



SUPER STUDENTS

From prestigious Schulich Leader Scholars and Best and Brightest scholarship recipients to international medal-winning University of Saskatchewan Huskie student-athletes, we profile some of our superb incoming and returning undergraduate students at USask in this month's edition of *On Campus News*.

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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.

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Quantum centre crosses disciplinary boundaries

SHANNON BOKLASCHUK

A dynamic new research centre in the College of Arts and Science at the University of Saskatchewan (USask) is bringing together faculty members from a number of disciplines to explore the exciting potential of quantum materials.

The Centre for Quantum Topology and its Applications (quanTA) received approval from University Council in May and is now in operation. Researchers from the college's Departments of Mathematics and Statistics, Physics, and Chemistry are collaborating on work related to quantum materials, which are made possible by the fusion of mathematics and physics.

The materials have remarkable properties, such as electrical conductivities that are controlled purely by the topology—or shape—of their quantum shadow. This is the geometry of the object at the tiny length scales inhabited by electrons



Dr. Steven Rayan (PhD) is the founding director of the Centre for Quantum Topology and its Applications (quanTA).

SHANNON BOKLASCHUK

and other subatomic particles, said the centre's founding director, Dr. Steven Rayan (PhD).

"The basic premise here is that

microelectronics have changed the face of humanity. There's very little that's recognizable between now and 1900," said Rayan, a professor

in USask's Department of Mathematics and Statistics.

"Today, we all carry around small supercomputers; they're just our smartphones. Even compared to what we had in 1990, these devices are almost pure science fiction. There are few, if any, buttons. You just swipe your finger and it can do complex and amazing things."

Watching a film on your telephone at the swipe of a finger was "the stuff of dreams" just 20 or 30 years ago, said Rayan. Now, he said, the question is: "What is the next phase of all of this?"

In March 2019, Rayan was awarded \$250,000 by the New Frontiers in Research Fund, a new federal fund designed to promote exploratory research that crosses disciplinary boundaries and enables researchers to take risks and be innovative.

SEE A CENTRE, PAGE 15



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:

Genome research

Wheat, lentils and livestock are the focus of a \$24.2-million investment over four years by Genome Canada and its partners in three University of Saskatchewan-led research projects aimed at ensuring Canada remains at the cutting-edge of agricultural markets. The projects led by USask Drs. Curtis Pozniak (PhD), Kirstin Bett (PhD), Bert Vandenberg (PhD) and Cheryl Waldner (DVM) and administered by Genome Prairie, are part of a \$76.7-million investment in eight projects across the country announced July 23 by Canada's Science and Sport Minister Kirsty Duncan to advance sustainability and productivity of Canadian agriculture, agri-food and fisheries.

Cancer imaging

A USask medical research team will receive \$987,000 from Western Economic Diversification (WD) towards a \$4.55-million project aimed at producing and testing new imaging agents for diagnosing lung and colorectal cancers in humans. The federal investment will enable clinical development of first-of-their-kind imaging agents for molecular, non-invasive diagnosis and accurate tumor removal, potentially increasing the survival rate of cancer patients, said team leader and pathology professor Dr. Ron Geyer (PhD). Also announced was \$650,880 from WD for the Summer Entrepreneurs program that was launched May 1 by USask's Innovation Enterprise.

HIV initiative

The rise in HIV and other sexually transmitted infections among Indigenous people in Saskatchewan and Manitoba is to be addressed by a new \$2.9-million Indigenous-led research centre to close gaps in prevention and care. First Nations researchers at the University of Saskatchewan have been awarded a \$2.84-million federal grant over five years from the Canadian Institutes of Health Research to establish an Indigenous-led centre. The location will be determined by the researchers and members of Indigenous communities. The centre will mentor and train a new generation of Indigenous experts in HIV prevention and treatment.

Northern energy

With a grant of \$2.5 million from the Social Sciences and Humanities Research Council of Canada, two USask researchers lead an \$8.8-million international project to explore how northern residents can achieve energy independence and benefit economically and socially by developing renewable energy. Dr. Bram Noble (PhD), professor of geography and planning in the College of Arts and Science, and Dr. Greg Poelzer (PhD), a professor in School of Environment and Sustainability, are co-directors of the Community Appropriate Sustainable Energy Security partnership, searching ways to transition northern communities to energy self-sufficiency.

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

PEOPLE OF THE PLAN

The University of Saskatchewan's new seven-year plan through to 2025 is entitled *The University the World Needs* and has been gifted Indigenous names *nīkānitān manācihitowinihk* (Cree) and *nī manachīhitoonaan* (Michif), which translate to "Let us lead with respect." In each issue of On Campus News in 2019, we take a closer look at the 12 major goals of the new plan by profiling individuals involved in the university's commitment to Courageous Curiosity, Boundless Collaboration and Inspired Communities. In this issue, we profile Dr. Leon Kochian (PhD) from the College of Agriculture and Bioresources, and the Global Institute for Food Security.

COMMITMENT: BOUNDLESS COLLABORATION
(Invigorate the impact of collaboration and partnership in everything we do through strategic goals)

GOAL: ENRICH DISCIPLINES
(Build, enhance and sustain research, scholarly and artistic strength central to vibrant collaboration, within and among all disciplines and academic unit)

Leon Kochian: world-renowned research

 JAMES SHEWAGA

He is one of the world's most highly cited researchers, a member of the Agricultural Research Service Hall of Fame, and has been named to Reuters' list of the World's Most Influential Scientific Minds. And University of Saskatchewan (USask) researcher Dr. Leon Kochian (PhD) is right where he wants to be.

"The University of Saskatchewan is a place where they've got a vision that I haven't seen at other universities, to be able to invest and build these multi-disciplinary teams that are needed for the kind of research that I wanted to do," said Kochian, the Canada Excellence Research Chair in Global Food Security and associate director of the Global Institute for Food Security at USask.

"I am seeing this university recruiting top scientists and I think this vision helps drive that ... We are hiring not just molecular biologists and physiologists and geneticists, but microbiologists, ecologists, post-docs, graduate students and technicians, and partnering them with physicists, engineers and computer scientists."

Kochian, who has published more than 250 peer-reviewed articles in high-profile journals like *Nature* and has been cited more



Dr. Leon Kochian (PhD) is the Canada Excellence Research Chair in Global Food Security and associate director of the Global Institute for Food Security at the University of Saskatchewan. 

than 33,000 times, said the university is building its research strength and global impact by recruiting top faculty and students and encouraging cross-college collaboration in all disciplines to work with the university's unique array of research facilities across campus.

"I have been really impressed with the can-do attitude and positive attitude here and also the willingness

to think outside the box and try to put together teams across different departments," he said. "There is much more of a positive attitude here about research and about investing in research and it comes from the federal government, the provincial government and the university. And this allows you to do the kind of broad multi-disciplinary research that we need to do, to really make progress

in agricultural research, particularly the crop side of agricultural research.

"Here you have a unique combination of willingness to find the resources and the technological resources you need, like the Canadian Light Source (synchrotron) and the Fedoruk Centre, and the world-class cyclotron that you don't often see located at one university."

A world-leading plant

molecular physiologist and professor in the College of Agriculture and Bioresources, Kochian's work specializes in improving cereal crop varieties and root systems to help plants adapt to marginal soil conditions and increase yields in tropical and developing countries. Kochian, who came to Saskatoon in 2016 after working for Cornell University and with the United States Department of Agriculture, said USask continues to build on its success and reputation as a leader in developing agriculture leaders of tomorrow.

"We're training the next generation of agricultural scientists and they are not just going to be trained in soil science, or agronomy or plant molecular biology. In my group, they are going to be cross-trained because we have professors who will be co-mentoring from the different disciplines," Kochian said. "So, if they are getting into the phenotyping side of things, they can work with a bioengineer or maybe a physicist on the optics. As they gather that data, they could be learning some molecular genetics to kind of dissect that data in terms of ways in which we could improve crops." ■

The Structurist celebrates major milestone

CHRIS MORIN

An internationally-renowned art journal published through the University of Saskatchewan (USask) is celebrating another major milestone.

When Eli Bornstein, an award-winning artist and professor emeritus, first started *The Structurist* in 1960, he had little idea he would be producing the publication for more than the next half-a-century. An international, interdisciplinary journal dealing with art, architecture, ecology, culture and communication, *The Structurist* was intended to bring clarity to the issues and approaches of modern art.

While the magazine's 50th anniversary issue—published in 2010—was initially intended to be its last, Bornstein said the legacy of *The Structurist* will continue with the production of a new issue to celebrate its 60th anniversary.

"I had no great plans about establishing something on a permanent basis, but after the first issue it attracted enough attention and dialogue from artists around the world who were experiencing similar concerns that were happening relating to the future of the arts," said Bornstein.

"It started on a shoestring but it gradually took on a bit of an identity for itself. As with each issue, I focused on specific and neglected subjects, and there were always a variety of responses."

The latest publication, which is being printed as a double issue, deals with evolution and ecology in art. These themes, including the history of art, is something that Bornstein sees as vitally important.

"*The Structurist* acted as a forum to look at different and often controversial points of view and evaluate them, and not a lot of that was happening when I first started the publication," said Bornstein, who is set to be honoured at a gala event at the Remai Modern gallery on September 19. "I felt like it was serving an important purpose, and believe it is still serving that purpose."

Born in Milwaukee, Bornstein arrived on campus at USask in 1950 and quickly established himself as head of the university's Department of Art and Art History, bringing his expertise to students through the teaching of a variety of mediums, including painting and sculpture. Despite what was, at the time, a relatively small university community, Bornstein recalls being delighted by how engaged his classes were.

"As an artist it was extremely gratifying," said Bornstein. "There was this concentration from the students, many who would travel to be here and would be so eager to learn. They kept me busy trying to communicate and stimulate them, which was important and necessary."

Juggling his own burgeoning practice, teaching a full course load and publishing duties for 12 years, *The Structurist* eventually moved into a biennial publishing schedule to allow Bornstein more time to focus on his own painting



Professor Emeritus Eli Bornstein was awarded a Doctor of Letters from the University of Saskatchewan in 1990 and was appointed to the Order of Canada in 2018.

COURTESY OF REMAI MODERN

and sculpture. Eventually, he began creating complex three-dimensional structurist reliefs—something that helped to establish him as one of the Prairie's most influential artists, with a career that has placed his works in major galleries across the globe.

Inducted into the Order of Canada earlier this year, Bornstein credits his time at USask as providing the spark that carried the publication to an international art audience.

"I felt that the arts were not some very rare or isolated and

highly specialized activity, but were connected to many, if not all, major subjects of human knowledge and creativity. And those were good connections to make, and I hoped that was reflected in *The Structurist*." ■

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ALUMNI SPOTLIGHT

Every month in *On Campus News*, we highlight an exceptional graduate of the University of Saskatchewan in our new Alumni Spotlight feature. In this edition, we focus on a young alumna for International Youth Day on Aug. 12 — Amanda Guthrie (BA'16).



University of Saskatchewan alumna Amanda Guthrie now serves as the education and operations manager at OUTSaskatoon.

 SUBMITTED

Amanda Guthrie: Finding your way

 TARYN RIEMER

Amanda Guthrie has a longer history with the University of Saskatchewan (USask) than most people.

Guthrie was diagnosed with a rare form of cancer called rhabdomyosarcoma when she was just eight years old and had to make numerous trips from her hometown of North Battleford, Sask., to Royal University Hospital (RUH) in Saskatoon for chemotherapy treatments.

After two years of battling cancer, she made the decision to remove her right eye in order to have a better life experience. She now wears a prosthesis and was officially discharged from the cancer clinic at RUH a couple of years ago.

Since Guthrie spent a lot of time at RUH, USask seemed like an obvious choice for her when she was making the decision to go to university. Guthrie took classes to earn a Bachelor of Arts in psychology and planned to become a clinical psychologist, but her time on campus

helped her discover not only what she wanted to do, but who she was.

"I had some of my best times and some of my worst times at university," she said. "Being an undergraduate student for some students can be really challenging and for myself I struggled throughout high school in figuring out my queer identity and I did a lot of soul searching and identity searching when I came to the University of Saskatchewan. So, my first several years at university were quite hard, personally and mentally."

Guthrie relied on a lot of the supports that USask had to offer, such as student health. At the time she was not comfortable with going to the Pride Centre, but she felt comfort knowing that it was there and a resource if she needed.

Where Guthrie did go was to the Avenue Community Centre for Gender and Sexual Diversity, now OUTSaskatoon. She volunteered

there with youth programming and found a love for educating people, and also discovered that social change was a passion. In 2014, she began working at OUTSaskatoon as the youth and education co-ordinator.

"Completing my degree in 2016 was a really big accomplishment because it felt like there were certainly days where my struggles just felt so overwhelming," said Guthrie. "It felt really, really great to walk across the stage at convocation knowing that I completed my degree, that I was out and proud, and that I had found community and belonging."

"Educating people still remains one of my big passions in life," she said. "How can we build bridges that connect communities that on a stereotypical level seem so different, when in reality we have more in common than we think we do."

In 2016, Guthrie was named a

CBC Future 40 Under 40 winner.

"I don't do my work in an individualistic way, I believe in collaboration and community; that we're stronger as a whole. It was incredibly humbling to be recognized for all of the hard work that I have been doing, but I certainly know that my work is part of a larger collective effort," said Guthrie.

Today, Guthrie is the education and operations manager at OUTSaskatoon, where she oversees all educational initiatives and operations of the organization.

Along with her work, Guthrie has also been involved in the political world over the last several years. She has helped elect a member of parliament at the federal level, worked on a provincial campaign, and managed a campaign in which a close friend was elected at the municipal level. And while she's unsure if she'll run for politics in the future, she enjoys

being involved in the area.

"I see electoral politics as a large tool of how we can create better communities," she said. "It's certainly not the only tool, but it's one that definitely piques my interest," said Guthrie with a laugh.

Guthrie is also a board member at Quint Development, which is a housing and social entrepreneurship organization in Saskatoon. And in March, she was nominated as a YWCA Woman of Distinction in the youth category.

"It was a really big honour to be nominated alongside so many amazing women in our community. There are so many women working to build a better and more inclusive Saskatoon, it was humbling to be nominated alongside them," said Guthrie. ■

**Taryn Riemer is
a communications officer
in Alumni Relations.**

WCVM launches blood donor program for pets

✍️ JEANETTE NEUFELD

When Emma Thomson adopted Asha from a local shelter, she wasn't expecting to come home with a dog that day — let alone one that would become a life-saving support for other animals.

Four-year-old Asha, a female mixed breed dog, is one of the first pets to join the revamped blood donor program at the Western College of Veterinary Medicine (WCVM).

Thomson, now a fourth-year veterinary student at the University of Saskatchewan, had just adopted Asha when she took part in the first blood donor clinic run by the WCVM's Emergency and Critical Care student club, a key part of the new program. Thomson, who is president of the club, brought Asha to the event and realized her new dog had the ideal blood type (negative) to become a canine blood donor.

"For me, being her owner, I love when she comes to donate. I think it's great that we can help out ... it's kind of her way of giving back," said Thomson.

People might be surprised to learn that pets require blood donations, and they might be more surprised to learn that their own pets could also become life-saving blood donors.

"A lot of the cases that come into emergency do require blood," said Dr. Jennifer Loewen (DVM), an assistant professor and an emergency and critical care specialist at the WCVM's Veterinary Medical Centre (VMC).

Pets may need blood transfusions for a variety of reasons including trauma, ruptured tumours or an illness that causes the body to attack its own red blood cells.

"The blood donor program is very important for our patients," said Dr. Valerie MacDonald-Dickinson (DVM), an associate professor of veterinary medical oncology at the WCVM. "It's also important for our referring veterinarians in the



Emma Thomson with her dog Asha, following Asha's recent blood donation at WCVM's Veterinary Medical Centre at USask.

📷 RIGEL SMITH

city and beyond who refer patients in need of a blood transfusion."

The VMC previously relied on pets owned by staff and faculty at the college. But an increased need for blood products at the veterinary teaching hospital has led to an expanded search for donors across campus.

Ideal donors are cats and dogs between one and eight years of age and that are in lean body condition. Cats must weigh more than five kilograms, be easy to handle and be kept indoors. Dogs must weigh over 23 kilograms, and their owners must know their pets' travel and vaccination histories. Female dogs must be spayed.

Most importantly, the canine donors need to have a good attitude

about veterinary clinic visits.

"We don't want dogs that react negatively to it. We want them to be happy about it, just like when we donate blood," said Thomson.

Like people, cats and dogs also have blood types. Cats have three different blood types and feline patients must receive blood products from the same blood type. Like humans, dogs have a universal blood type—that's why clinicians prefer dogs like Asha with negative blood types, since their donated blood products can help canine patients with positive or negative blood types.

One donation given by a dog can usually save two to three lives, depending on the size of dog receiving a transfusion. Typically, a

feline donation will be used by only one cat.

Owners who enrol their pets in the program must commit to four scheduled donations per year, with up to two additional emergency donations. Pets must be brought to the VMC, where donating appointments take up to two hours.

Donors receive free vaccinations, bloodwork and infectious disease screening. Dogs also receive plenty of treats during and after the donation process. Owners receive the satisfaction of knowing they helped save lives.

"The owners of our blood

donors want to help other pets. They have a great love of animals, and they previously may have needed blood for their own pet in the past and want to give back because of that," said MacDonald-Dickinson.

"They may be human blood donors themselves, and on a volunteer basis. They want to contribute to animal welfare and the overall well-being of pets." ■

Jeanette Neufeld is a communications co-ordinator at the Western College of Veterinary Medicine.

For more information about this program, email pawsblooddonor@usask.ca.

Schulich Leader scholars ready for next chapter

 MEGHAN SIREN

At first glance, Morgan Beattie and Ashim Dhital live very different lives. They grew up in different cities and have different passions and goals. Yet, once you get to know them, you quickly learn that family, balance and altruism are passions they share that have led both of them to success.

Now the 18-year-old students also share the experience of being the most recent Schulich Leader Scholarship recipients attending the University of Saskatchewan (USask).

Schulich Leader Scholarships are undergraduate entrance scholarships awarded annually to 50 high school graduates enrolling in a science, technology, engineering or mathematics (STEM) undergraduate program at 20 partner universities in Canada. USask has partnered with the Schulich organization since 2012 and has welcomed 16 Schulich Leaders to the Saskatoon campus.

“It is all but guaranteed that this group represents the best and brightest Canada has to offer,” said program founder Seymour Schulich. “These students will make great contributions to society, both on a national and global scale. With their university expenses covered, they can focus their time on their studies, research projects, extracurriculars and entrepreneurial ventures. They are the next generation of technology innovators.”

Each year, every high school in Canada can submit one Schulich Leader nominee based on academic excellence in STEM, entrepreneurial leadership and/or financial need. This year, out of a pool of more than 300,000 potential candidates across Canada, 1,400 students were nominated.

Beattie will enter the College of Arts and Science this fall and will receive \$80,000 over four years, thanks to the Schulich scholarship. Dhital will enter the College of Engineering and receive \$100,000



Morgan Beattie will receive an \$80,000 Schulich Leader Scholarship over four years to study in USask's College of Arts and Science.  SUBMITTED

over four years.

“I’m excited to face new challenges, learn new things and have new experiences at the University of Saskatchewan this fall,” said Beattie, a resident of Saskatoon and recent graduate of Marion M. Graham Collegiate. “I loved every math and science class I took in high school. I am excited to study science and find my passion.

“I have always had a natural curiosity and hunger for science. I look forward to exploring many areas of science at the University of Saskatchewan until I am ready to narrow my focus on a specific field. I am so thankful to be a Schulich Leader and to be able to pursue my love of science without financial pressure.”

Dhital also has a clear plan for his future. Eventually he sees himself as a mechanical/aeronautical engineer working for a multinational aerospace company such as Boeing, Airbus or Bombardier. He would like to lead a team of engineers and develop new technology.

Dhital and his parents moved from Nepal to Quebec when he was five years old and then to Prince Albert before he started Grade 8.

It was in Grade 8 that his interest in aviation was piqued when he visited the Air Canada booth at a job fair. The representative there said many in the aviation field start out as members of the Royal Canadian Air Cadets. So, that’s what Dhital did. He now holds a glider and private pilot license and is working



Ashim Dhital has earned a \$100,000 Schulich Leader Scholarship over four years to enter the College of Engineering at USask.  SUBMITTED

on earning his commercial license.

“Flying is always a joy,” said Dhital, a graduate of St. Mary High School in Prince Albert. “It’s incredible to be in control of a machine that allows you to do such impressive things. Statistically, flying is very safe, but the smallest mistake can go very wrong. So, you have to prepare yourself mentally and make sure you do your job very well.”

Both Dhital and Beattie say they are so thankful for their parents and the support and guidance their families provide.

When Dhital is asked who his role model is, he immediately says “my dad.”

“We don’t get to go back to our home country of Nepal very often, but when we do, it’s a very

eye-opening experience for me to see where my family came from,” said Dhital. “When I visit my cousins, my aunt and my uncles who still live in the village that my father grew up in, it is a complete different lifestyle.

“My father came from very humble beginnings and he worked very hard to get our family to live the comfortable life that we’re living today, and I think that’s why he’s my role model because he’s sacrificed so much for our family.”

Beattie said her parents are her biggest role models.

“They taught me how to live a balanced life and always made sure I knew I was loved,” said Beattie.

SEE LOVE, PAGE 15



Meet the Best and Brightest: Sharon Jacob

BRETT MAKULOWICH

Best and Brightest Entrance Scholarships are the University of Saskatchewan's (USask) highest valued, renewable entrance scholarships, and are awarded to exceptional students based on academics, leadership and contributions to school and community life.

Sharon Jacob is one of those remarkable students. The 18-year-old recent graduate of Walter Murray Collegiate in Saskatoon received the prestigious George and Marsha Ivany President's First and Best Scholarship, which is the highest valued of the Best and Brightest Entrance Scholarships at \$40,000 (\$10,000/year for four years).

Jacob is entering USask this fall and will pursue a Bachelor of Science degree.

"I choose USask because it offers great opportunities for me to further my learning," said Jacob. "I have built a great foundation in Saskatoon and by attending USask I am still able to aid my community and be involved with different organizations."

Jacob is a leader in her community. She volunteers at a community garden and the Saskatoon Friendship Inn, is a peer leader for the Saskatoon Open Door Society, president of her community's Youth Action Committee, and was the co-president of her high school student council. She also volunteers for Plan International Canada's Speakers Bureau, focusing on the Because I Am a Girl initiative.

Plan International Canada is a member of a global organization dedicated to advancing children's rights and equality for girls. Its Speakers Bureau provides a platform for young people across Canada to learn more about gender inequality issues, develop presentation skills and take collective action to raise awareness. Jacob shares the ideas she



“ Winning this type of scholarship truly makes me proud of myself ... It makes me excited to attend university and work hard in whatever goal I have in mind.

— Sharon Jacob

Sharon Jacob will begin a Bachelor of Science degree this fall in her first year as a scholarship student at the University of Saskatchewan.

SUBMITTED

learns through the bureau with her other volunteer organizations.

"Positive change begins with individuals who lead by example," said Jacob. "You should volunteer and participate in activities not because you see what you personally will get out of the experience, but participate because it will have a positive impact in your community."

In 2018, Jacob participated in Girls Belong Here, an annual initiative to celebrate International Day of the Girl, by supporting females to take on leadership positions and engage in spaces where they are traditionally underrepresented. Jacob travelled to Toronto to work alongside the senior vice-president of the Bank of Montreal.

"Throughout this experience, I have learned that I have to go outside

of my comfort zone and challenge myself to achieve success," said Jacob. "It's important to take risks to understand my strengths and skills I could improve upon."

Jacob's leadership skills, commitment to her community and stellar academic record will benefit both her and USask.

"Winning this type of scholarship truly makes me proud of myself ... It makes me excited to attend university and work hard in whatever goal I have in mind," said Jacob.

She has advice for students considering applying for scholarships.

"I recommend applying to a multitude of scholarships and taking the time to explore all of your options."

The Best and Brightest

Entrance Scholarships were created to recognize the outstanding academic achievement of graduating high school students, and to assist these individuals in their pursuit of excellence at USask. In total, 43 scholarships are awarded annually to students who are entering their first year of undergraduate study.

"The Best and Brightest Entrance Scholarships attract and retain exceptional students to the University of Saskatchewan," said President Peter Stoicheff. "We are proud to offer these life-changing scholarships and to welcome these future leaders to USask."

Five George and Marsha Ivany President's First and Best Scholarships are awarded every year. The criteria for the scholarship include

a minimum high school average of 95 per cent, in addition to leadership and contributions to school/community life. The scholarships are an institutional award and were named after USask's seventh president and his wife.

USask offers more than \$13 million in scholarships, bursaries and awards. All entering and continuing students are encouraged to apply for awards. The criteria for awards includes academic achievement, financial need, background, school/community contributions, as well as achievement in music and athletics. ■

Brett Makulowich is a communications officer with the Teaching, Learning and Student Experience portfolio.



Meet the Best and Brightest: Fraser McLeod

 JAMES SHEWAGA

Graduating with a 96.2 per cent average and a remarkable resume as a student leader, a multiple award winner and a multi-sport athlete, Fraser McLeod could have gone to any university in the country.

But for the 18-year-old Saskatoon student, the University of Saskatchewan (USask) was the clear choice.

“Since the last semester of high school, I have been ready for a change, ready for a different learning environment and ready for something new, so I am excited about moving on to study business at the University of Saskatchewan and to play soccer for the Huskies,” said McLeod, who has been awarded a prestigious \$24,000 Circle of Honour USask Entrance Scholarship for high-achieving Indigenous students (\$6,000/year for four years). “I have a lot of pride in being from Saskatoon and being from Saskatchewan, so I am proud to be going to school here.”

In addition to being an exceptional student, McLeod played soccer and basketball and ran track at Centennial Collegiate, where he was elected as one of two senior rings to serve as co-class presidents of the Student Representative Council. McLeod, who also worked part-time throughout his four years in high school, is thankful to have received a half dozen scholarships to attend USask, including a \$1,500 award from the Saskatoon Public School Division for earning the top academic average among Indigenous students in the city.

“I am very grateful for the scholarship support,” said McLeod, who is proud to trace his ancestry to the traditional homeland of the Métis in the Red River area of Manitoba and up to Fish Creek by Batoche where his great-great grandfather William Grant was elected as the first MLA



“ I have a lot of pride in being from Saskatoon and being from Saskatchewan, so I am proud to be going to school here.

— Fraser McLeod

Fraser McLeod will be attending the University of Saskatchewan’s Edwards School of Business and playing for the Huskie men’s soccer team this fall.  IRELAND COCKWILL

for the district back in 1905. “I have had to work a lot all throughout high school, so to be able to get these scholarships is such a huge relief and it lets me focus on my classes and my passion for soccer and not have to worry about that financial burden.”

McLeod is following in the footsteps of his parents Don and Dana, who both graduated from USask’s College of Education and are high school teachers in the city. While he was raised in an environment emphasizing the importance of education, McLeod also takes great personal pride in his academic

accomplishments, while juggling school, sports, student council and working part-time.

“Academics has always been something that is important to me and both of my parents are teachers, so it has always been kind of instilled in me,” he said. “But it’s also something that I have always wanted, too, and I have worked hard for it and I’m proud of it. This was also my first year on the SRC and it definitely connected me with the school community and I was happy to become that involved and contribute and I really enjoyed it. I

think it also helped prepare me for the next step.”

That next step includes beginning his commerce degree next month in the Edwards School of Business, and suiting up for the Huskies after playing alongside a number of current members of the team on the SK Selects elite summer league squad.

“Edwards is obviously a prestigious school, so I am very excited for it and can’t wait to get started,” said McLeod, who officially signed his letter of intent to commit to the Huskies in December and will suit

up in his first U Sports Canada West conference game on August 23 at Griffiths Stadium in Nutrien Park at USask.

“I have been training with a lot of the Huskies since January, actually, so I have gotten quite close to lots of the guys. I definitely think I can compete, but there will be a transition. They are bigger, faster and better, and I know I have lots of work to do to get to where I want to be. But I am super excited to be playing for the University of Saskatchewan and representing the province and I am really looking forward to it.” ■

Space: Final frontier for USask students

 HENRYTYE GLAZEBROOK

When you're studying outer space, it helps to broaden your horizons.

At least according to Dr. Kathryn McWilliams (PhD), a University of Saskatchewan (USask) professor of physics and engineering physics, who leads a master's degree program aimed at giving students the tools they need to research—and maybe one day even explore—beyond the furthest reaches of Earth's atmosphere.

"We have students in their thesis research who are using zero gravity plane flights. They take off and go up and down and up and down, so you can test how things work in zero gravity," McWilliams said. "The sky is not the limit."

The International Space Mission Training Program (ISM) began three years ago as a collaborative effort between Canada and Norway and is funded through a \$1.65 million grant over six years from the Natural Sciences and Engineering Research Council of Canada's CREATE Program, and an additional \$1.3 million in partner contributions.

The graduate program is a natural extension of the Canada-Norway Student Sounding Rocket Program (CaNoRock), which since 2012 has offered USask students a weeklong experience building and launching rockets in Norway. ISM offers those same students and others like them a more intensive and extensive opportunity to pursue their interest in space physics and engineering and put it to practical educational use.

"In the master's-level course, they spend a whole term doing research and trying to understand

how the rocket or balloon or satellite systems work, and then they have more time to design new things and implement new technologies and new computer code," McWilliams said. "They're often writing control programs for the sensors that they're putting on their payload."

"They have a couple of weeks to get things working and then launch it and analyze the data that comes back. It's higher risk at the master's level and it demands more from them, but that's appropriate for that level of training and they just love it so far."

In July, four USask graduates students in the program were part of an international team that launched a research balloon 30 kilometres into near space, from the Cudworth Airport outside of Saskatoon, in a project designed to measure cosmic rays and to study the effect on satellite communications and to better protect astronauts.

Although the focus is currently aimed at thesis-based research and hands-on space mission and professional skill building, McWilliams hopes that the program's success will pave the way for a joint degree program between USask, the University of Calgary and the University of Oslo. If successful, the overarching goal is to provide students with the privilege of taking the lead on an operational Canadian-Norwegian space mission by 2025.

"This program gives a special opportunity to the students involved in rocket science at the university, and they are often among the top students at the university," she said. "It's so fabulous to be able to give these students a chance to do



University of Saskatchewan graduate students were part of an international team that launched a research balloon 30 kilometres into near-space on July 24 near Saskatoon.

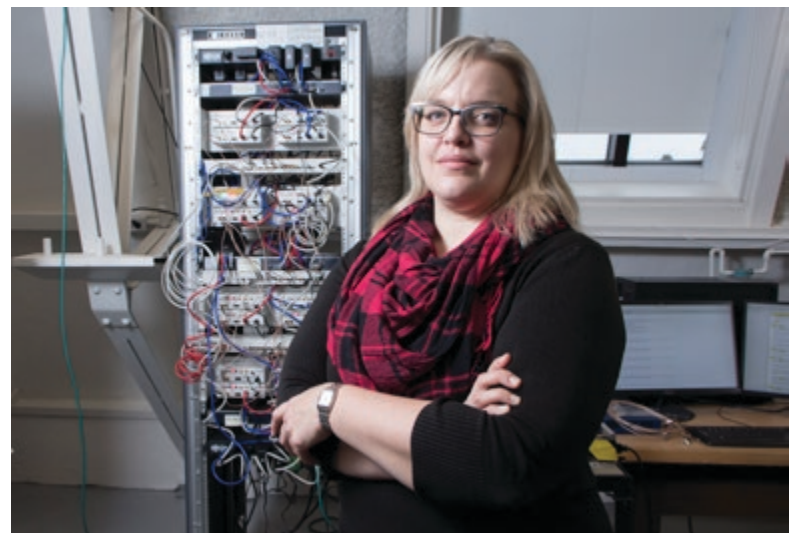
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something that they wouldn't get to do elsewhere or through another program."

It's a lofty goal, but one that McWilliams believes is of utmost importance, given the growing relevance of space technologies in the modern world.

"We rely on space-based technology do so many things—Internet, cell phones, GPS navigation, online banking—all that stuff and then some, relies on space technology," she said. "We need people with those skills." ■

HenryTye Glazebrook is a freelance writer and a graduate of the University of Saskatchewan.



Dr. Kathryn McWilliams (PhD) leads the International Space Mission Training Program for USask students.

 CHRIS PUTNAM

Honouring a sensei:

Edwards Professor Bruni-Bossio receives Master Teacher Award

JESSICA STEWART

He is an inspiring innovator in the field of experiential learning and a sensei of martial arts. Now, Vince Bruni-Bossio is also a Master Teacher Award winner at the University of Saskatchewan (USask).

Now in his ninth year of teaching at USask, the associate professor in the Department of Management and Marketing at the Edwards School of Business, and director of the Edwards Experiential Learning Initiative, was honoured at 2019 Spring Convocation with the Master Teacher Award, the university's highest level of recognition for teaching excellence.

The Master Teacher Award honours two USask faculty members each year who make outstanding contributions to teaching through a vibrant learning environment, positivity, professional growth, and leadership.

Bruni-Bossio said that his teaching style is heavily influenced by his martial arts training. He's been training and studying the philosophies of a range of martial arts, including Aikido, Chi Kung, Tai Chi, Wing Chun and YiQuan for 25 years, as well as teaching for 15 years. To elevate the learning experience in his classrooms in Edwards, Bruni-Bossio ensures that his students understand the reasons behind exercises and assignments, creates real-life learning contexts, and walks together with students as they learn.

Understanding the why

"In my martial arts training, my sensei explained that learning the principles behind the various forms and techniques is far more important than mastering the technique itself," Bruni-Bossio said. "My intention is always to help students develop a clear vision of why they're being



Professor Vince Bruni-Bossio of the Edwards School of Business earned the University of Saskatchewan's Master Teacher Award at this year's Spring Convocation.

NATASHA KATCHUK

asked to learn or do something."

Bruni-Bossio explained that the why might include learning basic principles for approaching problems, like listening before arriving at a conclusion, or seeing a problem from multiple perspectives.

"Imparting these principles is not always easy and requires self-reflection," he said. "In my martial arts

training, I would talk with my sensei afterward about what had occurred during practice. I try to create a similar space with my students."

Real-Life Learning

Bruni-Bossio said his martial arts training, coupled with his extensive work as a consultant, have honed his skills for navigating highly intense

situations, keeping him focused and alert. He doesn't believe the classroom is separate from the real world, but rather represents an important preparation ground.

"In my teaching, I create a practice space similar to a martial arts dojo where students can demonstrate their abilities with the understanding that failure is part of the process,"

said Bruni-Bossio, who earned his Master of Business Administration at Edwards in 2010 and received the Provost's Outstanding New Teacher Award at USask in 2016. "Students aren't just learning skills, but also developing their confidence."

Walking Together

"In my experience, the most difficult part of learning is starting the process," Bruni-Bossio said.

He noted that in the Japanese martial art of Aikido, the process of Irimi is the understanding that one must enter into a mindset to deal with an opponent or situation.

"To help students overcome the discomfort of entering a new process, I strive to help them start with confidence," Bruni-Bossio said. "My goal is to walk with students through their concerns, with the learning process being driven by their questions."

That also helps students become comfortable with not knowing all the answers.

"I want to empower students with the knowledge that they may not have all the answers but they do know how to find them," he said.

This type of apprenticeship learning comes directly from his experience with martial arts, both being a martial arts teacher, and from his own sensei, Bruni-Bossio explained.

"Sensei literally means a person born before another or, as my sensei explained, the one who walked before," he said. "It reflects the idea that the teacher has experienced the same learning process and therefore can be trusted to lead the way." ■

Jessica Stewart is a freelance writer and a graduate of the University of Saskatchewan.



JAMES SHEWAGA

The sun shines on the University of Saskatchewan's solar module (panel) array located at the John Mitchell Building.

JAMES SHEWAGA

Here comes the sun: Solar supports USask sustainability

JAMES SHEWAGA

It's one small piece of the sustainability puzzle for the University of Saskatchewan (USask), but solar power production is proving to be an increasingly viable option for the campus and the community to help reduce greenhouse gases.

A sun-drenched month of May set a record for solar energy production at USask, with the 24-kilowatt solar array at the university's Horticultural Field Office setting an all-time record for monthly production at 4.09 megawatts. This array produces roughly enough electricity to power five homes for a year. While that may be a drop in the proverbial power bucket for the university as a whole, it's a modest but effective example of how simply harnessing the power of the sun can play a part in campus sustainability strategies.

"It is a good example of one of

the things that we can do here on campus," said Bill Hale, manager of Facilities Sustainability and Engineering at USask. "It is feasible, it does work, it does support sustainability, and it is becoming more financially viable. We can absolutely produce electricity on a scale that is worth doing."

The horticulture array was the first of two solar module (panel) arrays erected on campus, completed in 2012 with the support of a provincial government rebate program. The array supplies close to 70 per cent of the horticulture facility's electricity needs, with capital costs originally projected to be recovered within 14 years of construction. Since then, solar array prices have dropped significantly, making the economics even better today.



Hale

The university also has a 5.12-kilowatt solar module array built in 2016 outside of the John Mitchell Building, an initiative designed to also provide a hands-on renewable energy research and learning environment for students, and funded from the Sustainability Revolving

Fund that was established in 2014. The fund supports on-campus projects designed for energy and water conservation and re-invests the cost savings back into the fund to help support the next project.

"Both (solar arrays) are functioning well and producing and providing electricity for the university," Hale said. "At the John Mitchell Building, each set of the four modules has the ability to be independently adjusted in its elevation angle, so there is a fair bit of opportunity for testing different angles at the same location."

With solar power becoming more and more financially feasible over the years, Hale said there is a possibility the university may explore options to establish more arrays on campus, in support of broader sustainability initiatives

that are a key pillar of the foundation of the new university plan to be *The University the World Needs*.

"It is much more economical now to install solar, than it was 10 years ago," said Hale. "Annually there has been a downward trend in cost of materials, and installers are getting more efficient at installing because they have done more of it and the hardware to do it makes it easier.

"At the university, we have the opportunity to put solar on more of the buildings that we own, plus we can put them over top of parking lots, too. It's a possibility and those opportunities exist for the future. It is often a matter of funding, but certainly there are several parking lots that we could consider putting solar canopies over portions of in the future." ■

Huskies student-athlete Courtney Hufsmith celebrates her bronze medal in the 1,500 metres at the World University Games last month.

MATHIEU BELANGER

Huskies' Hufsmith shines on world stage

JAMES SHEWAGA

Courtney Hufsmith returned from Europe with more than the usual assortment of souvenirs in her luggage.

The 20-year-old University of Saskatchewan Huskie Athletics track star from Saskatoon came home with a bronze medal after finishing third in the women's 1,500 metres at the World University Games, capturing one of the six medals won by Team Canada athletes from July 3-14 in Naples, Italy.

For Hufsmith, earning a medal on the world stage was a moment she will never forget.

"Being able to represent the country has always been a dream of mine, so it's hard to describe just how great that felt to actually have it happen," said Hufsmith, who enters her fourth year in the Edwards School of Business next month, after making the Dean's Honour Roll in 2018. "This is for sure the biggest competition and best result that I have had. But I have had a lot of highlights recently that have really reinforced that all the hard work that I have been putting in

does pay off."

One of Canada's up-and-coming middle-distance runners, Hufsmith was named a U Sports All-Canadian in both track and cross-country last season, and has set Huskie records in both the 1,500m and 3,000m. She set a new personal best time of 4:11.81 in the 1,500m to make the medal podium at the Summer Universiade.

Hufsmith said knowing that she had plenty of support from teammates, family and friends back home gave her added motivation and inspiration overseas.

"I brought along some things to remind me of the Huskies back home and all of the messages from teammates and everything was awesome," she said. "I think that support was a big part of what carried me through the race, just knowing how many people were watching back home and being kind of an ambassador for the Huskies program really felt great."

Hufsmith hopes to be an Olympian one day, with her race times getting closer and closer to meeting the qualifying standard for the world track and field championships (Sept. 28-Oct. 6 in Qatar) and possibly the 2020 Summer Olympics (July 25-August 9 in Japan).

"The Olympics is something that I want to achieve one day, but as the year 2020 gets closer and as my times keep getting better, it's becoming more of a reality that I might have a chance of making that team," she said. "If I do make it next year, that will be amazing. But if I don't, I will just keep going and working towards it."

Hufsmith was one of four Huskies and two other USask students who competed in the Summer Universiade. Here's a look at their results:

Megan Ahlstrom/Kyla Shand

The two members of the Huskie women's basketball team helped

Canada beat Argentina 75-36 and Mexico 67-54 in the last two games to place 13th out of 16 teams. Ahlstrom, a 5-foot-10 guard from Calgary and an Academic All-Canadian studying in the College of Kinesiology, had a solid all-around effort in Canada's win over Argentina with 13 rebounds, five assists and four points. Shand, a 6-foot-3 post and fellow kinesiology student from Saskatoon, was second on the team with 12 points and five rebounds versus Argentina.

Dylan Mortensen

The 6-foot-7 Canada West conference all-star outside hitter with the Huskie men's volleyball team helped Canada finish 11th out of 20 teams by amassing 70 kills and a team-high 14 blocks. The 2018 U Sports rookie of the year led Canada with 18 kills and five blocks to close out the tournament with a five-set victory over Brazil. Mortensen is from Swift Current and is in the Edwards School of Business.



HUSKIES HOME ACTION:

FRIDAY, AUGUST 23

Men's Soccer: vs. MacEwan, at Griffiths Stadium, 7 pm

SUNDAY, AUGUST 25

Men's Soccer: vs. Alberta, at Griffiths Stadium, 2 pm

FRIDAY, SEPTEMBER 6

Football: vs. UBC, at Griffiths Stadium, 7 pm

SATURDAY, SEPTEMBER 14

Women's Soccer: vs. UNBC, at Nutrien Park Field No.7, 2 pm

SUNDAY, SEPTEMBER 15

Women's Soccer: vs. Calgary, at Nutrien Park Field No.7, 2 pm

Kirsten Van Marion

USask student Kirsten Van Marion competed in fencing, finishing 17th overall in the women's team epee relay for Canada. The USask engineering student and former university national champion from Asquith, Sask., also finished 57th out of 79 competitors in the individual women's epee.

Alayna Chan

USask student Alayna Chan represented Canada in table tennis, advancing to the round of 32 in women's doubles. The USask Arts and Science student and former national doubles champion from Saskatoon was also eliminated in the round of 64 in women's singles action and mixed doubles. ■



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USask researchers looking to help transgender patients

KRISTEN MCEWEN

A University of Saskatchewan (USask)-led research team is looking to make navigating the health-care system easier for transgender people in Saskatchewan.

USask researchers Dr. Stéphanie Madill (PhD) and Dr. Megan Clark (MD) are starting a research project to create new positions called client navigators, who would support trans and gender diverse individuals through the health system.

Hoping to secure funding, Madill and Clark are aiming to begin a pilot project in 2020 by establishing two client navigator positions—one in Saskatoon and the other in Regina.

Madill is a physiotherapist based in Saskatoon and an assistant professor at the School of Rehabilitation Science at USask.

“This project is a really excellent fit for me,” Madill said. “I identify as lesbian and queer. Queer activism has been important to me for over 30 years.”

“Trans health is a clinical interest of mine,” said Clark, who is a family doctor based in Regina and a faculty member in USask’s Department of Academic Family Medicine.

When she was training as a resident, Clark was working with a trans and gender diverse patient to prescribe them hormone therapy.

“The fundamental thing for me is to improve health-care service delivery for gender and diverse people in Saskatchewan. A client navigator is a way to identify gaps to measure and articulate what that is,” she said.

The research project has been strongly guided by trans individuals in the research group, Madill said.

The 18-person research team for the project includes members of the Saskatchewan Trans Health Coalition (STHC), an organization made up of transgender people, activists, primary-care service providers including physicians, and service organizations including UR



Dr. Stéphanie Madill (PhD) is a physiotherapist and an assistant professor in USask’s School of Rehabilitation Science.

KRISTEN MCEWEN



Dr. Megan Clark (MD) is a faculty member in the University of Saskatchewan’s Department of Academic Family Medicine.

KRISTEN MCEWEN

Pride and OUTSaskatoon.

Two years ago, STHC initially approached Madill and Clark separately to collaborate on research that would improve trans and gender diverse individuals’ experiences with health care. From finding a family physician to psychiatrists, there is a wide range of issues trans people face when they are seeking help in the health-care system.

“Unfortunately there are holes in cultural safety principles, cultural acceptance ... Trans people being misgendered, not treated well in the health-care system, which is really unfortunate,” Clark said.

When trans individuals navigate the system, learning about services is often through an informal process.

“You have to know where to look,” Clark added.

Family physicians, or general

“The fundamental thing for me is to improve health-care service delivery for gender and diverse people in Saskatchewan. A client navigator is a way to identify gaps to measure and articulate what that is.

– Dr. Megan Clark

internists, who will prescribe hormone therapy, are limited in the province. Surgical referrals for top surgery can be made within Saskatchewan, however external genital surgery referrals for patients are made out of province.

Saskatchewan patients can have their procedures partially covered when travelling to Montreal. But in order to receive a referral, patients must receive two

surgical approvals from health care providers, one in Saskatchewan and one out-of-province.

“In other provinces, they’ve expanded who can do those surgical approvals, and family physicians who are able to do those approvals see their own list decrease,” Clark said.

Some funding is available for surgical and hospital costs, but there is no support for travel, or time needed for aftercare post-surgery.

Madill said trans patients sometimes find themselves experiencing what’s called the Trans Broken Arm Syndrome.

“You go into an emergency room with a broken arm, and the physician focuses on the fact that you’re trans,” she said. “A broken arm is a broken arm.”

Madill added that accessing mental health services is more of a problem for people needing support.

“Being trans doesn’t predispose a person to (mental health issues),” Madill said. “It’s society that’s so unaccepting that makes it pretty hard to avoid. It’s also the lack of mental health-care providers who understand what it’s like to live as a trans person.” ■

Kristen McEwen is a communications co-ordinator in the College of Medicine.



COMING EVENTS

SEMINARS/LECTURES

TEDxUniversityofSaskatchewan: Building Bridges

Sept. 7, 8am-6pm, Health Sciences Building, E-Wing Room 1150. Registration is open for TEDxUniversityofSaskatchewan. This year's theme is Building Bridges, and will showcase inspirational individuals who have shaped our community and who have inspired others. For more details, visit: <https://tedx2019.usask.ca/>

CONFERENCES

International and Indigenous Research Forum

Aug. 31, 8:30am-11:30am, Quance Theatre (Room 1003), Education Building. The International and Indigenous Research Forum—*Creating Relationships*—will engage researchers from the University of Waikato (New Zealand) and University of Saskatchewan. Faculty members from each university

will give presentations on research and its Indigenous context and narrative. Professor Linda Tuhiwai Smith, a member of the University of Waikato's Faculty of Māori and Indigenous Studies, will present *Decolonizing Methodologies* and *He Oranga Ngākau: Māori Approaches to Trauma Informed Care*. Professor Leonie Pihama, director of Waikato's Te Kotahi Research Institute, will present *Ngā Pou: Kaupapa Māori and Māori Health Research and Honour Project Aotearoa*. USask presenters include Dr. Margaret Kovach (PhD), College of Education; Dr. Michelle Johnson-Jennings (PhD), Indigenous Studies; Dr. Derek Jennings (PhD), Community Health and Epidemiology; Assistant Professor Jaime Lavallee, College of Law; and Dr. Carrie Bourassa (PhD), Institute of Indigenous Peoples' Health.

MISCELLANY

Fall Orientation

Aug. 29-Sept. 1. The student welcome and

orientation for the fall semester begins Aug. 29 with the Aboriginal Students' Centre New Student Welcome for Métis, First Nations and Inuit students. The meet-and-greet and services introduction for new international students takes place Aug. 30, with Fall Orientation events for all students scheduled on Sept. 3. For more information, visit: <https://students.usask.ca/events/orientation.php>

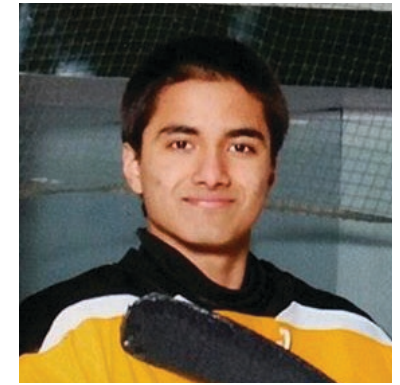
Alumni Weekend

Sept. 19-21. This year's annual event includes a speaker series, golf tournament, Prairie Lily boat tour, lectures, breakfast events, a Golden Grads ceremony and high tea, as well as the new USask FestiBowl. The weekend wraps up with the annual reception celebration dinner event at the University Club. To register, or for more information, visit: <https://alumni.usask.ca/alumniweekend/weekend-schedule.php>

NEXT OCN: September 13
DEADLINE: August 30



Beattie



Dhital

Love of volunteering

FROM PAGE 7

"I owe everything to my parents because they taught me how to work hard. They taught me how to compromise between a career and personal life. They are so supportive; they attended all of my musicals, my sports games and all my band concerts—every single one. They're always there for me and they mean the world to me."

Beattie said her family, including her twin brothers, share a love of sports and music. In high school, she played on the basketball, volleyball, softball, badminton and curling teams, and in Grade 12 she was the captain of her volleyball team, co-captain of her basketball team.

Beattie's family has also formed a band together, volunteering to play at various care homes, including Luther Heights, where she has worked for the past two years.

"Getting to share music is really a rewarding experience," said Beattie. "I enjoy performing for the residents because sometimes they'll sing along and they're really excited about the music we're playing for them. Through music, I've been able to connect with them on another level and form meaningful relationships."

Dhital also works with seniors. He volunteers at the Herb Bassett Home, a special needs care home next to Victoria Hospital in Prince

Albert. He said that work, along with the volunteering he does with the Société canadienne-française de Prince Albert and the Prince Albert Nepali Community, and his time with the air cadets, has helped shape who he has become.

"My community has allowed me to accomplish a lot of things and allowed me to do a lot of things," said Dhital. "So, I think it's important to give back and volunteering is my way to give back."

"When I was younger I was more of a shy kid. I was more introverted—not the type of guy who went out and talked to new people. But a lot of the activities I participated in, like volunteering, helped me grow out of that, and that's why I volunteered so much. Not only was I helping other people, but I also saw myself grow into more of a competent person and into more of a leader."

Beattie also believes her experiences in academics, athletics and music will help her moving forward as she pursues her love of science as a Schulich Leader at USask.

"I look forward to transferring the leadership skills I've gained to the post-secondary level as I pursue science at the U of S." ■

Meghan Sired is a communications co-ordinator in the Teaching, Learning and Student Experience portfolio.

A centre of convergent science

FROM PAGE 2

Rayan's New Frontiers project—"Topology and the Next Generation of Quantum Materials"—is connected to the work he will be doing with quanTA, which is focused on how objects in the visible world cast a "shadow" in the quantum world where electrons and other sub-atomic particles interact.

"We are a kind of unique synergy between mathematics, physics, chemistry, computing and other disciplines," Rayan said of the centre. "This is convergent science; it's not about being a math problem or a physics problem. We're intending to work together on the problem of unlocking what we call quantum materials as the next generation of materials."

These quantum materials were predicted mathematically as early as 1982, and the discovery in nature of topological materials in 2008 was awarded a Nobel Prize in Physics in 2016, said Rayan. Together, established and junior researchers associated with quanTA will develop models of materials



Rayan

that enjoy these properties under less stringent circumstances and are therefore more readily deployable in groundbreaking applications, such as nanoscale medical devices, spintronic data storage devices and quantum computers, he said.

About 10 USask faculty members in the College of Arts and Science are currently working with quanTA, which will also train graduate students and post-doctoral fellows. The centre's advisory board

includes two Canada Research Chairs in physics at the University of Alberta, a topologist from the University of Manitoba, a University Chair in quantum information from the University of Ottawa, and Dr. Johannes Dyring (PhD), the managing director of Innovation Enterprise at USask.

"We at the new centre are deeply grateful to both the College of Arts and Science and university leadership for supporting our vision and nurturing this project," said Rayan.

"In particular, I thank the vice-dean RSAW (research, scholarly and artistic work) and his staff for expertly facilitating this proposal and enthusiastically advising at every step of the way, and the university-level centres subcommittee for their wonderful support in this process and for helping us to further refine our vision." ■

Shannon Boklaschuk is a communications officer in the College of Arts and Science.

For more information about the Schulich Leaders scholarships, visit schulichleaders.com.

ON TIME TRAVEL

Pack your bags and set your sights on memory lane, because this year's *On Campus News* back page features landmark moments and events from our storied 110-year history.

Have a particular event you'd like to see featured? Let us know about it at news@usask.ca.

With files from University Archives and Special Collections.



A-3923



A large crowd gathers for the official opening ceremony of the Chemistry Building (later renamed the Thorvaldson Building) at the University of Saskatchewan on August, 22, 1924.

A-244

AUGUST 1924

CHEMISTRY (THORVALDSON) BUILDING OPENS

A large crowd of observers gathered on August 22, 1924 for the official opening of the one of the grandest buildings on campus.

The Chemistry Building—later renamed the Thorvaldson Building in 1966—was one of the last of the original stone collegiate Gothic style buildings on the University of Saskatchewan campus that were designed by noted Montreal architect David Brown. Interestingly, while most of the original buildings faced inwards toward the Bowl, the Chemistry/Thorvaldson building was oriented to face outward, in anticipation of future expansion of the campus.

The historic building originally housed the Department of Chemistry, as well as the old College of Home Economics and Pharmacy. As noted by USask's University Archives, the building's features included laboratories that had acid-proof lining on all fume vents and drains, as well as the infamous Airplane Room, a lecture hall with 300 wooden seats and a dome roof rising almost 68 feet. The ceiling is still embedded with paper airplanes.

A large influx of new university students after the Second World War prompted the installation of nine surplus military huts to serve as a short-term solution to the need for extra classroom space in the building—a temporary solution that wound up lasting two decades. A second wing of the building was finally completed in 1966, providing classrooms, laboratories, offices and a library.

With the new wing came a new name, as the Chemistry Building was officially renamed the Thorvaldson Building in 1966, in honour of long-time chemistry department head Thorbergur Thorvaldson, who had passed away eight months earlier.

Another addition dedicated to pharmacy was completed in 1988, with a further expansion finished in 2003 when the four-storey Spinks Addition completed the current building. The new addition was finished with a neo-collegiate Gothic façade, combining the Tyndall stone and fieldstone that has served as the foundation of the classic campus architecture.