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Benedictine College School of Engineering Newsletter
Volume 9. Issue 1, Summer 2025

A Message from the Chair

Dr. Patrick O'Malley

Greetings from the School of Engineering! As Dr. Muggli announced in the last issue, he has rotated out of the Department Chair position. We owe him a huge debt of gratitude for the work he put in since 2009 to take the school from concept to incredibly successful reality. So much goes on behind the scenes: recruiting, faculty hiring, accreditation, facilities, budgeting, scheduling; the list goes on. It has been a privilege for me to be a part of the growth of the school, and I have learned so much working under Dr. Muggli's leadership. Realizing I have big shoes to fill, it is an honor for me to now serve in the Chair role at this special place.

This has been a year of many changes. As I'm sure many of you have heard, Mr. Sean Bauer passed away in February. His wealth of knowledge of all things mechanical (and electrical for that matter) and his gentle nature have benefited many of our students over the years. He was also a man of deep faith and will truly be missed. We are very excited to have Scott Kuefler (ME/Math '16) take on the shop manager role. He started in April in what was probably the busiest week of the semester as the seniors were wrapping up their builds. He has big plans for implementing a lot of what he learned in his nine years as a manufacturing engineer into our shop and lab spaces, and is looking forward to sharing his knowledge with our students.

This year also saw several changes among the faculty. First, Dr. Paciaroni, who served in our EE program since 2020, has retired. She came at a challenging time, with the pandemic's difficulties, being the sole EE faculty member and having to teach extra classes, and taking the lead on the first-time accreditation report for Electrical. We're grateful for her time spent with us. She was awarded "Professor Emerita" status by the Benedictine College Board of Directors upon her retirement. Also retiring is Prof. John Modlin, who served as the instructor for ME Senior Design, Design of Machinery, and Intro to ME Lab. His skills as a manager and industrial experience were appreciated by the students as they went through their projects. Dr. Strandquist (ChE) and her husband welcomed their son Jerome in December. She took the spring semester off and will be returning part-time in the fall. Lastly, Prof. Schabron has decided to return to industry in the KC area.

We will welcome two new faculty members this fall. Dr. Elissa Ledoux in ME will take

over the Senior Design course, which she taught at her previous school (Middle Tennessee State University) for the past six years. She'll also be teaching Statics this fall – believe me, that was a hard class for me to give up! Dr. Sam Rothstein is joining our Chemical Engineering faculty; he's from Iowa State and a biotech company called Skroot Labs, which makes devices to monitor cell cultures in closed incubators. In addition to his ChE courses, he'll also be teaching Computer Applications. Unfortunately, we'll be a little shorthanded for faculty in the fall with open positions in Civil, Electrical, and Mechanical Engineering. If you know anyone with an advanced degree in one of these fields who would love to teach at a faithful Catholic college, I'd be happy to connect with them!

In other exciting news, equipment has started arriving from our $1M equipment grant (you can read more about that later in this issue). I've been particularly enjoying the cobot (industrial robot) we received as part of this grant. I'm excited to bring this cutting-edge technology into our curriculum.

Enrollment has continued to be strong, which has been a blessing at a time when many colleges are struggling. We had 265 students at the start of Fall 2024 and are projecting over 100 in our Intro to Engineering class in Fall 2025.

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Thanks for reading this issue, I hope you enjoy the stories and updates from Westerman. Please continue to pray for the success of our school, the faculty, and our students. I always look forward to seeing our alumni back on campus … if you are visiting, please be sure to stop by!

The Heart of the Machine Shop:

By Steve Spencer

It is with a heavy heart that we must share the sudden passing of Sean Bauer in February 2025. Students, faculty, and alumni will remember him as the "Shop Master" who ran the School of Engineering's machine shop. He was so much more than an equipment wizard—he was also available to help faculty and students fabricate or repair their unique hardware projects.

In the old machine shop, c. 2009

In addition to being a part of the department since its inception, Sean was a man of unshakeable faith. Not only was he an active member of St. Benedict Church, but he also sang in several church choirs and performed in several church orchestras and ensembles. Uniquely, Sean was proficient on the accordion and clarinet. He shared his talents with many but steadfastly refused to be associated with polka music.

Sean spent his high school years in Spain where his father was a supervising construction contractor. As a result, he spoke fluent Spanish and had a love of Spanish witticisms. He returned to the United States where he attended Benedictine College, graduating in three years with *summa cum laude* honors earning a bachelor of arts in physics; and learned to drive.

After pursuing further studies in Boulder, Colorado, Sean returned to Atchison, where he became the designer of next-generation moisture meters for Steinlite Corp. He started to split his time with Steinlite and the Benedictine College physics department, where he served as their lab technician. He transferred to the college's new engineering department (along with the machine shop) in 2009.

Sean was part of the engineering program from its inception. Those of us who were fortunate enough to follow him through his career witnessed his growth and dedication to the students and the department.

A Tribute to Sean Bauer

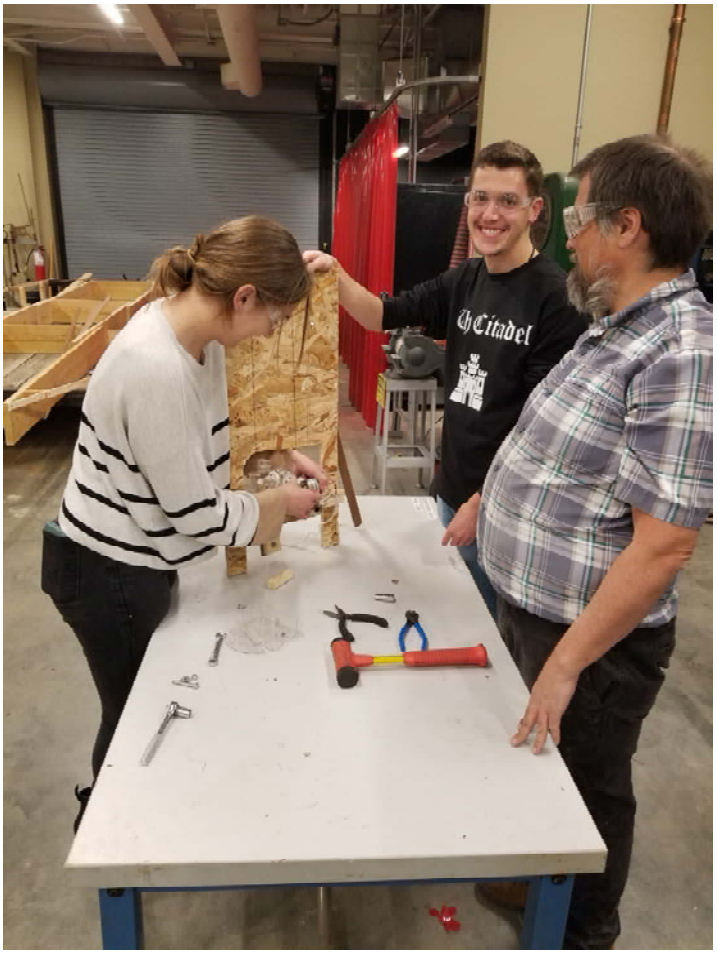
In the beginning, he was in charge of the machine shop in the old Westerman Hall. The old machine shop was described to be similar to a prototype of a machine shop found on a WWII submarine, but not as spacious.

His skills expanded as the department grew and acquired modern machines, like the CNC mill. To his credit, he taught himself G-code, CAM programs, and how to run the new machines. He also was the go-to-guy for assisting students in the fabrication of their projects for Discovery Day, junior and senior design projects, and so much more. When something was broken around the department (and beyond), Sean could be counted on to fix it.

When not found helping students fabricate their projects or assisting instructors with their teaching labs, he would be building equipment for the department. For example, he built the control system for the CNC router, rebuilt the small universal tester, and converted a manual lathe to a CNC machine.

One of Sean's many talents was his ability to find everything needed in a shop full of nuts, bolts, cutters, and students.

He embraced his church, Atchison, and the department as his family. Sean and his many talents are missed. Sean was laid to rest April 4, 2025, at Mt. Calvary Cemetery in Atchison. Memorials in his memory may be sent to Benedictine College, Office of Advancement, 1020 North Second St., Atchison, KS 66002.



Advising Design of Machinery students on Christmas Float Project, c. 2021

Professor Modlin Retires

By John Modlin

It was at a School of Engineering Board of Industry and Academic Advisors (BIAA) meeting, about eight years ago, that **Emeritus Professor Steve Spencer** pulled me aside and suggested that I could someday fill his shoes. I thought that it was unlikely, but a seed was planted.

I was working as the engineering manager at Evergy's Iatan Station, which can be seen from the southeast windows of Westerman Hall's upper floors. In the summer of 2020, I claimed an early retirement opportunity without a clear plan of what I would do next. Seven days after making my retirement official, I received an email from **Dr. Darrin Muggli** notifying me of **Professor Spencer**'s upcoming retirement and the resulting opening for the fall 2021 semester. From then on, and especially through my first-year teaching struggles, I felt that my role in the School of Engineering was God's will for me and for the program.

I have said many times over the last four years that one could not ask for better students than engineering students at Benedictine College. Overall, the students have great character and determination. They were especially patient and understanding with my new professor foibles.

The students' transformation between freshman "Intro Lab" and Senior Design was wonderful to see. I had over two-thirds of my last senior design class in Intro Lab. After four years, I feel like I'm graduating with them, in a way! I most-enjoyed guiding the senior teams through their capstone projects, demonstrating course concepts by sharing work experiences, often my failures, and having the freedom to incorporate my faith in the classroom.

Retirement celebration at senior awards lunch

As I built on the work of previous professors, it is now time for others to build on my work. I think **Dr. Elissa Ledoux** will be great!

Thank you to my fellow faculty for their support, **Jann McGregor** for keeping track of both me and the seniors, for all the well-wishes I received, and the parting celebration, cards, and gifts.

I will be close by, in St. Joseph, and hope to follow the program as it continues to grow. I'm looking forward to Presentation Day 2026!

Elissa Ledoux Joins ME Faculty

By Dr. Elissa Ledoux

Dr. Elissa Ledoux will join Benedictine College this fall as an assistant professor in Mechanical Engineering, transitioning from Middle Tennessee State University, where she has taught Mechatronics Engineering for the past seven years. Despite beginning as a preschool dropout, Elissa found her passion for academics while homeschooling and graduated from Louisiana State University (2013) with a B.S. in Mechanical Engineering.

After earning her M.S. from Vanderbilt University (2016) with a focus on robotic lower-limb prosthetics, she worked in industrial robotics as an engineer designing workcells and end-of-arm tooling. After she began teaching at MTSU in 2018, she returned to Vanderbilt to complete her Ph.D. in Mechanical Engineering (2024), where she designed soft robotic exoskeletons for stroke recovery.

In her spare time, Elissa enjoys running, country swing & line dancing, solving problems, reading, and learning new things. She is an avid Star Wars fan and will sadly be closing the doors of her themed Airbnb when she leaves Tennessee for Kansas. A child of the deep south, Elissa is not used to weather below 50 degrees F and may look more like an astronaut than an engineer in the wintertime.

Elissa is the oldest sister of **Anne Marie Ledoux**, who graduated from Benedictine College in May 2025. They are two of seven siblings from a large, Catholic family. Last summer, Elissa married **Melvin Ebersol**, a construction worker and former Amish boy from Pennsylvania. They are both introverts but warmed up to each other after a few months of an unwilling dance partnership. The two are looking forward to starting a family and a life together in the Atchison community.

Elissa and Melvin wedding photo

Faculty

Samuel Rothstein Joins ChE Faculty

By Samuel Rothstein

Dr. Samuel Rothstein is a new chemical engineering faculty in the Benedictine College School of Engineering. Sam is originally from Minnesota, where he attended University of Minnesota Duluth (BS in ChE, 2015). Enamored with biotechnology and metabolic engineering, he studied at Iowa State University (PhD in CBE, 2020) where he focused his studies on genome engineering lactic acid bacteria. Since graduating, he has been working at a start-up company, Skroot Laboratory Inc., in Iowa, which focused on developing sensors for biomanufacturing. Through this start-up, Sam has considerable experience progressing laboratory developments into products and protecting new products with patents. Sam is excited to bring his experience in the start-up life to Benedictine.

In his free time, Sam likes to 3D print, smoke meat, and ferment food (sauerkraut and sourdough) and beverages (beer, wine, mead, and ginger beer). Sam also loves spending time with his wife, **Anne,** playing boardgames and playing with their dogs, Ginger and Kolbe. Sam is excited to meet all the engineering students at Benedictine College and would love to hear some quality dad jokes if you have them!

Sam and Anne, with dogs, Ginger and Kolbe

Scott with wife, Kayla and children Simon , Monica, and Alice (L to R)

New Shop Manager - Scott Kuefler

By Scott Kuefler

Scott Kuefler came back to walk in the footsteps of the late Sean Bauer and take up the role of Shop and Lab Manager in the School of Engineering. This was a coming home in many ways for Scott. He graduated in 2016 from Benedictine College and worked in the Engineering Department as a lead student worker with Sean in the old Engineering Shop before the Westerman remodel. It was this time as a student worker helping with casting and machining that steered Scott's career path as a professional engineer.

Scott has a BS in Mechanical Engineering from UND and a BA in Mathematics from Benedictine College. After graduating, he worked in Sabetha, KS for nine years as a Manufacturing Design Engineer for Coperion Process Solutions LLC (formerly Schenck Process). During his time there, he did casting and machining design for aluminum, steel, and iron for new and legacy rotary airlock and diverter valve products. This included lean manufacturing and Kaizen training for manufacturing efficiency. Scott worked closely with machine shops and foundries in the USA and India on manufacturing practices, design, and tolerances. He wrote original standard documentation for surface finish and quality control criteria for these specialty castings. Before leaving, Scott had completed the re-design for two gen II product lines of older rotary valve airlocks for pneumatic conveying and dust filtration applications used primarily in the pet food industry. This included all design aspects from the ground up including the casting, machining, assembly, seals, bearings, manuals, procurement, and project management.

Scott and his wife **Kayla** have three children **Simon,** *7*, **Monica,** *5*, **and Alice.** (Photo on preceding page) Alice was diagnosed with a rare genetic condition, Trisomy 18 (Edward's Syndrome), right after birth and died two and a half months later after a short life full of love. Scott & Kayla know Alice is their little saint in Heaven and they are thankful and blessed for the time they had with her.

Scott is a jack-of-all trades - always fixing things and designing solutions around the house and cars. His new position will tie in well to those passions. He is excited to be close to home to spend more time with his family and to be back serving the Benedictine College community once again.

News

School of Engineering Earns $1M Grant

By Dr. Patrick O'Malley

The Benedictine College School of Engineering received $1,000,000 in funding for purchasing equipment as part of the 2024 federal budget. The funds were part of the Congressionally Directed Spending Appropriations recommended by **U.S. Senator Jerry Moran**. Over this past spring semester, the faculty of the School of Engineering have been busy purchasing new equipment, some of which has started to arrive on campus.

One exciting piece of equipment is a new UR5e industrial robot arm from Universal Robots. This collaborative robot or "cobot" is designed to work in an industrial setting side-by-side with a person without the need for extensive guarding. It has integrated force/torque sensors that monitor what the robot is expecting to "feel" as it goes through its motions, and if it detects any anomalies (i.e. collisions), it shuts down.

School of Engineering Faculty with Senator Jerry Moran, center

Austin Windsor and Dr. O'Malley

The robot was purchased from HTE Technologies, where **Austin Windsor (ME 2018)** works as a Robotics Product Manager. He helped select the appropriate machine for what we want to do in the classroom and came to campus in May to get it installed and running. "It's amazing to see how much the program has grown, and this will be a big addition to their robotics course", said Austin. "It was especially meaningful to work with **Dr. O'Malley**, department chair and the professor who taught the very first robotics elective I took during my time at BC—the course that originally sparked my passion for this industry. I hope this robot helps students learn, build, and dream big for years to come!"

The grant has equipment selections from all programs, some other highlights include new CNC machines for the shop, RF Power meter and network analyzer, a distillation column, an instrumented combustion engine and emissions analyzer, concrete crusher, soil testing equipment, instruments for water quality analysis, and many more. It is exciting to have this op-

portunity to bring in state-of-the-art equipment for our students to use, so they are well prepared for when they get out in the field. And to be honest, the faculty is enjoying getting their hands on some new equipment too!

Thomazin Is Outstanding Young Alum

By College Staff

Hannah Thomazin (ME 2020) was recently recognized as the 2025 Benedictine College Young Alumni Award recipient.

After graduation, Hannah landed a job as a project engineer at U.S. Engineering, a mechanical contracting and consulting company headquartered in Kansas City. As a woman in the male-dominated fields of engineering and construction, she wanted to be seen as a role model and example for other female students looking at a similar career.

At U.S. Engineering, Hannah joined a team working on a new lesson plan for Project Lead the Way, a national organization focused on STEM education. She also became active in recruiting, team-building, and mentoring.

Hannah participated in U.S. Engineering's International Exchange Program, working two months as a consultant for NG Bailey, the UK's leading independent engineering and services business based in Leeds.

Hannah receives award from Dr. O'Malley

Working to inspire young professional women to enter the engineering field, she currently serves on the Young Professionals Committee of the Kansas City Chapter of the Mechanical Contractors Association. She also serves as the youngest member and only female on this organization's Innovative Technologies Initiative Advisor Board! She helps plan the association's annual MEP Innovations Conference and has served as a featured speaker and panelist for the last three years. Hannah's success there propelled her to be an invited speaker at the 2024 Conference for Integrated Design, Construction & Operations, where she spoke on "Tackling Inefficiencies: The Power of Using Your Data."

Outside of her professional accomplishments, Hannah continues to prioritize her Catholic faith and regularly demonstrates

that faith through the way she treats and serves others. She is an active member of Queen of the Holy Rosary Catholic Church in Overland Park and is also a member of the Kansas City Chapter of Young Catholic Professionals. She recently served as an alumni panelist at the Benedictine College Pathways to Professionalism Conference.

Today, she is an Assistant Project Manager for Strategy with U.S. Engineering and obtained her Professional Engineer license in Industrial Systems this past February.

Hannah is well-established in her profession and has accomplished a lot in five short years. She exemplifies the Characteristics of a Raven in every way, both professionally and personally. Hannah's dedication to her career, commitment to mentoring and inspiring young people, and active involvement in her faith community make her an outstanding young alumna and a deserving recipient of this award.

Jesse Cara, Edward Stephenson, Owen McOmber

Design of Machinery LEGO Mechanisms

By Robert LeBoeuf, Reuben Coombs

In the Fall 2024 semester, the Design of Machinery class had a new project. Each team of three students was challenged to design and build a LEGO Technic mechanism, which would lift a load at least three inches in one minute. A competition was held to determine the design capable of lifting the greatest load.

There were three stages of design and testing before the competition. The first was to use MSC Adams simulation software to design the linkage, ensuring it was realistic by using measured LEGO densities for the parts. The second phase was designing a gearbox with proper gear ratios to maximize output torque, while completing the lift within the time limit. As torque and speed are tradeoffs, the application of engineering judgement was required to determine a design safety factor such that the team could lift a significant weight without being disqualified. **Professor Modlin** helped the students at this stage by testing the provided motor to determine its motor curve. The third phase was construction and testing. When transitioning from models to LEGOs, the rubber met the road, and various limitations became apparent. For example, certain gears could not mate at all, and others mated poorly, which limited usable gear ratios. One of the biggest problems

encountered was the extent to which the shafts deflected, which caused gears to slip and reinforced an important lesson from Design of Machinery. This problem was addressed with aluminum shafts made by **Mr. Bauer** in the machine shop.

As competition day approached, students found that certain problems were inherent to the LEGOs, so certain workarounds were granted to the teams, such as using up to two aluminum shafts, using counter weights to balance the machine, and adding external reinforcement to hold the mechanism together while it was running, as the LEGOs easily separated from each other. On competition day, the winning mechanism lifted the equivalent of a half-gallon of water, and no one died when one of the mechanisms exploded.

Statics Bridge Competition

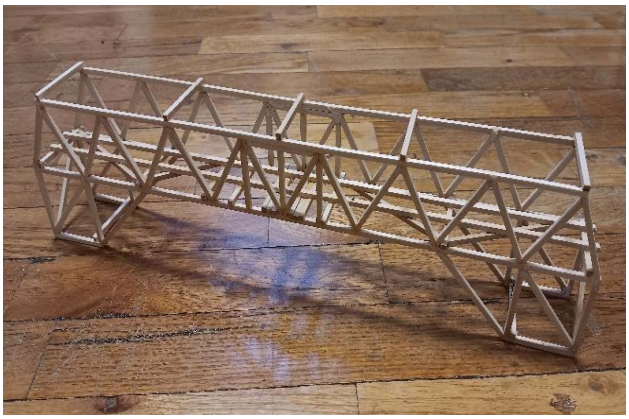
By Paul Hanson

Nearing the end of the fall semester, Dr. O'Malley introduced his sophomore statics class to the infamous bridge competition. In this project, students are tasked to design and build a bridge over the course of three weeks using thin wood beams and glue. With these material restrictions, the teams must research different truss designs and develop one that will maximize the efficiency of the bridge. The class designed and built 19 bridges, varying in designs from the classic Pratt truss, the more complicated Bowstring truss, and multiple completely unique designs. Aiming for the same goal, every team came up with a distinct design they believed was the best. This competition showed how different people can design vastly different solutions to the same problem and highlights the creative capacity that engineers have when they work together.

Everyone was competing for the honor of winning the bridge competition! With so many different bridges, some very light, some very sturdy, some very unique, no one knew who would win. At the end, when the broken bridge pieces settled, it was **Nick Katze and Katherine Stickney** who held their ground with a 35g bridge

Luke and Sebastian testing their bridge

that had an efficiency of 1023. That means a bridge that weighs as much as a bag of chips holding up a small washing machine! Overall, everyone in the class learned through this competition the vast importance of bridges, why certain bridges are so common, and that good construction is just as important as a good design. Incoming sophomores will have the opportunity to try to dethrone the all-time leaders from 2015, whose efficiency record of 1312 has stood for the last 10 years.



Winning bridge design 2024

Iatan Power Plant Tour

By Kalen Wojtkun

On November 15th, 2024, the Intermediate Thermodynamics class took a trip to tour the Iatan Power Plant. The plant consists of two coal-fired units. Unit 1 has a sub-critical boiler and was built in the late 1970's. Unit 2 has a super-critical boiler and went into service in 2010. Located in Platte County, Missouri, the plant is a mere fifteen-minute drive from Benedictine College. Evergy owns and operates this power plant. The purpose of the trip and tour was to see first-hand the application of the Rankine power cycle, a major topic in class.

Two plant engineers led small group tours of the plant. **Mr. Shawn Duryea**, one of the engineers, began the tour in the plant conference room by covering the safety requirements and telling the class about the specific features of the power plant. The language he used and the concepts he referenced were familiar from class lectures and reading.

From here, the tour went into the plant. The ground floor of the plant was the base for coal pulverizers and condensers. The pulverizers are massive structures, about two stories tall, which grind the coal into a fine powder for efficient combustion. The condensers condense the low-pressure steam leaving the turbines back into water for re-heating in heat exchangers and the boilers. The condensers are cooled by Missouri River water (Unit 1) or circulating water cooled by a large cooling tower (Unit 2). In class, we learned briefly about different types of heat exchangers as they were important for our study of thermodynamic cycles.

After this, the tour went up several stories and viewed different parts of Unit 2's super-critical boiler, which itself stretched

many stories. In total, the building was 43 stories tall, all filled with complex machinery. Surrounding the boiler were pipes and measurement devices. After this, the tour went to the outside walkways on the plant. From here we were able to see many features of the plant site, including scrubber waste processing equipment and the Unit 2 cooling tower. It was excellent to see the cooling tower and the after-treatment facilities, which were topics covered in the class.

The tour then visited the turbine deck. As there were two units, there were two (multi-stage) turbines. While viewing the turbines, the class was able to see spare turbine blades and learn about the complex start up process. The start-up process for the plant requires hours to slowly heat up the turbines, so it thermally expands without causing interference as the turbine reaches operating conditions. It was very interesting to see how a power plant requires the application of topics such as heat transfer and fluid dynamics, which were topics of other classes we have taken or will take.

The trip to the Iatan Power Plant was an excellent experience which demonstrated the real-world application of classroom topics. Every part of the plant utilized something which was either taught in the Intermediate Thermodynamics class or some other class at Benedictine. Many thanks to **Dr. Sprouse** and **Mr. Duryea** for arranging this tour.

Engineering Starts BC Radio Club

By Sophia Caughron

Benedictine College has a new Amateur Radio Club! This is especially exciting as Benedictine College has a previous history of amateur radio: at one point, several of the Abbey monks were licensed, and the college had an amateur radio studio from which they would transmit weekly. The new Amateur Radio Club obtained club status in April 2025. Faculty sponsor **Dr. John Rogers** and club president **Sophia Caughron** collaborated over the 2025-26 school year to grow membership and develop the club's founding documents. After having a table at the Fall club fair and several introductory meetings, the club was able to host a licensing session through the help of hams from the Missouri Valley Amateur Radio Club based in Saint Joseph, Missouri. Through these efforts, three Benedictine students -- - **Ryan Fricker** (KE9CSK), **Karolek Suchocki** (KF0TNK), and **Liam Philbin**

(KR4BZR) --- earned their technician class licenses, and club president **Sophia Caughron** (KE0LAM) upgraded her license to general class. The club, which is open to all Benedictine College students, staff, and faculty of any discipline (not just engineering), is looking forward to a second year!

BC Radio Club meeting

Student Orgs Take Over Christmas Float

By Sarah Hanson

In previous years, the Design of Machinery students would build a Christmas Float for the Atchison Christmas Parade. This year, the curriculum was changed, and they were no longer going to make a Christmas float. Because of this, members from SWE, ASME, and ASCE rallied together to construct and enter a Christmas float. The members that made this possible were **Sarah Hanson** (SWE), **Kalen Wojtkun** and other members from ASME, **Matthew Cavanaugh** (ASCE), and **Joseph Campbell.**

The theme for the 2024 float was Winter Wonderland. The front half of the float had a Christmas tree with lots of lights. The back half of the float was a snowy Christmas village, surrounded by a working model train. The houses and church in the village were made of cardboard as well as the base that the village was on. White felt was used to make the snow. After the parade, the Benedictine College engineering students were awarded first place in the school and church division.

Throughout this project, the clubs were assisted by many people. They were assisted by **Dr. Megan Paciaroni** and **Jann McGregor**, who gave them the idea of taking up this project. Jann also helped to make sure that the project stayed on track. **Joe Campbell** helped by using his truck to participate in the parade. Finally, they were assisted by two members of the Atchison community. One allowed them to use his trailer for the float, and the other made new bows to decorate the Christmas tree with.

Concrete Canoe Meets with Success

By Rebecca Madden

Following success in 2024, the Benedictine College Concrete Canoe Team returned in 2025 with a goal of improving their canoe and expanding their team. The team this year was composed of 17 engineering students of all disciplines, as well as students from many different majors. This year, the team worked to make improvements in every area of the project, specifically the weight, strength, and aesthetics. **Joseph Campbell** led the Hull Design Team in designing the shape of the canoe, creating a mold, and completing a structural analysis. **Rebecca Madden** led the Mix Design Team in testing various concrete mixes to create a strong yet lightweight canoe. **Paul Hanson** led the Report Team in writing a technical report, documenting the overall process and highlighting the team's strengths. Finally, **Sarah Hanson** led the Aesthetics Team, planning the overall look of the canoe and creating a display to show the construction process.

This year's canoe was named Verso and was themed around Leonardo Da Vinci's drawings and inventions. The canoe itself featured many of his original ideas, including a flying machine, giant cross bow, and his original boat design.

The team attended the ASCE Mid-America Student Symposium in April, competing against 13 other teams. They placed 2nd overall in the races, with 2nd place finishes in the Women's sprint, Women's slalom and Men's slalom, and 3rd in the Men's sprint and Coed sprint. Additionally, the team placed 4th for their proposal, 5th for their presentation, and 3rd for the product. This placed the team 4th overall, beating 9 other schools. After this exciting finish, the team is already planning for next year's competition.

Concrete Canoe team at the ASCE Symposium

In addition to the concrete canoe, students competed in various other competitions at the symposium as well. **Nick Ackerman** competed in the 3D printed bridge competition, where his bridge held 148lbs with an efficiency of 155.7. **Sean Galloway** led a team in the Concrete Bowling Ball Competition, where he placed 6th overall, and 1st for Design Requirements. Finally, **MJ Guarino** competed in the student symposium paper competition, where she presented on ethical responsibility in engineering disasters.

Organizations

Sleep in Heavenly Peace

Another year of getting kids off the floor! This year, Sleep in Heavenly Peace built 140 beds, totaling to 1,350 built since the chapter's founding in 2018. We were blessed to have many sports teams volunteer their time this year with constructing the beds, including the Benedictine College baseball team, women's basketball, track and cross country, and women's soccer, plus the Maur Hill – Mount Academy cheer team. This year, we ran four full bed builds and a few mini builds with students, faculty, and sports teams. During Lent, 41 beds were delivered to families in Atchison and St. Joseph. We look forward to another successful year of serving the community and helping families in need.

Bed building in the shop

Loading up for delivery

Sleep in Heavenly Peace

Organizations

SWE, AIChE, & ASME

Society of Women Engineers

Benedictine College's Society of Women Engineers (SWE) started this year with an introductory brunch. Throughout the year, SWE hosted many events. In the fall, they had a resume building workshop and had two guest speakers at a Lunch and Learn. In October, SWE helped **Dr. Andrew Downs** run different stations during Spooky Science. SWE also worked with the Presidents of ASME and ASCE to build the float for the Atchison Christmas parade, winning first in the school and church division. In the spring, SWE worked with ASME to host many Lunch and Learn events. They also had another resume workshop before the Benedictine College Career Fair. Sadly, at the end of the semester, they will be saying goodbye to their academic advisor, **Dr. Megan Paciaroni**. She has overseen the club since she has been at Benedictine College. While working, she has played a large role in helping plan events and being a mentor to the members of the board. She will be missed.

American Institute of Chemical Engineers

The Benedictine College American Institute of Chemical Engineering student chapter welcomes any students interested in Chemical Engineering. The chapter hosted two events this year. The first was a guided plant tour of the Frito Lay facility in Topeka, Kansas, given by alumna, **Catharine Marak '23**, Supply Chain Manager. We saw multiple process lines, including the Ruffles potato chips, Sun Chips, Cheetos, Funyuns, and Tostitos manufacturing processes. The second event was a talk given by **Dr. Juan A. Lopez-Ruiz**, a professional

ASME, KSPE

chemical engineer performing electrochemistry research at Pacific Northwest National Laboratory in Richland, Washington. **Dr. Lopez-Ruiz** presented his research topics, discussed what it is like working at a national laboratory, and how to get involved with the national labs.

American Society of Mechanical Engineers

This past year, the ASME Student Chapter continued to foster professional development opportunities and build community among engineering students. The chapter hosted several speakers, who gave talks on various fascinating topics.

Captain Julie Johnston, a Pilot-In-Command in the UH60 Blackhawk, who was deployed to Afghanistan and now studies at MIT towards her master's in Mechanical Engineering, spoke about her background and research. **Sophia Vaughan** (sister of **Jacob Vaughan**, ME 2025), a law student at the University of Pennsylvania, who obtained her bachelor's in Chemical Engineering at Iowa State, spoke about intellectual property law, touching on patents, trademarks, and copyrights.

Stefan Rey RPEQ, an Application Engineer at Cummins, Inc., who holds a Mechanical Engineering degree from the University of Queensland, Australia, was able to share some of his experience from working in the Australian rail industry and researching the mechanical characterization of nanowires.

The chapter also ran multiple community activities, such as building a first-in-class Christmas parade float (see previous article) and hosting the annual Engineering Christmas party. Overall, it was a very successful year of service to the School of Engineering community.

Junior Design

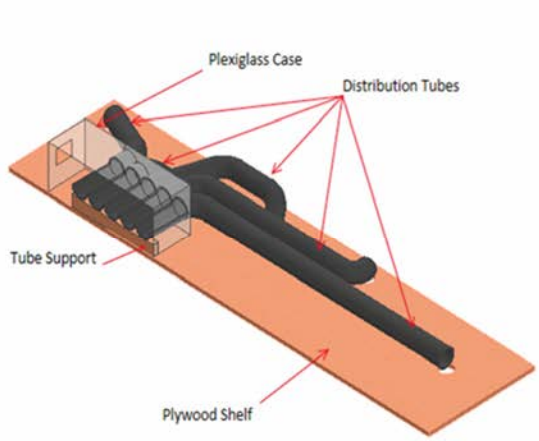
Mechanical Junior Design Projects

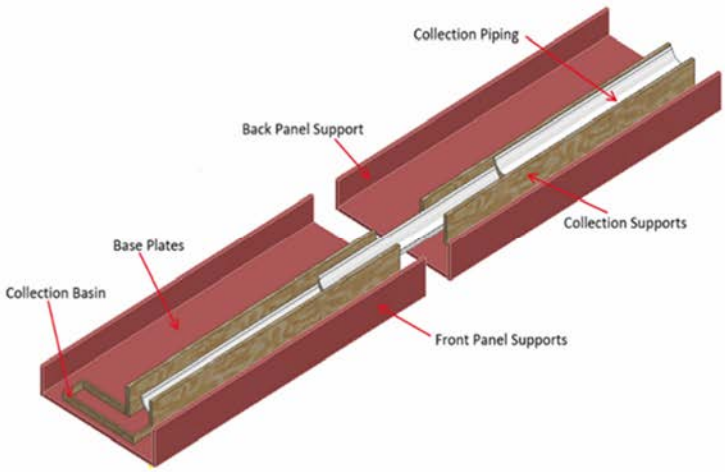
Overall Ingenious Mechanical System

Students this year designed and constructed a modular system to display "ingenious mechanisms". The system is powered entirely by the potential energy of a steel ball. An Archimedes screw (left) lifts the ball to a distribution unit (top), which directs it to any of the five modules via a user-controlled magnet. Finally, a collection system (bottom) returns the ball to the base of the screw.

Distribution and Collection

Joseph Campbell, Maria Clarke, Skyler Specht



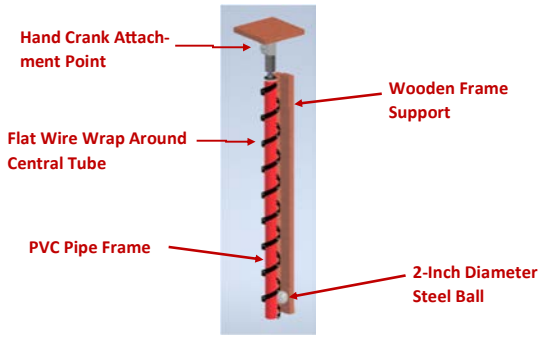


The distribution system (left) creates a user interface to allow the selection of a module. A module is selected by using a magnet-rod assembly to drop the steel ball in the corresponding distribution tube. A plexiglass case constrains the movement of the ball and prevents it from escaping the system. The collection system (right) returns the steel marble to the Archimedes screw.

Mechanical Junior Design Projects

Archimedes Screw Lift

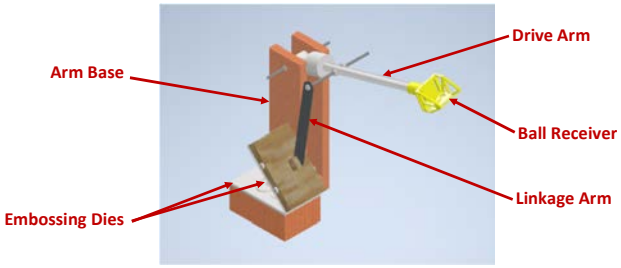
Brendan Baier, Jack Strom, Jesse Cara



The Archimedes screw design is the ball-resetting mechanism. A user manually rotates the screw with a hand crank, raising the ball to the return point in a repeatable mechanical process.

Automatic Stamping Machine

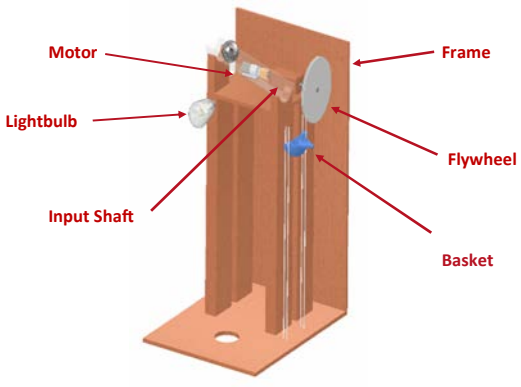
Kalen Wojtkun, Liam Philbin, Daniel Larkin



This design embosses a notecard with the Benedictine "B" logo. Visitors place a blank card between the embossing dies and direct a steel ball into the receiver, closing the dies and embossing the card.

Converting Energy: Linear to Electric

Johnny Bauer, Owen McOmber, Charlie Stiles



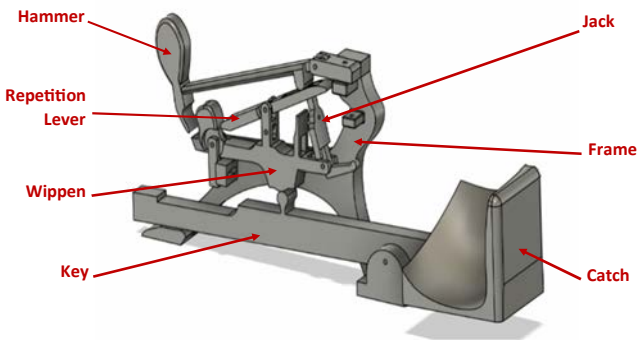
This design converts the potential energy of the ball to electrical energy. The ball drops into a basket, which drives a flywheel as it lowers, spinning a generator and lighting a bulb.

Junior Design

Mechanical Junior Design Projects

Grand Piano Action Mechanism

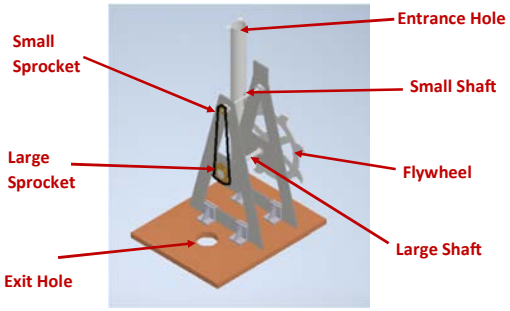
Reuben Coombs, Sebastian Michael, Augustine Smith



The piano action is inspired by the classic Steinway grand piano. Most elements are 3-D printed, while the ball-catching key is pine wood. Four of these mechanisms together play the BC fight song.

Phenakistoscope Animation Wheel

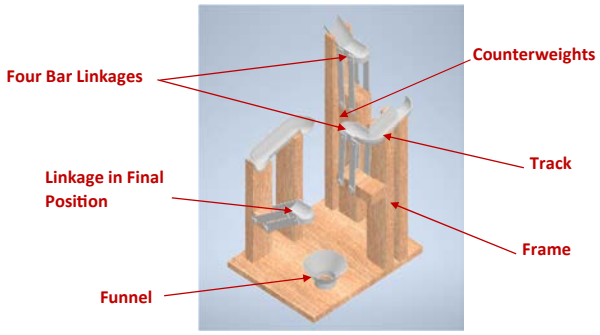
Delaney Trainor, Paul Wilkin, John Wingbermuehle



This phenakistoscope uses a falling ball to power a flywheel, with a gear reduction and ratcheting mechanism spinning the animation wheel at high speed, for viewing via a mirror.

Self-Resetting Four Bar Linkage Track

Anna Leuer, Rebecca Madden, Chase Robertson



This design showcases how four bar linkages work by moving a steel ball across the module and including counterweights to allow the module to self-reset.

Chemical Capstone Projects

Baking Powder Production Using the Solvay Process

Johan Nijs, Elizabeth Kastl

Baking powder - a staple in kitchens around the world - is essential for leavening baked goods. Typically composed of baking soda, corn starch, and cream of tartar, this common ingredient plays a critical role in everything from cookies to cakes. With the global food industry expanding, the baking powder market is expanding at annual growth rate of 7.66%.

In response to this rising demand, a Chemical Engineering team developed an industrial-scale process for producing baking powder using the Solvay method. Known for its low-risk operation and moderate conditions, the Solvay process offers a reliable and efficient route to high-volume production.

Elizabeth and Johan

The proposed system is designed to manufacture 95,000 cans per day, meeting both technical and economic benchmarks. With a positive net present value and sustainable production metrics, the process is a viable solution for large-scale baking powder manufacturing.

Sweet Solutions: Designing a Scalable Sugar Beet Processing Plant for Global Demand

Thomas Coyle, Nelson Klein, Thomas Walsh

With sugar beet production accounting for 55% of global sugar output and worldwide demand growing at an estimated 5% annually, scalable and sustainable production methods are essential. In response, a Chemical Engineering team designed a crystallized sugar production process that meets projected growth, while also capitalizing on valuable by-products.

The proposed facility processes sugar beets to produce crystallized sugar at a commercial scale, while also generating beet pulp for animal feed and calcium carbonate as a soil enhancer, both expanding markets.

Capstones

Chemical and Civil Capstone Projects

Sugar beets in processing plant

Technically, the process is low risk, operating at mild temperatures and pressures. All materials involved are non-hazardous, resulting in minimal environmental impact. From an economic standpoint, the project is highly feasible, with a projected net present value of $430 million and a capital investment of $500 million.

Laying the Groundwork: High Fructose Corn Syrup Facility Site Design

Julia Jochum, Lillian Gardner, Anton Murray, Blake Dapkus, Ryan Petka, Cole Voss, Peter Cara, Will Griffin

Building on last year's Chemical Engineering Capstone Project, this year's Civil Engineering Team designed the critical infrastructure needed to support a high fructose corn syrup production facility - from the ground up.

The proposed site is a 95-acre parcel in Atchison's Shannon Industrial Park, owned by the City of Atchison. The location is ideal for industrial development, with direct access to Highway 73, the Santa Fe railroad, as well as city-supplied water and sewer services.

The students developed conceptual and detailed designs, along with full construction documents - including plans and specifications - to support site development. These documents cover a wide

Front Row Lt to Rt: Blake, Ryan, Lily, Julia
Back Row Lt to Rt: Will, Anton, Peter, Cole

Electrical Capstone Projects

range of infrastructure elements, including site grading, railroad and road improvements, water and sewer pipelines, storm-water management systems, wastewater pre-treatment, building foundations, and structural steel buildings.

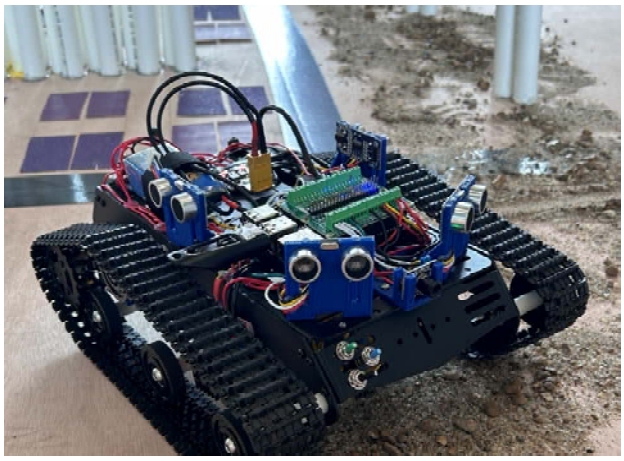
Lt to Rt: William, Benjamin, Mark

Team Places 5th at IEEE Robotics Competition

Benjamin Schuberg, William Hamada, Mark Stromberg

The School of Engineering competed in the 2025 IEEE Region 5 Robotics Competition, where the Electrical Engineering Senior Design team earned an impressive 5th place finish with their fire-mitigation robot.

Designed to operate autonomously, the robot uses thermal imaging to detect fires, navigates challenging terrain while avoiding obstacles, and precisely deploys a fire hose at a target location. After completing its mission, the robot retraces its steps to return safely to its starting point.



The EE Team's Robot

This capstone project gave the students invaluable hands-on experience in system design, software development, and chassis engineering, while also honing their ability to adapt to last-minute design changes demanded by the competition.

The School of Engineering looks forward to next year's competition and continuing to push the boundaries of robotics innovation.

Capstones

Electrical Capstone Projects

Ultrafast Laser Measurement System for Physics Dept

Jacob Steffen, Sydney Schmidt, Braden Stewart

The Electrical Engineering FROG Team is developing a Frequency Resolved Optical Gating (FROG) system for the Benedictine College Physics & Astronomy Department. FROG is a sophisticated measurement technique used to reconstruct the waveform of ultrafast laser pulses.

Guided by faculty advisors **Dr. Paciaroni, Dr. Sayler,** and **Dr. Shcherbatyuk**, the team designed and constructed an integrated system that includes an autocorrelator, a spectrometer, and an image acquisition system. Together, these components form the core of the FROG setup.

Lt-Rt: Braden, Sydney , Jacob,

The system has wide-ranging applications in fields such as nonlinear optics, atomic and molecular spectroscopy, and the study of ultrafast physical processes. It will play a key role in the restoration and use of the department's Titanium-Sapphire laser, bringing advanced optical diagnostics to campus research.

Baja in the works

Baja Frame and Integration

Client: Benedictine College School of Engineering
Nick Eisman, Aaron Stanley, Matt Feldkamp, Michael Herbic

The goal of this year's Baja project was to evaluate the current condition of the off-road vehicle and ensure full compliance with SAE design requirements. After a

Mechanical Capstone Projects

comprehensive assessment, the team identified several areas for improvement and implemented upgrades.

Key enhancements included a redesigned frame with stronger welds and enlarged engine compartment for a larger SAE-specified engine, adjustments to drive shaft alignment, performance tuning of the Continuously Variable Transmission (CVT), repair of the 4-wheel drive switch circuit, and resolution of a gear box oil leak.

The updated Baja vehicle design features a larger, more durable frame, and looped tubing for the gear box vent. The team salvaged materials from the previous frame, significantly reducing the project cost.

Hands-On History: Child-Friendly Handcart

Client: Atchison Train Club
Jacob Vaughan, Thomas Campbell, Ben Houlihan, Ben Sylvain, Isaac LeMark

To spark children's interest in railway history through interactive play, the Atchison Train Club requested the design of a small, rideable handcart. Their goal: create a safe, engaging amusement ride that encourages young riders' interest in railroad history.

In response, ME Team SD2 developed a handcart powered by a 4-bar mechanism connected to a chain drive. Riders propel the cart by pumping a central handle. To ensure safety, the cart includes two independent braking systems: a centrifugal brake for automatic speed regulation and a manual handbrake for one of the riders.

Key features of the final design include the 4-bar drive system, custom handlebar, centrifugal brake, and a sturdy manual brake. Together, these elements create a fun, hands-on way for kids to explore the area's railway heritage.

Lt-Rt: Ben H, Isaac, Jacob , Thomas, Ben S delivering cart to Atchison Train Museum

Capstones

Mechanical Capstone Projects

Ainsley's Angels Adjustable Racing Chair

Client: Ainsley's Angels
Grace Dondlinger, Anna McDonald, Hannah Nelson, Domenico Ricciardi

Team SD5, known as *The Charioteers*, partnered with **Ainsley's Angels of America**, a non-profit that champions inclusion by organizing endurance races for individuals with disabilities. Their mission: to design an innovative, fully adjustable racing chair inspired by the evolving needs of Ainsley, the daughter of Ainsley's Angels president Major Kim "Rooster" Rossiter.

While a few reclining chairs exist on the market, none offer the full 90° to 180° range that Major Rossiter envisioned. Rising to the challenge, the team engineered a custom solution - the Raven Chariot.

Key features of the Raven Chariot include:

- A telescoping frame that enables full reclining from upright to flat.
- A hinged seat back with support posts for structural integrity.
- Compatibility with two wheel types - bike wheels for races and beach wheels for off-road use - thanks to adjustable forks, a removable axle, and dual braking systems.
- An adjustable handlebar to accommodate riders and pushers of various heights.

This project combined mechanical design, user-focused engineering, and even a bit of craftsmanship:

Anna: "This project was really challenging and stretched me a lot, but it was also really rewarding to see everything come together. Plus, I loved getting to do some sewing as part of an engineering project!"

Hannah: "Working on this project for the past year taught me so much about the engineering process. I am happy with the product we made and grateful that I got to be a part of the team!"

Lt-Rt: Grace Dondlinger, Domenico Ricciardi, Anna McDonald, Hannah Nelson (seated)

Mechanical Capstone Projects

Grace: "It was awesome to be able to ride in the chair after finishing the project. Creating a product with a customer base in mind was a cool challenge that brought the team together to push us outside our comfort zone."

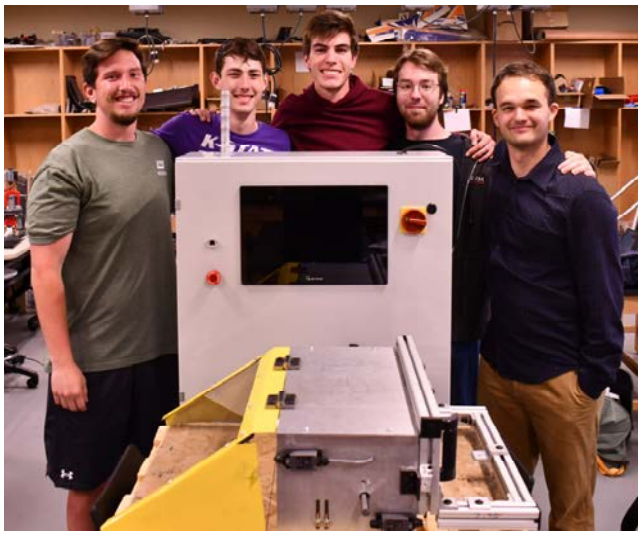
Domenico: "This project opened my eyes to the effort required to bring a novel idea into reality. Despite a few setbacks, I enjoyed working with my team to bring our idea to life, and hopefully one day it will make an impact on many people's lives."

Cutting Edge Innovation: Rotary Cutter Eliminates Assembly Line Jams

Client: Henkel
Augustine Blosser, Ryan Fricker, Gabriel Guzman, Zachary Johnson, Kenneth Lathrum

A guillotine cutter on one of the Henkel Corporation's assembly lines experiences jamming at high conveyor belt speeds due to the blade interfering with the paper. The team designed and built a rotary cutter to prevent jamming. The rotary cutter cuts in a circular path, so it moves out of the way of the incoming paper to avoid blocking it. A servo motor drives the blade and is controlled by an Allen Bradley PLC interfacing with a 14-inch HMI touchscreen.

The system was designed to integrate seamlessly with Henkel's existing equipment. It features a robust frame, custom electrical controls, a user-friendly interface, real-time position feedback, and multiple built-in safety features to ensure safe and reliable operation.



Lt-Rt: Ken Lathrum, Zach Johnson, Gabriel Guzman, Ryan Fricker, Agustine Blosser

By replacing the problematic guillotine mechanism, the new rotary cutter significantly improves efficiency and reliability on the production line—showcasing how targeted engineering solutions can make a real impact in industrial automation.

Beyond the technical success, the project offered a rewarding educational experience for the students:

Capstones

Mechanical Capstone Projects

Augustine Blosser: "I learned a lot about teamwork on this project."
Zachary Johnson: "I loved putting the skills I learned in the classroom into practice."
Kennith Lathrum: "This is engineering!"
Ryan Fricker: "The experience I got working with the electrical system helped me get an internship. I started this project with no electrical experience, but learned a lot along the way."
Gabriel Guzman: "Words couldn't describe our satisfaction in finally getting it to cut paper."

Ben R with Paper Loader during weight test

Paper Loader

Client: Henkel
Elias Ford, Ben Willits, Ben Roper, Karolek Suchocki

Henkel Richmond's production process relies on large industrial rolls of paper—each exceeding the 50-pound lift limit set for individual workers. Until now, the procedure required a worker to manually lift and rotate each roll onto a spindle before it could be transported to an unwinding station—an inefficient and physically demanding task.

To address this, Team SD6 engineered a safer, more ergonomic solution. Their design features a rotating platform mounted on a hydraulic lift cart, allowing a single worker to slide a roll into place, secure it, and rotate it for unloading—all without exceeding the weight limit.

Key features of the system include a dampened-motion rotating platform, a removable post to support the roll after rotation, and visual registration marks to ensure secure locking. An adjustable handle enables easy resetting of the platform between uses.

By improving both safety and efficiency, Team SD6's design helps protect workers while streamlining a critical step in Henkel Richmond's workflow.

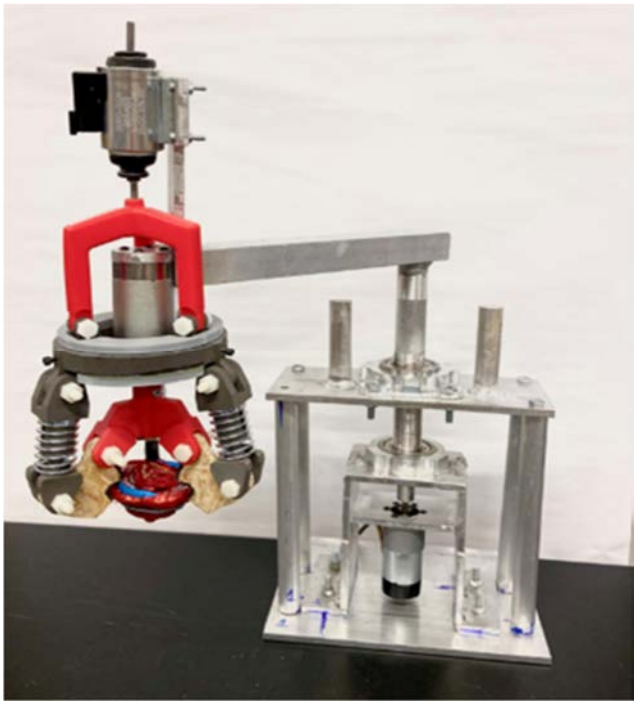
Mechanical Capstone Projects

Beyblade Launcher

Client: Leavenworth School District
Maximilian Al-Ali, James Atkinson, Jonah Bergman, Daryl Easterling, George Spaniol

Beyblades are high-speed spinning toys, similar to traditional tops, that are used in head-to-head competitions. Players launch their Beyblades into an arena with the goal of knocking their opponent's spinning Beyblade out of the ring.

When the **Leavenworth School District** identified a student with limited arm mobility who was unable to participate in Beyblade battles, Team SD4 stepped up to the challenge. Their mission: design and build a fully functional, accessible Beyblade launcher.



Beyblade Launcher

Key design goals included the ability to spin Beyblades at competitive speeds, release them reliably, support multiple Beyblade sizes, and allowing the user to control launcher position and spin direction. The device features a custom spring-loaded claw mechanism capable of spinning at up to 5,000 RPM and accommodating a wide variety of Beyblade models. A rotating arm positions the launcher relative to the arena. The user has real-time control via a touch screen interface and a Raspberry Pi microcomputer.

The design includes a clear shield to protect the players.

Lt-Rt: Dr. Andrew Doyle, Jonah, Max, George, Daryl with Ecko, the launcher recipient (in wheel chair)

Graduate Photos

Chemical Engineering


Thomas Coyle


Nelson Klein


Gianna Muggli


Johan Nijs


Therese Pivarunas

Civil Engineering


Peter Cara


Blake Dapkus


Lillian Gardner


William Griffin


Julia Jochum


Anton Murray


Ryan Petka


Cole Voss

Graduate Photos

Electrical Engineering


Sydney Schmidt


Jacob Steffen


Braden Stewart

Mechanical Engineering

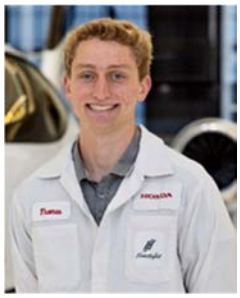

Maximilian Al-Ali


James Atkinson


Roman Becher


Jonah Bergman


Augustine Blosser


Thomas Campbell


Grace Dondlinger

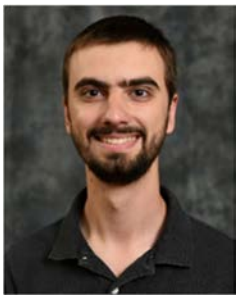

Daryl Easterling


Nick Eisman


Matthew Feldkamp

Graduate Photos

Mechanical Engineering


Elias Ford


Ryan Fricker


Gabriel Guzman


Michael Herbic


Benjamin Houlihan


Kenneth Lathrum


Isaac LeMark


Luke Marquis


Anna McDonald


Hannah Nelson


Domenico Ricciardi


Benjamin Roper


George Spaniol


Karolek Suchocki


Aaron Stanley


Benjamin Sylvain


Jacob Vaughan


Douglas Vestrat


Benjamin Willits

2025 Graduates

May 2025

Mechanical Engineering
Ben Houlihan
Ben Sylvain
Daryl Easterling
Douglas Vestrat
Elias Ford
George Spaniol
Hannah Nelson
Jacob Vaughan
James Atkinson
Kenneth Lathrum
Luke Marquis
Matthew Feldkamp
Maximilian Al-Ali
Michael Herbic
Roman Becher
Thomas Campbell

Electrical Engineering
Braden Stewart
Jacob Steffen

Chemical Engineering
Gianna Muggli
Nelson Klein
Therese Pivarunas
Thomas Coyle

Civil Engineering
Anton Murray
Julia Jochum
Peter Cara
Ryan Petka

December 2025

Mechanical Engineering
Aaron Stanley
Anna McDonald
Augustine Blosser
Benjamin Roper
Benjamin Willits
Domenico Ricciardi
Gabriel Guzman
Grace Dondlinger
Isaac LeMark
Jonah Bergman
Karolek Suchocki
Nicholas Eisman
Ryan Fricker

Electrical Engineering
Benjamin Schuberg
Sydney Schmidt
William Hamada-Canez

Chemical Engineering
Johan Nijs

Civil Engineering
Blake Dapkus
Cole Voss
Lillian Gardner
William Griffin

Awards

St. Patrick Award Outstanding Engineering Student and **Outstanding Civil Engineer** Julia Jochum

Scholar Athlete Award Blake Dapkus (At Conference Track & Field Meet on Presentation/Awards Day.)

Outstanding Student Worker
Karolek Suchocki

Outstanding Electrical Engineer
Sydney Schmidt

Outstanding Chemical Engineer
Gianna Muggli

Outstanding Mechanical Engineer
Elias Ford

Awards

Mechanical Engineering Graduates and Faculty

Electrical Engineering Graduates and Faculty
(Not pictured: Dr. Megan Paciaroni)

Chemical Engineering Graduates and Faculty
(Not pictured: Dr. Scott Blonigen)

Steve Spencer Mechanical Engineering Design Team: Rail Cart
Jacob Vaughn, Isaac LeMark, Ben Houlihan, Ben Sylvain (Not pictured: Thomas Campbell)

Best Non-ME Team: Civil Engineering
Julia Jochum, Lillian Gardner, Cole Voss, Ryan Petka, Peter Cara (Not pictured: Blake Dapkus, William Griffin, Anton Murray)

Alumni News

2017 Civil Engr

After graduating from Benedictine College, **Morgan (Wentz) Hoffman** married Brady Hoffman and moved to Kansas City, where they both started work as Civil Engineers. Morgan and Brady have three children: Vera, Jude, and Eloise. Morgan has worked at Black and Veatch since graduation, working for some time in the Nuclear department, but mostly in the Overhead Transmission Line Department. Obtaining her Professional Engineering License and taking on leadership roles in projects, Morgan is "passionate about Women in Engineering and the need for strong Catholics in the work force." Morgan enjoyed Dr. Newbolds's methodical technique of teaching and found that working with a diverse group, communication, and problem solving during her time at Benedictine helped prepare her for her job, with her liberal arts education making her a standout compared to other job candidates. While earning her Civil Engineering degree, Morgan was involved in many organizations and clubs, such as on the dance team, religious group FOCUS, and within the engineering department, which helped show that she was a leader who could take on multiple roles simultaneously. While Morgan doesn't directly work with any fellow Benedictine graduates, she is aware of several others working at the company.

Morgan, Brady, Vera (6), Jude (4), Eloise (1) Hoffman

2018 Mechanical Engr

A 2018 Mechanical Engineering graduate from Benedictine, **Andrew Hawkins** works for Garmin as an Aviation Systems Engineer. He feels his education at Benedictine prepared him well, though, he says, his "work is not Mechanical Engineering but more Software and Systems Engineering for Garmin Avionics." Complex system design and coding classes were most beneficial to prepare Andrew for his cur-

Alumni News

rent work, and his favorite course was Design of Machinery, due to inclusion of levers, linkages, and gearing, which drew him to Mechanical Engineering to begin with. Of Design of Machinery, Andrew said, "The combination of designing and building in the lab portions was perfect." Andrew's wife, Adriana Carlson Hawkins, also attended Benedictine, and graduated in 2016, and Andrew and Adriana were married in 2018. They have three children: Miriam, Joseph, and Dominic.

2021 Civil Engr

After graduating in 2021 from Benedictine, **Cole Lehman** obtained a full-time job with MKEC's land development team in Wichita, where he had a summer internship, and then moved to MKEC's Overland Park office. The next year, Cole was called to serve as a Catholic missionary with NET Ministries Ireland for the 2023-24 school year. He served in Co. Westmeath, Ireland, running a youth group, starting a young adult group, and teaching confirmation and first communion classes. When his year there was up, Cole returned to MKEC, where he currently still works.

Taking hydrology especially helped prepare Cole for his current work. Being an ASCE student chapter officer helped him obtain his internship, which in turn led to his job. Asked about a project he has worked on since graduation, Cole said, "I worked on drainage analysis and culvert sizing for a five-mile stretch of tollway in Oklahoma City. The quality of my hydrology and hydraulics classes gave me both the knowledge to perform this design work and the confidence in myself to do it." Cole plans to take the PE in the next year. He is not the only Lehman to attend Benedictine College—his siblings, Landis, Abbie, and Connor, have also attended or are currently attending Benedictine for their degrees, as well!

Cole Lehman

Alumni News

2023 Mechanical Engr

Joseph Crouch is engaged to fellow Benedictine graduate Halley Rindom. A mechanical engineer for Coperion Process Solutions, Joseph is currently working on a new design for a product line coming out soon that has involved him in a lot of analysis and testing. He credits Benedictine College for preparing him for writing and presenting well, saying, "Since graduating, I have had to write multiple reports as well as present data to groups of people. I have been complimented on my writing and presentation of data on multiple occasions, and I don't think that would be the case had I not attended Benedictine." Classes in thermodynamics, fluids, statics, and dynamics have been very useful to Joseph's job, with his favorite class being fluid dynamics, "as a large part of it pertains to aerospace." Incidentally, Joseph has worked with several other fellow Benedictine graduates, including two from his graduating class. In order to get more interesting opportunities, Joseph took on extra work in his first year at Coperion and was rewarded with moving into a group focused on design optimization and implementation. Outside work, besides getting engaged to Halley, Joseph is preparing for his first triathlon in May.

2024 Mechanical Engr

Carson Kasl, who played on the baseball team at Benedictine, from which he learned time management and social skills, landed a job at Engineering Technologies Inc. in Lincoln, NE, after graduation. He credits the "hands-on, personal approach to teaching professors at Benedictine take" as the "pinnacle reason for [his] success," adding, "[a]ny time I needed help or had a question, my professors were there for me[,] and the effort they took to make sure I understood the concepts at hand was very admirable." Carson states that getting a solid understanding of heat and energy flow of a system and thermodynamic cycles from studying thermodynamics and fluid mechanics at Benedictine College have been instrumental to his HVAC engineering job at ETI. However, Carson's favorite course was Finite Element Analysis, with its modeling of real-world components and predicting the effects of forces, stress, and heat on them. Carson says having his diploma from Benedictine opened up a conversation with his boss during the hiring process, as he had not heard of Benedictine College before. Senior design taught Carson about project management, balancing multiple tasks at the same time, and collaboration with team members, preparing him for the workforce. Regarding projects

Alumni News

at work, Carson's most exciting project is working on a very large new dairy processing facility in Seward, NE, where he works with process engineers to "size and select the boilers, chillers, cooling towers, and heat exchangers as well as design and size the piping layout for the hot/chilled water loops and the process drainage system." Soon, Carson will be a member of ASHRAE, and he plans to get his PE license in HVAC and Refrigeration in a few years. On the side, Carson and former classmate Jackson Sarver have been working on patenting the result of their Junior Design project—the portable Plyo Board, and the pair have sold the product to a number of youth and college-aged baseball teams.

We're proud to announce that all 22 Benedictine College Engineering students who took the Fundamentals of Engineering (FE) Exam in Spring 2025 passed on their first try! This milestone reflects the dedication of our students and the strength of our faculty and curriculum. Congratulations to our future engineers!

Follow us on social media!

Benedictine.edu/School-of-Engineering

Would you like to support our flourishing programs?

We would love to have you join us on our mission of educating the next generation of engineers within this community of faith and scholarship. Below are listed three options to donate in support of our mission:

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School of Engineering Endowment Fund (ESEE)

https://go.benedictine.edu/main-giving-page/?a=10795126&designation=ESEE

Dr. Scott Newbolds Engineering Missions Endowment (EEME)

https://go.benedictine.edu/main-giving-page/?a=10795126&designation=EEME

Ingenium: noun, from Latin meaning natural talent or disposition.

Student Editor: Sophia Caughron
Staff Editor: Julia Jochum
Faculty Editors: John Modlin, Charles Sprouse

On the Front Cover, Lt-Rt:
Front: Nelson Klein, Elizabeth Kastl
Back: Thomas Coyle, Johan Nijs, Thomas Walsh

We want YOU in the next issue of Ingenium! Scan the QR code to submit.

INGENIUM

School of Engineering Newsletter

Ingenium **signifies intelligence, character, genius — all of which describe Benedictine College engineers. The use of the Latin language shows solidarity with the Church, whose official language is Latin, and with the scientific community, which for many years communicated primarily through Latin.** ***Ingenium*** **is a proud testament to our history and character as engineers and as members of the Benedictine College community.**

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