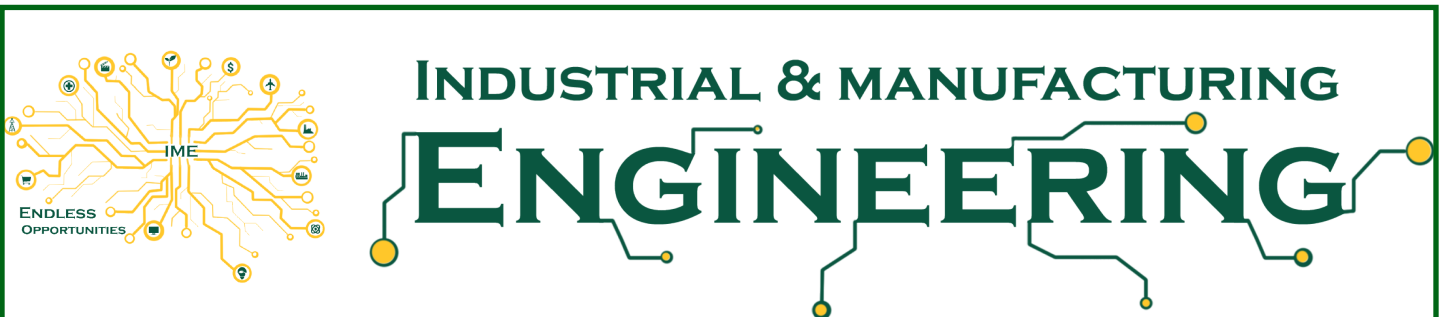
Lu Liu (CS), Harun Pirim (IME), Zaidur Rahman, & Lokesh Narayanan (IME)



Congratulations to Harun Pirim, Assistant Professor in IME! Dr. Pirim was one of the November recipients of the Innovation in Teaching Award. This award is given by NDSU's Office of Teaching and Learning to recognize instructors and graduate assistants for their efforts to improve teaching and learning on campus. Award nominations are submitted exclusively from students.

In addition, Dr. Pirim recently had an article published in *Computation*, a peer reviewed journal of computational science and engineering published monthly online. The article, titled '*Building Political Hashtag Communities: A Multiplex Network Analysis of U.S. Senators on Twitter during the 2022 Midterm Elections*,' explores how U.S. senators strategically utilized hashtags to form political communities on Twitter. Notably, Yusuf Akbulut, a graduate student in industrial engineering, co-authored this study. The article can be read [here](#).

Congratulations Harun! We are so proud of all your hard work and dedication!

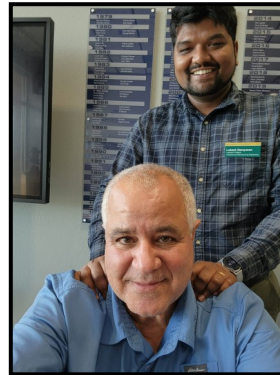


Outreach and Recruiting

Manufacturing Day

Two of our faculty members, Reza Maleki and Lokesh Narayanan traveled to Dickinson, ND this past October to represent the IME department at Manufacturing Day in Dickinson.

Manufacturing Day brings together 9th grade students from area schools to meet with university manufacturing faculty and local manufacturers to raise awareness of all the possibilities for high-quality manufacturing careers.



STEM Event

Dr. Diana Lopez and Kelly Schutt participated in the 6th Annual BrainSTEM event at Concordia College. More than 300 Ben Franklin 7th graders attended the event and had the opportunity to select from 17 workshops. The Event promotes diversity in stem where students can meet with role models from different backgrounds while learning about new careers.

Dr. Lopez and Kelly presented an activity on paper airplane construction to emphasize the importance of all aspects of engineering—quality control, material, cost, project management and working together to develop a design that would fly further than competing teams.



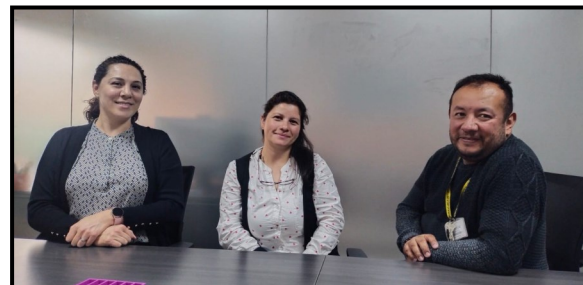
Visit to Bogota, Columbia

During the week of November 18th to November 25th, Dr. Lopez was invited to Bogotá, Colombia, by Universidad Militar Nueva Granada (UMNG). The visit was part of a program that UMNG has developed to enhance research collaboration. Dr. Lopez was invited by Dr. Karen Nino at the university, who has been her research partner in projects presented at international conferences such as the Annual INFORMS Meeting and IISE Central and South American Region Conference.

During her visit, Dr. Lopez also met with the College of Engineering Dean, Nancy Olarte, and the Chair of the Industrial Engineering Department, Pedro Sanchez. They expressed their interest in collaborating with NDSU on exchange programs, including a 2 + 2 initiative for both undergraduate and graduate students, as well as fostering faculty collaboration in research and teaching.



Diana Lopez, Nancy Olarte, & Karen Nino



Diana Lopez, Karen Nino, & Pedro Sanchez

Spotlights....

#NDSU Intern Spotlight: Braedon Odenthal

Braedon Odenthal is a Manufacturing student. He completed his Manufacturing Engineering internship in Operations at nVent in Anoka, Minnesota. Braedon learned about this internship opportunity through the NDSU Career Fair.

What was the favorite part about your internship experience?

My favorite part of the experience has definitely been the people. I was worried that the senior engineers wouldn't trust me with projects and would just give me busy work, but they have given me projects that are important and I have had a chance to create stuff that will be used here for years to come. I was also able to come up to the NDSU career fair this February and help recruit the next round of interns! That's where this photo was taken

What was the most challenging part of your internship? How have you overcome these obstacles?

The most challenging part of this experience has definitely been learning the flow of the company. You can't just design something, make a drawing, and email the drawing to someone on the floor to produce. There is a process to getting things done, and it is different at every company. The best way to overcome this challenge is to just observe and ask questions.



Noteworthy Happenings...

Research Experience for Undergrads (REU)

The Department of Industrial and Manufacturing Engineering provides undergraduate students a chance to participate in fundamental and applied research opportunities in the fields of sustainability, logistics, operational research and human factors. The students can gain hands-on experience with supply chain management, OR, optimization, additive management, automation, manufacturing, quality and reliability, and simulation.

Last summer we welcomed Andres Rueda Lopez and Santiago Ospina Ferreira to campus as part of the REU program. Andres is an Industrial Engineering and Physics student at the University of the Andes in Bogotá, Colombia and Santiago is an Industrial Engineering student at Pontificia Universidad Javeriana in Bogotá, Colombia. While here, Andres worked with Dr. Lokesh Narayanan conducting research focused on In-vitro Modelling of Brain Aneurysms. Santiago worked with Dr. Harun Pirim conducting research on the robustness and optimization with graph analysis and simulation of power networks.



NDSU Giving Day 2023

NDSU alumni, friends, students, staff, and faculty raised nearly \$2.2 million on the eighth annual NDSU Giving Day, held on November 28. Of this total, \$600,000 was raised specifically for the College of Engineering and \$5,810 for the IME department. Our Advisory Board president and IME alum Bob Heller and his wife Diane Heller donated \$50,000 for IME student scholarships. Thank you Bob and Diane for your generosity and kindness!

Noteworthy Happenings...

Recognition of Excellence Award Joe Stanislaw awarded IME Recognition of Excellence Award

At our fall Advisory Board meeting, Dr. Joseph Stanislaw, was recognized for his distinguished career, professional achievements, and service contributions to the IME Department, as well as his community.

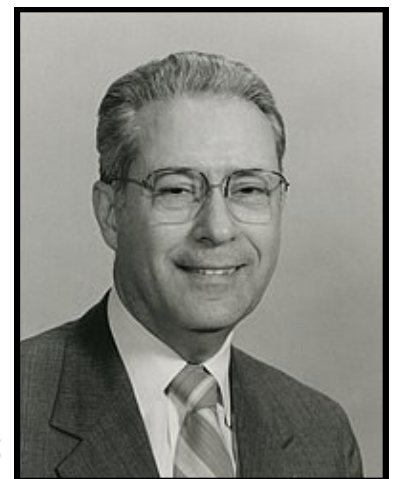
Joe was Dean of the NDSU College of Engineering from 1975-1993. While at NDSU, Joe was instrumental in bringing the Robert Perkins Center for Computer Technology Transfer to campus in 1985, doubled the number of degrees offered by the college, and saw enrollment increase from 657 students to more than 2,500. In 1991, he received the first Economic Development Award at NDSU for his substantial contribution to the economic development of North Dakota through teaching, research, and service activities.

With a distinguished career spanning decades, Joe has made significant contributions to the field of engineering. His innovative spirit is evident through his numerous patents for groundbreaking inventions, such as the pump apparatus, vertical lift, gasless engine, and thermal brick, among others. In 2010, at 80 years of age, Joe started his own engineering consulting business. Joe's commitment to the field of engineering is immeasurable.

Congratulations to Dr. Stanislaw for being recognized with this IME Recognition of Excellence Award and thank you for all you have done for the field of engineering.



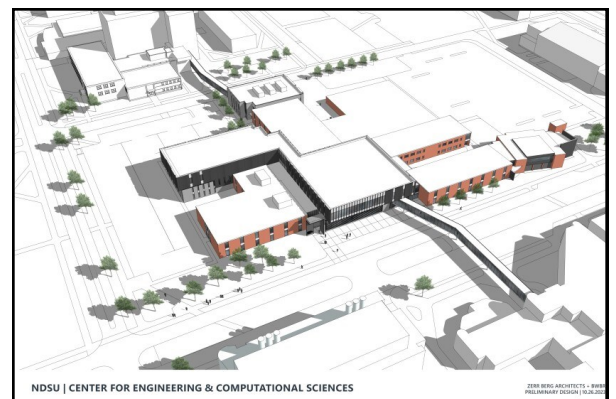
IME Interim Chair Dr. Kambiz Farahmand, IME Advisory Board Chair, Bob Heller, & Joseph Stanislaw



Center for Engineering and Computational Sciences

To date, \$15 million has been raised toward the \$30 million needed for the Center for Engineering and Computational Sciences building project. Thank you to both Doosan Bobcat and Mortenson for each donating \$5 million, as well as to other alumni and industry partners for their gifts. The private funds will be used to match the ND Legislature's appropriation of \$59 million for the new center.

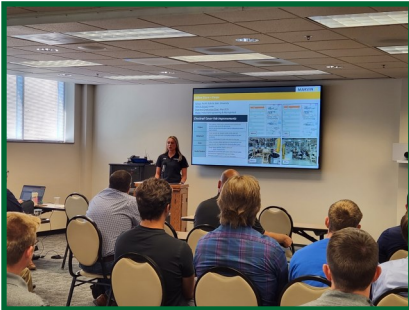
The new facility would house numerous academic areas, promoting efficiency and collaboration within engineering and computational sciences.



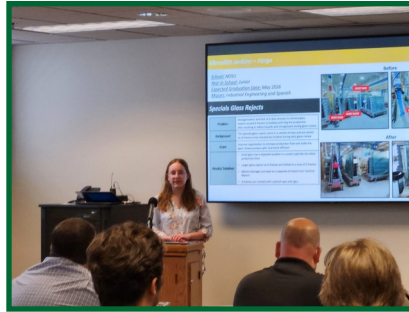
Noteworthy Happenings

Marvin Windows Internship Projects

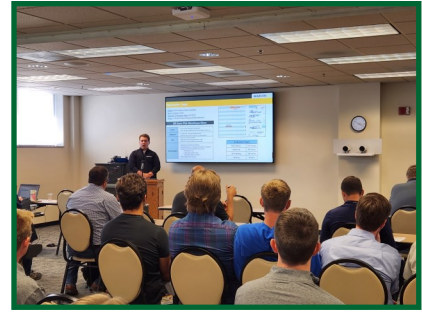
Last summer, we had seven of our industrial engineering and management students intern at Marvin Windows and Doors here in Fargo. As part of the internship program, each intern works on a project to improve processes at the facility. Below are the links to each intern's project.



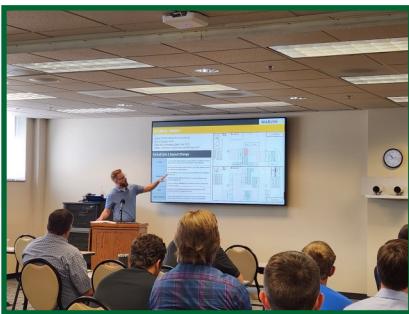
Laiken Sturn: [Checkrail Cover Fab Improvements](#)



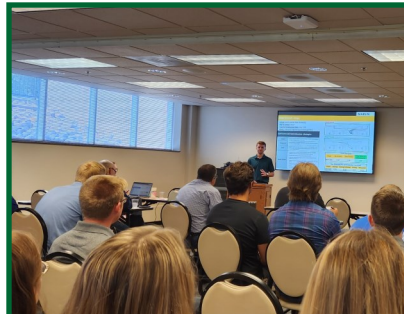
Meredith Jenkins: [Special Glass Rejects](#)



Nash Jochim: [Sill Cover Pick Warehouse Move](#)



Jack White: [End of Line 1 Layout Change](#)



Blake Schmidt: [BLDG Cut to Calc Jamb Extensions](#)



Cameron Knoll: [Casement/Awning Cover Job Aids](#)



Walker Winjum: [Special's Easel Layout](#)

MARVIN[®]

Noteworthy Happenings

CB² Annual Fall Meeting

The [Center for Bioplastics and Biocomposites](#) (CB²) held its fall meeting November 14-15 right here at NDSU. A welcome reception was held on November 13 to gear up for the two day meeting. There were a total of 60 attendees, 38 in person and 22 virtually.



The first day of the conference was spent listening to PI's (Principal Investigator) present their proposals to the IAB (Industry Advisory Board) members. During the second day, the IAB members had another chance to hear PI's speak briefly about their proposals. The proposals were then voted on to choose which of those would be awarded money for their 2024 projects. In total, there were 20 proposed presentations. Of those 20, 10 were awarded a total of \$629,244.

Natural Fiber Reinforced Nylon-Based Composites for Under the hood Applications, Vikram Yadama, Raul Pelaez-Samaniego, Manuel Garcia-Perez/WSU

Development of Biobased VOC-free Powder Coating Resin Systems, Jinwen Zhang, Eric Cochran/WSU, ISU

Utilizing Hemp Hurd. Improving Hemp Hurd Performance as Filler in Plastic Manufacturing, Ali Amiri, Chad Ulven, Breeanna Urbanowicz/NDSU, UGA

Disintegration Behavior Spectrum, Branson Ritchie/UGA

Microbial & Enzymatic Deconstruction of Lignin to Produce Scalable High Purity Reactive Building Blocks, Xiao Zhang/WSU

Developing Vegan Leather Alternatives with Persimmon and NFC-Chitosan Hydrogel Coatings: A Natural and Innovative Approach, Suraj Sharma/UGA

Valorization of Xylan in Industrial Wastes via Chemical Modification to Create UV-curable Resins, Breeanna Urbanowicz, Daniel Josey, Maria Pena, Nataraja Yadavilli/UGA

The role of bioplastics in the pharmaceutical industry, Jason Locklin/UGA

Compatibilization of PLA and PHA blends for Improved Properties, Grant Crane/UGA

Value-Added Molecules/Materials from Agricultural Residues, Yan Zhao/ISU

SPE ACCE Conference 2023

The SPE Automotive Composites Conference and Expo was held from September 6-8 in Novi, Michigan. This event focused on how automotive and transportation industries are advancing with composites playing a key role in the development of electric vehicles and sustainability initiatives worldwide.

Attending the conference this year were three members of the NDSU Chapter of SPE (Society of Plastic Engineers) and engineering graduate students, Raihan Quader, Dhirendra Sah, and Abimbola (Bibi) Oladoyin.

If you are interested in becoming a member of the NDSU chapter of SPE, scan the QR code below:



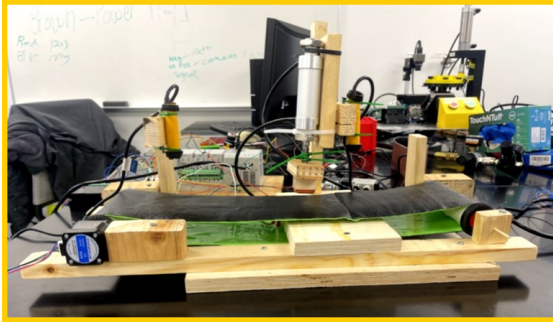
SCAN TO JOIN
SPE IN myNDSU



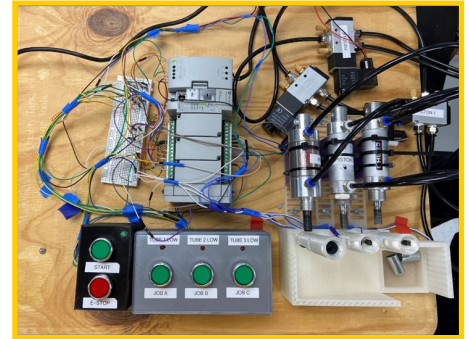
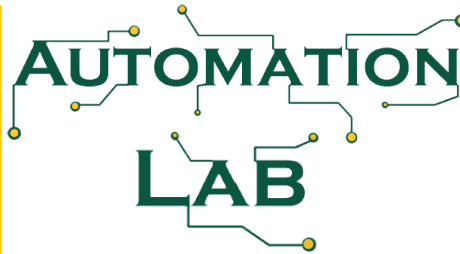
Raihan Quader, Dhirendra Sah, & Abimbola Oladoyin

Automation Projects

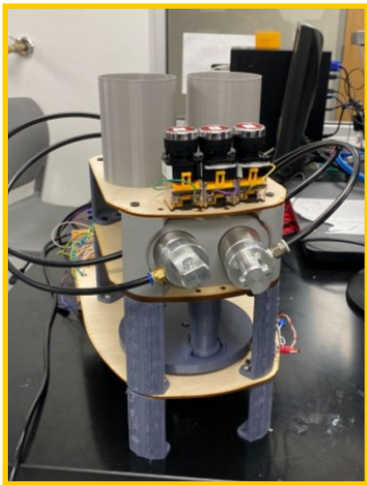
In IME 482 (Automated Manufacturing Systems), students develop essential skills in automation through hands-on experience with automation software such as Fusion 360, tools, and equipment like programmable logic controllers (PLCs). Instructed by Dr. Lokesh Narayanan, this course is designed to provide a comprehensive understanding of automated manufacturing processes. The final group project challenges students to design a practical automation system. The following designs are from the fall semester.



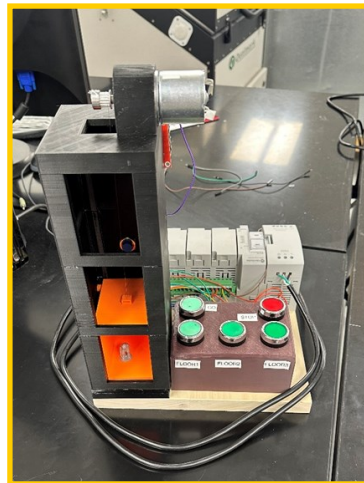
Automatic Letter Stamper



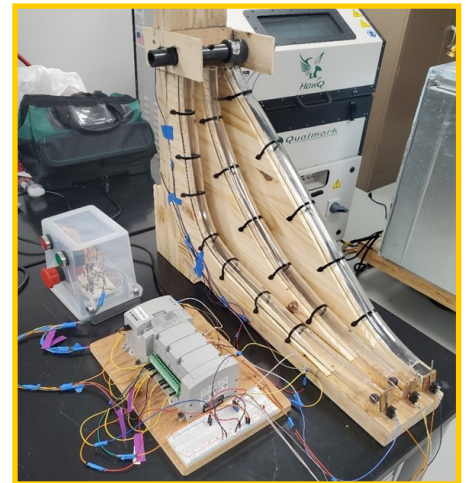
Automated Part Sorter



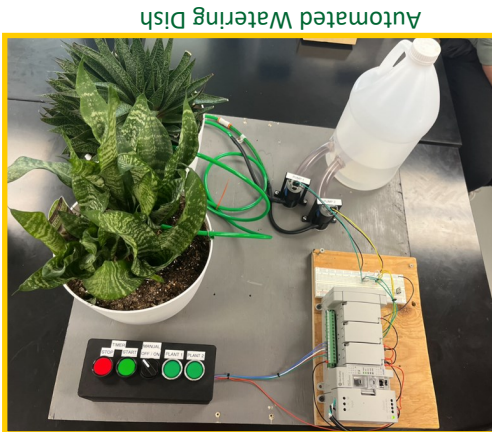
Automated Beverage Dispenser



Automated Lift System



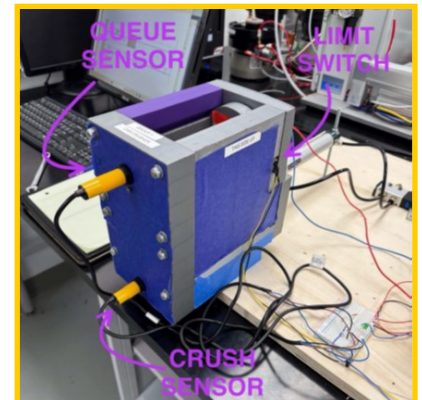
The Brachistochrone Curve



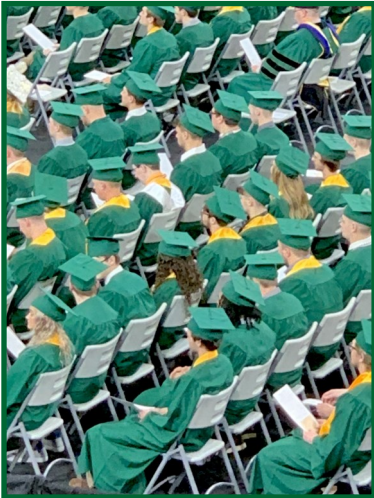
Automated Plant Watering System



Infinite Marble Run



Automated Can Crushing System



Industrial Engineering & Management

Danielle Collison
Bryce Fox
Bailey Kemper
Jacob Knox
Emma Marsolek
Hayden Wiese

Manufacturing Engineering

Orlando Ekici
Braden Wiedmann

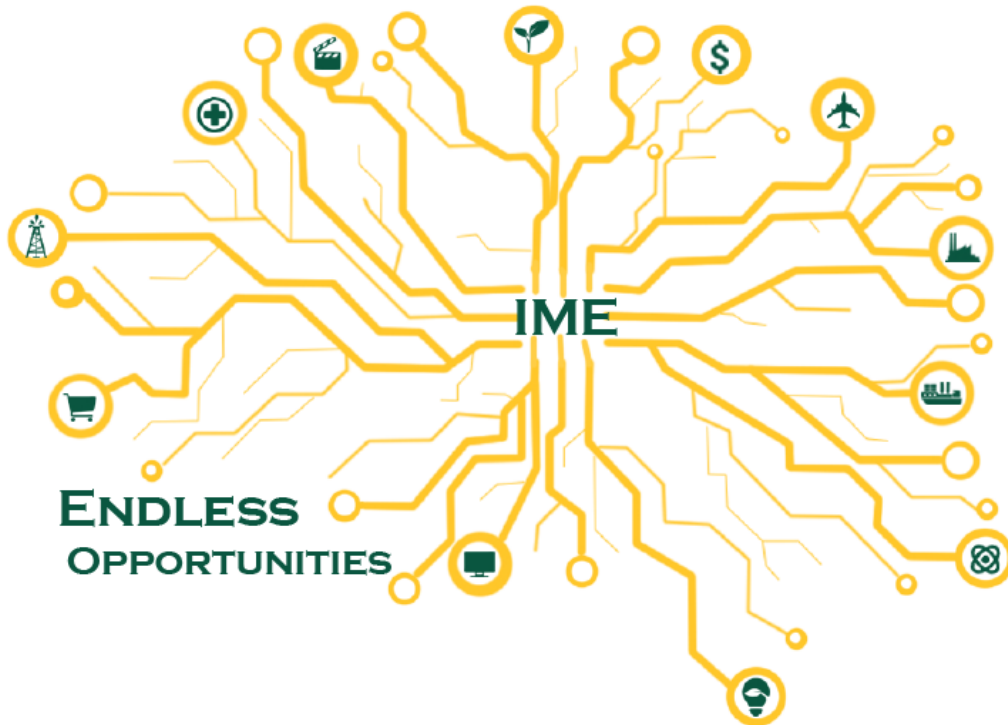


Danielle Collison & Hayden Wiese

[Watch the Ceremony](#)

[Commencement Ceremony Program](#)

We are so proud of you



Looking for more information about the IME department
or past newsletters?

Check us out on our website at: [NDSU.edu/ime](https://www.ndsu.edu/ime)
Or follow us on Instagram!



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