

GREEN & WHITE

UNIVERSITY OF SASKATCHEWAN ■ ALUMNI MAGAZINE

SPRING 2015



Stargazer:

Amateur astronomer and activist Richard Huziak wants to give the world the stars.

Taking space by storm

Indigenous spaces, Indigenous places

Fly me to the moon

Urban planning in the Land of Living Skies

I'm a mechanical engineer, not a doctor!

ON THE COVER

Richard Huziak (BusAdm'92)
atop the Physics Building
at the U of S.

DAVID STOBBE

THE GREEN & WHITE TEAM

A UNIVERSITY OF
SASKATCHEWAN PUBLICATION

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Upper Place Riel: circa 1980

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EDITOR'S NOTE

I can't think of the word "space" without wanting to say "the final frontier." As we began planning and putting together this issue of the *Green & White* dedicated to space, I started to realize various perspectives I hadn't before.

The word has so many different meanings—from the very finite confines of borders and boundaries to the infinite reaches of the cosmos.

Working on campus, I get to see our beautiful, and changing, campus space every day. That familiarity may shield me from how much our campus has changed since I was a student here. Place Riel Student Centre represents a dramatic change for me.

How can I forget the first time I rode the escalator down into Lower Place Riel? The cloud of cigarette smoke hung over the bland brown floor tile and orange upholstered furniture. I was not yet addicted to caffeine, so I didn't bother to stop at the muffin shop on my way to the tunnel, library or games room.

Compare that to the smoke-free, brightly lit Place Riel students enjoy today. It's still buzzing with activity: meeting friends and classmates, enjoying the variety of the food court, waiting to catch the bus or just passing through on the way to class, avoiding the need to step outside into the frigid winter wind. The more things change, the more they stay the same.

As you read this issue, I hope you think of space a bit differently—both the challenges and opportunities space provides in your own backyard and that final frontier.

And, next time you're in the area, visit campus and rediscover the spaces and memories that are meaningful to you. ■

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GREETINGS, MY FELLOW ALUMNI

As spring emerges and everything once white turns green, I'm reminded how beautiful our campus is. I really believe, and I know I'm not alone, that we truly do have one of the most picturesque campuses in North America, and perhaps the world.

It is by deliberate, consistent decisions that our space on campus is among the finest. From the decisions of our founders to integrate greystone and Tyndall stone into the collegiate-gothic architecture, to a commitment to use these materials consistently over our 108-year history in building core-campus facilities, to integrating the plants and flowers developed and grown by our very own horticulture department, we have ensured that our campus remains an attraction for photographers—visiting or local, amateur or professional.

What we do inside these stone walls remains consistent as well—our commitment to teaching and discovery ensures that we educate and equip tomorrow's leaders for challenging careers and rewarding lives, just as we did with you, our alumni. How we accomplish that will change—we must integrate technology in the classroom, equip labs with state-of-the-art equipment, and adapt library spaces to meet the learning needs of a new generation of students who learn differently and require different tools to do so—but the core purpose of our space remains: teaching, discovery and research.

It is a reasonable expectation of our students, staff and faculty that our campus is a safe space—physically safe as well as a safe place to think and

speaking freely. With respect to the latter, the U of S always has been, and always will be, a place for respectful debate of differing points of view in the pursuit of knowledge. With respect to the former, campus safety across Canada has been in the news in recent months and is always top of mind at the U of S. We make great effort to ensure our campuses are safe environments, and we continue considering and pursuing new ways to make those who live, study and visit our campuses throughout the province feel safe.

The pages of this issue of the *Green & White* explore space in a variety of ways. Learn how your fellow alumni are shaping changes to how we plan and use our urban spaces. Discover why Aboriginal space is important, both practically and culturally. Did you know an asteroid is named after a U of S alumnus? Or that another has developed medical equipment that will be sent to the International Space Station? Read how a Saskatoon-based company born out of our physics department helped make landing on a comet half-a-billion kilometres away possible.

As always, thank you for taking time to read what I have to say in this space. ■

Sincerely yours,

Gordon Barnhart, CM, SOM
(BA'67, PhD'98)
Interim President
University of Saskatchewan
uofs.president@usask.ca

OVER 85 YEARS OF WATCHING THE NIGHT SKY: A BRIEF HISTORY OF THE U OF S OBSERVATORY

 **TIM HUTCHINSON**
UNIVERSITY ARCHIVES AND SPECIAL
COLLECTIONS, UNIVERSITY LIBRARY

An unsolicited donation of \$500 in 1925 led to the construction of one of the smallest, yet perhaps most recognizable buildings on the University of Saskatchewan campus. W. H. Duncan of Regina sent a donation “for a telescope” in recognition of the work being done by Prof. A. J. Pyke. The donation led to a fundraising campaign by the Saskatoon Board of Trade that brought in a total of \$3,800 in donations, which allowed the purchase of the telescope and necessary accessories, including the dome. An observatory had not been part of the university’s original building plans, but at a cost of about \$23,000, it was completed in two phases—the tower and then the classroom wing—between 1927 and 1929.

Pyke was a math professor who also taught astronomy. Courses in astronomy had been offered as early as the 1914/15 academic year, and in 1929/30, the Duncan Telescope was first introduced as a part of one of the courses. During

the 1930s and 40s, physics students were recruited to act as caretakers for the Observatory keeping the coal furnace stoked in exchange for sleeping quarters in the building. Eventually this privilege was reportedly abused, and the university assigned the quarters to the caretaker of the medical building.

In 1942, W. H. White arrived at the U of S, and for about 18 years he opened the Observatory to the public once a week. Both a classical scholar and a physicist, he had an office in the physics department but does not appear to have been officially on faculty. White’s lasting legacy was the addition of the sundial installed on the south side of the building in 1944. It was removed due to weathering in the early 1990s and is now stored in the Physics Building.

The Observatory was used less frequently through the 1950s. In 1964, the Saskatoon Astronomical Society was formed, followed by the Saskatoon Centre of the Royal Astronomical Society

of Canada. These groups were given access to the Observatory. Their activity, open houses and university astronomy classes increased in the 1970s after some important upgrades to the facility. In 1971, the telescope was overhauled, and in 1976, a new electrically-controlled dome was installed. Other renovations to the facilities included repurposing a storage room for displays and the addition of public washrooms. Prof. J. E. Kennedy, a physics and astronomy professor specializing in the history of astronomy, ran the Observatory during this period and was instrumental in its revitalization.

Today, students continue to use the Observatory for the laboratory component of astronomy classes, and tours are offered to school groups and community associations. It is also open to the public on Saturday nights year round and for significant celestial events such as sightings of comets and the transit of Venus, which can attract hundreds, if not thousands, of visitors. ■



Watch a brief history of the Observatory.
alumni.usask.ca/observatory



 PHOTOGRAPH COLLECTION, A-6675

The Observatory in 1934, looking north at the Chemistry Building, Physics Building and a corner of the student residences are in the distance.

REFOCUS ON PROMISE AND POTENTIAL

Several months after the TransformUS program prioritization process was laid to rest and a new set of priorities established, Ernie Barber, the interim provost and vice-president academic is encouraged by the effort on significant projects for the U of S.

Barber said the eight priorities outlined last September refocus the institution on the objectives of its third integrated plan (IP3), *Promise and Potential*. A person has been appointed to lead each priority since they were announced.

Barber pointed out while he is not in charge of the individual projects, “I still have an eye on them all because I need to make sure the leaders and teams get what they need to accomplish the initiatives.”

PRIORITY 1: Accelerate the delivery on the commitment to Aboriginal achievement

This priority “is in some ways too big to call a single initiative.” Work is focused on building a representative workforce, and a proposal is being made for additional investment in human resources and the office of the vice-provost for faculty relations to assist units with activities like developing representative candidate pools, he said. Interim President Gordon Barnhart is working with key leaders on campus to ensure the work of this significant priority is co-ordinated and appropriately resourced.

PRIORITY 2: Continue the restructuring of the College of Medicine

Dr. Preston Smith, dean of medicine, is leading the efforts to address a number of issues within the college. Barber said one of the most challenging issues centres around attaining clinical research and clinical teaching faculty members.

PRIORITY 3: Deliver on the promise of inter-professional health education and interdisciplinary health research

The interim provost said additional investments would be made in the Council of Health Science Deans to create positions dedicated to developing programming. This priority is being led by Karen Chad (BSPE’80, BEd’81), vice-president of research.

PRIORITY 4: Advance the reorganization and strengthening of graduate studies and support for graduate students

“Before the end of the academic year, we will have signalled to campus what we are doing about the organizational structure of the College of Graduate Studies and Research,” said Barber. “I think it’s fair to say it will not be business as usual but graduate studies will not be reduced to just an administrative unit.”

Priority leader Adam Baxter-Jones, acting dean of the college, will also be releasing a report identifying priority areas for financial support for students.

PRIORITY 5: Continue the capital project for the transformation of the library collections, facilities, capital and services

Barber said this project is decades old and was originally focused on the Murray Library and Murray Building only. That has changed to include the entire library system, and he said the project’s capital steering committee has resumed meetings. Library Dean Vicki Williamson is leading the initiative.

PRIORITY 6: Complete the reorganization and revitalization of centrally organized teaching and learning activities and functions

Patti McDougall, vice-provost teaching and learning, is managing the reorganization, said Barber. Two of three units in Media Access and Production (eMAP) have been repositioned in Information and Communication Technology, there has been progress on moving non-credit programming from the Centre for Continuing and Distance Education (CCDE) into colleges, and the University Learning Centre will be transferred to the library, a change that Barber said will be seamless for users.

PRIORITY 7: Focus on the creation of inter-disciplinary and cross-college academic programming

“This is devilishly difficult because this university favours academic programming that is uniquely linked to one academic unit,” commented Barber. The goal, Barber continued, “is creating opportunities for better outcomes for students with the same resources ... (but) we need to walk before we run.” Toddi Steelman, director of the School of Environment and Sustainability is the priority leader.

PRIORITY 8: Align administrative services culture to support and facilitate the academic mission

Initially, this realignment was expected to take place in pieces but Barber said it has become apparent it needs to happen across all services and across the campus. Greg Fowler (BA’88, MBA’92), vice-president of finance and resources, is working with a consultant to assess how services are delivered and develop a new model. Barber added the goal “is to make sure that our central administrative services are college facing” with a how-can-we-help attitude.

After recapping the priority-area efforts, Barber added he senses that “most people are like me—they’re proud of this university and that pride is like the pride you have in a child. You want to protect them from harm but you also want them to get better. This process is about putting the effort into being better.” ■

MEDICAL ISOTOPE PROJECTS MARK MILESTONES

The University of Saskatchewan is in the unique position to have two methods of producing medical isotopes underway. Each recently reached significant milestones.

Scientists at the Canadian Light Source (CLS) synchrotron are ready to test the Medical Isotope Project (MIP) facility after receipt of the commissioning licence from the Canadian Nuclear Safety Commission.

With the licence, the MIP will undergo rigorous testing to ensure the facility is ready to produce medical isotopes in the very near future.

The CLS will have the ability to produce medical isotopes using X-rays from a particle accelerator instead of a nuclear reactor. The project is being led by the CLS along with partners from the National Research Council of Canada, and medical researchers in Winnipeg, Ottawa and Toronto.

“After many years of hard work, we are extremely excited to begin testing the Medical Isotope Project facility,” said Mark de Jong, CLS director of accelerators. “We have made tremendous progress so that we can begin the production of isotopes very soon. Our goal is to produce medical isotopes safely, reliably and affordably, and we have almost reached that goal.”

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Learn more:
alumni.usask.ca/mip

▶
Watch a behind the scenes video:
alumni.usask.ca/isotopes

The second project, conducted by the U of S and the Sylvia Fedoruk Canadian Centre for Nuclear Innovation, completed construction of the Saskatchewan Centre for Cyclotron Sciences on campus.

At the heart of the new centre is a state-of-the-art TR24 cyclotron, a Canadian-built particle accelerator that produces radioisotopes for medical and biological research and for use in PET-CT (Positron Emission Tomography-Computed Tomography) scanners to diagnose diseases such as cancer. The radioisotopes will be processed on-site in a specialized pharmaceutical laboratory for the PET-CT scanner at Royal University Hospital.

Work now gets underway on the commissioning of the facility to ensure it meets the regulatory requirements of the Canadian Nuclear Safety Commission and Health Canada. It is anticipated that the first radioisotopes for research use will be produced in spring 2015, with the first commercial radioisotopes for medical care in late 2016. ■

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Learn more about
the Fedoruk Centre at:
fedorukcentre.ca

▶
Watch how the cyclotron works:
alumni.usask.ca/cyclotron



Inside the Centre
for Cyclotron
Sciences

**PROVIDED BY
FEDORUK CENTRE**

HUSKIES: SEASON AT A GLANCE

<p>12 OF 15 HUSKIE TEAMS COMPETED IN CANADA WEST PLAYOFFS</p>	<p>7 OF 15 HUSKIE TEAMS COMPETED AT THE CIS CHAMPIONSHIP</p>	<p>2 CIS GOLD MEDALS LAUREN TAYLOR, HIGH JUMP JOSH BODNARCHUK, WRESTLING</p>	<p>1 CIS MAJOR AWARD JOSH BODNARCHUK, CIS MEN'S WRESTLING ROOKIE OF THE YEAR</p> <p>8 CANADA WEST MAJOR AWARDS</p>
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ICYMI (IN CASE YOU MISSED IT)

A lot goes on between issues of the *Green & White*...

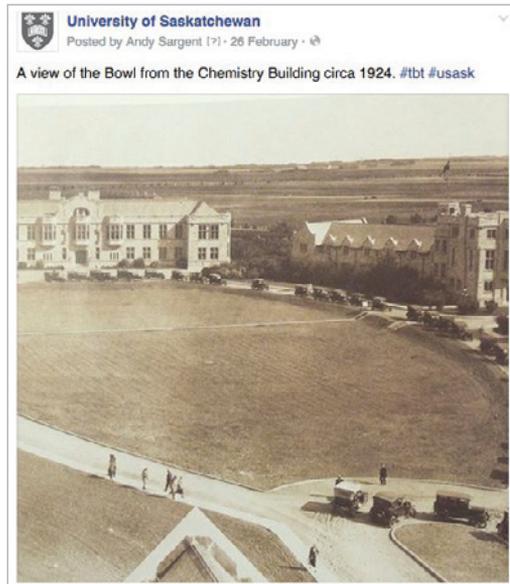
Keep up to date and join the conversation on official U of S social media channels to help stay connected.



facebook.com/usask



@usask



NEW BOARD CHAIR

At its Oct. 9 meeting, the Board of Governors approved a motion to have Greg Smith (BComm'79) replace Susan Milburn (BComm'78, MBA'80) as chair of the U of S Board of Governors. Smith, a partner in the Swift Current accounting firm Stark & Marsh LLP, assumed the role of chair in October.



Greg Smith

Lee Ahenakew (BComm'97) was appointed vice-chair at the same meeting. Ahenakew was appointed to the board in January 2013, and currently works at BHP Billiton in community engagement.

On Oct. 18, University Senate elected Joy Crawford (BComm'93) to replace Milburn as the Senate representative on the board. Crawford is a certified management accountant at Potash Corporation of Saskatchewan. ■

FOOD INSTITUTE GETS NEW DIRECTOR



The Global Institute for Food Security (GIFS) at the U of S has appointed Maurice Moloney as its new executive director and CEO. With more than 25 years of experience, Moloney joins GIFS from Australia's Commonwealth Scientific and Industrial Research Organization, where he led a team working on science-based solutions to address major global challenges such as the need to increase sustainable agricultural productivity. ■



Hours of research revealed this bust of Hannibal at the U of S Museum of Antiquities was once owned by French Emperor Napoleon Bonaparte.

HEADRESS PRESENTED TO BARNHART

An exact replica of the headdress presented to the Rt. Hon. John G. Diefenbaker (BA'15, MA'16, LLB'19, DCL'58) was given to the U of S by the Whitecap Dakota First Nation.

In 1959, Diefenbaker was given a headdress and the name Chief Walking Buffalo by Chief Littlecrow during a ceremony marking the beginning of construction of the Gardiner Dam.

The original 1959 headdress is preserved in the Diefenbaker collection but is too fragile to be exhibited. The replica will be prominently featured within the permanent Diefenbaker exhibit in the Diefenbaker Canada Centre. ■



Whitecap Dakota Chief Darcy Bear (BusAdm'09, LLD'14) shows the replica headdress to Lieutenant Governor Vaughn Solomon Schofield and Interim U of S President Gordon Barnhart.

Images of Research grand prize winner

Geochemical Rainbow by geological sciences professor Matt Lindsay depicts a rainbow-like pH gradient at the confluence of two streams impacted by historic and modern mining. Nearly 90 photographs were submitted for the competition, showcasing the diverse research being conducted by members of the U of S community.



View all the photographs, including category winners, at research.usask.ca/images-of-research.php

Read more U of S news at news.usask.ca

CAMPUS CONSTRUCTION UPDATES

The Gordon Oakes-Red Bear Student Centre is nearing completion and is expected to open in the summer.



Inside the Gordon Oakes-Red Bear Student Centre

LIAM RICHARDS

Construction of a new standalone campus **childcare facility** has begun.

The one-storey building, located south of the R. J. Williams Building and west of the Souris Hall residence building in College Quarter, will have 90 spaces. It is expected to be ready in the spring of 2016.

A request for proposals (RFP) has been issued by the U of S to develop a meeting and lodging facility at the **Kenderdine Campus at Emma Lake** in exchange for some access and a long-term lease on the land.

The RFP is an effort to find a financially sustainable plan for the campus that was established in 1935 with a focus on U of S arts and ecology activities, in addition to community use.

Programs at the campus were suspended in 2012, when it was determined a significant capital investment would be required to bring the facility up to operating standard.

There are no significant updates for the **hotel or ice facility projects**. ■

PRESIDENTIAL SEARCH UPDATE

The Board of Governors is hoping to have the next U of S president selected this summer, with the successful candidate assuming office in 2016.

The presidential search committee, working with the consultant company Perrett Laver, has developed a long list

of candidates. The next step is to create a short list of candidates who will then be interviewed. Interviews are expected to start in June.

The confidential nature of the search prevents the disclosure of details about who has applied, but Greg Smith, board chair, said in a statement, "I can tell

you that the search committee is very pleased with the quality and diversity of candidates. We are confident we will identify an outstanding individual to recommend to the Board of Governors."

More detail on the search process, the committee and future updates can be found at usask.ca/presidentialsearch. ■



The U of S Cheer Team poses in the One Day for Students photo booth.

ONE DAY FOR STUDENTS

On March 20, 302 donors gave a total of \$27,696 to the President's Student Experience Fund supporting unique and innovative projects and activities that give students an opportunity to grow their knowledge, apply their learning, or pursue once-in-a-lifetime experiences outside of the classroom.

The first \$25,000 was generously matched by Prof. Emeritus Kay (PhD'65) and Dora (BEd'69) Nasser, who were so impressed by the support that they gave another \$5,000, bringing the total raised to \$57,696. ■



Learn more at give.usask.ca/oneday

Taking space by storm

 SCOTT DAVIDSON

We often look up at our legendary living skies with wonder. We gaze at the vibrant colours of an early morning sunrise or a lingering prairie sunset. We are enchanted by the nighttime spectacle of the dancing aurora borealis—the northern lights.

We know how to read the rolling clouds and respect the potentially destructive nature of a prairie storm. But we seem less wary, even unaware, of the potential harm that those captivating northern lights can cause.

TIPS FOR AURORA VIEWING

Auroras are not only the effect of space weather Canadians are most familiar with, but are also the most visually stunning. With Saskatchewan sitting directly under the auroral oval, Saskatoon provides an ideal place to view this phenomenon.

Light pollution, which is caused by the abundance of lights in populated locations (see pg 18), can obscure viewing.

Head out of town to find darker skies.



Kathryn McWilliams (BSc'94, MSc'97, PhD'01), an associate professor of physics and engineering physics, and her team of researchers at the University of Saskatchewan's Institute for Space and Atmospheric Studies (ISAS) monitor and study the "space

weather" that is responsible for phenomena such as the aurora.

Space weather describes the movement of charged particles in Earth's ionosphere, a region of the atmosphere above the stratosphere that is ionized by solar radiation. This movement, which is driven by the interaction between the solar wind and the Earth's magnetic field, can directly affect communications, navigation and power systems on Earth.

Significant space weather activity can interfere with GPS navigation systems. Flight crews and frequent fliers on commercial aircraft are also exposed to the radiation of space weather—not at levels that would concern most travellers, though.

One of the most devastating examples of the effects of space weather is the 1989 Quebec blackout. In March of that year, a major geomagnetic storm allowed the aurora to be seen as far south as Florida and Cuba. It also caused Hydro Quebec's power grid to completely collapse for nine hours. A combination of factors, including the design of the power grid itself and the rocky, Canadian Shield ground of Quebec, meant the system was particularly susceptible to the damaging effects of the powerful explosion, called a coronal mass ejection, that the sun unleashed days prior.

"Canada has the largest landmass under the auroral oval," McWilliams said. "Along with our front row seat for space weather, Canada's population is sparsely distributed over our vast area, meaning that we rely heavily on satellite communication and navigation and radio communication technologies that are vulnerable to space weather."

ISAS—the only combined space and atmospheric research institute in Canada—is part of SuperDARN (Super Dual Auroral Radar Network), an international

network of 35 high-frequency radar stations in 10 countries across the northern and southern hemispheres. SuperDARN creates up-to-the-minute maps of the weather in the ionosphere.

McWilliams is co-lead of the Canadian team headquartered at the U of S. Five radar stations located in Saskatoon; Prince George, BC; Inuvik, NT; Rankin Inlet, NU; and Clyde River, NU are responsible for mapping approximately five million square kilometres of the ionosphere.

The U of S joined SuperDARN in 1993 and is the only Canadian university to be part of the network. According to McWilliams, the U of S has a long history of studying Earth's atmosphere. ISAS was founded as the Institute for Upper Atmospheric Research in 1956. The organization was formed to study weather, aurora and related phenomena in the upper atmosphere.

Today, ISAS employs 40 people, including physics and engineering physics professors, research assistants, engineers, and 19 graduate students. McWilliams said the university's extensive history in space science research, along with Saskatoon's prime location under the auroral oval—the area of Earth where the effects of space weather are experienced most intensely—is what led ISAS to join SuperDARN.

"The long history of atmospheric and space science, along with the institute's significant engineering activities and radar expertise has made the U of S an ideal headquarters for the Canadian component of SuperDARN," McWilliams said.

Earlier this year, the team received \$462,000 in funding from the Canadian Foundation for Innovation (CFI). "The funding that we received from the Major Science Initiatives program of the CFI is essential for SuperDARN to continue to operate in Canada," McWilliams said. "Without it, we would have had to significantly scale back the research, potentially discontinuing operations at some of the more expensive Arctic sites. The network continues to grow, and the CFI funding is allowing the Canadian portion of SuperDARN to move forward."

And we can enjoy the spectacle of the northern lights instead of worry about its effects on our critical communications network on which we so heavily rely. ■

Cloud cover, as well as bright moonlight, can hinder aurora viewing.

Winter months tend to provide better viewing because there are more hours of darkness.

Remember to dress warm.

Consult spaceweatherlive.com/en/auroral-activity/auroral_oval to see the real-time location of the auroral oval to optimize your chances of seeing an aurora.

Can you hear me now?

 DERRICK KUNZ

Every time I drive past the row of massive satellite dishes on Preston Avenue, just north of campus, I can't help but think of *Contact*, the 1997 movie about finding radio proof of intelligent life on other planets starring Jodie Foster and Matthew McConaughey.

What could that equipment be used for? Why here in Saskatoon? Should I put on my tinfoil hat as I go do my shopping at the nearby stores?

It turns out my science fiction image of listening for signals from the far-reaches of the galaxy is not out of this world—except the headgear. SED Systems, the company that built and operates those satellite dishes, developed the deep space communications systems used for the European Space Agency's (ESA) historic landing on a comet half-a-billion kilometres away.

Rosetta made history in November 2014, when the craft, which was orbiting Comet 67P, deployed its Philae lander to the comet's surface. Although it was a less-than-perfect landing, Philae is on the comet and was able to communicate with Rosetta, which communicates directly with the ESA.

“Our involvement with the European Space Agency Deep Space Antenna program began in the late 1990s,” said Patrick Thera (BSc'85), president of SED. “That was one of the fundamental building blocks for programs like Rosetta.

“Our role in building these antennas was one of systems engineering and prime contractor,” said Thera. “We were responsible for the overall design of the antenna, its installation and for the civil works associated with the sites.”





Patrick Thera, SED Systems president, inside the SiriusXM test bed.

LIAM RICHARDS

Don't let Thera's use of the word antenna fool you into thinking about a metal pole stretching into the air. He is referring to enormous satellite dishes 35 metres in diameter (those ones on Preston Ave. are 11 metres) and all the electronics and components necessary to make them work.

"These antennas are critical for deep space missions such as Rosetta in order for the team to keep in contact with the probe to receive data from it and send it commands." And that can be challenging. "One of our engineers explained it's kind of like leading a hockey player with a pass. You pass the puck to where your teammate is going to be, not to where he is," Thera explained. Except in this case, your target is flying through space hundreds of thousands of kilometres away and it takes 20 to 30 minutes for a "pass" to get there.

"It was exciting to hear that Philae landed, but our exciting moment was 10 years earlier when Rosetta launched and ESA was able to successfully communicate with it. The failure of the lander to solidly anchor itself to the comet was disappointing, but it illustrates the great technical uncertainty when undertaking these missions. It also illustrates the great amount of information that can be gained from these missions in spite of unforeseen events."

As if deep space communication wasn't impressive enough, SED has other well-known projects, perhaps more applicable for us Earthlings, on its resume. You won't be able to pick up their products at your local Best Buy, but the project-based company is integral to a service you may enjoy.

"The songs you hear on SiriusXM digital satellite radio have been processed and uplinked through the systems that SED designed and built. We built the uplink delivery systems, authorization systems and management systems for this service," said Thera.

In SED's facility is what Thera called a test bed—a large server room and full replica of what SiriusXM has—in which they can test modifications and software upgrades. "Clients like that expect 100 per cent uptime; you can never be down. So there is a lot of redundancy and testing."

Next time you fly overseas, you can thank SED for air-to-ground communications. "Whenever an aircraft flies over

the ocean, all of the aircraft communications is routed via satellite to an Inmarsat aeronautical ground earth station designed and built by SED."

Even when that communication is turned off and something goes tragically wrong, as it did on March 7, 2014, when Malaysian Airlines flight MH370 from Kuala Lumpur to Beijing lost contact with air traffic control, SED plays another important role. Search and rescue efforts to track the pings sent by the aircraft's cockpit communications were tracked (or at least attempted to track) using technology from the Saskatoon-based company.

All of this is pretty impressive for a company located in a small prairie city that got its start 50 years ago.

The Space Engineering Division (SED) was formed in 1965 by the University of Saskatchewan's Institute of Space and Atmospheric Studies. At that time, it built rocket payloads for upper atmospheric studies. In 1991, Calian Technologies purchased SED, and it became their systems engineering division.

Today the company focuses on three main markets: satellite communication systems and services; communications products; and test, aerospace and defence manufacturing. They provide products and solutions to customers around the globe. In fact, the majority of their work is exported out of Canada.

The company employs approximately 240 people, and Thera estimates over a hundred are U of S alumni with backgrounds in engineering, computer science, business and project management.

"We are celebrating our 50th anniversary this year," said Thera. "When I started here 30 years ago, it was my first full-time job. I thought I would go to Silicon Valley and get rich, but the projects here kept me interested. We celebrated when Philae landed, but we popped the champagne a few days ago when the company celebrated 50 years."

Here's to a company that refused to accept the sky as the limit. ■



Indigenous spaces,

✍ ANDRÉA LEDDING

“When I think of the idea of space and Indigenous space at the University of Saskatchewan, the first thing I would reflect on is the name; *kisiskâciwani-sîpiy* is the name of the river and the real, Cree name of Saskatchewan,” said Neal McLeod.

To understand the space, and what’s in a name, it is important to understand the meaning behind its name. Fast flowing river is the translation of Saskatchewan, and the City of Saskatoon is named for the local berry—both derived from Cree. “It is historically important in the development of the province,” observed McLeod (BA’92, MA’96), an Indigenous studies professor at Trent University in Ontario. “Of course, the university itself is along the river, but so too are many important historical events, such as the Battle of Batoche further north. The river was a vital lifeline and an important element in the foundation and vibrancy of the territory of not only present day Saskatchewan, but also Alberta.”

Places with Indigenous names abound in Canada—or Kanata—from streets to rivers, lakes, cities and provinces. Names embody cultural and historical space and identity—for our nation, and more significantly for Indigenous people whose languages are linked to, and from, these spaces.

The University of Saskatchewan is no different. Construction of the Gordon Oakes-Red Bear Student Centre is a tangible commitment to Indigenous space. “For me, the university continues to develop, and become more about Indigenous space



Indigenous places

as time goes on,” he said, also noting connections about Indigenous languages of, and to, the land. “My late nòhkom (grandmother) was the first Cree teacher on campus in 1972. The Cree language is a creation of space, along with the rest of the Indigenous languages of the province. Over time, the language has become more of a presence on the campus.”

Ryan Walker, associate professor of urban planning at the U of S, noted that Aboriginal space—and renewing our sense of that space—goes far beyond academics and architecture. People and relationships are key.

McLeod noted when his father started at the U of S in 1966, he was one of only three First Nations students. “Today, there have been three back-to-back Indigenous presidents of the student union [Jack Saddleback, Max FineDay and Jared Brown] and a growing and vibrant Indigenous student population.” The university’s chancellor, Blaine Favel (BE’87, LLD’12), is the first Aboriginal person to serve in that role.

Walker explained there is renewed interest and investment to prioritize Indigenous space. “They don’t disappear ... but are sometimes muted in the background, especially in the context of what non-Indigenous people experience,” Walker said. “It’s really about recalibrating what we actually see and experience around us. The cultural landscapes are still there, it’s just we’ve done so much work to displace them.”

Although larger plans and architecture are important, evidence suggests smaller steps that make a community more family friendly can have a significant impact on Aboriginal and international

student retention. Things as simple as accessible baby-change stations, physical spaces to study while children play, or clear and supportive classroom policies for pregnant and nursing mothers, and parents in general. The U of S, like many organizations, has the opportunity to lead the way with innovative practices.

In Winnipeg, the Little Red Spirit program provides childcare support while incorporating Indigenous teaching, components, and philosophies in early childhood. Walker pondered, “What’s the potential for something like that here? It’s helpful to all students with young kids, not only Aboriginal students. What becomes most powerful is the Aboriginal teachings—Aboriginal cultural components to a whole variety of educational service provision is helpful to non-Aboriginals too.

“So any and all dimensions can be really powerful in creating and reclaiming Aboriginal space,” Walker said. “It’s not just the physical space but the social and cultural space that comes as well. All those things reclaim Indigenous space.”

Walker described it as valuable “social and cultural space” for everyone created each time Indigenous space is acknowledged: childcare, housing, counselling, celebratory powwows and round dances, the many ceremonies taking place on campus and in conjunction with the new student centre.

Walker believes the U of S has been leading the way and setting the tone for broader society, stating that commissioning noted Aboriginal architect Douglas Cardinal’s (DL’12) design for the new student centre is “something we can be quite proud of.

“So no surprise that the U of S is ahead of the city, leading on that front,” Walker continued, but added that he hopes the city and broader society do more to incorporate the Indigenous aspect of local identities. He cited the Round Prairie Métis community as one of the forgotten place and pioneering histories of Saskatoon. While Dakota Chief Whitecap and John Lake are commemorated with a statue at the foot of the Traffic Bridge, many other stories of the overlapping and complex histories are not being told, particularly stories of the Cree and Métis.

But does using a name evoke enough of a connection for the average Canadian? And if not, what can the average Canadian do? Walker said it’s quite simple, “Take an interest in local history and contemporary Aboriginal art, culture and the issues that are important in the community—just take an interest. It’s really fascinating when you start to learn more about Indigenous cultures in the area; it’s part of everyone’s civic identity here.”

For example, stop to think about the significance of the naming of the Place Riel Student Centre and Louis’ Pub, or how Cree is used in the name of the university itself.

“[The university] has that opportunity to really embrace the richer local place history that we’re not getting reflected in the city otherwise, as much,” he explained. “It’s a great role for campus to play. We often think of what we want to do for teaching and learning but also in terms of being a leader in the city, the province and the country on reclaiming and creating Indigenous spaces.” ■

Fly me to the moon

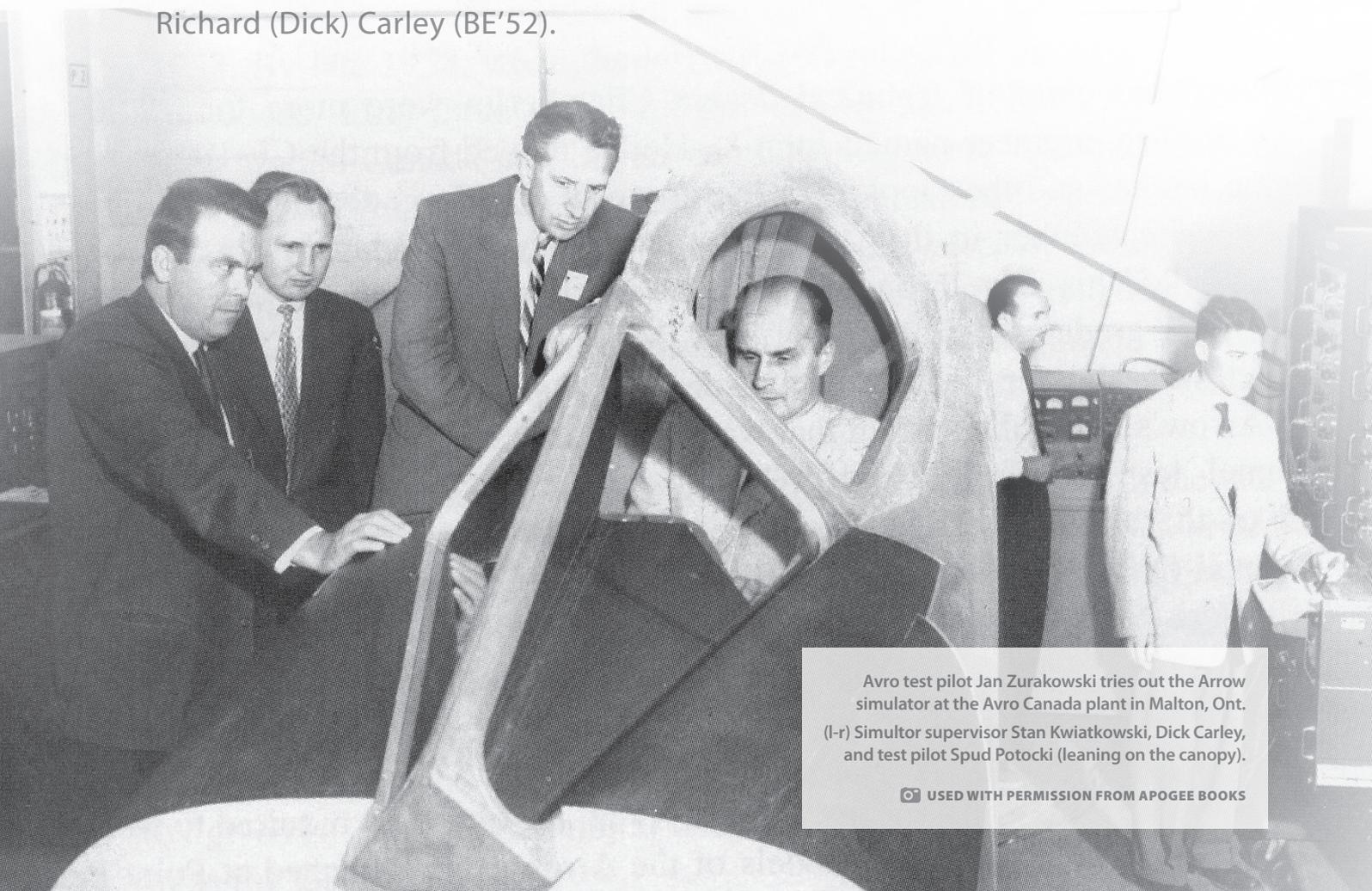
 RUSSELL ISINGER

“I shot an arrow in the air, it fell to earth I knew not where.”

So begins Longfellow’s famous poem. It is also an apt summary of the extraordinary career path of distinguished alumnus Richard (Dick) Carley (BE’52).



(l-r) Rick Retzlaff (BE’85, MSc’89), U of S assistant professor of mechanical engineering; Russ Isinger (BA’88, MA’97), U of S registrar; David Sumner U of S professor of mechanical engineering with the Avro Canada Orenda engine in the Engineering Building.



Avro test pilot Jan Zurakowski tries out the Arrow simulator at the Avro Canada plant in Malton, Ont. (l-r) Simulator supervisor Stan Kwiatkowski, Dick Carley, and test pilot Spud Potocki (leaning on the canopy).

 USED WITH PERMISSION FROM APOGEE BOOKS



Born in Saskatoon in 1927, Carley's family was in the bakery business. But it was airplanes that fascinated him as a boy growing up during the Second World War, particularly the legendary Supermarine Spitfire that was being used by the Royal Canadian Air Force (RCAF). His keen interest in how things work led him to study electrical engineering at the University of Saskatchewan.

After a stint working with Canadian National Telegraph, Carley determined he wanted a position in which he could design electronic systems. And so, in 1954, he ended up in Malton, Ont., working on the premier high-technology project of the day—the Avro Canada CF-105 Arrow, the world's most advanced supersonic interceptor. The Arrow, designed and built for the RCAF, was intended to protect North America from attack by Soviet nuclear bombers. For a young engineer fascinated with flight, it was surely a dream job.

During five years at Avro, Carley focused on what would become his career specialization—navigation, guidance and control systems. In order to better understand flight, he learned to fly himself. Carley became particularly interested in using simulators to develop and test the Arrow's advanced avionics systems and as a means of getting pilots to better understand the flying characteristics of the Arrow. Avro's famous chief test pilot, Jan Zurakowski (Zura), spent many hours on these simulators before climbing into the cockpit of the Arrow for its successful first flight in 1958. Carley recalled that after that flight Zura quipped, "It's a lot easier flying the airplane than it was a simulator," which was exactly the result Carley wanted.

Carley and his fellow Avro engineers knew they had designed a state-of-the-art aircraft, but what they did not know was how much trouble their project was in. The RCAF's ambition to have nothing but the best had caused the costs of the Arrow to skyrocket. The Soviet Union's launch of Sputnik in 1957 (ominously, on the same day the Arrow was publicly unveiled) meant the nature of the threat to North America was shifting rapidly away from bombers to missiles—which the Arrow could not defend against. The Arrow was starting to look like a billion-dollar boondoggle to many in the halls of power.

The Canadian government almost certainly would have cancelled the Arrow in 1957 if the Liberals had been re-elected; instead, the newly-elected Conservative government of John G. Diefenbaker (BA'15, MA'16, LLB'19, DCL'58) inherited the project, and temporized as to what to do about it for a year-and-a-half. The Arrow was a superb technological achievement, but harsh financial realities domestically and dramatic strategic shifts internationally led inexorably to its cancellation. The axe finally fell on February 20, 1959. That decision has remained controversial ever since, with Diefenbaker fated to be forever associated in the public's mind with the Arrow.

On "Black Friday," over 14,000 Avro employees were laid off. Thinking toward the future, Carley suggested to his boss, the brilliant aerodynamicist Jim Chamberlin, that feelers should be put out to a recently founded American

government agency Carley had been reading about, the National Aeronautics and Space Administration (NASA). Needing a break from events, Carley then went skiing for a month. Upon his return to Malton, he discovered that eager NASA officials, desperate for highly-skilled engineers, were on their way to Malton to conduct interviews. By April, Carley, Chamberlin and others were headed south to join NASA's Space Task Group at Langley, Virginia, which later moved to Houston, Texas.

The Avro Group at NASA would eventually include 32 former Avro engineers. When it comes to foreign contributions to the American space program, one tends to hear about Germans, such as Wernher von Braun, who were brought to the United States after the war to work on rocket technology. There is a good claim to be made, however, that the Avro Group contributed just as much to the success of America's space program. As the book *Apollo: Race for the Moon* put it, "The Canadian government unintentionally gave the American space program its luckiest break.... The Canadians never gained much public recognition for their contribution to the manned space program, but to the people within the program their contribution was incalculable.... They had it all over us, in many areas ... just brilliant guys.... They were more mature and they were bright as hell and talented and professional, to a man."

Carley spent his NASA years working on various systems for the Mercury, Gemini, Apollo and other programs. As examples of his work, Carley had been part of the team that had developed the Arrow's fly-by-wire flight control system, which made it the first non-experimental aircraft in the world to have an electronic, as opposed to mechanical, hydraulic system. At NASA, Carley used this experience to develop a similar system for the Mercury capsule. Carley and his team received a NASA Group Achievement Award for their work on guidance and control systems for Gemini. When working at NASA's Electronics Research Centre in Cambridge, Massachusetts, Carley helped lay the foundations for what eventually became the Global Positioning System. And the list goes on. As one of his Avro and NASA colleagues stated, "Dick was just an outstanding scientist and engineer in his field, which was guidance and navigation." Carley served in a variety of positions and places with NASA during his career, spending the most time at NASA's headquarters in Washington, DC, with his last assignment being to work on space shuttle systems.

In 1966, when Carley was honoured with NASA's Superior Achievement Award for his contributions to the Gemini program, his award announcement noted him as a native of Saskatoon and an alumnus of the University of Saskatchewan. His citation reads in part: "His extraordinary technical ability has resulted in a highly effective development program and contributed significantly to the success of the United States' manned space flights." After leaving NASA in 1981, Carley worked for several corporations before retiring in Sausalito, California. ■

For further information, read Chris Gainor's *Arrows to the Moon. Avro's Engineers and the Space Race* (Burlington, ON: Apogee Books, 2001).

“
It's a lot easier flying the airplane than it was a simulator," which was exactly the result Carley wanted.



Stargazer:

Amateur astronomer and activist Richard Huziak wants to give the world the stars.

 ASHLEIGH MATTERN

Orbiting the sun somewhere between Mars and Jupiter is Asteroid 4143 Huziak, named after amateur astronomer Richard Huziak (BusAdm'92) in honour of his research and educational efforts. One of Huziak's goals is to see his asteroid with his own eyes, an endeavour that will take a dark sky, a big telescope and a bit of free time—the latter of which is the most difficult for Huziak to find.

Huziak has been fascinated by the night sky since he was 12 years old. So naturally, when he went to university, he chose to study physics. But he never finished that degree.

"I had a hobby I tried to make a profession, and that's maybe not the best thing to do," he said.

He left school to work, returning to the University of Saskatchewan later to earn his business administration certificate. Today, he works as a manufacturing engineering technologist at SED Systems in Saskatoon, a satellite

communications company. (See pg 12 for more about SED Systems).

No matter where life has taken him, he has never stopped looking up. "There's a whole universe out there," he said.

That constant looking up led to one of the more exciting chapters of his work—helping confirm the discovery of a comet. In 2001, at the Royal Astronomical Society of Canada (RASC) Saskatoon Centre's annual star party at Cypress Hills Interprovincial Park, a fellow amateur astronomer, Vance Petriew (BSc'92), had found something strange in the view of his telescope. Huziak happened to be walking by and took a look, letting Petriew know he had found a comet! Petriew, Huziak and others worked together to record the location and notify the astronomical community. The discovery of Comet Petriew made international news. ▶

Watching the stars

Huziak specializes in studying variable stars, doing most of his research for the American Association of Variable Star Observers, a worldwide group that co-ordinates amateurs to observe for professionals, though he contributes data to about a dozen other groups as well.

Variable stars change in brightness over time. The changes can be due to many factors—stars eclipsing each other, binary stars, pulsating stars, exploding stars—and their nature can only be determined by recording how their light fluctuates.

Amateur astronomers play an important role in this branch of science. The number of stars we can observe is mind-boggling. The observable universe is estimated to have more than 100 billion galaxies, and our own Milky Way Galaxy contains somewhere between 300 and 400 billion stars.

“There are lots of amateurs but not so many professionals, and [amateurs] can spend a lot of time looking at the stars,” Huziak said. “Three thousand amateurs observing can cover 10,000 stars. Because of the vast number of amateurs, we do have this ability to do a mass survey of the sky, and do it on a regular basis.”

In one research project he and others contributed to, they watched SS Cygni, a cataclysmic variable star that was exploding over and over again. The research was trying to determine if there was a precursor event that would allow them to predict the outbursts.

“About two dozen observers collected about half-a-million observations of [SS Cygni] over one year,” Huziak said. “We contributed the largest data set for any star in history.”

Advancements in electronics have given amateurs tools that allow them to do ever more precise measurements and leading-edge science.

Protecting the skies

Huziak’s career as an amateur astronomer would not have been possible if we could not see the stars. As absurd as this may sound, finding skies dark enough to view stars is becoming increasingly difficult as cities grow larger and become brighter.

Today, Huziak dedicates most of his spare time to protecting nighttime skies from light pollution. His fight to keep the sky dark started out with a narrow interest. RASC had an observatory just south of Saskatoon in the Grasswood area, and as the city expanded, they lost their observatory because many of the new buildings were badly lit. The buildings leaked light into the sky, making it impossible for the observers to do their work.

They moved their observatory to a place 40 minutes’ drive east of Saskatoon. But soon even there won’t be far enough.

“Light pollution is not all light; it’s the light that is wasted upward,” Huziak said. “Light pollution is defined as light that goes in a direction that it does no work and light that is too bright. And you see both of these growing exponentially in society.”

Even outside of cities, lighting can be a problem. RASC has held the Saskatchewan Summer Star Party at Cypress Hills each year since 1996, and after a few years at that location, they realized there was an overabundance of street lights at the park. Parks are supposed to be places to enjoy nature, but light pollution was blotting out one of nature’s most spectacular shows.

Huziak and others began working with the park to designate it a dark-sky preserve.

“Part of the dark-sky preserve philosophy is to restore an area that is bright back to darkness. It’s not to take the light off the ground where you would have safety and security, but to get rid of wasted light that’s going sideways and upward, where it’s just doing harm.”

The agreement they pushed for was to retrofit bad lights, to only use good lights when they were expanding, to only use as much light as they absolutely need and to create educational programming around the idea of preserving dark skies.

In 2004, Cypress Hills became the first dark-sky preserve in Saskatchewan and Alberta, one of the first in Canada, and at the time it was designated, one of the largest in Canada. Since then, many more dark-sky preserves have been designated all over the country. Parks Canada saw the benefit of what

was done in Cypress Hills and made a decree that all national parks shall become dark-sky preserves, a process that is continuing to this day.

Environmental activism

The issue of light pollution isn’t just one for national parks and astronomers, though. Huziak makes this comparison: if a tap were running water down the street for hours, people would complain or shut it off, but lights are left on all night long, even when no one is using them—yet there is no uproar. Managing light and the energy it takes to create it should be taken as seriously as any other resource.

Huziak noted that his fight has shifted from its original narrow focus to one with wider environmental and social implications.

“My observatory will survive,” he said. “If we have to move it, we’ll move it again. But if we don’t protect the nighttime environment, we’ve really lost something.”

It’s not an easy fight, especially in cities. As with many environmental concerns, dark-sky activists are fighting a bureaucracy and the status quo, and in this case, Huziak said there’s been push back from the lighting industry as well.

He and his contemporaries are working with the City of Saskatoon to put together an official policy on lighting and protecting dark skies, though the city is making efforts to install appropriate lighting even without a written policy.

“My end goal is to have a dark sky, so astronomers and everybody else can look up and see the stars. There’s no reason from anywhere in the city that you shouldn’t be able to see the Milky Way. When I came to university in 1976, you could stand in most areas of the city and you could see the Milky Way, but you don’t see that anymore because cities have gotten so much brighter for so many marginal reasons at best.”

Controlling light with today’s technology is easier than ever. Older styles of lights need time to turn on, but today’s LEDs are instant, potentially lending themselves to the use of motion sensors. The cost to retrofit a city would be high, but Huziak asks: what’s the cost to not do it? ■



A Canadian icon immortalized in campus art

Farley and Chester are located between the Arts Tower and the Murray Library.

DAVID STOBBE

SUSAN PEDERSON

A familiar figure stands quietly near the Bowl, grasping a walking stick and gazing towards the horizon. Closely shadowed by his trusty dog, Chester, he is easily recognized by the many passers by who grew up loving his books: Farley Mowat.

The striking bronze statue of the Canadian literary icon and environmentalist was unveiled on campus in June 2014, just one month after Mowat passed away at the age of 92. Jennifer Molloy (BA'03), director of development for the Western College of Veterinary Medicine, was involved in bringing the statue to campus and said, "It has become a meeting place on campus and is creating new memories and experiences for students."

Created by the renowned Ontario artist George Boileau over a period of four years, the statue is the first of the renowned author and was made possible through a donation from Toronto businessperson Ron Rhodes. Believing that not enough was being done to recognize Mowat's outstanding contributions to Canada, Rhodes wanted to commemorate him with a donation that would pay lasting tribute. Rhodes said, "Mowat was a gifted writer, and his work as an environmentalist will be one of his lasting legacies. He should be remembered as one of the real heroes of our time."

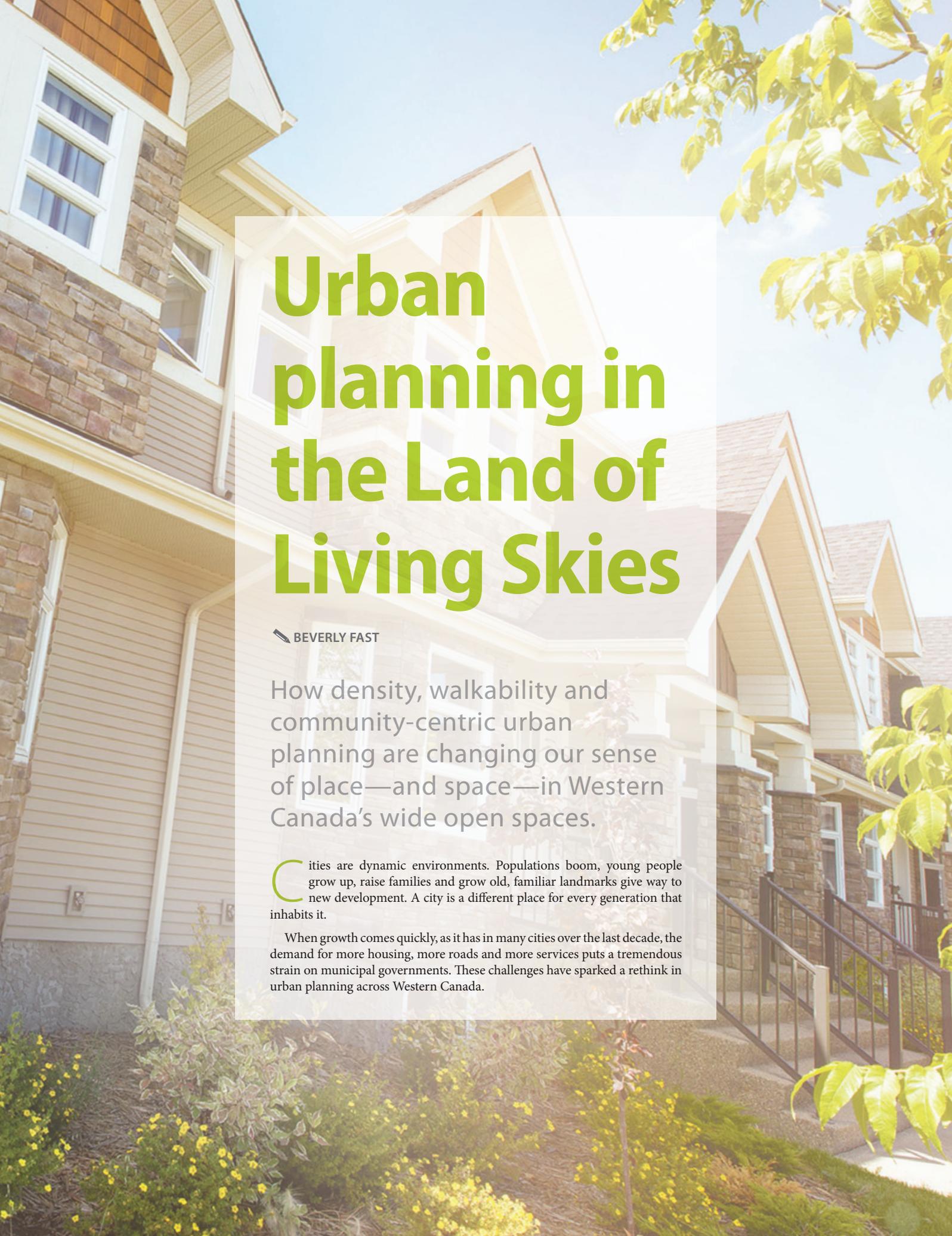
Farley Mowat was born in Ontario, but moved to Saskatoon with his family in 1933. He spent his teenage years exploring the riverbank and prairie, watching—and even taming—the local wildlife, memorably recounted in his book *Owls in the Family*. Saskatoon's landscape made a huge impression, and he spoke fondly of taking a five-minute streetcar ride to the country, which was paradise for the budding nature lover. So

when Rhodes asked him where he would like the statue to be placed, Mowat replied, "Saskatoon would be a wonderful place to spend the rest of my days." He then sent a typically witty letter to the university, adding that the statue "ought to pleasure the pigeons I used to try and shoot with my BB gun in your cattle barns back in 1935. They can now get their own back!"

The unveiling ceremony was attended by the artist, Farley's wife Claire, and a group of special guests: the Grade 2 class from École Lakeview School. Captivated by Mowat's stories, these young students had written to the author. In response to their flood of enthusiastic letters, he replied, "I'd like to answer them all, but you will understand I haven't enough fingers!" and then asked them to attend the unveiling of the statue in his place.

Thanks to Rhodes' generosity, Farley's statue is now a friendly figure on campus that will inspire students and be enjoyed by all for many years to come. Molloy said, "The statue of Farley ties in with so many things that are appropriate to the U of S: a love of writing, love of learning and a love of nature. We hope many people will visit this special place on our campus." ■

For more information on making a donation that has a lasting impact on the university, please visit give.usask.ca.



Urban planning in the Land of Living Skies

 BEVERLY FAST

How density, walkability and community-centric urban planning are changing our sense of place—and space—in Western Canada's wide open spaces.

Cities are dynamic environments. Populations boom, young people grow up, raise families and grow old, familiar landmarks give way to new development. A city is a different place for every generation that inhabits it.

When growth comes quickly, as it has in many cities over the last decade, the demand for more housing, more roads and more services puts a tremendous strain on municipal governments. These challenges have sparked a rethink in urban planning across Western Canada.

Density and the push to grow up

Urban sprawl and density are planning terms that have made their way into the public vocabulary. Definitions of urban sprawl vary, but common elements include low density (fewer people living in an area), single use (single detached homes only, no commercial), car-oriented and developed on greenfield (previously undeveloped) land.

Definitions of density also vary. A planner might measure density by how many people live in an area, how many dwellings are in an area or the size of buildings on a given site in an area.

Whatever the definition, the trend in planning is to control sprawl while encouraging density.

“Density is an important word in my profession,” said Tyson McShane (BA’04), a senior planner with the City of Saskatoon. “The easiest way to explain the thinking behind a move towards high density is dollars—it’s expensive to put new water and sewer pipe in the ground, to extend roads, electrical and gas. It reaches a point where it isn’t sustainable.”

It’s easy to think of density as the flip side of sprawl. In fact, sprawling megacities are often very high density. In Shanghai, China, 23.4 million people live on about 3,800 square kilometres of land, for a population density of about 6,100 people/ km². Delhi, India’s 24.9 million residents occupy 2,072 square kilometres, a population density of about 12,100 people/km².

In comparison, the 2011 census puts the City of Calgary’s population of 1.1 million, land area at 825 square kilometres and population density at 1,329 people/km². The City of Saskatoon’s 222,189 residents occupy 209 square kilometres, for a population density of 1,060 people/ km².

While greater density is pushing residential development up—more townhouses and high-rise condominiums—it is also driving more innovation in mid-rise development: six, seven and eight story apartment and condo developments made of wood-frame construction.

“For me as a planner, that’s a game changer,” McShane said. “Right now, anything more than four stories

requires concrete construction, which is not always financially feasible. But construction technology is changing, and in British Columbia, you can now build up to six stories using wood frame construction. It opens up a lot of development opportunities.”

Mid-rise residential development is one of many elements urban planners use to balance growing up and growing out.

“In planning, you have to recognize that different people want different things. Not everyone wants a hip condo downtown, and not everyone wants a house on a quiet cul-de-sac,” McShane said. “There is a middle ground. You can have houses on quiet cul-de-sacs, but you can also have hip condos near a village square, a small commercial area, connected green space, and transit links not too far away.

“In the suburban model, low density often means the population isn’t large enough to support amenities, like schools or coffee shops. That’s the trade-off,” McShane explained. “It’s interesting when we’re out in the community to see people realize that the things they want are actually in conflict. Someone who wants a big house with a big yard may also want their kids to be able to walk to school, but some low density suburbs may not have enough kids to support a school. So you see people start to understand what they really value, and it usually comes down to quality of life things.”

Walkability: putting more feet on the street

One of the goals in urban planning today is to create more opportunities for residents to live an active, socially-connected lifestyle. That means offering a mix of housing options, small-scale commercial development, local gathering places and green spaces. It also means walkability: neighbourhoods built for pedestrians, with sidewalks, village squares, street furniture, crosswalks, curb bump-outs, public transit stops and more.

“In my own experience, walkability features in a lot of planning conversations,” McShane said. “We look at ways to make it easier for residents to enjoy life because we believe there’s intrinsic value in being able to walk somewhere in your own neighbourhood, to have a destination, whether it’s the village square or a coffee shop or a nearby store.”

Density has long been the norm in the United Kingdom and throughout most of Europe, where land values have led to more concentrated urban growth. Yet urban sprawl is also an issue.

In the 1930s, the City of London instituted the Green Belt, a ring of open, undeveloped countryside around the city to control urban sprawl. Almost a century later, its value continues to be hotly debated.



We look at ways to make it easier for residents to enjoy life, because we believe there’s intrinsic value in being able to walk somewhere in your own neighbourhood, to have a destination, whether it’s the village square or a coffee shop or a nearby store.”

—McShane



Saskatoon neighbourhoods (l-r) Elaine Hnatyshyn Park in Evergreen, Hampton Village fountain, Evergreen village centre

“

We built our previous Saskatoon to be car-oriented, we’re building our future Saskatoon to be more people focused.”

—Totland

Planning and public engagement

It’s beneficial in community-centric planning to actually involve the community in the process. In western Canadian cities, public engagement in the planning process has evolved from a limited practice that sought opinions from community volunteers and stakeholders to an open public debate. Shaping Saskatoon provides an online forum for collecting public feedback on a wide range of issues. Talk Vancouver, SpeakUpWinnipeg and Calgary’s Smarter Growth Initiative are other examples of municipal governments reaching out to citizens.

Murray Totland (BE’79, MBA’92), Saskatoon’s city manager, is a proponent of public engagement in city planning. “Starting around 2005-2006, we began experiencing rapid growth. We were starting to see changing attitudes and expectations, so we decided to go out and talk to citizens.”

Saskatoon Speaks was a broad initiative designed to engage as many people as possible and collect input about the city’s future. What did residents value, what did they want, what were their priorities?

“Saskatoon Speaks gave us real insight into what citizens were thinking about. What was interesting and exciting was that they were thinking about a lot of the same things that we were thinking about: quality of life, the environment, transit, mobility, urban sprawl, density—all that input fed into our strategic plan for urban growth and urban form. It was the genesis of the work we’re doing now with our growth plan to 500,000 population,” said Totland.

“You need people in your cities to demand change or push development because it’s easy for planners and developers to do what they’ve always done,” McShane said. “But you also need to inform the conversation because sometimes people don’t know what they want until they see it. Willowgrove, for example, was our first new neighbourhood plan to include a significant mix of multifamily housing options and commercial development opportunities—and it was the fastest selling development in the city’s history.”

So, are our perceptions of urban space changing in the land of living skies? “In my opinion, yes,” said Totland. “I think we’re all realizing that we have to manage growth a little differently, and that means better understanding both the impacts of sprawl and increasing density. But I also think young people have a different view of what quality of life means. Whether it’s home ownership, work-life balance or car ownership, I see a bit of a different dynamic forming with this generation. I don’t know exactly how this might unfold, other than the future won’t look like the past.”

Planning in a broader context

There’s another aspect to planning, one that happens on a global stage, but nonetheless impacts local populations. The recent drop in oil prices and the 2013 drop in potash prices have underscored the fact that what happens in China, Russia or the Middle East impacts Western Canada’s commodities-based economy, which in turn impacts commercial development and job growth, which in turn impacts funding for civic infrastructure projects, which in turn impacts our own personal quality of life.

The multinational corporations that do business in this global village are Liz Thompson Campbell’s clients. Campbell (BA’81) is miles away from her days as a student studying regional planning at the University of Saskatchewan. She’s



director of global human rights and societal risk at UK-based Verisk Maplecroft, a global risk analytics and advisory firm that helps multinationals analyze extra-financial supply chain risks. These risks could include natural catastrophes or human rights issues, or economic, environmental, political or societal risks.

“My background in urban planning and regional development helps me understand these dynamics, although it’s taken me in a different direction,” Campbell said. “I don’t deal with the spatial elements of planning but, rather, I deal with disruptions to global supply chains. This includes risk analysis of many of the same aspects that impact regional and urban planning.”

Global supply chains can be complex. A mining company based in Vancouver, Calgary or Saskatoon, for example, may operate mines in emerging growth markets in Africa, Asia or South America.

“It might seem that urban planning isn’t related to what I do, but it is,” Campbell said. “Cities in emerging markets are critical for what we do, because this is where consumption will be; this is where products will be sourced, made and bought. My job is to assess risk in terms of what issues will set the stage for future growth. How well can cities like Lagos, Hong Kong and Buenos Aires cope with urbanization, housing, health, transportation? How well they cope will determine the sustainability of urban life.

“We help companies put processes in place to enhance their corporate social responsibility (CSR) and sustainability mandates. For example, in an area where child labour or human trafficking is a risk, we help implement processes to identify where it might be in the supply chain, and to put together mechanisms to root it out.”

When CSR is done well, multinationals maintain their social license to operate. They attract other investment to a city or region, which then supports more economic growth. Campbell believes a private sector that is doing things well can positively contribute to national development and social goals, including mitigating poverty and discrimination.

That’s the positive impact of good CSR along the supply chain, but it’s not easy. Campbell points to the 2013 collapse of a garment factory in Bangladesh, that killed more than 1,100 people. Joe Fresh, owned by Loblaw Companies Ltd., was one of many clothing labels produced there. The company has since taken steps to ensure safety in factories it uses.

“It’s difficult to have big thoughts and ambitions when you have no basic services, like water and electricity.”

—Campbell

described as “regional planning in a very difficult context.” In 2010, she was one of many in southern Iraq working on economic development.

“You can look at that situation and say those companies should have never been there, but on the other hand, those companies are making an investment in Bangladesh. Bangladesh’s textile and clothing industry is the single largest source of economic growth in the country. What happens if you take that away?”

Campbell has also used her planning background to build expertise in post-conflict reconstruction, something she

“Our strategy focused on creating a framework to support economic growth, just like the premier does for this province,” Campbell said. “The principles of regional and economic development are pretty global in terms of how to attract investment, how to support growth, how to plan spatially. But, in regions that are emerging from war or prolonged conflict, everything has to be rebuilt—not just the roads, bridges and airports, but the banking system, health services, policing, fire, schools.”

If accounting for all of these factors isn’t enough of a challenge for planners, non-governmental organizations (NGOs) and intergovernmental organizations like the UN and the World Bank are busy with their own projects rebuilding infrastructure and services. “It requires a lot of co-ordination and building relationships with others,” Campbell said.

Can you apply the principles of post-conflict reconstruction to any struggling community? Campbell thinks you can. “You need the private sector, government and NGOs to come together to address competitiveness challenges and focus on rebuilding. That’s the key to all of this, in my opinion, and I think it applies wherever you do this kind of work, whether you’re in Iraq or a struggling community in Canada.” ■

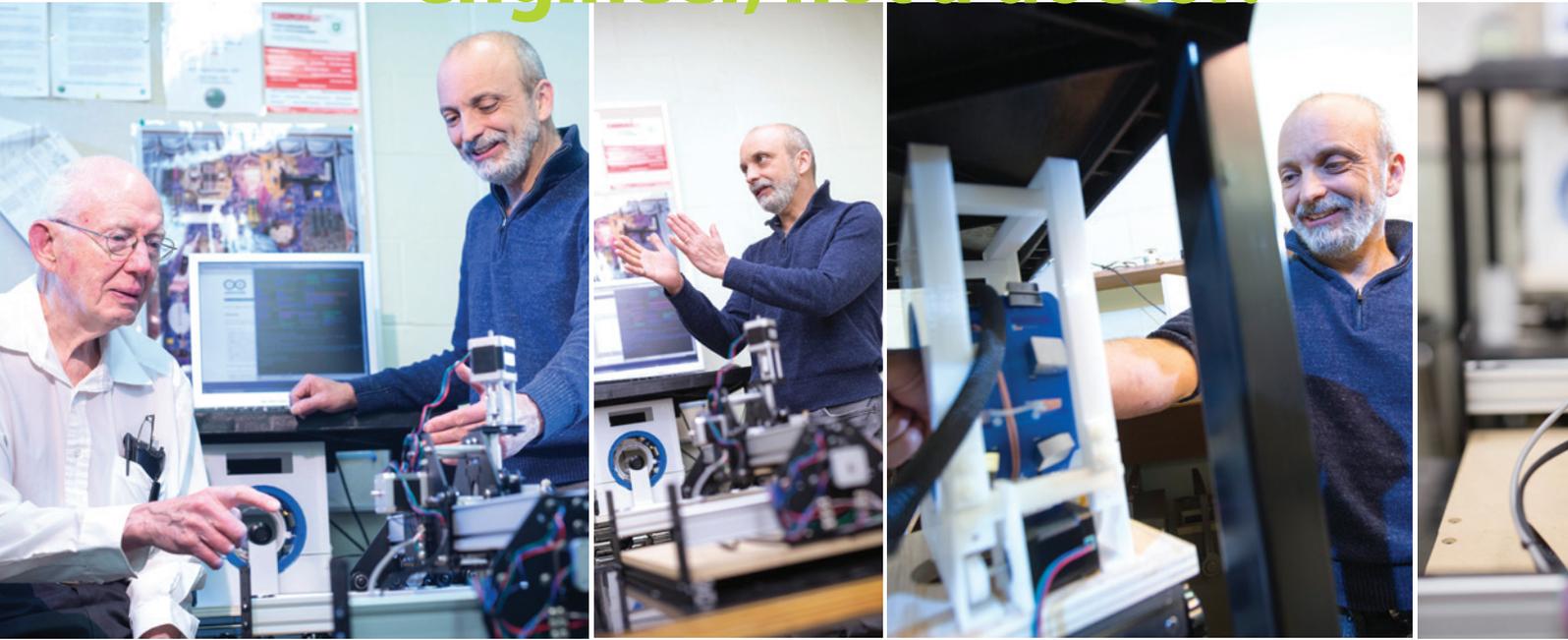
TOOLS OF THE TRADE

Urban planners have been using remote sensing and geographic information system (GIS) technology since the 1980s.

The technology provides a bird’s-eye view, mapping everything from road networks to urban sprawl, green space to flooding patterns, commercial areas to residential density. The ability to overlay data on satellite and aerial maps makes it a valuable planning tool.

Xulin Guo in the Department of Geography and Planning at the U of S said, “Canada is a leader in remote sensing and GIS technology, but I think we are a bit conservative in using it. I think the technology can help us monitor land use, resource use, urban growth, climate change—all those things are connected. All those things impact how we live and our quality of life.”

I'm a mechanical engineer, not a doctor!



 DEE HOBSBAWN-SMITH

In six *Star Trek* movies and the television series of the same name, the USS Enterprise's doctor, Leonard "Bones" McCoy, whips out his hand-held tricorder to scan the bodies of injured and ill crew members.

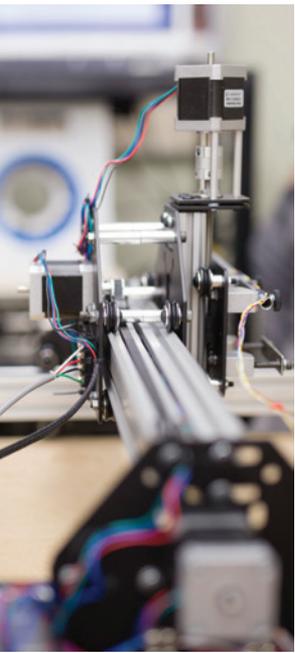
To Gordon Sarty, Bones' tricorder represents a mind meld of his own long-held love of astronomy and the sky, and his work as a mechanical engineer with a PhD in applied mathematics.

The man who once built telescopes as a youth and dreamed of working in aerospace is on the verge of sending a portable MRI to the International Space Station, bringing high-tech medical imaging in outer space one step closer to reality. "Our ultimate objective is to make magnetic resonance imaging (MRI) portable," said Sarty (Msc'90, PhD'95), professor and acting chair of the Division of Biomedical Engineering with the College of Arts and Science.

Sarty is still building things. A typical full-size MRI machine is a large, tubular magnet, about a metre-and-a-half long and 60 centimetres across—big enough to contain a human body. In the basement of the U of S Physics Building, Sarty and two graduate students are developing and fine-tuning a smaller version, large enough to scan a human wrist, with an internal diameter of 18 centimetres and 36 centimetres long. It weighs in at a relatively slender 50 kilograms, light enough to be considered

Gordon Sarty shows the prototype of his wrist MRI to Dr. Stuart Houston (DLitt'87), former head of radiology at Royal University Hospital

 DAVID STOBBE



for inclusion on the International Space Station, where volume, weight and electrical needs are strictly governed. The MRI Sarty is working on is small enough to be considered portable, and at \$250,000, it costs a fraction of its larger cousin's \$2 million price tag.

The project was one of five that won a 2014 Canadian Space Agency competition for new medical-study instruments. Two were selected for further funding in February, but the MRI project didn't make the cut. "It boils down to risk and dollars," he said wryly. "It would be awesome that Canada would be the first ever to put an MRI in space. Canada doesn't have a whole lot of firsts in space."

Sarty remains hopeful that he will receive additional funds toward production of the MRI in next year's allocation of the space agency's budget. It becomes a tight timeline, however. The space station's international collaboration among the European Space Agency, NASA, Japan and Russia is set to expire by 2025 at the latest, and Canada has not signed on to the agreement beyond 2020. Further, by 2030, the space station itself will be allowed to burn up in the Earth's atmosphere. "It will take a couple years to build the MRI," he said. "If we start building now, by 2017, it will get three years in operation."

Sarty is frequently asked, "Why build it, and what is its use?"

"The technological angle is that it's a challenge to get an MRI light enough to put on a rocket," he said in response. "That attracted me to the problem." A full-size MRI weighs about 11 tons. He explained that it is necessary to create a "very perfect" magnetic field, that requires many neodymium magnets. In the lab, he and his team are developing new technology to enable

the MRI to work with imperfect magnets. "It will make the MRI lighter, which leads to greater portability.

"The other reason is that in space, astronauts lose muscle and bone mass because they don't use them," he added. "All the studies to understand why that happens are based on before and after measurement—MRIs before and after, but none while actually flying. It has been a guess to what happens in-between." Participating astronauts on the space station would be tested monthly by MRI if and when the machine reaches the stars.

Beyond space, a smaller, less expensive and portable MRI would be a worthwhile project on planet Earth. "What's really important is to increase accessibility of MRI and eliminate long waiting lines," Sarty said. The machine would not only make diagnostic imaging more affordable, it could be put to use in remote rural and northern communities, in developing countries, war zones and in disaster relief areas.

Sarty has retained his fondness for the sky and is a long-time active member of the Royal Astronomical Society of Canada. When he's not looking at stars, working in the lab or spending time with his family, he and Associate Professor Michael Bradley are busy co-supervising three fourth-year engineering students, Mitchell Tallon, Michael Dorma and Graham Scott, as they prepare their capstone project on measuring magnetic fields.

"My focus is along a businesslike direction," Sarty said. "Within two or three years, I hope to see this [portable MRI] on the market. This is the big project I'd like to see happen, either by working with manufacturers or by solving the technological problems ourselves." ■

HOW AN MRI WORKS

Magnetic resonance imaging (MRI) is a medical technique based on radio waves, magnets and computers, used to investigate the anatomy and physiology of the body, producing images of organs, soft tissues, bone and virtually all other internal body structures.

When a person lies inside the magnetic tube, its magnetic field temporarily interacts with hydrogen nuclei in the water molecules of the human body.

The radio waves excite the spin of the nucleus of the hydrogen atoms, or protons, and the atoms produce very faint signals, that are used to create cross-sectional or three-dimensional images.

MRI is a benign, non-invasive treatment, as opposed to computerized tomography (CT) scans, whose high-energy X-rays ionize the atoms and can lead to cancer later in life.

MRIs are used to assess organs, tissue and bones; they can diagnose stroke and detect breast cancer, tumours, illnesses such as multiple sclerosis, and joint damage or disorders like arthritis.

They can be used to determine the size and function of the heart's chambers as well as any damage caused by heart attacks or diseases.

The hip joint is the most popular site for bone structure assessment, followed by the ankle, then the wrist.

ALUMNI ASSOCIATION PRESIDENT'S MESSAGE



For nearly 100 years, the U of S Alumni Association has been the way for alumni to connect with each other and with the University of Saskatchewan—your university. Every June, we add over 2,500 members to our alumni family, and close to another 1,000 in the fall. We expect to push past 145,000 living alumni this year.

The way that we connect changes over the years. Our first Alumni Association president, Lawrence Kirk (BA'16, BSA'17, MSc'22, LLD'49), didn't have a LinkedIn account or Facebook profile to network with fellow alumni. Alumni were not spread out across the globe in over 115 countries, and keeping a current email address with the alumni office was not on his to-do list.

The reasons we want to maintain a strong connection with and among our alumni remain the same: to enhance the reputation of the institution through alumni success, to celebrate the significant contributions and accomplishments of our alumni, and to build a community among our members.

One of the most significant ways we do that is through the Alumni Achievement Awards. To ensure we are celebrating the best U of S graduates, we rely on you, our alumni members to nominate your fellow alumni for the achievement awards. All the information you need, including the nomination form, can be found at alumni.usask.ca/achieve.

To help build our alumni community, it is important that we gather together from time to time. With the staff at the alumni office leading the charge, we are increasing the opportunities for you to get together. For those of you in Saskatoon, we want you to come back to campus and have some fun. For those of you who have left the city, we are looking for opportunities to facilitate gatherings in your area.

In 2016-17, the Alumni Association will mark its centennial. Please make sure your contact information is up-to-date so you do not miss out on information about the activities and events we have planned to celebrate this wonderful event.

For all this to work, we are going to need your help. We are going to need many volunteers. Most importantly we are going to need a way to contact you. We are going to need you to help spread the word among your network of U of S alumni. Above all, we want you to come out and have some fun and be part of the Alumni Association centennial! I hope to see you there. ■

Sincerely,

Wayne Evanisky, BComm'77

U of S Alumni Association President

**INNOVATION,
PUBLIC SERVICE,
COMMUNITY LEADERSHIP,
PHILANTHROPY...**

Nominate a University of Saskatchewan alumnus for a 2015 Alumni Achievement Award.

The deadline for nominations is June 10.
alumni.usask.ca/achieve

Notice of Alumni Association's annual general meeting.

Date: June 17

Time: 6:30 pm; reception to follow

Place: Convocation Hall, Peter MacKinnon Building

Reports and agendas will be posted at
alumni.usask.ca/association/agm

RSVP at alumni.usask.ca/events/registration
or call 1-800-699-1907

ICYMI
(IN CASE YOU MISSED IT)

Check out the alumni Facebook page and LinkedIn group to help stay connected.



facebook.com/usaskalumni



alumni.usask.ca/linkedin

Update your contact information to make sure you get *Beyond the Bowl* monthly e-news, event invitations, college news and more.

alumni.usask.ca/update

A lot goes on between issues of the *Green & White*...



USSU YOUNG ALUMNI EXCELLENCE AWARD



John Desjarlais Jr. (BE'11)—an engineer with Cameco and MBA student at the Edwards School of Business—is this year's USSU Young Alumni Excellence Award recipient.



Read more at alumni.usask.ca/ussu2015

SHARE YOUR SPOOKY STORIES

Plans are already underway for the third annual U of S Ghost Walk that takes place around Halloween.

Do you have any spooky U of S stories or experiences to share? Did something inexplicable happen to you on campus that made the hair on your neck stand up or send shivers down your spine?

Send your mysterious stories, experiences or legends to alumni.office@usask.ca.

Is there a connection between the living and the dead?

Some peculiar activity involving this Egyptian false door at the Museum of Antiquities leads some to believe there is.





(1)



(1)



(2)



(4)



(3)



(4)



(5)



(6)

- (1) Future U of S alumni hop about the Bowl at the inaugural bunny brunch and egg hunt.
- (2) Alumni in China, some travelling for hours, gathered to hear Interim President Barnhart share news about their alma mater.
- (3) Vancouver-area alumni enjoy the view—and the company—from the Vancouver Lookout.
- (4) A delightful reception with Interim President Barnhart at the historic Empress Hotel in Victoria.
- (5) Sampling some of Calgary's finest craft beer at the Wild Rose Brewery.
- (6) The Saskatchewan Sports Hall of Fame in Swift Current was one of seven stops for the president's provincial tour.

SHARE YOUR STORY. TELL US THE RECENT HIGHLIGHTS OF YOUR CAREER, ACHIEVEMENTS AND PERSONAL UPDATES.

Your story will be shared online in class notes and may be published in the next issue or in college publications.

Visit alumni.usask.ca/classnotes.

1950

Mr. Jack G. Braidek, BSA'51, Admin'70, of Saskatoon, SK, will be posthumously inducted into the Saskatchewan Agricultural Hall of Fame on August 1, 2015.

Mrs. Marleen J. Hacquoil, BA'57, of Jersey, UK, published *The Lady Who Wore Her Cat as a Collar*, an historical novel based on the life of romance writer and silent movie scriptwriter Elinor Glyn.

Dr. Bert A. McBride, BA'59, MD'63, of Saskatoon, SK, retired in March after 42 years of commitment and service to U of S students. He has been working in student health since 1973, was director from 1984 to 1995 and has been instrumental in the advancement of medical services and planning of the new U of S clinic.

1960

Mr. Ron G. Britton, BE'62, of Sanford, MB, was named an Honorary Life Member of the Association of Professional Engineers and Geoscientists of Manitoba.

Prof. Emeritus Radhey Lal Kushwaha, PhD'67, of Saskatoon, SK, received the 2014 Bekker-Reece-Radforth Award from the International Society for Terrain-Vehicle Systems.

Mr. David N. Nettleship, MSc'67, of Head of St. Margarets Bay, NS, known for his science publications on seabirds in the Arctic and Atlantic Oceans, recently published his tenth book *Voyage of Discovery: Fifty Years of Marine Research at Canada's Bedford Institute of Oceanography*.

Dr. Harold A. Fast, Agric'67, DVM'76, of Spiritwood, SK, will be inducted into the Saskatchewan Agricultural Hall of Fame on August 1, 2015.

Ms. Carol A. Shipley, BA'69, of Ottawa, ON, has published her first book *Love, Loss, and Longing: Stories of Adoption*, sharing a unique perspective to the world of adoption as an adoptee, an adoptive mother and an adoption professional.

1970

The Hon. C. Michael Ryer, BA'70, LLB'74, of Canmore, AB, was appointed judge of the Federal Court of Appeal.

Mrs. Elma M. Schemenauer, BA'70, of Kamloops, BC, had her 1940s-era novel *Consider the Sunflowers* published by Borealis Press. It's a story of love, Mennonites, family, faith and betrayal, set mostly in rural Saskatchewan.

Mr. Barry D. Bridges, BE'71, JD'73, of Estevan, SK, was appointed Queen's Counsel by the Province of Saskatchewan.

The Hon. Wayne G. Wouters, BComm'74, LLD'12, of Ottawa, ON, was named a member of the Queen's Privy Council for Canada by the Rt. Hon. Stephen Harper, Prime Minister of Canada. He retired after 37 years of public service, including years as Clerk of the Privy Council of Canada.

Mr. George Da Pont, BA'74, MA'76, of Gatineau, QC, has been appointed the Deputy Minister of Public Works and Government Services by the Rt. Hon. Stephen Harper, Prime Minister of Canada.

Ms. Betty-Ann L. Heggie, BE'75, of Toronto, ON, received the 2015 Women in Mining Canada Trailblazer Award. The honour is the first national award in Canada to recognize the achievements of women who have made a significant contribution to Canadian mining and/or the inclusion of women in the industry.

Mr. Rigas E. Karamanos, MSc'75, PhD'79, of Calgary, AB, will be inducted into the Saskatchewan Agricultural Hall of Fame on August 1, 2015.

Mr. Mark E. Wartman, BA'75, MDiv'79, of Regina, SK, was appointed regional vice-president for the Nature Conservancy of Canada.

Mr. Rob P. McGregor, BSPE'76, BEd'78, of Abu Dhabi, U.A.E., is currently working with the Abu Dhabi Education Council. After two years with the College of Education at U of S as an internship facilitator, he moved to the Middle East, where he has lived for the past year-and-a-half and has worked as an academic vice-principal in a Gr. 10-12 boys' school.

Mr. Regan D. Roy, BSA'77, of Grimsby, ON, has been volunteering as an independent consultant in the city of Ica, Peru, collaborating with local authorities and civil society groups to move forward several large-scale drinking water and sanitation projects that were conceived and designed with Canadian funding and carried out by World University Service of Canada field staff.

Ms. Gail D. Wartman, BA'77, JD'78, of Moose Jaw, SK, a partner with McDougall Gauley LLP, was elected president of the Saskatchewan Branch of the Canadian Bar Association.

Dr. Gaylord C. Wardell, MD'78, of Medicine Hat, AB, was honoured by the Pain Society of Alberta for outstanding contributions to the Chronic Pain Society and to chronic pain patients in Canada. He is recognized both for his success with medical treatments and in the education of patients and multidisciplinary professionals. He retired from anesthesia in 2011 to pursue a chronic pain practice full-time.

Mr. Greg D. Smith, BComm'79, of Swift Current, SK, was appointed chair of the University of Saskatchewan Board of Governors.

Ms. Marion R. C. Mutala, BEd'79, MEd'95, PGD'94, of Saskatoon, SK, released her fourth book titled *Grateful*. She is planning a fifth book coming out in 2016 and a 57-page book of poetry, *Ukrainian Daughter's Dance*. ▶

1980

Mr. W. Dean Sinclair, LLB'80, of Regina, SK, was appointed Queen's Counsel by the Province of Saskatchewan.

Ms. Patricia M. Prowse, BEd'80, MEd'90, BA'06, of Saskatoon, SK, served as student first advisor from October 2013 until June, 2014, a role to which she was appointed by the Government of Saskatchewan's Minister of Education.

Ms. Marjorie L. Denson, BA'81, of Brisbane, AU, received her doctor of musical arts degree in July, 2014. She is a senior lecturer in jazz at the Queensland Conservatorium, Griffith University in Brisbane, Australia, where she has taught for 15 years. She is an active composer and pianist.

Mr. David A. Poulsen, BA'81, Arts'82, of Claresholm, AB, an award winning author, wrote *Serpents Rising*, the first of the Cullen and Cobb Mystery Series from Dundurn Books. He has written 23 books prior to this, but it's his first foray into the world of crime fiction.

Ms. Diana K. Lee, JD'81, of Regina, SK, was appointed Queen's Counsel by the Province of Saskatchewan.

Dr. David E. Stark, BSc'82, DMD'90, of Saskatoon, SK, was awarded the Distinguished Service Award for 2014, by the College of Dental Surgeons of Saskatchewan, after 24 years of service to his profession.

Ms. Mary M. Donlevy-Konkin, BA'82, LLB'85, of Saskatoon, SK, was appointed Queen's Counsel by the Province of Saskatchewan.

Mr. James K. Hill, BEd'83, BA'87, of Seattle, WA, USA, was appointed the Canadian Consul General in Seattle.

Ms. Lori M. Florence, BEd'83, MEd'98, of Saskatoon, SK, recently retired after 31 years with Saskatoon Public Schools.

Mr. Tony P. Bidulka, BA'83, BComm'91, BEd'91, of Saskatoon, SK, was named a co-recipient of the 2014 CTV Saskatoon Citizen of the Year, along with his partner, Herb McFaull.

Mr. Bill E. Gerla, BSP'84, of Humboldt, SK, was elected president-elect of the Saskatchewan College of Pharmacists for 2014-15.

Mr. D. Kent Fraser, BSA'84, of Calgary, AB, was elected chair of ShelterBox Canada, part of a global charity providing shelter and essential materials to families who have lost everything in a disaster.

Ms. Heather A. Koshinsky, BSc'84, Sc'85, PhD'94, of El Cerrito, CA, USA, received a 2015 Alumni of Influence award from the U of S College of Arts and Science.

Mr. Brent A. Hesje, BComm'85, of Edmonton, AB, was named chair of the Board of Governors of the Northern Alberta Institute of Technology (NAIT).

Sgt. Keith W. Briant, BA'86, of Saskatoon, SK, received a 2015 Alumni of Influence award from the U of S College of Arts and Science.

Dr. Timothy R. Daniels, MD'86, of Toronto, ON, an international expert in foot and ankle surgery at St. Michael's Hospital in Toronto, was appointed the hospital's first chair in foot and ankle research—the first foot and ankle chair in Canada and one of the few that exist in North America.

Mr. John P. Schmeiser, BA'86, of Chestermere, AB, was appointed CEO of the Western Equipment Dealers Association, an international trade association representing farm, construction and outdoor power equipment dealers in four provinces and five American states.

Mr. Hugh-John A. MacIsaac, BE'86, of Cambridge Bay, NU, is currently working as a resident geologist with the Government of Nunavut in Ikaluktuutiak and teaching prospecting to local Nunavummiut. He has conducted gold exploration at a variety of overseas mine sites, including the Sons of Gwalia and Marvel Loch mines in Western Australia.

Mr. D. Scott Banda, BA'86, LLB'90, of Saskatoon, SK, received a 2015 Alumni of Influence award from the U of S College of Arts and Science.

Ms. Jody D. Drope, BComm'87, of Kelowna, BC, was appointed vice-president, human resources and environment, health and safety for the electric power and gas distribution company, FortisBC.

Mr. Bruce W. Waldner, BSc'87, BEd'89, of Saskatoon, SK, recently earned his PhD in applied computer science from Northcentral University in Arizona, USA.

Ms. Pat A. G. Quaroni, JD'87, of Regina, SK, was appointed Queen's Counsel by the Province of Saskatchewan.

Mr. Dan J. Florizone, BComm'88, of Saskatoon, SK, assumed the role of president and CEO of the Saskatoon Health Region.

Dr. Parmjit S. Sohal, PhD'88, of Surrey, BC, was awarded the 2014 Reg L. Perkin Award by the College of Family Physicians of Canada and was named the 2014 Family Physician of the Year by the College of Physicians and Surgeons of British Columbia.

Mr. Gary W. Sereda, BSA'89, of Saskatoon, SK, will be retiring from the Canadian Armed Forces in May 2015, after 25 years of service as a military pilot.

1990

Mr. Joe K. Schmutz, BEd'91, of Saskatoon, SK, was awarded the Cliff Shaw Award from Nature Saskatchewan.

Mr. Tyler A. Campbell, BA'91, Arts'93, BEd'96, of Saskatoon, SK, was presented with the Medal of Bravery by His Excellency the Right Honourable David Johnston, Governor General of Canada on March 4, 2015. He and a colleague rescued a patient from a burning hospital room in Saskatoon. They had to retreat several times from the area due to the thick smoke, but they managed to locate the patient and bring her to safety.

Mr. David W. Chorney, BEd'92, BA'96, of Edmonton, AB, received the 2014 Rutherford Award for Excellence in Undergraduate Teaching from the University of Alberta.

Mr. Nevin C. Halyk, BEd'92, MEd'11, of Foam Lake, SK, was named one of Canada's 40 Outstanding Principals for 2015.

Ms. Shirley A. L. Collingridge, BA'93, MA'98, of Saskatoon, SK, earned two silver medals at the Adult National Figure Skating Championships in 2014. She skates out of the U of S Anne Collingridge Figure Skating Club, which she founded in her mother's honour in 1995. The skating club is open to students, alumni and the public, 16 years of age and older.

Ms. Joy N. Crawford, BComm'93, of Saskatoon, SK, was elected by the University of Saskatchewan Senate to serve on the U of S Board of Governors.

Dr. Nora D. McKee, MD'93, of Saskatoon, SK, received the 2014 Reg L. Perkin Award from The College of Family Physicians of Canada.

The Hon. Michelle G. Marquette, LLB'93, of Kelvington, SK, was appointed judge of the Provincial Court of Saskatchewan in Wynyard.

Ms. Piya Chattopadhyay, BA'95, of Toronto, ON, received a 2015 Alumni of Influence award from the U of S College of Arts and Science.

Mr. David M. Stack, BA'95, LLB'99, of Saskatoon, SK, was appointed Queen's Counsel by the Province of Saskatchewan.

Mr. Bob F. Gerwing, BE'95, of Calgary, AB, was appointed the vice-president, facilities engineering for Sunshine Oilsands Ltd.

Ms. Rachel K. McCormick, BA'97, of Bethesda, MD, USA, is a Canadian diplomat currently serving in Washington D.C. as counsellor and head of the energy and environment section.

Mr. Craig S. Reynolds, BComm'98, MPAcc'99, of Regina, SK, has assumed the position of president and CEO of the Saskatchewan Roughriders football club.

Ms. Carol E. Hay, BA'99, of Lowell, MA, USA, received the Kavka Prize in Political Philosophy. The philosophy professor and gender studies director at the University of Massachusetts, Lowell, is the first junior scholar to be awarded the prize that is widely regarded as the most prestigious in political philosophy.

2000

Dr. Wendy M. McClelland, DVM'02, of Calgary, AB, was named one of 2014 W100 Top Female Entrepreneurs by *PROFIT* and *Chatelaine* magazines.

Dr. Thomas Yu, DMD'03, of Calgary, AB, was named one of *Avenue Calgary's* Top 40 under 40, Class of 2014. He was also the winner of Piano Hero, CBC Music's search for Canada's favourite amateur classical pianist.

Ms. Pam K. Chamberlain, CTESL'03, of Calgary, AB, has published her second book, *In the Company of Animals: Stories of Extraordinary Encounters*, a collection of entertaining and thought-provoking tales about the complicated relationship between humans and animals.

Mr. Jerred L. T. Moore, JD'03, of St. Paul, AB, along with his wife Renee Tulk Moore (JD'07), have opened their own law firm, New Beginning Law in St. Paul. The firm focuses on criminal and family law.

Mr. Zachari J. Logan, BFA'05, MFA'09, of Saskatoon, SK, received a 2015 Alumni of Influence award from the U of S College of Arts and Science.

Mr. Tanner J. Desrosiers, BComm'07, of Airdrie, AB, has earned his professional designation as a certified management accountant from the Certified General Accountants Association of Saskatchewan.

Ms. Renee L. Moore, JD'07, of St. Paul, AB, along with her husband Jerred Moore (JD'03), have opened their own law firm, New Beginning Law in St. Paul. The firm focuses on criminal and family law.

Dr. Aaron D. Beattie, PhD'07, of Saskatoon, SK, was appointed a director of the Barley Council of Canada.

Mr. Jeffrey F. Fedosoff, CACP'08, of Saskatoon, SK, along with his wife Diana Fedosoff (BusAdm'09) purchased the Petrofka Orchard (located 40 miles north of Saskatoon) with the goal of producing fresh, healthy and sustainably grown food for consumers.

Ms. Diana L. Fedosoff, BusAdm'08, of Saskatoon, SK, along with her husband, Jeffrey Fedosoff (CACP'08) purchased the Petrofka Orchard (located 40 miles north of Saskatoon) with the goal of producing fresh, healthy and sustainably grown food for consumers.

Mr. Justin M. Kosar, BSP'08, of Saskatoon, SK, was elected the vice-president of the Saskatchewan College of Pharmacists for 2014-15.

Mr. Robert J. Anthony, BE'08, of North Battleford, SK, was hired by the City of North Battleford as a civil engineer.

Mr. Shankar B. Das, MBA'08, of Saskatoon, SK, is president of the Saskatchewan Institute of Agrologists. He currently works for the Saskatchewan Ministry of Agriculture and is the founder of the Canada-Bangladesh Development Centre.

Ms. Jaimee D. Schmidt, BE'08, of Brandon, MB, volunteers with Engineering Ministries International Canada to provide master planning and design work. He has been on over 10 trips with this organization, including his most recent trip in 2015 to Tactic, Guatemala to help plan and design an orphanage.

2010

Mrs. Karen E. Siemens, BComm'10, of Saskatoon, SK, has earned her professional designation as a chartered accountant from the Institute of Chartered Accountants of Saskatchewan.

Mr. Braden B. Davie, BSN'11, of Halifax, NS, recently began a term as councillor-at-large for the College of Registered Nurses of Nova Scotia.

Ms. Zayna E. Jaafar, BSP'12, of Calgary, AB, is now authorized to prescribe as a pharmacist.

Ms. Erica D. Bennett, BComm'12, of Dodsland, SK, has earned her professional designation as a chartered accountant from the Institute of Chartered Accountants of Saskatchewan.

Ms. Ying Zhang, BComm'12, of Saskatoon, SK, has earned her professional designation as a chartered accountant from the Institute of Chartered Accountants of Saskatchewan.

Mr. Carson G. Heagy, BComm'12, of Saskatoon, SK, has earned his professional designation as a chartered accountant from the Institute of Chartered Accountants of Saskatchewan.

Ms. Katelle T. J. Halpape, BComm'13, of Pense, SK, has earned her professional designation as a chartered accountant from the Institute of Chartered Accountants of Saskatchewan.

THE ALUMNI ASSOCIATION HAS NOTED, WITH SORROW, THE PASSING OF THE FOLLOWING GRADUATES.

Names are listed by decade of receipt of their first U of S degree. Maiden names or surnames of individuals while they were students may not be available.

Degrees, date of death and last-known address can be found online at usask.ca/greenandwhite.

1930

Geake, Lloyd W.
McConnell, Gordon H.
Tallman, Pauline J. (Joyce)

Price, Mary E.
Roberts, Evelyn J. (Jean)
Sargent, Leslie R.
Schmitt, Gilbert R.
Skinner, Hugh R.
Stubbins, Robert A.
Thompson, Margaret A. (Peggy)
Trawin, John
Vockeroth, Robert E.
Wieler, Frank R.
Zaharuk, Peter
Zepick, Reuben L

1940

Anderson, William J.
Andres, Otto J.
Andrew, Stewart W.
Baker, James H.
Benton, Ruth L.
Campbell, William R.
Chapman, Robert E.
Collins, Darrall S.
Cooke Garvie, Maxine O.
Corbett, William J.
Crocker, Keith M.
Crocker, Margaret J. (Jean)
Davidson, Pearl J.
Eley, Lawrence S.
Fedoroff, Muriel E. (Elaine)
Fishman, Sherold
Fullerton, James A.
Gray, George R.
Haraldson, John D. (Jack)
Hordern, William E.
Hulicka, Irene M.
Jones, Albert L. (Lloyd)
Lang, Edward E.
Little, Margaret F.
MacPherson, Ritchie,
McEwen, Lilian M.
McLeod, Jeanne-Marie
Miller, James E.
Miller, Margery E.
Murch, Hewitt J.
Pedersen, Bert H.
Pinder, Herbert C. (Herb),

1950

Abbott, Robert G.
Akehurst, Herbert R. (Herb)
Banfield, Leonard C.
Beattie, Albert C.
Billesberger, Lambert G.
Block, Erwin W.
Bonstrom, Arthur M.
Bowman, Gordon H.
Bowness, Phyllis P.
Campbell, Duane B.
Chupick, Michael L.
Cojocar, Ronald G.
Coleman, Thomas H.
Collins, Barry D.
Cooke, Joseph A.
Cropp, Mary I.
Cryderman, John N.
Demetrick, Lu-Anne M.
Doherty, Gudrun E.
Driver, Darrol D.
Duff, James G. (Gordon)
Emmons, Wilma D.
Fobel, Edwin W.
Garth, Alan W.
Goodman, Mavis E.
Hagen, Arnold B.

Harborenko, John W.
Hardy, George N.
Harilstad, Ivar O.
Harold, Lucie D.
Harris, Arthur L.
Hartall, William.
Herman, Samuel
Hill, Robert C.
Hillis, William I.
Hnatiuk, John E.
Hornford, Helgi
Jacobs, Lucien W.
Jamieson, Jamesina G.
Jenkins, John
Kavanagh, John A.
Keeler, Daniel R. (Dan)
Kernen, Herman W.
Kolbinson, Thordur (Thordy)
Korchinski, Illirion J. (Larry)
Kujawa, Sergej
Lenz, Mary J.
MacCuish, Patrick G.
McKay, William A.
McKenzie, Ronald I.
McKinnon, Marianne
McLeod, Keith A.
Meagher, Joseph W. (Wilf)
Mercier, Joseph A.
Miklos, Erwin
Mills, Walter L.
Mitchell, Frederick M. (Fred)
Nisbet, Earl G.
Njaa, Marion B.
Oatway, Lillian I.
Pfeifer, James C.
Phillips, Kathleen M. (Kay)
Rempel, Albert
Sawula, Orest
Sowinski, Joseph
Tabashniuk, Metro W.
Tinkess, Robert L.
Torrle, James E.
Vanterpool, Alan

Windrem, Orville C.
Young, Robert W.

1960

Bernhauser, William A.
Blair, Dale C.
Bollman, George A.
Carlson, Patricia (Trish)
Carter, George W.
Christopher, Iown A.
Crosson, Lorne S.
Dice, David R.
Drabinasty, Elizabeth H.
Else, Margaret E.
England, Douglas M.
Fraser, Robert W.
Fries, Arnold A.
Fyhn, Alvin M.
Gerein, William F. (Frank)
Giles, Betty L.
Haines, Robert N.
Hildred, Robert J.
Hohne, Sheila I.
Johnson, Kenneth D.
Kocur, Alec S.
Korchin, Lawrence J. (Laurie)
Kowalenko, Albert E.
Krahn, Jacob H.
Lambert, William B.
Leinan, Arvid B.
Litowski, Thomas J.
Little, Stephen J.
Lutz, Albert W.
Magnuson, Dale W.
Mathieu, Donald G. (Don)
Mazur, Ernest L.
McBeth, Fredrick C. (Fred).
McLellan, Robert W.
Miessner, Thora A.
Negraeff, Alexander D.

THE ALUMNI ASSOCIATION HAS NOTED, WITH SORROW, THE PASSING OF THE FOLLOWING FACULTY, STAFF AND FRIENDS.

O'Brien, Eleanor
Ostafie, Marcel N.
Provost, EVELDA J.
Pyne, Mary E.
Reese, Vern O.
Schappert, Henry J.
Schmidt, Harold L.
Senchyna, William L.
Senkiw, John P.
Sowa, Margaret J. (Jane)
Struble, Dean L.
Stuart, James A.
Vetzal, John
Vinge, Alvin B.
Wallin, Mary L.
Walter, Raymond H.
Woolley, Donald T.

1970

Anderson, Heather A.
Bahrich, Michael
Bailey, James A.
Belyk, Darrell A.
Braidek, Dorothy
Broudy, Harry I.
Burton, Betty J.
Carter, Audrey L.
Charron, Florence L.
Cole, Joan H.
Craik, James G.
Cushon, Allan B.
Dawson, Susan A.
Dessouki, Ezzat A.
Donlevy, William R. (Rod)
Foley, Carolyn J.
Friesen, Naomi L.
Harries, Hubert R.
Heisler, Annette A.
Henderson, Yvonne A.
Hillis, Richard L. (Rick)

Johnson, Clement J.
Konlup, Loretta
Laing, Bevan D.
Lambert, Winona M.
Lee, Joseph P.
MacDougall, Sheila J.
McKinlay, Trudie N.
Mulhern, Allan E.
Mullord, Donald J. (Don)
Nostbakken, Richard J.
Pantekoek, Jacobus F.
Parkinson, Shirley C.
Patrick, James A.
Pindar, Eric O.
Polischuk, Randall J.
Popoff, Alicia D.
Reeson, David K.
Regier, Bernice
Rittinger, Glen D.
Rothwell, June R.
Samways, Maxine K.
Soltys, Russell J.
Spencer, Constance E.
Stewart, Duane W.
Tekelenburg, Alice D.
Tetzlaff, Norbert L.
Vigoren, Wilma L.
White, William E. (Bill)

1980

Avann, Thomas A.
Beliveau, Susan L.
Broberg, Pamela F.
Carlson, Maryellen D.
Dodge, James L.
Ducasse, Marie H. (Hilda)
Eddy, Kelly P.
Eng, Peter G.
Gutenberg, Beverley A.
Haanen, Deborah K.

Harshman, Frederick C.
Holroyd, Mavis M.
Howell-Pick, Arlene J.
Johnson, Garry D.
Kirby, Coleman J. (Cole)
Martin, Janice J.
Maxwell, Doris S. (Sandra)
Mazer, Bridget A.
Pittman, Alice V. (Verna)
Reaser, Sylvia M.
Reichle, Colin W.
Schaller, Huntley J.
Van Goozen, Bruce N.
Wright, Clifford E. (Cliff)

1990

Chui, Daniel W.
Cross, Richard J.
Henry, John A.
Janis, Michael J.
Moore, Brian G.
Poppleton, JoAnn L.
Van Essen, Anne L.

2000

Bouchard, Aaron J.
Hinz, Nancy M.
Sylvester, Jeffrey D. (Jeff)

2010

Ponomarenko, Yakiv
Renaut, Duncan A.

Baker, Charles G.
Bateman, Eleanor E. (Eileen)
Brooke, James A.
Englot, Geraldine J.
Guerrero, Alfredo,
Harder, Fred R.
Hazelwanter, Alfred J.
Kaplan, David L.
Kinar, Liana R.
King, Lindy
Lane, Peter R.
Langford, Fredrick F.

Marken, M. J.
Nagus, Donna C.
Nixon, Howard R.
Perrott, Betty
Peters, Henry
Roberts, Thomas J.
Santha, John
Steckler, Linda J.
Wallace, Raina L.
Wells, Marguerite L.
York, Elsie
Zielke, Colleen M.

Correction

In the fall 2014 issue, Carl Melnyk (BA'77, BEd'85) and Michael Callahan (PhD'86) were inadvertently included in the In Memoriam listing. We are happy to share that they are alive and well. We apologize for the error.

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Senate Election 2015

**Voting is open from June 8 to
June 29, 2015 at 4 pm**

There are five member-at-large positions, and five district positions available in the following districts:

District 1	Weyburn - Estevan - Carlyle
District 5	Kindersley - Delisle - Lucky Lake
District 6	Wynyard - Esterhazy
District 10	Sandy Bay - Creighton - Stony Rapids
District 13	Saskatoon

All members of Convocation are eligible to vote for member-at-large candidates. Only members of Convocation resident in the district may vote for the candidate in their district.

A list of candidates and biographical information for each candidate is available at the University Secretary website at usask.ca/secretariat/governing-bodies/senate/elections.php

How to vote

1. Using your web browser, go to **paws.usask.ca**
2. Log in using your NSID and password
3. Click on the "Vote" tab and follow the instructions provided. You may vote for up to five candidates for members-at-large and for one candidate for the district election (if you reside in that district).
4. Once you have submitted your ballot you will not be able to go back in to change your vote.

To vote you will need a U of S Network Service Identifier Number (NSID) and a password. All graduates have NSIDs and passwords; if you do not know your NSID number or password, please contact the Customer Service Centre, University Advancement at 306-966-5186 or 1-800-699-1907 or by e-mail at alumni.office@usask.ca.

If you are not able to vote electronically, a paper ballot will be available from the Customer Service Centre. Returned ballots must be received by June 29, 2015.

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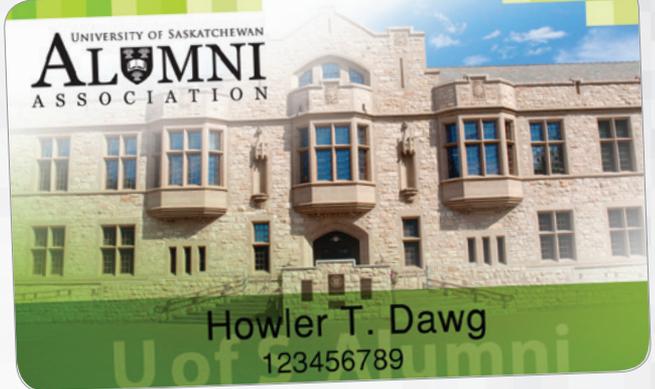
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— Henry Ford



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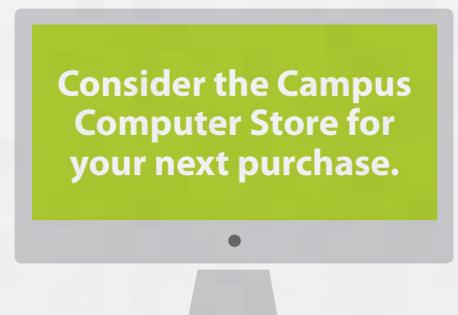


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I developed my passion for agriculture growing up on a small farm near Fairlight, in southeast Saskatchewan. The hard work was challenging at times—but I loved every bit of it.

That passion is what brought me to the University of Saskatchewan to study plant sciences. My research focuses on cleaver weeds in Western Canada. As I learn more about this species my project expands. Ten years ago, I never would have dreamed that I would be helping farmers with my research.

However, I wouldn't have been able to pursue these dreams without the support of scholarships, which have had a profound effect on my life, my studies and my career. There is absolutely no way I would be where I am today without this support."

– **Andrea De Roo, B.S.A. 2013, M.Sc. Candidate**

Legacy gifts allow students to pursue their passions and fulfill their educational and career aspirations. Andrea De Roo received scholarship support through the Douglas Christie Ferguson Fund, which was established through a generous bequest gift.

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Bev Cooper

Associate Director of Development, Planned Giving
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