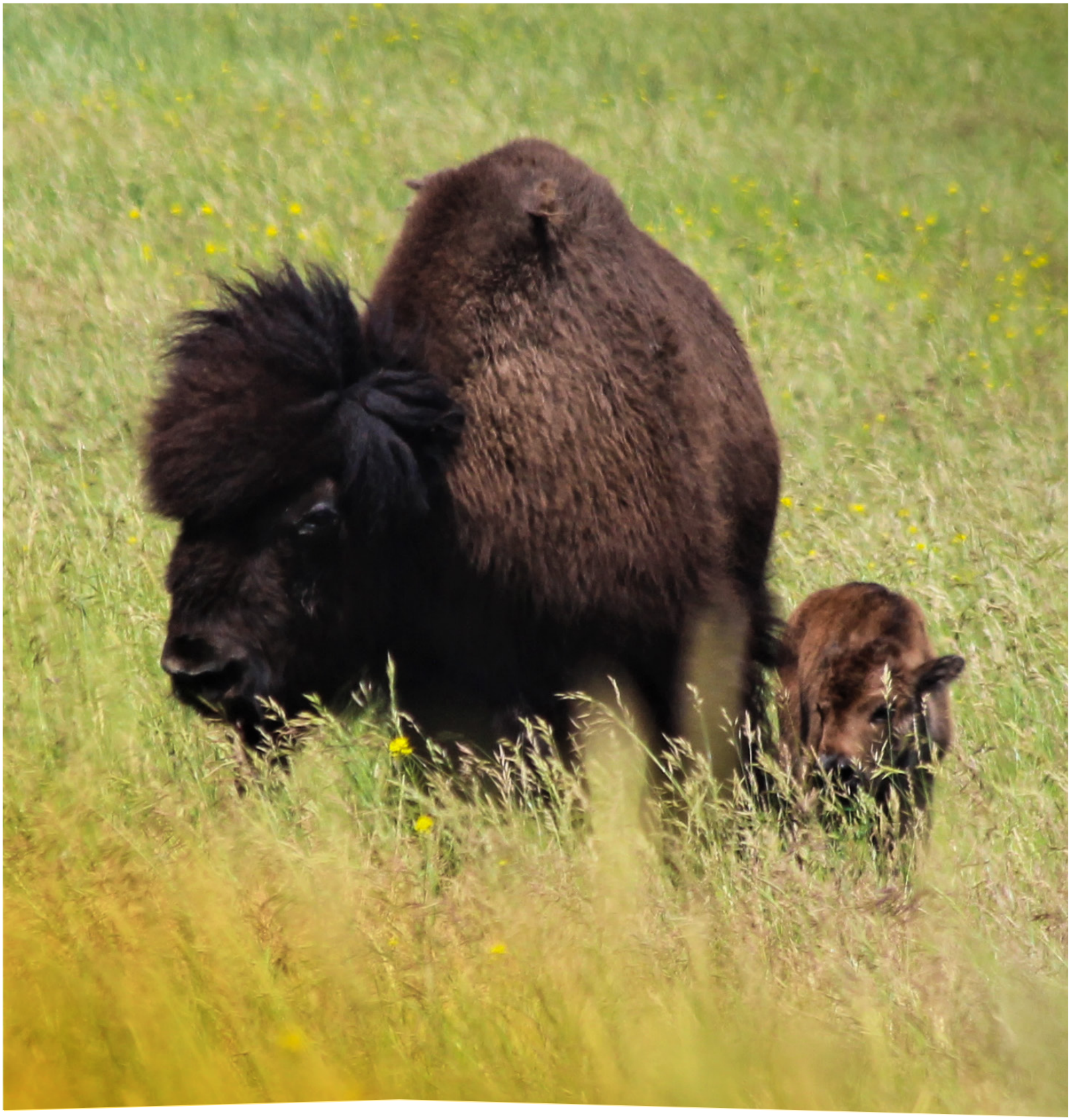
ON CAMPUS NEWS
news.usask.ca

SEPTEMBER 11, 2020
Volume 28, Issue 1



BRING BACK THE BISON

A University of Saskatchewan (USask) research team's new *in vitro* fertilization technique has proven successful in a major step forward to helping ensure the survival of wood and plains bison herds in North America. In early July, two wood bison calves—named Skeeter and Mo—were born at USask's Livestock and Forage Centre of Excellence, the first bison to be born using immature eggs collected from live bison, and only the third and fourth calves to be born from frozen *in vitro* embryos.

SEE PAGES 8-9

Publication Mail Agreement #40065156

University of Saskatchewan

On Campus News is published 12 times per year by University of Saskatchewan Marketing and Communications. It is distributed to all USask faculty, staff, graduate students and members of governing bodies, as well as to others in the university community, related organizations, some Saskatchewan government officials and news media.

Subscriptions are available for $24 per year. Story and photo ideas are welcome. Advertising rates are available online or on request.

—

On Campus News aims to provide a forum for the sharing of timely news, information and opinions about events and issues of interest to the USask community.

The views and opinions expressed by writers of letters to the editor and viewpoints do not necessarily reflect those of USask or *On Campus News*.

—

We acknowledge we are on Treaty 6 Territory and the Homeland of the Métis. We pay our respect to the First Nation and Métis ancestors of this place and reaffirm our relationship with one another.

—

EDITOR
James Shewaga

WRITERS
Megan Evans, Jenna Fraser, Kira Glasscock, John Grainger, Lana Haight, Meagan Hinther, Donella Hoffman, Inalie Portades, Collin Semenoff, James Shewaga.

DESIGNERS
Brian Kachur
Pierre Wilkinson

ISSN: 1195-7654

PUBLICATIONS MAIL AGREEMENT NO. 40065156

Return undeliverable addresses to:

UNIVERSITY OF SASKATCHEWAN
MARKETING AND COMMUNICATIONS
G16 THORVALDSON BUILDING
110 SCIENCE PLACE
SASKATOON, SK S7N 5C9

Email: **news@usask.ca**

Singh named new USask VP research

USASK RESEARCH PROFILE AND IMPACT

Following an extensive national and international search, Dr. Baljit Singh (MVetSc), a highly accomplished veterinary researcher, educator and administrator, will join University of Saskatchewan (USask) President Peter Stoicheff's leadership team as vice-president research, effective February 1, 2021.

Singh, who spent 17 years at USask, including as associate dean of research for USask's Western College of Veterinary Medicine from 2011 to 2016, is currently dean of veterinary medicine at the University of Calgary. He will succeed Karen Chad who has served as USask vice-president research since 2008, and who has agreed to stay on in the role until Jan. 31, 2021.

"I am thrilled that Baljit will be returning to our campus to assume this critical role for our university and province in driving outstanding research and innovation as one of Canada's top 15 research universities," said Stoicheff.

Dr. Baljit Singh (MVetSc)

"Well known across campus for his collaborative, passionate and inspiring approach, he brings to the role a wealth of research and leadership experience and expertise that will guide our strategic research, scholarly and artistic work endeavours as we continue to be the university the world needs."

Singh's formal education includes a Bachelor of Veterinary Science and Animal Husbandry, and Master of Veterinary Science from Punjab Agricultural University in Punjab; a PhD from the University of Guelph; and post-doctoral training at Texas A&M University and Columbia University, New York. He has also obtained credentials as a veterinarian in Canada and the United States.

Singh's research has focused on cell and molecular biology of lung inflammation, work for which he has been awarded nearly $11 million in funding since 1999. A fellow of the American Association of Anatomists, he has received the Outstanding Veterinary Anatomist Award from the American Association of Veterinary Anatomists, as well as the Pfizer Award for Research Excellence. He is a fellow of the Canadian Academy of Health Sciences, one of the highest honours for health research and teaching in Canada.

At USask, Singh led an NSERC-CREATE "One Health" research program into food safety, infectious disease control, and public policy, training students from more than 20 universities in Canada and other countries, and building international collaborations. He is the author or co-author of more than 100 peer-reviewed journal articles and books, and has supervised the research training of nearly 90 undergraduate, graduate and post-doctoral students.

An accomplished educator, Singh has also been awarded the 3M National Teaching Fellowship, the highest teaching honour in Canada; the USask Provost's Prize for Innovative Practice of Teaching and Learning; USask's Master Teacher Award; and the Carl J. Norden Distinguished Teacher Award.

"The story of my academic work and personal life is deeply linked to Saskatchewan, so I am truly honoured to be appointed to the role of vice-president research and grateful for this opportunity to return to the University of Saskatchewan," Singh said.

IN CASE YOU MISSED IT

A lot happens at the USask during the weeks when *On Campus News* isn't published. Here are a few of the top stories from news.usask.ca:

Enrolment rises

Enrolment is up two per cent over this time last year as USask begins the fall term. As of the first day of classes on Sept. 3, the university was on track to have its highest enrolment ever. By the end of the academic year in April 2021, enrolment is projected to exceed 26,000, the highest in USask history, despite the ongoing pandemic. Undergraduate enrolment has increased 2.4 per cent, while graduate enrolment overall is similar to last year. There has been a significant increase in Canadian graduate students (2.5 per cent), while international graduate student enrolment is down by five per cent. Indigenous student enrolment is up 1.1 per cent.

Masks mandatory

The University of Saskatchewan (USask) has made wearing face masks mandatory in all indoor common and shared spaces on the campuses in Saskatoon, Regina and Prince Albert, following the guidance of public health officials. The new directive, implemented on August 24, requires all faculty, staff and students—as well as visitors, contractors and vendors who are approved to be on USask campuses—to wear a mask indoors in hallways, lobbies, libraries, classrooms, labs, study spaces, elevators and other shared spaces. Students who are living in USask residence must also wear a mask in all common and designated areas.

Support for WCVM

Three provincial governments have announced the renewal of their financial commitment to the Western College of Veterinary Medicine (WCVM) at the University of Saskatchewan (USask). The British Columbia, Saskatchewan and Manitoba provincial governments' agreement with the university provides more than $134 million to the WCVM for the next five years. The WCVM is the premier centre of veterinary education, research and expertise in Western Canada and is a key member of Canada's veterinary, public health and food safety networks. The college's new interprovincial agreement is in place until 2025.

Schulich Leaders

Arliss Sidloski and Olivia Stewart have been named the USask recipients of the Schulich Leader Scholarship. Through The Schulich Foundation, entrance scholarships were awarded to 100 high school graduates, enrolling in a science, technology, engineering or mathematics (STEM) undergraduate program at 20 universities, including USask. Sidloski, 18, from Weyburn Comprehensive, was awarded a $100,000 scholarship and is entering College of Engineering. Stewart, 19, from the United World Colleges in Victoria and Toronto, received an $80,000 scholarship. She is entering the College of Arts and Science.

FOR MORE UP-TO-THE-MINUTE NEWS, VISIT: news.usask.ca @usask

New biography sheds light on Fedoruk's 'radiant life'

USASK RESEARCH PROFILE AND IMPACT

A just-released biography—*A Radiant Life*—highlights the many outstanding contributions to Canada and the world of Sylvia Fedoruk (1927-2012), a trailblazing medical physicist at the University of Saskatchewan (USask) best known for co-developing the cobalt-60 technology that revolutionized cancer treatment around the globe.

A pioneering woman of science—one of the few Canadian female medical physics researchers in the 1950s—Fedoruk also went on to serve as the university's first female chancellor (1986) and the province's first female lieutenant-governor (1988).

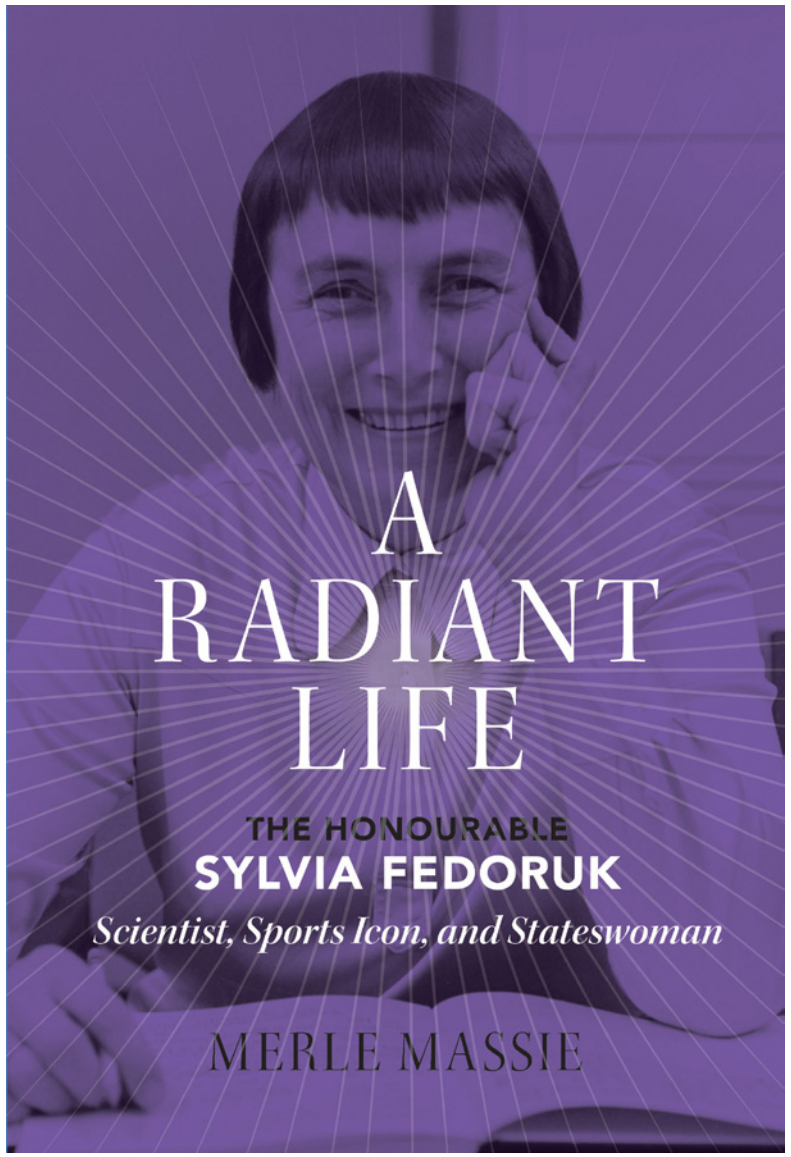
The well-researched book—the first biography of this distinguished Canadian—is written by award-winning author Dr. Merle Massie (PhD), a USask-trained historian who now co-ordinates undergraduate research across the university.

With help from University Archives, Massie combed through Fedoruk's collected papers and other artifacts and spoke with many people in the USask community—including Dr. Stuart Houston (MD), Dr. Gordon Barnhart (PhD), and Roy Romanow, former premier and a senior policy fellow in political studies—to present a compelling and nuanced portrait of Fedoruk's public and private life.

> **"In many ways, this is a University of Saskatchewan story.**
>
> **—Chancellor Emerita Dr. Vera Pezer (PhD)**

At a time when there were few highly placed female leaders in academe, Fedoruk excelled as a USask competitive student-athlete (a "rampaging amazon" as she called herself), graduate student, cancer radiation researcher, professor in both physics and medicine, board of governors member, and eventually chancellor, the ceremonial head of the university. Her remarkable career touched on many of the scientific, political and social challenges of her time, including nuclear energy issues, women's equality, and gay rights.

"In many ways, this is a University of Saskatchewan story," said Chancellor Emerita Dr. Vera Pezer (PhD), a long-time friend of Fedoruk. "Saskatchewan and the university helped to shape Sylvia Fedoruk, and she in turn had a profound influence on them—they bettered each other."



The cover of the new book, *A Radiant Life*, which will be launched on Sept. 15 at 7 pm, during a USask-hosted public online event. SUBMITTED

As a graduate student of medical physicist Dr. Harold Johns (PhD), Fedoruk established the world standard for radiation depth-dose measurements to treat tumours deep inside the body. The cobalt-60 therapy unit was a groundbreaking advance in cancer treatment innovation that positioned USask to become a leader in areas of nuclear medicine and biomedical imaging that it is today. The university's Sylvia Fedoruk Canadian Centre for Nuclear Innovation honours her contributions.

A strong supporter of women in science, Fedoruk was the first woman to join the Atomic Energy Control Board of Canada, an advisor to the federal government on radioisotopes, and a consultant with the International Atomic Energy Agency throughout the 1960s. Due to her national profile, she was included in Queen Elizabeth II's 1977 visit to Ottawa where Fedoruk and the Queen chatted about nuclear issues.

Insights into Fedoruk as a person include that she loved pranks, poker, and pickling, as well as fishing, curling, and collecting curling pins from all over the world. She was warm, generous and had a gentle humour. She was also very hard on herself, with a propensity to over imbibe alcohol.

Massie devotes a fascinating chapter to the controversy around an openly gay USask art student's attempt to "out" Lieutenant-Governor Fedoruk—whom he presumed was a lesbian—and the reaction of the university, the media and the government in a province riven with homophobia. The complex controversy, which resulted in the student's expulsion, pitted privacy issues against freedom of speech and artistic expression, and underscored the widespread feeling of loyalty toward Fedoruk.


SUBMITTED

USask's Dr. Merle Massie (PhD) has written a new biography on the life and times of Sylvia Fedoruk.

"In some ways, Syl was the victim in all of this," said Pezer. "She was given bad advice, and the university was left trying to deal with it. I think the university was as much a victim of this as Syl was. If this kind of episode had happened today, it would not have caused the flurry that it caused then. Twenty-five years later, attitudes have changed so significantly."

Massie states that Fedoruk represents "the essence of Saskatchewan, of building a life with world impact in a place well used to being forgotten," noting the number of lives that Fedoruk's work touched in Saskatchewan and around the world was "uncountable, but a safe estimate would be millions."

At Fedoruk's funeral, then-Premier Brad Wall mused that she must be "a character in a novel" since her life "couldn't possibly be true of one person."

The book will be launched at a USask-hosted online event Sept. 15 at 7 pm, moderated by Pezer.

For an in-depth look at the development of the cobalt-60 unit and its legacy, visit: cobalt60.usask.ca

Science and math prep program inspires incoming USask students

MEAGAN HINTHER

For many students, the transition from high school courses to a university learning environment can be daunting. Add to that a senior year abruptly cut short and altered by a global pandemic, and the transition can feel particularly overwhelming.

"As a university, we were concerned that some incoming students may be particularly anxious about the upcoming academic year and wanted to offer a program that could help mitigate any learning gaps," said Dr. Michelle Prytula (PhD), dean of the College of Education at the University of Saskatchewan (USask) and project collaborator.

The solution: a new summer Science and Math Prep Program consisting of modules in four key subject areas—biology, physics, chemistry and math. The program received more than 350 registrations from incoming first-year students. Two sessions were offered in each subject area throughout July and August.

The College of Education, College of Arts and Science, as well as Teaching, Learning and Student Experience worked collaboratively to plan, develop and support the program. The course modules were designed by graduate students in science and the Educational Technology and Design program, with 14 education and science students hired to facilitate the delivery of the content and mentor small groups of students through the modules.

Lana Elias, director of the Science Outreach Office in the College of Arts and Science, acted as program manager for the initiative, connecting course developers, facilitators and faculty to enable project success and the learning of the prep program participants.

"We were fortunate to receive funding from the federal government's Canada Summer Jobs program and TECHNATION's Career Ready Program to help offset the course developer and facilitator positions," said Elias. "Both recognized the importance of providing employment opportunities for students that may have been impacted by COVID-related job losses and supporting online learning."

Course facilitators Alex Rosset and Peter Homer enjoyed the experience and shared that they saw growth in the students as well.

"Based on the feedback from surveys throughout the course and what we saw in the students, they really liked the course, they would recommend it to other people, and it felt like they took valuable learning away to apply to their first year of university," said Homer, a third-year education student who also holds a Bachelor of Science in chemistry from USask.

Rosset, a fourth-year honours student in the Department of Physics and Engineering Physics, said that a lot of the feedback received from the students pointed to increasing gains in confidence.

"As much as I love the subject, physics is not for everyone," she said. "You'll often hear people say that they hate physics. There was one student in particular that entered the course thinking that and at first they weren't super engaged."

"Near the end, they were completing assignments before the due date, and they came and talked to me and said that they had a great experience and they don't hate physics anymore. Which is really all you can ask for," Rosset added.

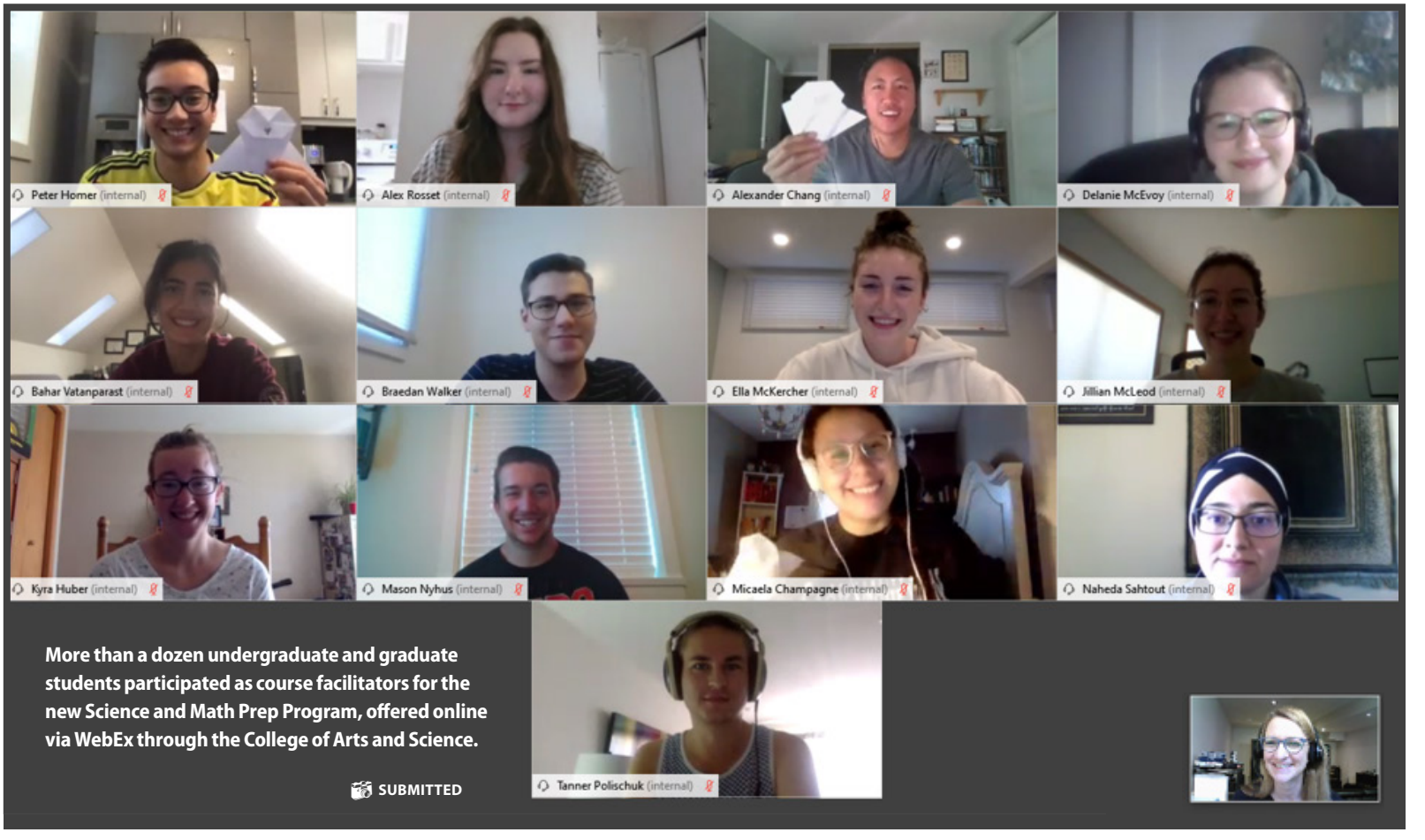
Many faculty and staff in the College of Arts and Science, the College of Education, and Teaching, Learning and Student Experience acted as mentors, guest lecturers, facilitator advisors and contributors to the curriculum development and were integral to the success of the program, explained Elias. That sentiment was shared by the course facilitators.

"The resources to support us—the facilitators—have been fantastic, particularly for a student that is just learning how to teach," said Homer. "We talked about the best ways to reach these students, how to keep them engaged and what sort of visual aids to use."

Though the goal was mentoring students, the facilitators felt they also learned a lot about themselves.

"I'm not an online learner personally, especially in physics and math, it's hard material to learn online," said Rosset. "Being able to teach these courses and having to find a way to engage these students has given me an understanding of how I, myself, might be engaged. Going into the fall term I'm going to dedicate time to learning examples and going to tutorials—the things I found my own students doing in the prep program."

Meagan Hinther is the manager of communications and external relations in the College of Education.



More than a dozen undergraduate and graduate students participated as course facilitators for the new Science and Math Prep Program, offered online via WebEx through the College of Arts and Science.

SUBMITTED

ALUMNI SPOTLIGHT

Every month in *On Campus News*, we highlight an exceptional graduate of the University of Saskatchewan (USask) in our Alumni Spotlight feature series. In this issue of OCN, we profile USask alumna Ann Cook (BSc'88, BEd'89, MEd'09), and the Saskatchewan-based virtual school that she established, Flex ED.

Ann Cook, who earned three degrees at the University of Saskatchewan, started a virtual school 15 years ago that is filled to capacity and now has a waiting list to enrol.

SUBMITTED

Cook shows her 'Flex'ability during pandemic

JOHN GRAINGER

When schools across the province closed their doors mid-March 2020, many were forced to adapt to a changing educational landscape, forcing parents into a role they had never considered before.

This wasn't the case for Ann Cook (BSc'88, BEd'89, MEd'09) and her company, Flex ED, a virtual school in Saskatchewan which offers students an experience to learn that differs from the conventional school setting.

"Thankfully, (our) school is a bit of a stabilizing factor because we've been doing this for 15 years," said Cook, who has seen enrolment in Flex ED skyrocket recently as concerned parents look to learning alternatives.

As August crept closer to September, Flex ED's website warned potential students that it had reached capacity, with a waiting list established for potential primary and middle school students.

"For us, it doesn't seem as dramatic in some ways," said Cook. "It's still crazy for us, there's lots of concerns. But people are flooding over to us because there's a stability factor."

Cook, a lifelong Saskatoon resident and a graduate of Walter Murray High School, always knew teaching was where she was headed. After all, it is in her blood.

"I come from a long history of teachers. My mom was a teacher, aunts … I have a lot of teachers in my family line – cousins, nieces and nephews, my grandmother. It was a pretty natural fit."

After graduating from the University of Saskatchewan (USask) in 1989, Cook jumped right into the profession; teaching kids from Kindergarten to Grade 12 and enjoying every minute. But as her career experience progressed, she started to see gaps in the way education was delivered. She knew something had to change and had full confidence to make that happen and get ahead of the curve in the way students received their education.

"The transformation that's happening right now in education, that's what I was feeling back then," she said. "There should be a lower student-teacher ratio. There should be a freedom to create their own learning environment. There's lots of things I was thinking about then that are coming to fruition now."

As a teacher to mostly younger grades, Cook saw things needed to change. Somehow.

"I had large classes and there were so many needs, so many ability levels and I thought this just isn't working well," she said.

The seed was sown and Cook looked to turn her education model into a business model. This was not an easy transition, she recalled.

"I had pretty much no (business) training," she said. "I didn't know anything about it. So, I've learned by experience, by trial and error and it was really interesting, shall we say.

"I had never thought about education as a business. What I have come to realize is that it is a business."

Even though the vision she carried stayed with her, initially creating that business was not easy and there were times she considered throwing in the towel.

"But the right help and the right inspiration would come along and new doors would open," she said.

Cook would often go back and recall her days on the USask campus where one of her College of Education professors asked his students to think differently as teachers.

"He was a very out-of-the-box thinker. But he really shocked me. I was in his class and he said, 'All of you should home-school your children.' I didn't even know what home-schooling was."

His words and his teaching methods resonated deeply with Cook.

"He had some very strong opinions and he talked about how learning happens. He pummelled us with questions and none of us answered. None of us could answer his questions," she said.

Cook firmly believes there is room for students who don't necessarily flourish in a classroom setting and her alternative allows for another option for parents to consider.

Now it's Cook's turn to provide uncertain parents some comfort, knowing Flex ED is a potential solution for many and their children will still receive a great education.

"It's been very moving. I've literally had people say to me, 'thank you for giving me a ray of hope.'"

John Grainger is a communications officer in University Relations at USask.

Dr. Angela Bedard-Haughn (PhD) officially began a five-year term as dean on Aug. 15.

CHRISTINA WEESE

COLLEGE OF AGRICULTURE AND BIORESOURCES:

Bedard-Haughn excited to take leadership role

KIRA GLASSCOCK

Despite beginning her term as dean of the College of Agriculture and Bioresources (AgBio) during a global pandemic, Dr. Angela Bedard-Haughn (PhD) is looking forward to the challenges of the fall semester.

"Seeing how hard our instructors have been working to prepare over the summer, I'm actually really excited about the year ahead and optimistic that we will all emerge from these strange times with a much larger and more diverse teaching toolkit to support all kinds of learners, including those who choose to study remotely even outside of a pandemic," said Bedard-Haughn, who officially began her five-year term as dean on Aug. 15.

Bedard-Haughn began teaching and researching at the University of Saskatchewan (USask) in 2006, earning the Provost's Outstanding New Teacher Award in 2010, along with Dr. Jay Wilson (EdD). Early in her career, taking on the challenge of being dean wasn't part of Bedard-Haughn's plans.

"Like many junior faculty members, my early years were focused on teaching and building my research program, not on administrative aspirations; but through a few key committees and admin opportunities, I gained a new appreciation for the complexity of the college and the university at the macro level," said Bedard-Haughn. "I got excited about the opportunities I could see and wanted to be part of turning those opportunities into action."

Over the next year, Bedard-Haughn plans to focus on providing a positive learning environment for students, both at the undergraduate and graduate level.

"AgBio places a high priority on hands-on learning, but that's pretty challenging in the age of COVID-19," she said. "The college will do everything it can to make sure our instructors, teaching assistants and students have the tools and supports they need to make the best of this situation."

> **"I'm actually really excited about the year ahead and optimistic that we will all emerge from these strange times with a much larger and more diverse teaching toolkit to support all kinds of learners, including those who choose to study remotely even outside of a pandemic.**
>
> **— Dr. Angela Bedard-Haughn (PhD)**

Another priority of Bedard-Haughn's for the year is to stay engaged with stakeholders.

"When we can't gather in person, this will require more creativity and a concerted effort, but it is just so important," said Bedard-Haughn, who earned bachelor's (1998) and master's (2001) degrees at USask and her PhD (2004) at the University of California, Davis. "Our current and prospective students, our industry, government and NGO partners, our alumni and our many community partners—rural, urban, remote—they need to know that AgBio is still working hard to provide the teaching, research and outreach that they need and deserve."

While COVID-19 has created some hurdles, Bedard-Haughn is looking forward to working on longer-term goals like continuing the work the college has done with curriculum renewal.

"I want to keep that momentum and move forward with renewal, incorporating some of the lessons we have learned in the last six months to think about not just what we teach but how we teach," said Bedard-Haughn. "What do we miss the most about the 'old normal' and what have we learned that we want to incorporate into the 'future normal'?"

For Bedard-Haughn, it is important to "take a close look at our training programs to make sure we are still delivering on our promises to our future leaders."

Over her term as dean, Bedard-Haughn also plans to grow the college's collaborative research ecosystem. She has learned from her own research projects that "when you collaborate, collectively you see solutions you wouldn't necessarily have seen on your own."

"Through industry, government, and community partnerships and interdisciplinary collaboration, we can tackle larger and more complex challenges and access a wider range of resources, both intellectual and financial," she said. "This will drive our research to new places as well as provide exciting training opportunities for our students."

Having grown up in rural Saskatchewan, Bedard-Haughn has always had a connection to agriculture and the land.

"When you grow up on a farm you have a profound appreciation for how farmers are stewards of the land and animals," she said.

When asked why agriculture is important to her, Bedard-Haughn refers to the college's mission to advance the responsible use of land, water and bioresources to provide products and services that enhance the quality of life for the people of Saskatchewan and around the world.

"This is why agriculture is important to me," said Bedard-Haughn. "When I interviewed for this job, I referenced a quote: 'Farming is a profession of hope.' Each seed that is planted, each calf that is born, each harvest that is hauled to the terminal, all require hope. Like farming itself, the mission of AgBio is steeped in hope, of returning to the fields each spring, of finding ways of living with and on the land in a productive partnership, ways that nourish and sustain not just this generation, but many generations to come."

Kira Glasscock is a communications co-ordinator in the College of Agriculture and Bioresources.

COLLEGE OF GRADUATE AND POSTDOCTORAL STUDIES:

New dean keen to support graduate students, postdocs

JAMES SHEWAGA

Changing jobs, cities and provinces can be challenging at the best of times. Now try doing it during the middle of a global pandemic.

For Dr. Debby Burshtyn (PhD), the new dean of the College of Graduate and Postdoctoral Studies at the University of Saskatchewan (USask), the physical move proved easier than expected, but the challenge of connecting with her colleagues through virtual means only has given her a new appreciation of what most USask students are experiencing as they adjust to starting the semester remotely.

"I can really relate to the students who are starting their courses in a virtual way, because I have been doing the same thing and I have some understanding of what that might feel like for them," said Burshtyn, who began her five-year term at USask on July 1. "It certainly is an added twist, thinking about how you build new relationships through virtual means. But what I have found is that people have been very generous with their time and I have had lots of one-on-one meetings online with both staff and senior leadership."

Burshtyn's background in graduate student administration helped her hit the ground running as the university geared up for the start of the fall term, with the focus largely on remote learning as most students, staff and faculty continue to work from home. With limited access to campus, she has spent just a day in her new office ("Just enough time to put my signature coffee cup on the desk," she said), with all staff meetings conducted online.

> **"I can really relate to the students who are starting their courses in a virtual way, because I have been doing the same thing and I have some understanding of what that might feel like for them.**
>
> **— Dr. Debby Burshtyn (PhD)**

"I am really impressed with how well our unit is doing working remotely," she said. "One thing that I have come to realize is how much I usually rely on non-verbal cues and looking at body language, especially in trying to become familiar with the staff. I am hoping that I am developing other skills and maybe my listening skills will actually improve because of this experience."

Burshtyn brings extensive experience to USask, with a resume of success in leadership roles in graduate student education at the University of Alberta, including having served as associate dean as well as interim vice-provost and dean of the Faculty of Graduate Studies and Research. She also brings a passion for research shared by graduate students and post-docs, giving her unique understanding of their particular program challenges, including the need to have access to labs, facilities and collections to conduct their work.

"I absolutely think having that connection is a great way to keep me grounded, because those of us who work in labs and collections, we really love what we do and research is our passion," said Burshtyn. "I think it is very important to have that connection with the students.

"Because of the pandemic, we have also been focused on how we communicate with students, and a new virtual orientation and onboarding platform online was already in the works. That is really exciting, because a lot of thought and research went into making it from the student's perspective, as opposed to what we think students need to know. These are the silver linings that we find in going through this experience."

As she continues her crash-course in connecting with colleagues and senior leaders in colleges across campus, Burshtyn has set a number of priorities and goals as the new academic year begins.

"The big things that I am really focused on are equity, diversity, inclusion, and to be good allies in reconciliation, and to figure out where a college of graduate students fits into the broader strategies that the university is already engaging in," she said. "I am also really interested in developing clear learning outcomes to help students through to their next career steps, and that is not just the research-intensive thesis-based students, but across all programs, and for postdoctoral fellows as well.

"The third goal has to do with keeping our faculty engaged. Sometimes it's simply to be in the room and involved in conversations about the students, to be there to always ask how this will impact graduate students in particular."

SUBMITTED

Dr. Debby Burshtyn (PhD) officially began a five-year term as the new dean of the College of Graduate and Postdoctoral Studies on July 1.

As she settles into her new role, Burshtyn is also looking forward to resuming her own active research program, funded by the Canadian Institutes of Health Research. Burshtyn's groundbreaking work in regulation of immune cells is internationally recognized, and she wants to continue her research on checkpoint inhibitors in human killer cells. So what exactly are checkpoint inhibitors?

"There are ways that the immune system has of distinguishing between something that is foreign and dangerous, or belongs in the body and is OK, and in some extreme situations, to temper the immune response so that it does not start to cause pathology and damage," she said. "This is something we are seeing in COVID-19. Overreaction of the immune response that is damaging in tissues such as the lungs."

"So, as the year progresses, I hope to establish a modest research program here to continue my work, because I continue to be passionate about research."

ERIC ZWIEFELHOFER

WCVM graduate student Miranda Zwiefelhofer with bison at the LFCE's specialized livestock facility.

MIRANDA ZWIEFELHOFER

The two new bison calves, named Skeeter and Mo, born from frozen *in vitro* embryos.

New *in vitro* fertilization technique successful

University of Saskatchewan researchers thrilled after the birth of bison calves

LANA HAIGHT

It's a rare privilege to welcome newborn bison calves into the world. It's even more rare when those calves are the fruit of your labour.

"I'm thrilled. It's very cool to actually see something that I was able to start from an egg and then an embryo, and actually get a calf out of it. It's very rewarding," said Miranda Zwiefelhofer, a graduate student in the Department of Veterinary Biomedical Sciences at the Western College of Veterinary Medicine at the University of Saskatchewan (USask) and a member of the research team headed by Dr. Gregg Adams (DVM).

In early July, two wood bison calves were born at USask's Livestock and Forage Centre of Excellence's specialized livestock facility, southeast of Saskatoon. The bison calves are the first to be born from frozen *in vitro* embryos produced from immature eggs that were collected from live bison.

Adams' team is refining protocols for advanced reproductive techniques to be used with bison in the wild. Zwiefelhofer focused on determining the ideal age and stage of development for an embryo to be frozen in order to result in a successful pregnancy.

"We can make a large quantity of

SEE *RESEARCH*, PAGE 9

Research supports 'near threatened' species

FROM PAGE 8

embryos, but only some are capable of producing a bison calf," she said.

Although 500,000 bison can be found in national parks and on commercial farms throughout North America, they are a "near threatened" species, according to the International Union for Conservation of Nature Red List. Rare and isolated bison genetics are locked away in remote locations. Adams and his team are determined to preserve these valuable genetics through reproduction.

Zwiefelhofer's project started in the summer of 2019 when she and others in Adams' team collected eggs from 32 bison cows, using minimal handling methods including sedating the bison and using field darts to deliver treatments.

Zwiefelhofer then moved from the field to the lab. First, she grew the eggs to maturity and fertilized them with frozen-thawed semen and produced 75 *in vitro* embryos. Then, she observed the embryos for several days as the single cell divided into two and then four and so on until the cells became compact and a cavity formed. With different embryos growing at different rates, they were frozen in liquid nitrogen at different stages of development (from morulas to expanded blastocysts) and on different days after fertilization (seven to nine days), all critical pieces of information for Zwiefelhofer's research.

In October 2019, the research moved out of the lab and back to the animals. Zwiefelhofer selected embryos based on the various stages of development and the age when they were frozen. She gradually thawed the ones she deemed to be of the highest quality. The team transferred embryos to 28 bison cows. When examined 30 days later, five cows were pregnant. Throughout pregnancy, three cows lost their calves. The two bison calves born were the result of morulae frozen seven or eight days after fertilization.

Like an expectant parent, Zwiefelhofer was on baby watch for days before the calves were born.

"We knew it was coming. We could see the mothers' udders starting to fill up and getting really pink. We made sure to drive by every 12 hours starting about a week before they were born," said Zwiefelhofer, who named the calves Skeeter and Mo.

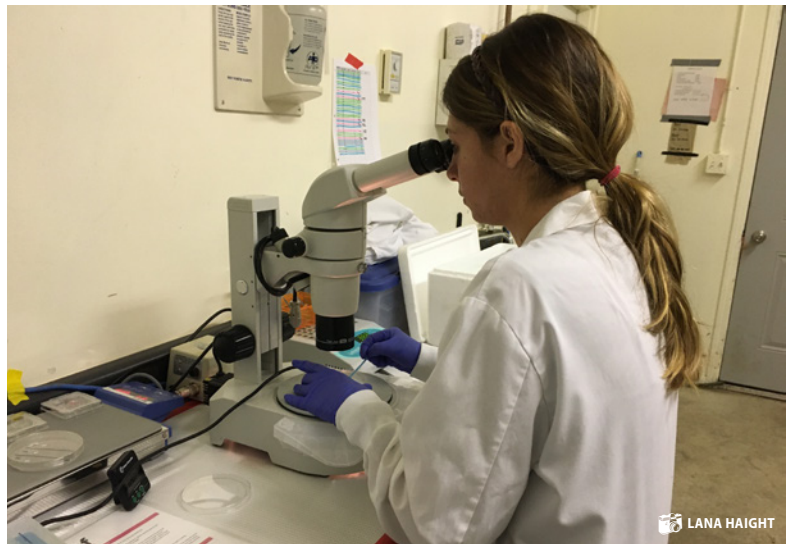
Not only are the new calves the first bison to be born using immature eggs collected from live bison, they are only the third and fourth calves to be born from frozen *in vitro* embryos.

"This is a pretty big deal. That we have two calves and originally had five pregnancies shows these technologies really do work. Freezing and thawing the embryos is the difficult part. We could use fresh embryos and get a higher pregnancy rate, but to transport embryos in a biosecure manner, they need to be frozen," said Zwiefelhofer, who is working toward earning a PhD.

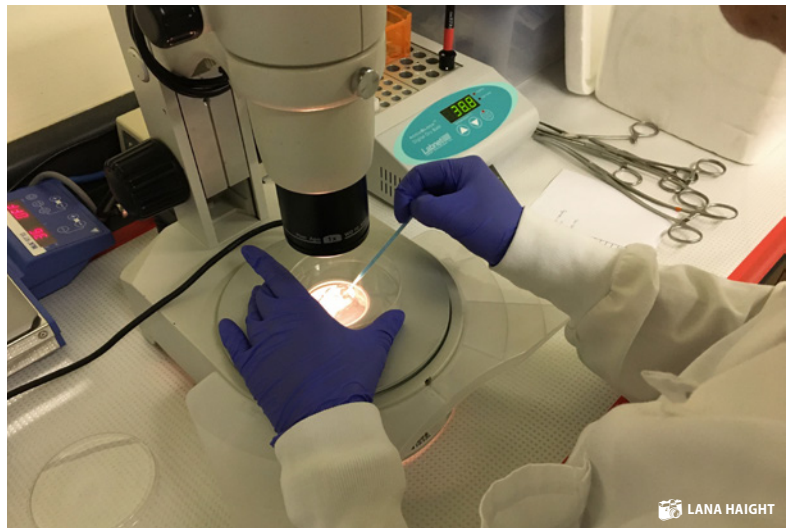
With this latest research, scientists have new tools in their toolbox for ensuring the survival of pure genetics of wood and plains bison herds that are scattered throughout North America, she said.

The Natural Sciences and Engineering Research Council of Canada and the Saskatchewan Agriculture Development Fund contributed funding for this research.

Lana Haight is the outreach and engagement specialist at USask's Livestock and Forage Centre of Excellence.



WCVM Department of Veterinary Biomedical Sciences graduate student Miranda Zwiefelhofer works in a lab the LFCE's specialized livestock facility.



A close-up look at a frozen *in vitro* fertilized bison embryo used to produce a new bison calf at the Livestock and Forage Centre of Excellence.

Two polar bears walk past a research camera trap set up in Wapusk National Park, near Churchill, Manitoba.

DOUGLAS CLARK

SENS master's student Katie Manning on a tundra buggy searching for polar bears in Churchill, Manitoba.

DOUGLAS CLARK

SENS student researching polar bear-human conflicts

MEGAN EVANS

Katie Manning is putting her skills to work studying local knowledge of polar bear-human conflicts in northern Manitoba.

Manning, a wilderness adventure guide turned master's student at the University of Saskatchewan (USask), credits lucky timing for her acceptance into graduate school.

But her supervisor, USask's School of Environment and Sustainability (SENS) professor Dr. Doug Clark (PhD), said her curriculum vitae and previous experience as a wilderness and dogsledding guide for Minnesota's Outward Bound School has proven her ability to handle some of the extreme conditions that come with the territory of studying polar and grizzly bears.

Working for Outward Bound, Manning lived and travelled on her own for anywhere from one week to 50 days at a time, with groups of middle school students or at-risk youth, and even a 71-year old war veteran, among others.

"Katie's expedition leadership experience has clearly prepared her not only to work well with our northern partners, but also to adapt her research plans to pandemic conditions and keep it going," said Clark. "This highly-competitive scholarship is a well-deserved acknowledgment of her capabilities."

Manning, a second-year student in SENS, is a recent recipient of a Canada Graduate Scholarship from the Social Science and Humanities Research Council (SSHRC). Her study is focused on empowering northerners to take more active roles in wildlife monitoring and research.

"Historically, the use of scientific, traditional, and local knowledge has not been weighted equally when creating species conservation plans, resulting in marginalization of local and Indigenous perspectives," Manning said. "The inequity of stakeholder opinions means that citizens of Churchill, Manitoba, have limited options for input into polar bear management, but they are the ones who ultimately have to live with the consequences of any conservation plan. This can leave local people feeling like bear lives matter more than their own, re-enforcing external existing power structures, and oversimplifying the relationship between the locals, the land, and the wildlife."

This problem is expected to be similar with grizzly bears. Although classified as extirpated in Manitoba, grizzly bears migrating from Nunavut bring unique governance and legislation challenges related to species management. Manning's study seeks to answer how community members' perceptions of risk are influenced by species familiarity (polar vs. grizzly bears) and how local knowledge applies or can be applied to a new incoming grizzly bear population.

Her study methods will include interviews with hunters, trappers, and local and traditional knowledge holders to gather risk perceptions. Trail cameras will be used to test community-generated hypotheses about grizzly and polar bear activity and risks of conflicts with people.

"There is a desire by Churchill locals to find pre-emptive solutions to potential human-grizzly bear conflicts. Due to the design of this study, community members have the opportunity to share and engage with traditional practices, as well as begin creating new local knowledge specific to the grizzly bear population," Manning said.

There are a lot of questions about grizzly bear activity, habits, and behaviour in and around the Churchill area, and characteristics cannot be blindly applied between different bear populations, Manning said. Determining what is true for this grizzly bear population is the first step in building the local ecological knowledge and pivotal to any successful co-existence planning.

While COVID-19 put many student research projects in limbo, Manning's project was able to continue without issue.

"It's disappointing that I don't get to spend more time in the community, but because I'm able to complete interviews over the phone, it's been an easy transition for me," she said. "In some ways, I think this might even make the interviews easier to complete; I get to ask a lot of questions, and no one has to make eye contact—it doesn't feel as intimate ...

"It feels serendipitous that this topic is getting national attention and that as a national grizzly bear management plan is being explored, we can put locals' perspectives and wishes out at the same time, rather than leaving Churchill to have to bend and retroactively fit the expectations. I think if we want to foster long-lasting northern conservation plans, then we need to be better at weighting the considerations of the people that live, work, and rely on those landscapes."

Megan Evans is the communications specialist in the School of Environment and Sustainability.

CAMPAIGN FOR STUDENTS

Making a difference

INALIE PORTADES

Studying in the kitchen, solving equations by their bedside, and rehearsing presentations in the living room are only a few of the many scenarios students are experiencing this year.

With classes being delivered remotely, the University of Saskatchewan's (USask) Campaign for Students: *Here today, tomorrow the world,* raises money to help students in all programs through scholarships and bursaries; provide financial assistance to those experiencing crisis situations; and offer mental health support during these challenging times.

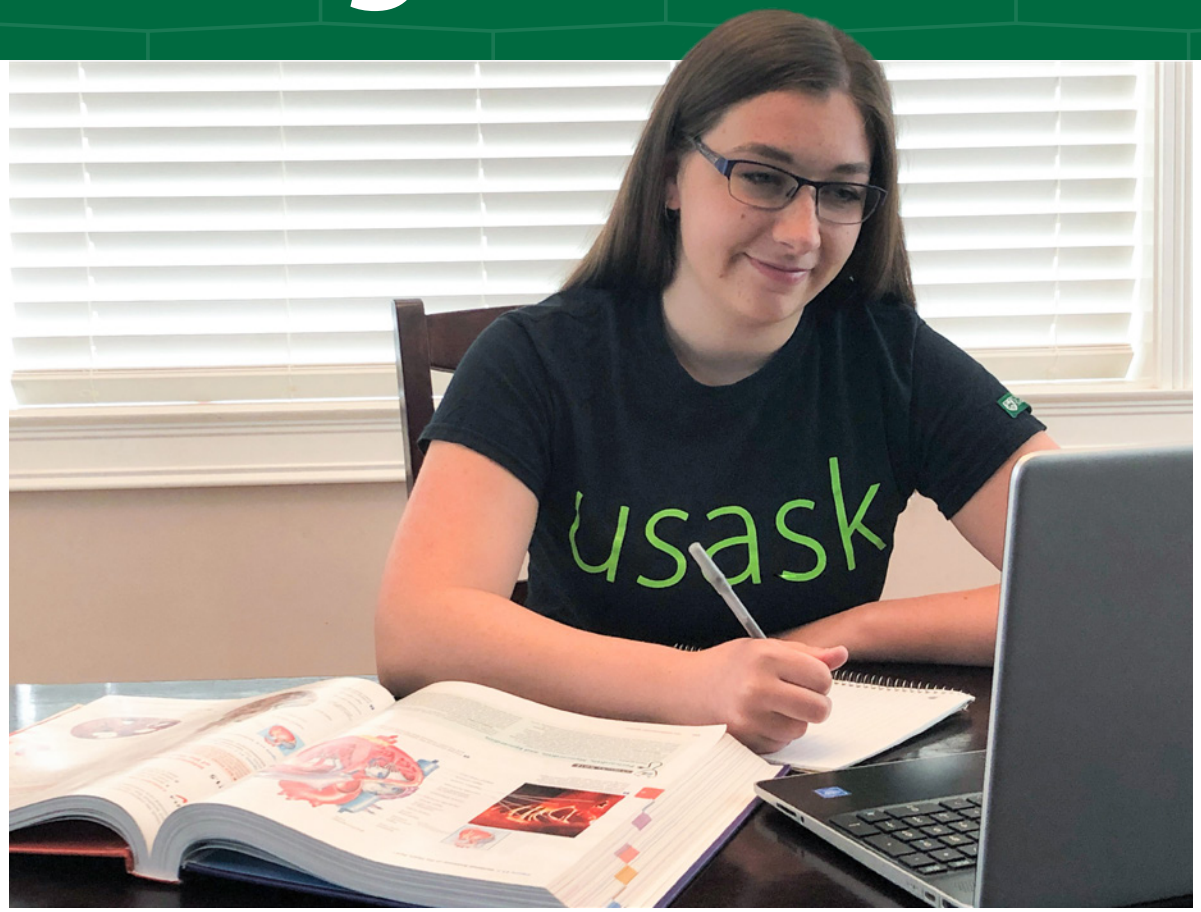
Kaitlyn Benko, a fourth-year student in the College of Kinesiology, is one of the many students who has received a scholarship through the Campaign for Students and been impacted by the global pandemic.

"I still remember the day that USask announced the closure of campus," Benko said. "I was checking PAWS at home and saw the headline that classes were moving to an online format. I remember thinking that this would definitely be an adjustment but that the university ultimately made the best decision to protect everyone."

For many students, learning online is a new environment that they have never experienced before. Benko is no exception to this shift.

"I definitely feel like I learn the best in an in-class environment, so it will be an adjustment for me to try and create the same immersive learning environment for my online classes from home," she said.

Students navigating their own remote study space often suffer from additional stress when they are far away from their peers and family members. Learning while isolated is a barrier for many in their journey to performing well in classes and maintaining a healthy lifestyle. Recently, there has been an upsurge of international students requiring assistance from USask's mental health services, due to isolated living conditions.



Kaitlyn Benko is forever grateful for the scholarship support she received from the Campaign for Students. SUBMITTED

On top of transitioning to online learning, students also have to cope with financial stress. During the same time the campus had closed, the skating rink where Benko works also shut down to stop the spread of the COVID-19 virus.

"I couldn't do my job for a couple of months and that was a big stressor in my life," she said.

Several USask students suddenly lost their source of income due to the pandemic. As a result, basic needs like rent and groceries have become more challenging to afford. On top of living expenses, other students are struggling to access tools for online learning such as laptops, internet connection and textbooks.

Despite these challenges, students like Benko continue to work towards their goals that were established before the pandemic.

"Going into university, I knew I wanted to be on the Dean's Honour Roll for all four years of my undergrad degree, so I've always tried to be attentive in my classes and stay on top of my course work to achieve this. This school year may look different, but I plan on being just as diligent with my studies. I will continue to persevere and set myself up for success as I aspire to reach my future goal of becoming a chiropractor," she noted.

However, thanks to the Campaign for Students, more support is available to help students achieve their goals. Donations to the campaign makes a real difference in students' lives during these challenging times. Any amount of gift, big or small, increases their confidence in fulfilling their dreams.

"Some of the biggest supports that students will need as we continue to learn through an online platform will involve financial, mental health, social, and overall wellness supports. There will likely be unique stressors arising with online learning amidst a pandemic, so it is important that students' well-being as a whole is addressed and prioritized to help them best succeed in and out of school," Benko explained.

She also commented that the impact of receiving financial awards and aid can also extend beyond each student.

"Receiving a scholarship has motivated me to continue striving for excellence in my academics and to be the best role model I can be for my siblings," Benko said. "My younger brother, who is entering high school this year, says that he has set a goal to work hard in school and receive the same scholarship that I did. This goes to show that donations to students has the potential to support not only the recipient, but also uplift and motivate others around that individual."

For more information about Campaign for Students, or to make a donation to help students achieve their goals while learning from home, please visit give.usask.ca/students.

Inalie Portades is a development communications co-ordinator at USask.

College of Dentistry adapts to COVID-19

College of Dentistry students work on skill training in the simulation clinic in the Health Sciences Building during the first week of fall term classes at the University of Saskatchewan. WALTER SIQUEIRA

JENNA FRASER

The ongoing COVID-19 pandemic has required colleges across the University of Saskatchewan (USask) to make significant changes in their educational programming.

In addition to shifting classroom activities to virtual learning, the College of Dentistry has had to develop and adopt new protocols in the patient care clinics that are open to the public and in the training simulation clinics, as students are required to be on campus to complete the psychomotor skill components of their education.

"We have worked closely with the university, the Saskatchewan Health Authority, and the College of Dental Surgeons of Saskatchewan (CDSS) to implement additional COVID-specific infection control and safety protocols in our clinical and preclinical programs," said Dr. Doug Brothwell (DMD), dean of the College of Dentistry. "Our regulatory body, CDSS, have mandated significant changes in infection control protocol for clinics across the province, and we spent the last couple of months planning, designing, and implementing these changes so that our clinics could reopen for the fall semester."

While all Saskatchewan dental clinics are adapting to these new changes, the College of Dentistry was presented with a unique challenge: the size of its clinical operation. The college's patient care clinics include close to 100 dental chairs used by approximately 155 students, 15 staff and 25 faculty working in the clinical program.

To best ensure patient, student, staff and faculty safety, the college has developed new protocols for clinical care, including increased levels of personal protective equipment (PPE), rearranging schedules to limit the amount of time students are on campus, changing and renovating the clinics to allow for fully enclosed operatories (dental treatment areas), and finding a new way for instructors to provide supervision to students working in enclosed spaces.

"Aerosols are generated during a large number of different dental procedures, and must be strictly managed to prevent the spread of COVID-19. As a result, the college needed to add fully enclosed operatories for our students to work in to prevent the risk of virus transmission," Brothwell said.

"The new enclosed treatment rooms allow us to leave operatories undisturbed (quarantined) for a specified amount of time to ensure aerosols have settled before re-entering and disinfecting the rooms according to the new protocols. One notable addition to the disinfection protocol is the addition of room fogging devices that discharge an anti-viral disinfecting solution that is approved by Health Canada for COVID-19."

The fully enclosed operatories presented another challenge for the college. With the number of students working in the clinic at one time, it is not feasible to have a faculty member present and supervising students in each enclosed operatory. Additionally, it would be ineffective under the new PPE protocols to have supervising instructors circulate in and out of the enclosed operatories supervising several students as was done in the past, since this defeats the purpose of the enclosed room.

In response to this challenge, the college decided to pilot a remote audio-visual supervision strategy.

"We are in the process of equipping two enclosed operatories with a microphone and speaker for audio communication and two cameras: a webcam which will be mounted to provide an overall view of the patient and the student during a clinical procedure; and an intra-oral camera with which the student can provide high resolution, close-up views of the treatment being provided," said Dr. Alan Heinrichs (DMD), assistant dean, clinics. "The clinical supervisor, via a WebEx link, will be able to remotely view X-rays, observe the process of care, and provide instruction or evaluation on the progress and quality of care being provided."

The goal of this pilot strategy is that the instructor need only to enter the enclosed operatory once, ideally at the end of the procedure to evaluate the final result, but also more often in those situations where it is required.

"The health and safety of patients, students, faculty and staff were top priority for the College of Dentistry when our students returned and our patient care clinics and simulation clinics reopened in the latter parts of August," said Brothwell. "The college continues to be in contact with university leadership, the health authority, and our regulatory body, and will continue to monitor and update our clinical protocols as more information regarding COVID-19 becomes available."

Jenna Fraser is the communications officer in the College of Dentistry and School of Public Health at USask.

GETMYPHOTO.CA

The Life of Riley:

Roughrider debut on hold, but Huskies' star loved his time at USask

JAMES SHEWAGA

In the midst of the global pandemic, Mattland Riley enjoyed two of the most memorable moments of his life.

The 6-foot-3, 300-pound All-Canadian offensive lineman with the University of Saskatchewan Huskies completed a lifelong dream when he was selected in the first round (seventh overall) by the Saskatchewan Roughriders in the CFL draft on April 30. In June, the 23-year-old from Melfort also officially received his mechanical engineering degree, albeit remotely due to the ongoing pandemic. For Riley, it was still a moment to celebrate, the culmination of five years of dedication on the field and in the classroom.

"I was obviously really excited to be drafted by the Riders, and it was a tremendous honour," said Riley. "I loved my time at university and playing for the Huskies and I wouldn't be where I am without them. When you join the Huskies, you have a dream of playing professional football, but the odds are so slim.

"So my biggest focus coming into university was getting a degree in something that I wanted to do, that had a career path with lots of options, so engineering was a great choice. It was hard playing football and studying engineering at the same time, but it definitely paid off in the end."

Indeed. After earning his Bachelor of Science in Engineering (with distinction), Riley quickly put his degree to use, working as a project manager for a general contractor before beginning a design engineering position with a local agricultural manufacturer, while training for a CFL season that never came.

He's not exactly living a Charles Dickens novel, but 2020 has indeed been the best of times and the worst of times for Riley. A week after USask's virtual convocation ceremony on June 1, the Canada West conference and the U Sports national governing body announced the cancellation of first-semester sports, wiping out a potential fifth and final season of Huskies football for Riley. On Aug. 17, the news just got worse, as the CFL announced it would not play in 2020, ending Riley's hopes of turning pro this year.

"Hearing that the U Sports season was cancelled and then the CFL season was cancelled, too, it was pretty tough," said Riley. "I don't think it has fully set in yet, the reality of not playing football. This will be the first year I won't be playing football in 10 years, so it will just be weird having a fall without football."

While the pandemic has postponed his professional debut, Huskies head coach Scott Flory is confident Riley is destined for a great career in the CFL.

"Mattland is a fantastic person, leader and football player for us, and he deserved to be a first-round CFL selection," said Flory, who played 15 seasons in the CFL prior to beginning his coaching career with the Huskies. "I have no doubt he will have a long professional career. I doubt he will be back with us in 2021, even though he has eligibility remaining, as we assume he will be a Saskatchewan Roughrider at that point. Until then, as with all our players, we'll forge on and do our best to continue to develop our team over these tough times."

For his part, Riley is also refocusing on his development to prepare for what would be his first Roughriders training camp in 2021.

"Without there being a season, having all that time off will be tough," said Riley, who helped the Huskies win the Hardy Cup in 2018 and ended his Huskies career by being named a first-team All-Canadian in 2019, signifying the top 24 players in the country. "But I am looking forward to focusing on training and I think it is just going to be about setting up little milestones and really focusing on the reason why I am training."

In the meantime, he is enjoying working in the engineering field and spending more time with his wife Allison, celebrating their first anniversary earlier this year.

"It's been tough planning for the future with all the uncertainly surrounding COVID, because it's not just me, it's my wife too, who is affected," said Riley. "I imagine a lot of other CFL players feel the same frustration. Like a lot of people, because of COVID, we are just trying to figure out our plan as we go. But hopefully this time next year, I will be playing for the Roughriders."

New first-year engineering program RE-ENGINEERED for student success

Dr. Sean Maw (PhD), one of the leaders of the team redesigning USask Engineering's first-year program, was recently on campus shooting a video about the new program. DONELLA HOFFMAN

DONELLA HOFFMAN

The University of Saskatchewan (USask) College of Engineering is seeking to create the most effective first-year engineering program in Canada. Dubbed "RE-ENGINEERED," it will welcome its first students in fall 2021.

When that happens, it will mark the end of a process that began in 2016.

"We asked ourselves, 'What if we started from a blank piece of paper? How would we do it?' " said Associate Professor Dr. Sean Maw (PhD), one of the leaders of the team transforming USask Engineering's first-year program.

Today's engineering grads need a more robust and diverse skill set than ever before. But for the most part, engineering education hasn't fundamentally changed in 100 years or longer, according to Maw, the Jerry G. Huff Chair in Innovative Teaching, and a faculty member of the Graham School of Professional Development in the USask College of Engineering.

The team looked at curriculum and also focused on better supporting students' mental and physical health, while keeping them excited about engineering and giving them a solid foundation for upper-year courses. As they built the program, designers were informed by extensive consultation with faculty and students, as well as research on effective instruction, principles for teaching and learning in higher education, and practices that support student success.

The RE-ENGINEERED curriculum was made possible by Ron and Jane Graham, whose generous donation allowed the hiring of a new team of engineering education specialists to develop the curriculum. As the program is implemented, many alumni continue to support equipment and software costs through gifts to the Engineering Advancement Trust.

RE-ENGINEERED means a restructured student schedule

While engineering students currently have five or six courses that run the length of the semester, RE-ENGINEERED classes will vary in length and intensity, with material sequenced so when students learn knowledge in one course they can immediately apply it in another.

"Think of TV shows that have crossovers. It's going to be like that with the courses," said Maw.

"We will also be pacing things better," he added, noting that the team of first-year instructors will communicate regularly and co-ordinate assessments so students won't have one jam-packed week followed by another in which they have nothing due.

First-years will also have a consistent schedule with a common lunch hour so it will be easier for them to schedule community-building extra-curriculars and social events, or simply fit in a workout.

"This predictability is good for mature students, people who are working in the evening and for those who have a family," said Maw.

. . . and a revitalized curriculum

The first difference is the addition of online Summer Top Up courses, so students can identify and address any gaps from their high school classes – including chemistry, math and physics – before starting first-year. In fact, the college rolled out Summer Top Ups this August, a year earlier than planned, because in-person learning ended so abruptly for Grade 12 students.

Thanks to the inclusion of shorter courses in RE-ENGINEERED, a broader range of material will be covered, making students more employable after their first year. For example, content covered in students' first semester, in addition to basics like mechanics and electrical circuits, will include:

- Introduction to the profession and communication
- Calculus; linear algebra applied to engineering problems
- Short courses in chemistry, biology, physics and geology and how they relate to engineering
- Indigenous cultural foundation
- Design; drawing and sketching; computer-aided design
- Computer programming (Python and Matlab)
- One-day labs introducing students to each of the engineering disciplines

Refocused to build a stronger foundation

Students won't find the work easier, said Maw, but the environment will be more supportive. Although there are no final exam periods, students will be tested on modules of content throughout their courses using competency-based assessment, something pretty new for Canadian engineering education. The final exam periods in December and April will be used for discipline-specific, hands-on learning.

The idea is to ensure students have a stronger foundation in the basics they'll need for the rest of their degree. For instance, they will need to achieve a mark of at least 70 per cent on material involving facts, concepts, basic computations, and procedural steps, as well as basic integrative problems in the course. There will be no minimum standard for the very advanced material.

"They have to do pretty well on the foundational material. If they don't do well on an early test of a learning outcome, they will get a second or third chance to do better," Maw said.

Overall, it will be a more constructive environment for learning.

"We want to minimize the academic attrition by supporting the students better and by co-ordinating what we're doing across the courses better. It won't be easier, but it will be more supportive and thorough," said Maw.

It will also ensure students have the information they need to determine if they're making the right career choice.

"If they know what engineering's about and they know what the related sciences are about earlier, they can make a better decision earlier whether engineering is for them."

The overall goal will be preparing a stronger crop of USask Engineering grads.

Donella Hoffman is the communications officer in the College of Engineering.

USask collaboration creates free cannabis education toolkit

COLLIN SEMENOFF

From left, USask registered nurses Jenn Klemmer and Tish King, along with Dr. Holly Mansell (PharmD) and Dr. Kerry Mansell (PharmD).

REAGAN KING

A toolkit consisting of educational videos and materials about cannabis use has been developed by University of Saskatchewan (USask) health science collaborators and made available by the Ministry of Education for use in schools throughout the province.

REACH (Real Education about Cannabis and Health) is a free classroom resource resulting from a multidisciplinary collaboration between the USask College of Nursing, the College of Pharmacy and Nutrition, and researchers from the Cannabinoid Research Initiative of Saskatchewan (CRIS).

"Across Saskatchewan, school curricula have historically covered cannabis use in conjunction with illegal drugs," said Patricia King, a registered nurse and instructor in the College of Nursing. "Now that cannabis is no longer illegal for adults and is readily accessible in our communities, the previous message of 'just say no' may not be relevant."

King is one of several people recently involved in the development of cannabis education resources targeted toward youth in Grades 7 and 9.

Citing an urgent need to provide more cannabis education for school-aged children, King said that youth between the ages of 15 and 24 have a rate of cannabis use that is twice that of adults. This is of particular concern when one considers the fact that developing brains are particularly vulnerable to cannabis use.

The REACH curriculum is the culmination of a partnership between College of Nursing colleagues King and registered nurse Jenn Klemmer, and Drs. Holly Mansell (PharmD) and Kerry Mansell (PharmD) from the College of Pharmacy and Nutrition. The Mansells are both members of CRIS who helped support the initiative, with funding also provided through a grant from the Saskatchewan Health Research Foundation (SHRF).

By leveraging College of Nursing relationships with Saskatoon schools made possible by the Safe School Health Improvement Project (Safe SHIP) and the School Health Initiative with Nursing Education (SHINE), 12 nursing students and one pharmacy student were able to engage with local youth while fulfilling clinical hours for their university studies.

"Partnering with Safe SHIP and SHINE provided a unique opportunity for our pharmacy student to work within the schools and collaborate with other nursing students. It was a great example of interprofessional collaboration—something we really try to encourage within the Health Sciences," said Holly Mansell.

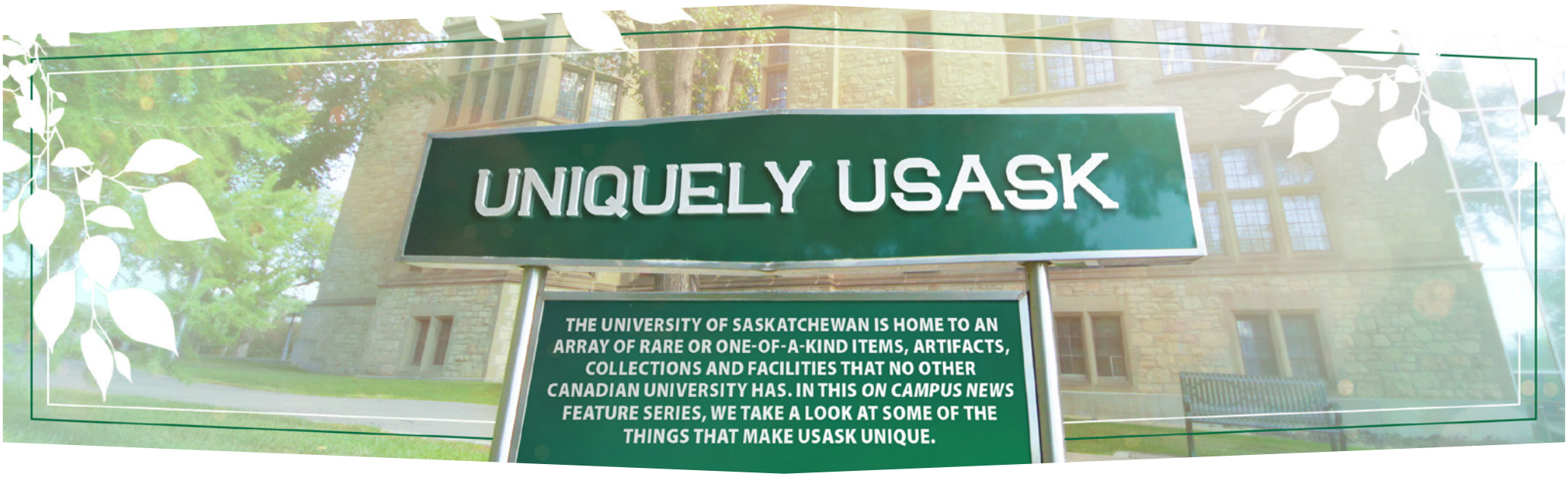
The scope of the clinical partnership involved youth engagement, meaningful interaction, health education, and health promotion around cannabis use in youth.

"Since late 2018, we've collaborated and worked closely with youth, health-care providers, educators, researchers, and other stakeholders to create cannabis education resources which are relevant and evidence-based," said King. "We believe these resources can have a profound impact on decision making for youth."

The REACH toolkit includes lesson plans, hands-on learning activities, and videos as well as supplemental resources to help educators increase their own knowledge about cannabis and become confident in knowledge translation. REACH also includes lessons that employ the teach-back strategy to foster student comprehension and consideration of future health behaviours.

REACH curriculum resources, including teaching-learning videos for middle and high school students, are freely available to Saskatchewan teachers. They have been posted in the *Other Useful Materials* sections of the *Health Education 7* and *Health Education 9* resource lists on the Saskatchewan Ministry of Education curriculum website.

Collin Semenoff is a communications strategist with USask Health Sciences.



HIDDEN GEM: FLORENCE NIGHTINGALE'S MEDICINE CHEST

JAMES SHEWAGA

Florence Nightingale is widely regarded as the most famous nurse of all time. And more than a century after her passing, a historic piece of her remarkable life story sits on display at the University of Saskatchewan (USask).

One of the historical hidden gems on campus, USask's College of Nursing is home to an antique medicine chest that has been traced back to Nightingale and was originally brought to Saskatoon in 1912, and decades later was donated to the university. With 2020 declared the Year of the Nurse and Midwife and the 200th anniversary of Nightingale's birth, current and former nursing professors want to shine a light on this unique piece of Nightingale's nursing narrative.

"I think it has been one of our best-kept secrets for years," said Dr. Arlene Kent-Wilkinson (PhD), a registered nurse and associate professor in the College of Nursing who is researching the history of the Nightingale medicine chest. "Most of the faculty know it is there, but we kind of forget about it ourselves, and some of the new nurses perhaps are not aware of it at all.

"I remember when I toured the Florence Nightingale Museum in England, I thought to myself, if they had our medicine chest, this would be their flagship display. It's our best-kept secret, for sure."

On display in the fourth-floor atrium of the E-Wing of the Health Sciences Building, the medicine chest matches a smaller companion piece on display in England that Nightingale used during the Crimean War. Nightingale became a nurse in 1851 and travelled to Turkey to treat sick and wounded British soldiers in the war, leading initiatives to clean up field hospitals and improve standards of care that are credited with saving the lives of more soldiers.

"The amazing thing to me is how the medicine chest got to Saskatoon and why a lot of people do not know about it," said Dr. Gail Laing (PhD), a registered nurse and professor emeritus of the nursing college, who is assisting Kent-Wilkinson in tracing the story of the chest. "I don't think we appreciate it enough. It is truly a piece of nursing history."

So how did it come to arrive in Saskatoon? The story began when Nightingale's sister, Lady Frances Verney, gave the chest to the family gardener Isaac Milsom, who took it with him when he immigrated to Canada and became a landscaper in Saskatoon in 1912, six years after Saskatoon became a city. Years later, Milsom gave the chest to local physician Dr. Herbert Weaver, who had also brought the first X-ray machine to Saskatoon back in 1906. After a long career practising medicine locally, Weaver donated both pieces to the university, where they remain on display to this day.

A look at the historic Florence Nightingale medicine chest, on display in the fourth floor atrium of the E-Wing of the USask Health Sciences Building.

ARLENE KENT-WILKINSON

MARK FERGUSON