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ENGINEERS OF CLUNCTURE CONTROL OF CONTROL OF

DONOR IMPACT REPORT

2020-2021

YOU ARE SUPPORTING THE FUTURE ENGINEERS OUR WORLD NEEDS.

BE WHAT THE WORLD NEEDS

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INNOVATORS,



THANK YOU

You make a difference

This last year has forced all of us to achieve great – and unexpected – things. In the midst of these challenges and upheavals, your support of our College of Engineering made great things possible at a time when we needed it most. Thank you.

You have built our capacity to adapt and ensure student learning remained supported in the transition to a remote learning environment. Your gifts added 17 new bursaries for students experiencing hardships due to COVD-19. You funded support and recognition for over 25 educators who went above and beyond in their commitment to maintain the quality of education for students learning remotely. Thanks to you, five critical classroom renovations are now under way to provide us with the infrastructure we need to confidently expand our face-to-face offerings this fall – a slate of courses significantly larger than other colleges on campus. Your generosity helps us keep the bar high.

Thanks to you, students will have new learning opportunities that excite and engage them this fall. With a completely "RE-ENGINEERED" first-year program, continued support of student groups and design teams, and new professional experiences in industry and research, you help students achieve their dreams.

Many of our students could not be here without the critical support that student awards provide, empowering them to get the most of their experience at USask. This year we saw that support increase in both breadth and depth, inspiring student success through a challenging year.

We are so incredibly grateful to have you in our community and are delighted to share, in this report, a selection of stories that illustrate the impact of your support this year.

Dr. Suzanne Kresta, PhD, P.Eng., FEC Dean, College of Engineering

IMPACT, SOLUTIONS & CHANGE BEGIN HERE.

You empower students to engineer a better future Your support enables high-quality instruction, hands-on learning, and opportunities to work with faculty to make critical research discoveries. Wherever you designate your gift - you make a real difference. Thank you!



545

Total donors

11% Organizational donors

89% Individual donors

Generations of USask Engineers show they care

This year we received donations from alumni of the Class of 1943 and from those of the Class of 2020, in addition to contributions from alumni of many classes inbetween, spanning generations of USask Engineers.



ENGINEERING BUILDI

STRATEGIC INVESTMENT AREAS \$4,054,336.84 Donations & spendable investment income

Your generosity allowed the College of Engineering to make strategic investments in four key areas:



FACILITIES 0.8%

Enhances spaces and equipment used by students, researchers and faculty



RESEARCH 19.7%

Enables high-quality research opportunities for students and industry partnerships



PROGRAMS 50.3%

Enables high-quality educational programming and an innovative teaching and learning environment



AWARDS 29.2%

Provides scholarships, bursaries and student awards that uplift and inspire student success

ANNUAL CAMPAIGN FOR STUDENTS: COVID-19 RESPONSE FUND

Donors to the Engineering COVID-19 Teaching and Learning Response Fund helped faculty bridge the transition to remote learning and supported the students most impacted by the pandemic.

Bursaries provide emotional and financial boost

"COVID has impacted me financially because of the loss of my internship, and my mental health plummeted as I felt the world was against me. This award has provided me with an extra cushion in my financial situation and money would be a lot tighter without it. This aids me in pursuing my degree in Chemical Engineering, and I will be the first female engineering graduate in my family of engineers. Thank you again for the support. It is more appreciated than I can write in a single letter."

"After receiving the email that I was selected for this award, I was speechless. I did not expect to be selected for this award. I know that there are also hundreds of students that needed help to be able to continue their studies this year. Without your generous support, it would have been difficult to continue my education. I would like to thank you for believing in me and what I can achieve. Hopefully, I can repay your generous support by reaching my goals to help the world become a better place." "As I completely support myself, this money is a huge help. Last year when COVID hit, I lost my internship, which would have helped me support myself through the year and start paying off my student loans. Money is a concern, so any help is greatly appreciated and helps me focus on my studies. I promise the help and consideration will not be wasted. Thank you again for your generous support of my education, I am very grateful."

"If I didn't receive your gracious award, I would have likely had to take out a larger student loan to help pay for school or pursue part-time employment. Having to work while continuing my education would force me to take a reduced course load in order to maintain the same commitment to my studies. Thank you so very much, this award is greatly appreciated. Continuing my studies and working towards my dream career is made easier and possible by your graciousness and generosity."

"Once I received the award, I was ecstatic and overjoyed. I will always remember and forever be grateful. This award shows the rewards of working hard during my first year in engineering. This motivates me to strive to work harder in engineering." "When I received this award, I was very happy and excited and had a great feeling of being recognized. This award not only greatly supports my financial situation but also inspires me to become better! If I did not receive this award, I would study as hard as usual, but I would feel a bit lost."

BRINGING THE CLASSROOM HOME

Donors helped engineering educators pivot to remote teaching

Students often struggle with social isolation and lack of daily structure in a remote teaching context. In response, many instructors have gone far beyond normal expectations to restructure classes and create instructional material to support students.

While transitioning to online lecture delivery, I had the opportunity to revisit the contents and delivery of my lectures and exams to spearhead unorthodox approaches. I installed a semi-professional TV studio in my basement with triple soft box lighting, three cameras, a dedicated microphone and a full-size green screen background. I projected myself into my own slides and selected external videos to embed in the lectures. The lecture videos obtained an almost professional touch, more like an internet video than a dry lecture recording.

In addition to the 75 lecture videos, another 33 were composed using an action camera for point-of-view shots, emulating the normal student experience in labs to make up for students missing out on getting exposed to a unique, and in normal years, popular lab experience in the SyLMAND micro and nano technology clean room at the Canadian Light Source.

These efforts contributed to the learning outcomes because they captured the attention of students and thus supported their learning in a substantial way. All these changes and new implementations have cost tremendous amounts of my time. Receiving the support of donors to enable this shift was a very welcome token of appreciation and assurance that we invested time in the right things for the benefit of our current students and future alumni.

Dr. Sven Achenbach, PhD, P.Eng. Professor of Electrical and Computer Engineering

DR. SVEN ACHENBACH IN HIS VIRTUAL CLASSROOM



"I think the instruction was handled amazingly. It was well-structured, the lecture videos were engaging, and the way Professor Achenbach adjusted the course delivery was as close as we could have possibly gotten to an in-person experience while remote."

Engineering student

DR. CHEN IN HIS LAB

3D-BIOPLOTTER

TEC

"The Group Representative method has greatly stimulated student engagement and participation in labs. These learning outcomes would not have been possible without the gifts made to the Annual Campaign for Students and the Engineering COVID-19 Response Fund. Thank you so much!"

- Dr. Daniel Chen

ENABLING HYBRID LAB GROUP WORK

Donors support student engagement with hybrid delivery of labs

In Mechanical Engineering ME 828, Biomedical Design and Fabrication of Tissue Scaffolds, students need hands-on experience in printing and characterization of tissue scaffolds on specialized equipment. Thanks to gifts to the Annual Campaign for Students, directed to the Engineering COVID-19 Teaching and Learning Response Fund, three teaching assistants were hired to shift three core labs to a method known as Group Representative.

In this method, one local representative of a student group was present at the experimental site, while the other group members were participating and engaging in the experiments remotely. The teaching assistants were hired to prepare and record the videos on the preparation and conduction of the three labs in this course, as well as to provide help at the experimental site.

The Group Representative method has greatly stimulated student engagement and participation in labs. Regardless of whether they were the on-site representative, all students were motivated to be involved so as to ensure the correctness/appropriateness of experimental procedures and the meaningfulness of the data/results obtained. By facilitating this teamwork and engagement, the student learning experience has been greatly enhanced, as compared to having simpler, streamed video labs.

These learning outcomes would not have been possible without the hiring of teaching assistants. We are most grateful to those who donated to the Annual Campaign for Students and the COVID-19 Teaching and Learning Response Fund for helping to make this possible!

Dr. Daniel Chen, PhD, P.Eng.

Professor of Mechanical Engineering & Graduate Chair for Biomedical Engineering

DEAN'S FUND IMPACT

Your gifts enable Dean Kresta to support high-priority projects and initiatives. This includes funding student design teams, including these two high-performing groups.

HUSKIE FORMULA RACING

The goal of the Formula SAE competition program and the Huskie Formula Racing team is to improve the educational experience of its members. We believe that the application of theoretical knowledge to a real-world design project makes for more engaged and well-rounded graduates. Your support of the Engineering Dean's Fund enables this experience by allowing us to bring our designs to reality, test the car to validate designs, acquire crucial data, and travel to competition.

The team also provides experience with skills not covered in the classroom, such as project management and interpersonal relations. This team is an incredibly valuable learning experience, and beyond that is a family for all those involved. Many of our members have stated that their involvement with HFR and Formula SAE is the highlight of their undergraduate degree. Without your support, Huskie Formula Racing would not be able to operate as it does and for that the team offers our sincerest gratitude.

RADSAT-SK CUBE SATELLITE PROJECT

This year, we have officially completed construction of the RADSAT-SK clean room where we will be conducting tests and the construction of our satellite. Gifts to the Engineering Dean's Fund have helped with the purchase of various test equipment and supplies that will be needed during these critical summer months where we move from design to fabrication in our new clean room. This part of the project will continue until the middle of 2023, when we will begin conducting flight readiness checks with NASA.

Your donation to the team through the Engineering Dean's Fund has helped us become one step closer to putting RADSAT-SK in orbit. Thank you so much from the whole team!



ENGINEERING ADVANCEMENT TRUST ENHANCES FIRST-YEAR



Engineering Advancement Trust donors supported a \$370,000 contribution to RE-ENGINEERED, the new first-year program, allowing for the purchase of a variety of equipment.

- Customized labs for engineering students in geology, chemistry, biology and physics
- Disciplinary experiences and design course projects and equipment, including a liquid extraction process kit, robotics system learning kit, bridge sets and wind tunnel testing tools.
- 10 CAD 3D printers for Engineering Communication II, to print objects designed in class
- 27 projectors for Engineering Communications Research, to easily and affordably display project posters electronically
- A new set of composite blocks for demonstration in Engineering Drawing and Sketching, to visually demonstrate how shapes and figures translate between two types of drawings
- A multidisciplinary model rocketry design project for Engineering Design II
- Customized examples of Indigenous technology for interaction and demonstration in Intro to Engineering I, developed by traditional teachings of Indigenous knowledge keepers
- Locktronics component kits for electrical circuit simulation to virtually construct DC and AC circuits in Electrical Circuits I / II
- Custom-built lab kits for engineering mechanics and statics for small group work at 15 stations
- 30 new Ballister Launcher kits for engineering mechanics and dynamics labs, for small groups to review kinematic data in real-time
- Fabrication of apparatus and Programmable Logic Controller Application Mixing Process to examine multivariable non-linear systems in Process Engineering
- 10 laptops and 20 scientific calculators to loan, to enhance our program's accessibility for those in challenging economic times.





EAT PROVIDES CNC MILL & LATHE

Students will get valuable hands-on experience in lab

Thanks to Engineering Advancement Trust donors, a full CNC-capable lab with a HAAS Mini Mill will be purchased for student use in design and build projects.

With a \$125,000 contribution from the EAT, the new computer numerical control (CNC) mill and lathe will live in the Hardy Lab, the hub of experiential and design learning, including capstone projects, design team work and upper-year labs.

Many industries use CNC and artificial intelligence (AI) learning equipment to build the projects that our students will be designing as full-fledged engineers. The CNC lab will provide students with the tools to practice and get hands-on experience within a safe environment before graduating. Students will have a leg up when they enter the workforce equipped with the confidence to use these tools.



COLLEGE OF ENGINEERING | USASK

GRADUATING CLASS CAMPAIGN RETURNS

Building community with our newest alumni



Alumni circa 1978 to 1999 might recall the engineering equipment campaign, or cornerstone pledge. With the leadership of Engineering Advancement Trust, the Graduating Class Campaign has returned for the Engineering Class of 2021.

As graduates take the first steps into the next chapter of their lives, we ask them to consider who they want to be. As alumni, we ask them to be dedicated, be engaged, be generous, be abundant. After graduation, they can be a proud USask Engineer by making gifts of time, talent and treasure.

Through this campaign, members of the Class of 2021 were able to set their intention to stay engaged and give back to USask Engineering. They are choosing to follow in the footsteps of alumni before them, continuing a long-standing tradition while taking steps to set the course for their own futures.

" It is important for me to be involved and to give back to the community, as a way of thanking alumni from when I was a student.

Alumni can play a significant role as they offer mentorship, volunteer their time, provide feedback on new initiatives, and donate to help fund lab equipment or awards.

Without these contributions, students would not have the same opportunities or experiences. In staying connected, alumni can give back to the community and ensure the best for the students of the college."

- Aaron Omelan, BE 2021

BECONNECTED #engineerstheworldneeds



GRADUATING CLASS CAMPAIGN CONTRIBUTORS

We gratefully recognize our newest engaged alumni

lan Adams, BE (Civil) Elizabeth Adams, MSc (Electrical) Safwan Aziz, BE (Mechanical) Carlos Buerano, BE (Electrical) Brendon Carbert, BE (Engineering Physics) Belema Clinton Ibanichuka, BE (Chemical) Paul Cubbon, BE (Civil) Kyla Dadzeninnare, BE (Civil) Carson Daly, BE (Electrical) Yasaman Delkash, M.Sc. (Biomedical) Nico Dimaano, BE (Computer Engineering) Nnamdi Emezieke, BE (Electrical) Skylar Flynn, BE (Civil) Jordan Fowler, BE (Civil) Dayne Gawley, BE (Electrical) Bowen Guan, BE (Mechanical) Manisha Jose, BE (Mechanical) Brendan Knorr, BE (Chemical) Caleb Kotylak, BE (Mechanical) Long Le, PhD (Electrical) Felize Lindain Ilao, BE (Civil) Aaron Lund, BE (Chemical) Lee Miller, BE (Chemical)

Shantanu Minhas, BE (Engineering Physics) Khoa Nguyen, MSc (Biomedical Engineering) Duncan Nguyen MEng (Civil) Nojendra Ola, BE (Computer Engineering) Austin Oleksyn BE (Civil) Aaron Omelan, BE (Civil) Reza Pourazizi, MSc (Mechanical) Luke Pulvermacher, BE (Mechanical) Cooper Robertson, BE (Engineering Physics) Chad Roth, BE (Engineering Physics) Samia Sami BE (Electrical) Alireza Shafe, MEng (Electrical) Atif Shah, BE (Electrical) Ryan Sheppard, BE (Engineering Physics) Lauren Shyluk, BE (Geological) Whitney Simon, BE (Electrical) Riley Stevenson, BE (Computer Engineering) Cheyenne Terry, BE (Environmental) Lauren Thomson, BE (Environmental) Blake Weinrauch, BE (Civil) Johnathon Willis, BE (Civil) Zhenjun Zhang, BE (Geological)



INDIGENIZATION AT USASK ENGINEERING

Gifts to the Indigenous Peoples Initiatives Fund help build a culture of respect, belonging and inclusion in the college. The Indigenous Student Ambassador program is one of the ways we are developing our community.



My name is Kyla Dadzeninnare and I just completed my civil degree. I am a First Nations woman: Dene, from the small town of Lashburn, Saskatchewan.

I chose to become a student ambassador as I wanted to help improve the programs that were already in place by spreading awareness and encouraging more

support for Indigenous students. Creating inclusivity can make the transition for first-years more welcoming and ease some of the anxieties and stresses of going to post-secondary, especially for those leaving home. It is important for students and those who may be unsure if they will fit into the college to see a support system and a community.

I was able to network with students and faculty and see more of the programs offered to Indigenous students to help them succeed in their studies. For some it is easier to ask for help or have input into what they would like to see for support. For example, as student ambassadors we were better able to gauge when students were more likely to engage in and attend events and what kind of events and incentives would draw them in.

I hope that with the continuation of these positions our Indigenous students see the inclusivity and supports that are there to help them succeed and thrive during their time at the college.



My name is Patrick Nelson and I am in my fourth year of Civil Engineering. I grew up on my family farm outside of Birch Hills, Saskatchewan. My family was one of many that came to Saskatchewan on Red River Carts and I identify as being Anishinaabe and Swampy Cree Métis. One of the reasons I chose to study engineering was my curiosity and wonderment at

how the world works. More than that, I wanted to make sure I was able to apply myself to the fullest and try to make the best possible difference in peoples' lives through engineering.

I chose to become a student ambassador to try and help others. Although some of my fondest memories of university are the people, not everyone always feels like they fit in and providing some camaraderie among students is extremely critical to success. I saw an opportunity to help make a community where we support each other from the ground up and provide the boost that is often needed to keep pushing through school or a hard time.

This role faced some challenges this past year with the onset of COVID-19 but I believe it does have a positive impact on students and has the potential to change the lives of many Indigenous students that enter into engineering. The work provided me with something that I could point to that demonstrates that I mean what I say about hopefully having the biggest positive impact I can have in the world.

THE GIFT OF A LIFETIME

The College of Engineering had a lasting impact on Al Demetrick. He left a gift to the college that enhances the education of the next generation of USask Engineers.

Al was born in Kelvington, Saskatchewan, and graduated from Civil Engineering in 1964. After working on several civil engineering projects in Quebec and New Brunswick, Al moved to Toronto, Ontario. In 1970, he joined his brother Gordon as a partner at Anchor Shoring and was well-respected in the heavy construction industry.

Al appreciated the education he received at the University of Saskatchewan and the lasting impact it had on his personal and professional life. He wanted to give back to the university and assist future students by leaving a generous donation from his estate.

The gift from Al's estate allowed the Department of Civil, Geological and Environmental Engineering to purchase a simple shear apparatus. This meaningful gift will provide hundreds of civil, geological and environmental engineering students with hands-on experience that builds a better understanding of soil characterization. Thanks to Al's thoughtful legacy gift, these aspiring engineers are better prepared to succeed in industry.

You can make a significant difference in an engineering student's life and the world around them by leaving a gift in your will. To explore this option please reach out to our development officer, Richelle Kenn.



Richelle Kenn, CFRE Development Officer, College of Engineering University of Saskatchewan Richelle.Kenn@usask.ca 306-966-4983



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Connect with us:

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