

GREEN & WHITE

an issue of

health

here comes the

silver tsunami

let's talk about it:

mental health

taking the pulse of technology

get vaccinated!

the health of a province



GREEN&WHITE

UNIVERSITY OF SASKATCHEWAN
ALUMNI MAGAZINE
FALL 2017

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APPENDICITIS PARKINSON'S
COMMON COLD OVERACTIVE THYROID
MEDITATION ROOT CANAL
MALARIA CONCUSSION EXERCISE
ANXIETY ATTACK AUTISM
COUGH HEART ATTACK ADHD
DIABETES MUSCULAR DYSTROPHY
NOT YET VACCINATED PREGNANT E. COLI INFECTION
LACTOSE INTOLERANT HERPES
BURSITIS DEPRESSION AIDS CUT
MIGRAINES LYME DISEASE
CHEST INFECTION ALZHEIMER'S
HERNIA HIGH CHOLESTEROL HEPATITIS
WHOOPING COUGH
OVER 65 AND HEALTHY PALEO
CELIAC BREAST CANCER CALLOUS
PNEUMONIA MEASLES BRUISES
UNDERWEIGHT MUSCLE SPASMS LEPROSY
LACK OF HEALTH INSURANCE LOW BLOOD PRESSURE
ANTERIOR CRUCIATE LIGAMENT TEAR BURN
FLU RHABDOMYOLYSIS ACNE
FETAL ALCOHOL SYNDROME SORE THROAT
MENINGITIS DRY MOUTH
EAR INFECTION BRAIN TUMOUR



TOOTHACHE DEHYDRATION
CHRONIC FATIGUE SYNDROME
SALMONELLOSIS
EPILEPSY DENGUE FEVER
OSTEOPOROSIS
ROTATOR CUFF INJURY
STROKE
INFECTIOUS ASTHMA ALCOHOL POISONING
MULTIPLE SCLEROSIS
MENTAL HEALTH
WEST NILE VIRUS SUNBURN
ACHILLES TENDON TEAR
BONE FRACTURE
BLOOD CLOT ALLERGIES
CHRONIC LOWER BACK PAIN
ANOREXIA ECZEMA
SPRAINED ANKLE CROHN'S
YELLOW FEVER LUPUS
BLOOD SUGAR OBESITY ARTHRITIS
LUNG CANCER FOOD POISONING
MUMPS CHICKENPOX
ULCER RUBELLA
ATHLETE'S FOOT BIPOLAR
POST-TRAUMATIC STRESS DISORDER
KIDNEY STONES

EDITOR'S NOTE

The strange thing about health is that, for something so critical to all of us, it doesn't come to mind until it begins to waver.

It is natural to not give disease and injury much thought until you face them. Why would someone ponder extensive wait times unless they are stuck in a waiting room? And public health issues? Not day-to-day relevant unless they are in your neighbourhood making headlines.

But some people, like a great many U of S students, researchers and graduates, think about health all the time. So, when we tossed around ideas for the next issue of the *Green & White*, we were a little surprised that this topic had yet to be covered; it seemed like a natural choice.

Once we started to sketch out potential stories, we figured out why health had yet to be tackled as a theme: it was nearly impossible to narrow down all the stories into one 48-page issue. Starting early in the university's history, health research has been foundational; it's time to share our institution's incredible contributions.

Walter Murray's first president's report—in 1909 before any buildings existed or any classes were offered—outlined his building plans for campus and those included "A College of Medicine with School of Pharmacy and adjacent Hospitals." More than a century ago, our first president had a vision of the university meeting the health needs of the province.

Since that time, the U of S has delivered on Murray's vision, growing to include a full complement of colleges and schools dedicated to health sciences. We train practitioners to look after the sick and injured. We conduct research to improve treatment and cure disease. We analyze policy to ensure the health systems hum.

From Saskatchewan, we bring our ideas to the world. And as the stories in this issue hint, we are just getting started.

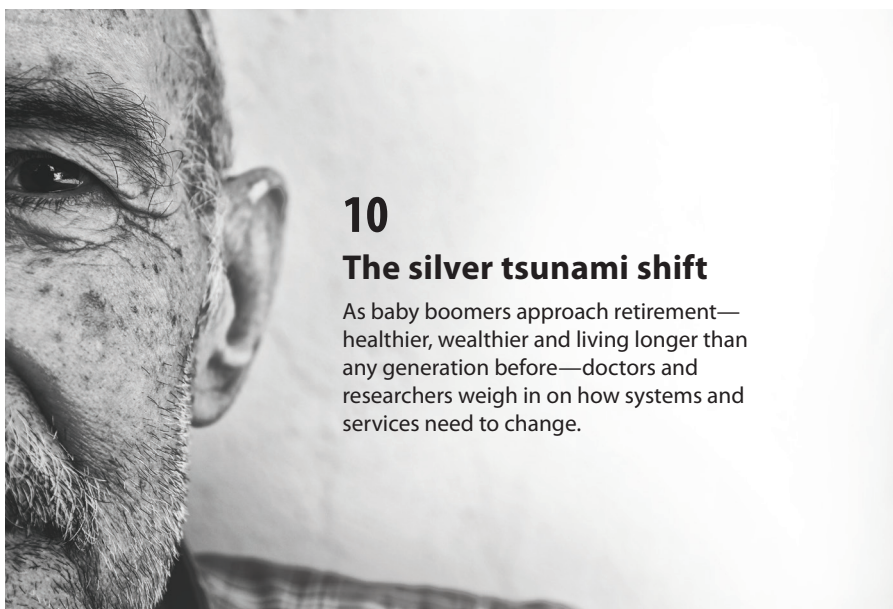
Kris Foster (BComm'98)
Acting editor

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PRESIDENT'S MESSAGE



A good measure of a university's value is found in the contributions it makes to the communities it serves. One could, of course, look to economic measures, like the more than \$1 billion our university contributes to Saskatchewan's economy each year. That is certainly an excellent determinant of value.

But the University of Saskatchewan's efforts in the fields related to health science also provide excellent examples of our impact locally, provincially, nationally and globally. Those effects are amplified when considering the success we have in educating our students who become engaged and responsible global citizens; throughout our history, we have more than 150,000 examples of that around the world in our growing family of alumni.

“No single researcher in a single discipline will solve the world’s most pressing problems alone. Reaching across boundaries and encouraging interdisciplinary collaboration is something we are remarkably successful at doing.”

And when you narrow the focus—for example, the accomplishments of our researchers and graduates in health sciences—our impact is again easy to see.

Indeed, the critical field of health research has been a cornerstone on which our university has been built and an area in which we have developed a reputation as a leader throughout our home province and far beyond those borders. We have a long history of delivering health solutions: we were the first to successfully treat a cancer patient using cobalt-60 radiation; we were the first in Canada to complete a kidney re-transplant; and we were the first to use ultrasound to directly

visualize human ovulation. More recently, thanks to our innovation infrastructure, we are now leading efforts in producing medical isotopes and radioisotopes, developing vaccines for humans and animals, and training the next generation of interdisciplinary health practitioners for Saskatchewan and beyond.

While I don't know what the next health breakthrough at the university will be, I do know that any solution will be found through the work of many people across diverse disciplines. No single researcher in a single discipline will solve the world's most pressing problems alone. Reaching across boundaries and encouraging interdisciplinary collaboration is something we are remarkably successful at doing. In the area of health, in particular, we are well placed to bring varied disciplines together to bear down on global issues. It is the very essence of the design and development of the Health Sciences Building.

This issue of the *Green & White* has a limited number of pages, and we couldn't come close to covering all of the amazing work being done by members of our university community. But what we have covered is a wide variety of topics—mental health, aging, technological applications, vaccinations and health issues unique to Saskatchewan—that showcase how U of S graduates and researchers are contributing to finding solutions in such a complex and important field.

After reading this issue and thinking about our proud tradition in the field of health, I am fully confident, as I am sure you will be too, that the next U of S “first” is just around the corner. ■

A handwritten signature in black ink, reading "Peter Stoicheff". The signature is written in a cursive, flowing style.

Peter Stoicheff
President and vice-chancellor
University of Saskatchewan
uofs.president@usask.ca

REMEMBER WHEN



A group of students and a nurse stand outside Saskatchewan Hall. Two students are holding communicable disease certificates in 1934. Photograph Collection, A-8806.



Three nurses and a dog on the steps of the infirmary in 1934. Photograph Collection, A-8804.

Health insurance for students

Four decades before the Government of Saskatchewan enacted a system of universal health services, the students of the University of Saskatchewan created a health insurance plan on campus.

 PATRICK HAYES (BA'80, MA'89)
UNIVERSITY ARCHIVES AND SPECIAL COLLECTIONS
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Student Health Services moved to Place Riel Student Centre in 2011.

President Walter Murray described the plan in his 1925-26 annual report: "Two years ago the Students Representative Council inaugurated a Benefit Fund for the relief of students who received injuries while participating in University sports. The fund has proved so beneficial that next year provision will be made to enlarge the Fund to cover sickness as well as accidents. The University has also undertaken to make greater provision for the medical examination and care of the students."

That same year, Murray noted: "There has been much serious illness among the students during the past session. An epidemic of mumps was followed by another of measles. A larger number than usual went to the hospital for serious operations. Death came to three students and to Mrs. Grant, who had been living with her daughter, the superintendent of Qu'Appelle Hall."

The initial fee was \$2 per student, rising to \$3 for the more comprehensive plan. Participation was mandatory and covered the academic year. A student could be refused coverage for pre-existing conditions such as "structural defects of the eyes, ears, nose or throat." Costs for the treatment of sickness was covered up to \$50. Medical cost for athletic injuries would be paid up to \$150. Expenditures could include "medical fees, medical supplies, hospital charges, nurses' fees and transportation for treatment." The plan fell short in covering common but serious conditions such as appendicitis where treatment cost could be more than \$200 but payments only covered the first \$50.

The plan was administered by a board consisting of the president of the university, a medical advisor, the secretary and treasurer of the Students Representative Council, the president of the athletic directorate and the business manager of the university. Any surplus in the plan would be retained by the plan. Any shortfall was

guaranteed by the university's Board of Governors.

In 1928, a daily clinic was established in Saskatchewan Hall between the hours of 11 am and noon. All students were entitled to free consultations. The plan also operated an infirmary staffed by nurses and located in one of Emmanuel College's original wooden structures located east of Rugby Chapel on what is now College Drive.

The plan continued with only minor changes until the implementation of the *Medical Care Insurance Act* on July 1, 1962. The University Health Services Program was transferred to the College of Medicine in 1963. A new Residence Sick Bay was completed in Saskatchewan Hall at the end of 1964. This consolidated functions once scattered across the campus into a single location. The new quarters consisted of eight beds and a resident nurse's suite. Medical records were kept in the attic known to staff as "the bat room." In 1970, a psychiatric program was added to the services offered.

Student Health Services remained in Saskatchewan Hall until 2011 when it moved to the newly renovated Place Riel Student Centre. As of September 2017, health and counselling services merged into one unit called the Student Wellness Centre, located on the third and fourth floors of Place Riel. The new centre offers urgent and non-urgent physical and mental health care to students and their spouses and children. It also offers physiotherapy, massage and chiropractic care to all staff, faculty and students, and provides health education through mindfulness meditation classes and Peer Health Mentor programming.

Today full-time, on-campus students automatically pay for a health and dental plan provided through their undergraduate or graduate student association. ■

ON CAMPUS NEWS

U of S in *The New York Times*

This past June, the University of Saskatchewan was featured in *The New York Times* showcasing its successes in Indigenous engagement and reconciliation.

Set during the annual Graduation Powwow, *The New York Times* spoke with those involved in campus efforts to increase Aboriginal initiatives, including President Peter Stoicheff, former chancellor Blaine Favel, and Indigenous and gender studies professor Priscilla Settee.

Stoicheff spoke of the university's initiatives on campus to bolster Aboriginal success, including involvement with reconciliation initiatives.

"If it's not going to be us in a province like this, leading the universities' response to the Truth and Reconciliation Commission, who is it going to be?" he said. "If not now, when?" ■



Engineering success

Suzanne Kresta, currently an engineering professor and associate dean in the Faculty of Graduate Studies and Research at the University of Alberta, will begin a five-year term as dean of the College of Engineering effective January 1, 2018.

"The reputation of the College of Engineering at the University of Saskatchewan is outstanding, both in terms of research and student experience," said Kresta, who earned a Bachelor of Science degree at the University of New Brunswick, a Master of Science at Leeds University and a PhD from McMaster University. "We have a very comprehensive academic offering in the college, and that is critical to maintain as we focus on training the next generation of professional engineers in the areas of

great importance to the province, country and world."

Kresta, an accomplished researcher in the area of turbulent mixing, who has worked in sectors ranging from drinking water to cosmetics and from hydrometallurgy to oilsands extraction, is perhaps even more regarded for her teaching excellence, having received the Engineers Canada Medal for Distinction in Engineering Education—the highest engineering education award in Canada—in 2014. ■



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



A generous prescription

With a \$1.6-million donation from Apotex to the College of Pharmacy and Nutrition—the largest donation in the college’s history—a number of college initiatives and activities will get a big boost.

Kishor Wasan, dean of the college, expressed his gratitude for this new investment, and thanked Apotex for its “continued support and belief in the research and community practice initiatives within the college. This funding is a game changer for us and will help the college continue to be one of the best programs in the country.”

The gift, to be received over eight years, builds on a long-standing history of initiatives supported by Apotex in the college. The most notable project, supported by a \$1.5-million donation in 2008, is the Apotex Pharmacy Professional Practice Centre, where students work in real-life pharmacy settings to learn to counsel patients and work as a team. ■



New nursing dean

Huey-Ming Tzeng stepped in as dean of the College of Nursing for a five-year term on September 15, 2017.

Tzeng, previously dean of the Whitson-Hester School of Nursing at the Tennessee Technological University, said the college has a long tradition of training excellent nursing clinicians, both at its main campus and throughout the province as a pioneer of the “learn where you live” model, a critical aspect of building connections with community.

“The college has proud, long-standing history and tradition, and I look forward to working with our outstanding faculty, staff, students and alumni, as well as our talented colleagues across the campus and in the communities we serve, to continue building our college into a model to which others aspire,” said Tzeng, who earned a Bachelor of Science in nursing from National Yang-Ming University in Taiwan and a Master of Science in nursing and PhD from the University of Michigan. ■

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



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First vice-provost of Indigenous engagement named



The U of S brought back a nationally recognized leader in providing educational opportunities for Indigenous students on October 1, 2017.

Jacqueline Ottmann (MEd’02, PhD’05), previously director of Indigenous education initiatives and an associate professor in the Werklund School of Education at the University of Calgary, will serve as the university’s first vice-provost, Indigenous engagement. Ottmann, who is Anishinaabe (Saulteaux) and a member of Saskatchewan’s Fishing Lake First Nation, said she is looking forward to returning to her home province.

“I am very excited to be coming back to the University of Saskatchewan and to Saskatoon in general, to contribute to the Indigenous strategy at the U of S. It’s a great privilege,” said Ottmann, who will lead the university’s ongoing commitment to respond to the National Truth and Reconciliation Commission’s calls to action for post-secondary institutions.

The university has actively been working on building Indigenous content and experiences grounded in Indigenous world views into degree programs, an initiative that will be a priority area for Ottmann to support moving forward. ■



Bad vibrations

Days spent driving around on a tractor contribute to back problems for a significant number of farmers, U of S researchers have found.

Catherine Trask, Canada Research Chair in Ergonomics and Musculoskeletal Health, and recent master's graduate Xiaoke Zeng (MSc'16) have found that farmers experience prolonged "body shock" when riding horses or driving farming machinery on uneven terrain during an average workday, a major risk factor for developing back pain.

"Farmers are often unaware that body vibration from machinery use is a potentially harmful physical hazard," said Trask.

Almost 20 per cent of Canadians are affected by back pain, costing the Canadian health-care system up to \$12 million per

year. Compared to people in cities, people in rural areas are 30 per cent more likely to experience chronic back pain.

In a 2015 study on 2,600 Saskatchewan farmers, Trask's team reported that almost 60 per cent experience low back pain. This causes farmers to reduce the amount of work they do daily in 30 per cent of the most severe cases.

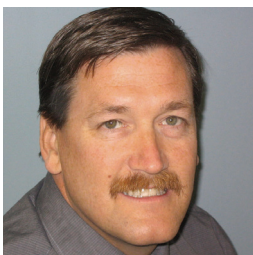
Zeng has also found that the type of vehicle and daily use of multiple machines changes the extent of farmers' exposure to vibration. Visiting 21 farms in 2015, she used vibration measuring equipment for tractors, grain trucks, pick-up trucks, combines, skid-

steer loaders, ATVs, sprayers and swathers.

"Skid-steer loaders and all-terrain vehicles showed the highest vibrations," she said. "Combines for harvesting crops and sprayers showed the lowest."

To limit exposure to vibrations, Trask and Zeng advise farmers to use newer seats for their vehicles, add cushion pads and back supports, and take hourly breaks for walking and stretching. ■

This article, by Federica Giannelli (MA'15), first ran as part of the 2017 Young Innovators series, an initiative of the U of S Research Profile and Impact office in partnership with the *Saskatoon StarPhoenix*.



Dawn of the new dentistry dean

The University of Saskatchewan has appointed Dr. Doug Brothwell as dean of the College of Dentistry for a five-year term.

For Brothwell (DDM'84), who stepped into the role on September 1, 2017, this post is a homecoming of sorts.

"I am a U of S grad, and I started my career as a dentist in Saskatchewan," said Brothwell, who also earned a Bachelor of Education degree at the U of S before pursuing his Master of Science and diploma in dental public health training at the University of Toronto. "This is full circle and I relish the opportunity to continue my career here and share what I've learned with future generations."

Brothwell—previously the associate dean (academic) in the College of Dentistry at the University of Manitoba—said the college has a long tradition of training excellent clinicians and he looks forward to "working with students to ensure the educational program only continues to improve. I will also work with the college faculty and staff in order to fulfill our larger university role with regards to research and service to the community." ■



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

Making a splash

The University of Saskatchewan-led Global Water Futures (GWF) program has funded 11 initial research projects across Canada, totalling nearly \$16.2 million over the next three years to tackle some of Canada's most pressing water-related challenges.

Funded projects tackle wide-ranging topics, including protecting prairie agricultural lands from drought and floods, mitigating algae blooms in lakes, developing new monitoring systems for Canadian watersheds using drones and satellites, using environmental DNA to assess ecosystem health, and understanding the impact that changes to mountain snow packs and glaciers will have on drinking water.

"This critically important research will contribute significantly to risk management solutions, provide disaster warnings, and diagnose and predict with greater accuracy what can happen to freshwater in Canada," said Howard Wheeler, Canada Excellence Research Chair in Water Security and director of the U of S Global Institute for Water Security, adding that the research findings will impact all Canadians. ■

The Vanier scholars

Four U of S PhD students have been awarded 2017 Vanier Canada Graduate Scholarships, valued at \$50,000 per year for three years. Vanier scholarships recognize top-tier PhD students who demonstrate excellence in academia, research impact and leadership at Canadian universities. The 2017 U of S Vanier Scholars are:

Jocelyn Joe-Strack, of the Champagne and Aishihik First Nation, Yukon, will discover the story of her community's journey towards self-determination and Indigenous-led reconciliation through development of a community-directed approach to land use planning.

Terrance Pelletier, former chief of the Cowessess First Nation in Saskatchewan and residential school survivor, will study how leadership models within his community have been influenced by the effects of colonization.

Tasha Spillett, a Cree and Trinidadian woman from Manitoba, will use feminist and race theory to look at the impact of Indigenous land-based education on the well-being of Indigenous girls in urban areas.

Ahmed Tiamiyu, a mechanical engineering student from Nigeria, will study a special type of stainless steel that could be used for high temperature and load-bearing applications.

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



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HEALTH SCIENCES BUILDING

 LESLEY PORTER

Planning for the Health Sciences Building, which began over a decade ago, was built on the vision of creating a new standard for team-based, interprofessional teaching, learning, research and practice in health sciences. The Government of Saskatchewan's commitment—\$300,000,000—is the largest ever made to a capital project in U of S history. Significant donor contributions also added to the success of this project.

Construction of the D-wing and E-wing additions began in 2008 and were completed in 2013, with the official grand opening occurring one year later. The new facilities feature state-of-the-art classrooms, laboratories, clinical learning resources, collaborative learning spaces and a new library specializing in the health sciences. Renovations to the existing B-wing were completed in 2016, and additional renovations currently underway in A-wing have an expected completion date of 2019.

1948 

A-wing, the original Health Sciences Building, was constructed.

18,680 ft² of D-wing.



This primarily houses collaborative research space for medicine, pharmacy and nutrition, and the Saskatoon Cancer Centre.

More than
50,000

books are in the Leslie and Irene Dubé Health Sciences Library.



24 examination rooms in the Clinical Learning Resource Centre.

This is a state-of-the-art simulation lab for health professionals in-the-making.



1,700
m² Tyndall stone

3,300

m² dolomite limestone



What was required for D-wing construction to match the original stonework of adjacent A-wing.

This careful attention to detail secured the 2011 Masonry Construction Project of the Year Award in the Institutional category.

500

seats in the Leslie and Irene Dubé Health Sciences Lecture Theatre.

It is named for the Saskatoon philanthropists after they made a \$10M donation to the project in 2011.



\$300M

investment from provincial government for this project.

It was the largest capital building project in university history.





THE SILVER TSUNAMI SHIFT

AS BABY BOOMERS HEAD INTO THEIR RETIREMENT YEARS, IT'S NOT ONLY THE TIMES THAT ARE A-CHANGING, IT'S OUR SYSTEMS, SERVICES AND HOW WE DELIVER THEM.

 BEVERLY FAST

Some call it the silver tsunami—a massive wave of aging baby boomers now entering their retirement years; a demographic so large it will—according to the popular meme—overwhelm our health-care system and wreak havoc on everything from pensions to public services.



Basran

Not so fast, say researchers at the University of Saskatchewan, including Dr. Jenny Basran (MD'98), head and associate professor at the College of Medicine's Division of Geriatric Medicine.

"I've heard the 'tsunami' term used to describe aging boomers, but I don't use it. It not only implies a wholly destructive force, it also implies that we don't know it's coming. Neither is accurate."

Basran is one of many at the U of S exploring ways and means to prepare our health and social systems to meet the future needs of aging baby boomers.

Adapting to a new normal

For the first time, Canadians aged 65-plus outnumber children under the age of 14, at 16.9 per cent versus 16.6 per cent of the population, respectively. Although Saskatchewan's population is younger than the national average (65-plus make up 15.5 per cent of our population), things get interesting when you break out the baby boom cohort born between 1946 and 1964. Using recent data from the Saskatchewan Bureau of Statistics, ages 53 to 71 make up 21.7 per cent of our provincial population (add another 8.7 per cent for ages 72-plus). As a cohort, boomers are healthier, wealthier and living longer than any generation before.

"The fact that baby boomers are living longer is a big success story for medicine," Basran said. "People are surviving heart attacks, strokes, cancer—that's good news. But it also means that more people are accumulating chronic health conditions as they age."

Multiple chronic conditions make diagnosis and treatment more complex. An 85-year-old, for example, might arrive at the hospital ER with a broken hip due to a fall—a clear-cut issue with a clear-cut response. But what if the patient also has osteoporosis, diabetes, cardiac issues, dementia, high blood pressure or all of the above?

"Our health system was designed for a population that didn't live as long," Basran said. "Hospitals were there for short-term trauma care, family doctors provided day-to-day care. But that's not what we're seeing. Family physicians are seeing older patients come in with a variety of vague symptoms. We see people in hospital because of multiple chronic disease; they're not acutely ill, but they're also not well enough to go home or live on their own. That's why we're exploring continuity of care and team-based care."

As Saskatchewan's only geriatrician, Basran's expertise is in demand on many levels. She is physician co-lead for the province's Emergency Department (ED) Waits and Patient Flow Initiative and co-chair of the Senior Home Visit Initiative. She has worked with health regions to restructure clinical services to meet the growing demands of an aging population, and she continues to work with engineering and computer science colleagues at the University of Saskatchewan on the development of a falls detection system for older adults. ▶

One area that has her particularly excited is computer simulation modelling to improve patient flow, a collaboration with the Saskatchewan Health Quality Council and Nate Osgood, professor in the Department of Computer Science. Modelling allows policy makers to use what-if scenarios to explore how changes in one area can affect other areas.

“This is an area where I think Saskatchewan is leading,” Basran said. “The computer model is based on health data in a specific health region or area of care. By taking a deep dive into the data, you can identify the unmet needs in an area of care or a region, go to the literature to find best practices, review what’s already in place and then fill in the gaps.”

By allowing for what-if scenarios, the computer model also helps stakeholders see how changes in one area might affect the larger system.

“Basically, it allows best practice for specific jurisdictions,” Basran said. “What works well in a small town like Cabri, for example, might be very different than what works well in an urban centre like Saskatoon.”

A recent initiative by the Health Quality Council is based on this work. Computer simulation models are being used to explore various what-if scenarios as part of the ED Waits and Patient Flow Initiative.

Basran is also involved in creating team-based care in hospital and community settings. “We’re exploring ways to bring the various resources of community care together to offer team-based care in specific geographic areas. This allows us to be more responsive to patient needs, and also to link with community partners and associations.”

The common thread through much of Basran’s work is keeping people healthier longer and to delay the need for more complex or acute-care services. This will help create capacity so the health-care system is ready when baby boomers start entering their 80s.

“Boomers have a strong voice; they will demand a different way of handling their health issues as they age,” Basran said. “As a generation, they’ve changed every single thing they’ve touched since the 1960s, and I think they will change the concept of retirement and aging well.”



Crizzle

Rise and fall

Though the full extent of the effects a growing aging population will have on society is unknown, one thing is certain, incidence rates of diseases and illnesses like Parkinson’s, Alzheimer’s, arthritis and dementia are bound follow an upward trajectory; and U of S experts in varied disciplines are grappling with these issues (see sidebar on page 14).

For Alexander Crizzle, a gerontologist and assistant professor in the School of Public Health, improving safety and quality of life for older adults is a key research focus. Crizzle is exploring mobility issues through a variety of lenses, notably driving, alternative modes of transportation, rehabilitation interventions and fall prevention.

His research aims to help people age in their own homes and remain engaged in their communities for as long as possible.

“If we can improve aging in place for seniors right now, it will impact quality of life not just for baby boomers but also future generations,” Crizzle said. “We don’t have the necessary infrastructure to handle the volume of baby boomers coming, so we’re trying to put that in place.”

Crizzle’s first foray into research was a six-week pilot program to test hydrotherapy on people with Parkinson’s at the local YMCA. The success of the pilot encouraged him to follow up an

“People are surviving heart attacks, strokes, cancer—that’s good news. But it also means that more people are accumulating chronic health conditions as they age.” DR. JENNY BASRAN

undergraduate degree in kinesiology with a graduate certificate in gerontology, a master’s degree in public health and a PhD in health and gerontology. His dissertation examined the driving behaviour of those with Parkinson’s compared to age-matched controls.

Driving remained the focus of his research during two post-doctoral positions, one at the University of Florida, the other at McMaster University. There, he used 3D modelling software and force plates to quantify falls as older adults exit and enter vehicles. The study, which is still underway, will inform future changes to vehicle design.

Crizzle has brought several research projects to the University of Saskatchewan, including two international collaborations. He is the lead researcher on a national study tracking causes and rates of common injuries in middle-aged Canadians, a study launched in collaboration with the University of Bordeaux in France.

“The University of Bordeaux has been using a longitudinal study to track injury types and rates as people age for over 25 years. Every five years, they conduct the same survey with the same cohort, who are now in their late 60s and 70s,” Crizzle said. “The international partnership lets us adapt the study to Canada. It also means we can compare injury prevention policies on an international level, which could potentially lead to improved systems in Canada, particularly for the elderly.”

Crizzle is also supervising a graduate student who is using the cohort data to look at the impact of common medications, such as anti-depressants and anti-psychotics, on the risk of senior falls.

The risk of falls is the focus of Crizzle’s second international collaboration, this one with the University of West Indies in Barbados.

“In Canada, we have well-developed, well-maintained urban infrastructure, like roads and sidewalks. In Barbados, infrastructure is not so well-developed or well-maintained. We’re looking at falls and walkability in these very different environments. Do ▶

“I think the trend among boomers will be to take on more flexible work, the kind of work they want to do. That way, you earn an income and you stay busy, happy and healthy.”

BRIAN LANE

well-maintained sidewalks improve mobility and prevent falls? We're also linking diet and physical activity to walkability and general sense of life-space mobility. Does improved infrastructure, such as easier access to services and amenities, result in more life-space mobility, and hence better health?"

Crizzle points out that his findings, particularly research on driving-related injuries among older adults, are not meant to take driver's licences away from older people.

"The goal is always to improve safety and quality of life, not take things away. So when someone can no longer drive, how do they maintain their mobility and social connections?"

This question led to a new initiative funded by the Saskatchewan Health Research Foundation on alternate transportation. Crizzle is involved in other research initiatives as well. In each, he tries to involve stakeholders—policy makers, planners, agencies and associations—as well as researchers and students.

"I can do the research and present the findings," he said, "but without the involvement of stakeholders, those findings just sit there. My focus is to collect data that informs change."



Lane

The cost of it all

Between 1921 and 2005, average life expectancy in Canada rose from 59 to 78 years for men and from 61 to 83 years for women. By 2031, average life expectancy will rise to 82 years for men and 86 years for women.

Adding 20 years to the average lifespan puts the notion of retiring at age 65 in a new light. The financial implications are sobering as more baby boomers are heading into retirement with debt.

"I've heard of people outliving their savings, and these would be scary situations," said Brian Lane (BComm'00, MBA'02), assistant professor in the Edwards School of Business and a certified financial planner (CFP). "A lot of people working today don't have a defined benefit pension, and fewer companies are offering one, so more

financial responsibility for saving for retirement is placed on the individual."

Advisors caution against depending on Canada Pension Plan and Old Age Security—not because it will disappear, but because it won't provide for the kind of lifestyle most of us, boomers to millennials, have come to expect.

Lane thinks the first step in saving for the future is simply acknowledging that you might, in fact, live beyond 80.

"Some advisors are even suggesting people use age 95 as their 'terminal' age when planning for retirement," he said.

Lane suggests using three simple rules to save for the long-term: spend less than you make, make savings automatic and significant, and make giving automatic and significant.

Rule one is the cardinal rule, but it's become something of a tough sell in our credit-addicted society.

"Credit is debt—that's a message I give my students," Lane said. "Seniors aren't immune to easy credit either, so I think it's more important than ever to be diligent. When you borrow money, you have to pay it back, and you're going to pay back more than you borrow."

The second rule is also a common sense stand-by. Lane likes to use an analogy with his students: "The Canada Revenue Agency automatically deducts tax from your paycheque. If tax payments are treated with this much importance, perhaps we should treat our personal savings deposits in the same way."

In Lane's opinion, the concept of retirement does not have to include the traditional "full-stop" at age 65 and can follow a more flexible model.

"I don't look forward to a traditional retirement, personally. I think the trend among boomers will be to take on more flexible work, the kind of work they want to do. That way, you earn an income and you stay busy, happy and healthy."

And the dream of Freedom 55? "Think about it," Lane said. "To full-on retire at 55, you would essentially have to earn enough in 30 to 35 years of work to fund 40 years of retirement. That's a tall order." ■

SEEING THE BIG PICTURE ONE PIECE AT A TIME

A number of U of S researchers are making an impact in addressing the challenges the health-care system will face in the coming decades due to our aging population.

Here is a look at the work of 13 U of S researchers in schools and colleges across campus, who were highlighted in the recent report by the Saskatchewan Health Research Foundation entitled *Impacting Seniors' Health – The Value of Aging-Related Research in Saskatchewan*:

Sylvia Abonyi, associate professor, medicine: Examining the role of culture in population health, including respiratory illnesses like tuberculosis, as well as diabetes, aging and food security.

Dr. Jenny Basran, associate professor, medicine: The head of geriatric medicine at the U of S is working with engineering and computer science colleagues to develop a falls detection system for older adults.

Larry Brawley, Canada Research Chair, kinesiology: Examining a novel behaviour change intervention model that helps older adults self-manage exercise and maintain gains in health and function after intervention completion.

Phil Chilibeck, professor, kinesiology: Focusing on using novel nutritional supplements in conjunction with exercise programs, in order to improve bone health in older adults.

Jon Farthing (BSKI'99, MSc'02, PhD'06), associate professor, kinesiology: Studying rehabilitation techniques for fractures, stroke and other neurological impairment affecting one side of the body, by training the opposite side.

Nancy Gyurcsik, professor, kinesiology: Examining psychological factors motivating older adults with arthritis to exercise, as a prevention and therapy tool.

Saija Kontulainen, professor, kinesiology: Developing strategies to prevent bone deterioration diseases such as osteoporosis, particularly for post-menopausal women who are prone to fractures.

Joel Lanovaz (BE'90, PGD'92, MSc'97), associate professor, kinesiology: Working in collaboration with the School of Physical Therapy to investigate frailty and fall-related injuries and effective prevention techniques.

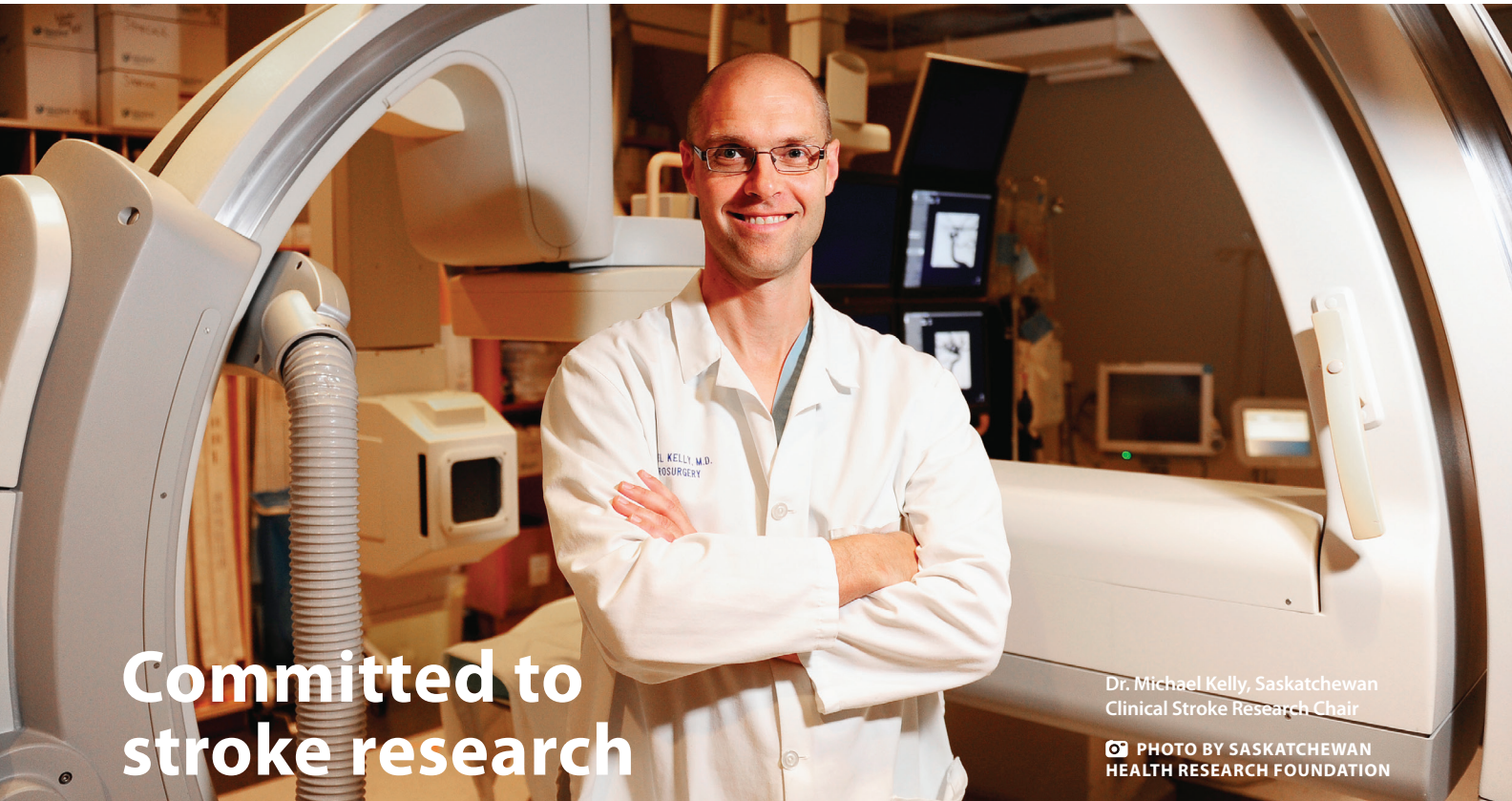
Debra Morgan (BSN'86, MN'90, PhD'96), professor, medicine: Dedicated to improving rural and remote health service delivery, particularly for individuals with dementia, and their caregivers.

Darrell Mousseau, professor, medicine: Studying causes of Alzheimer's disease and its connection to depression, in order to improve early diagnosis and treatment options prior to full onset of symptoms.

Alison Oates, assistant professor, kinesiology: Researching sensory information to improve balance while walking for older adults, to try to help prevent fall-related injuries.

Sarah Oosman (BSc'95, BSPT'98, PhD'12), assistant professor, medicine: Exploring community-based health intervention research and programs in partnership with First Nations and Métis communities.

Corey Tomczak, assistant professor, kinesiology: Focusing on preventing heart failure following a heart attack, by employing earlier referrals and earlier initiations of cardiac rehabilitation programs.



Committed to stroke research

Dr. Michael Kelly, Saskatchewan Clinical Stroke Research Chair

PHOTO BY SASKATCHEWAN HEALTH RESEARCH FOUNDATION

With a renewed funding commitment of \$1.5 million over five years, Dr. Michael Kelly (BSc'95, MD'98) will continue his work in the College of Medicine as the Saskatchewan Clinical Stroke Research Chair.

With the Heart and Stroke Foundation, Saskatchewan Health Research Foundation and the College of Medicine each providing \$500,000, the chair will be funded from November 2017 to October 2022.

Kelly, who oversees a robust basic science and clinical research program, has held the Saskatchewan Clinical Stroke Research Chair since 2012. During the first five-year term, Kelly and his team helped develop the Acute Stroke Pathway that enables patients who display signs of stroke have access to care in the critical first few hours.

"We think, in this province, there are about 2,000 strokes in the formal database per year," said Kelly, an associate professor of surgery. "But we think that database is probably off by about 30 or 40 per cent, so maybe 3,000 a year. And in Saskatoon we have one or two stroke alerts in the emergency department per day at RUH—so it's a common problem."

So common, in fact, that nearly 14,000 Canadians die from stroke each year, and there were an estimated 50,000 strokes across the country in 2012, making it the

third leading cause of death.

"Stroke is a tough disease because it's much harder to diagnose than, say, a heart attack where everybody knows the symptoms," he said.

While symptoms can vary, Kelly continued, they often include "one side of the body weakens, or paralysis of the arm, leg or face; numbness; loss of sensation; (a stroke on the) left side of the brain often is accompanied by difficulty with speech. And if the basilar artery, which supplies your brainstem, is affected it can give patients all sorts of problems from double-vision, and unsteadiness to coma.

"A huge portion of stroke is the rehab, the homecare, and probably—most importantly—the prevention of stroke," Kelly said.

And the prevention for stroke is pretty similar to the heart attack preventative measures most of us are already aware of: manage stress; quit smoking; maintain a healthy weight; control blood pressure and cholesterol levels; nurture an active lifestyle; and drink alcohol in moderation. ■

MAYBE ALL YOU NEED IS A SHOT IN THE ARM



THE VACCINE DEBATE

 HENRYTYE GLAZEBOOK

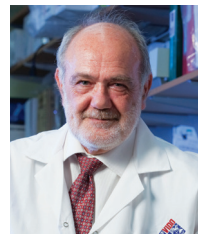
Maybe it starts with a mild fever, a scratch at the back of your throat or a cough you just can't shake. Nothing a few days of bed rest won't fix, hopefully.

But for an unlucky few, these are the first signs of a measles infection.

Measles is just one among a list of diseases that includes whooping cough and mumps, each of which was long considered nearly vanquished but has since had a resurgence as the anti-vaccination movement has grown.

"Measles we got two years ago, down in Regina, especially, but also a number of people in Alberta," said Andrew Potter, director and CEO of the Vaccine and

Infectious Disease Organization-International Vaccine Centre (VIDO-InterVac) at the University of Saskatchewan. "Measles in Canada is exceedingly rare. They managed to trace it to somebody who went to Disneyland. You go to Disneyland and there's a bunch of kids and, bingo, it just spreads like wildfire."



Potter

Vaccines, which stimulate the immune system with a microdose of a communicable disease to spark a response that leaves the human body better equipped to handle future encounters, are facing growing backlash in some circles. For Potter, who is also a professor of veterinary microbiology, ▶

this trend brings to mind worrisome memories of his own life prior to widespread immunization.

"When I was kid I had mumps, I had measles, I had whooping cough, I had them all," he said. "The whole principle behind vaccination is that you end up essentially immune, not for life but for many, many years—sometimes decades."

The general consensus is that there are two main drivers behind the rise of the anti-vaccination movement. The first, a marketing push from parties aiming to make an easy buck off a trendy topic, most experts are quick to brush off.

The second driver, however, originates from a much more familiar place of fear, even love: a misfounded belief that the procedure will place their family and children at risk of autism, which has been proven not to occur as a result of vaccination.



Thagard

"One thing to keep in mind is that people are really concerned with doing the best thing for their children," said Paul Thagard (BA'71), distinguished professor emeritus in philosophy with the University of Waterloo. "Nobody would want to do anything that would lead their child to become autistic or to have some serious issues. This is the good side of it: people are really motivated by a concern to do what's best for their children.

"Unfortunately, that also makes them easily taken in by people who don't weigh the evidence very well and just rely on bad theories or bad evidence."

Thagard, who has devoted an entire chapter in an upcoming book to the psychological ramifications of people moving away from immunization, largely attributes the trend to a confusion of correlation and causation, with many people watching the rise in both the number of vaccinations and diagnoses of autism as linked simply because of their similar trajectory.

"People have acquired the belief, partly because of bogus studies and partly because of pseudo science, that vaccinations cause autism," he said. "The reason people might suspect that is that autism occurs around the same time as the earliest vaccinations, but that's a logical fallacy."

Thagard looked to a 2015 University

of California, Los Angeles study, which favoured emphasizing the potential consequences of not immunizing children, as one possible solution to steering naysayers back toward inoculations.

"You can't counter bad emotions with good evidence," he said. "If the evidence isn't going to work and you're putting hundreds of people at risk of measles, then I think the emotion-based strategy—the fear-based strategy—is legitimate as well."

The sentiment of using fear as a motivator may sound brazen, but Yvonne Shevchuk (BSP'80) explained just how much of a reality check it can be to see the aftermath of an infection.

Shevchuk, associate dean academic in the College of Pharmacy and Nutrition and director of medSask at the U of S, recalled witnessing firsthand as a child came to the hospital for treatment of meningitis, an infection that may have been avoided had they been immunized for *Haemophilus influenzae* type b.

By the time they returned home with their parents, the disease had rendered the child irreversibly blind and deaf.

"Kids come in who might be unconscious or having seizures, they have high fevers—they're very, very, very, ill," she said. "Some recover without any issues, but some do have permanent problems.



Shevchuk

"It really wasn't that many years ago when children would come in with that bacteria identified in their spinal fluid. It's a preventable disease. That's very devastating to the parent and to the child, who comes into this world perfectly normal and gets a disease and ends up blind and deaf for the rest of their life."

The safety of vaccines is a foremost concern for Shevchuk, who explained that there is a rigorous inspection process performed before any immunizations go out to the Canadian public. Even the trace amounts of mercury contained in some inoculations, she said, is slight enough to be harmless.

"We know that mercury is not a safe substance, it's a toxic substance, but there's mercury around us," she said. ▶

“Vaccines have actually been too effective, and what's happened is that a lot of the people have not seen the devastation of these diseases; they sort of think that they're nothing...”

LORNE BABIUK

“We can't completely eliminate mercury from our environment, and the amount of mercury that you actually get from a vaccine is minute compared to that. There really isn't a risk of toxicity.”

The reality is that not all people are going to get vaccinated, sometimes due to their own issues of health, their personal religious beliefs or other circumstances. What's vital is to retain what's known as herd immunity.

The phrase refers to the concept that if a large enough percentage of the population is immunized—the specific amounts vary from one disease to the next—then the relatively few number of available hosts makes it difficult for illness to flourish, creating a kind of shield for those who can't or won't get vaccinated.

But problems can arise if people start to take that shield for granted.



Babiuk

“I've had discussions with people who don't think they need to get vaccinated because of herd immunity, and I think that is an extremely selfish approach,” said Lorne Babiuk (BA'67, MA'69, DSc'72), who was there

on the ground floor when VIDO first opened in 1975 and eventually went on to become its executive director and set in motion the creation of InterVac, a \$140-million level three biocontainment facility, designed to combat diseases including pandemic influenza, tuberculosis and numerous others.

“You're not willing to immunize your child, and you just think that everybody else is going to do it for you.”

Babiuk, who was a U of S Canada Research Chair in Vaccinology and Biotechnology before becoming the vice-president research at the University of Alberta in 2007, is a staunch defender of vaccination both as a safe tool for warding off disease and as a less financially burdensome method of preventative treatment.

“These vaccines don't get licensed if they are not safe,” he said. “If you had cancer, you would take all kinds of drugs that would have your hair fall out, you'd have diarrhea and all other kinds of side-effects, but you'd be perfectly willing to do that because that's the treatment. We're becoming a fire engine medical society, but with preventative medicine you can have no side effects, no inconvenience.”

What scares Babiuk most is the thought that people have lost sight of the sheer scale of illness that vaccination has prevented. He sees children getting infected with whooping cough or measles—a stark flashback to days he thought long-since gone—and knows for a fact that immunization could have helped avoid such pain.

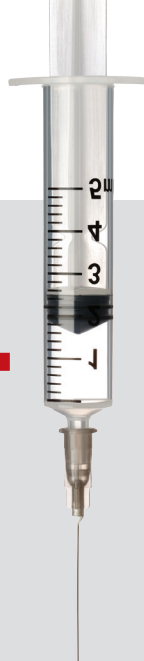
“Vaccines have actually been too effective, and what's happened is that a lot of the people have not seen the devastation of these diseases; they sort of think that they're nothing, and absolutely nothing could be further from the truth,” Babiuk said.

“There is no need for suffering if we have ways to eliminate it.”

But despite his concerns, Babiuk remains hopeful.

“I'm always an optimist, so I hope that our society will recognize the follies of the ways of the anti-vaccine people.” ■

ONE SHOT AT A TIME



Since April of 2015, the College of Pharmacy and Nutrition's Continuing Professional Development for Pharmacy Professionals (CPDPP) office at the University of Saskatchewan has trained 1,191 provincial pharmacists to administer injections like the flu vaccine.

The training program combines online and in-person educational components to ensure pharmacists have the required skills to properly administer medications and the flu vaccine by injection.

“Pharmacists are ideally situated to administer injections. Our patients have welcomed the convenience of receiving their flu shot at their local pharmacy, and pharmacists in Saskatchewan administered over 90,000 flu shots last season.”

DANIELLE LAROCQUE,
ASSOCIATE DIRECTOR OF CPDPP

During September and October of this year, an additional 90 pharmacists will be trained to administer injections.

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HEALTHY TECH VENTURES

FROM SASKATCHEWAN TO AROUND THE WORLD,
U OF S GRADUATES AND RESEARCHERS ARE CHANGING
THE FACE OF HEALTH WITH TECHNOLOGY.

 KATHY FITZPATRICK

 PHOTO BY DAVID STOBBE

A surgeon leads a patient on a virtual reality tour inside the patient's brain—in preparation for removing a tumour. A teenager with Crohn's disease receives prompts on his smartphone to get his bloodwork done. Lab-grown cartilage and heart tissue make joint replacements and heart transplants a thing of the past.

These are some of the ways researchers at or from the U of S hope to use technology to create game-changing advances in health care.



Cory

Back to reality

I'm standing in Bruce Cory's living room, about to experience virtual reality (VR) for the first time. Goggles and headset on, controls in my hands, I'm first "transported" deep below the surface of the ocean. I look up and see a blue whale plunging towards me. It veers from the sunken ship deck I'm standing on, but reflexively I shrink away to keep from getting smacked by the whale's flipper as it passes by.

It's like stepping inside a 3D movie. And it's this quality of the technology that makes Cory (BA'90, MA'94) believe it could have useful applications in health care, such as teaching medical students brain anatomy.

"The power of it is that we live in an environment that is inherently spatial ... when you put the VR headset on it feels natural, it feels very intuitive," said Cory, CEO of the Saskatoon-based technology company Sprockety.

After demonstrating VR technology to Dr. Ivar Mendez, Fred H. Wigmore Professor and unified head of the Department of Surgery at the U of S, Mendez asked Sprockety to produce a VR brain.

Cory shows me that, too. With the hand controls, I can turn the VR brain and look at it from every angle. I click on different parts and the names appear. The big red mass is a tumour. Another click and I can even look at the tumour from the inside, see yellow strands threading through it.

Ali Jamal, now a third-year medical student, ran the study to test the VR brain's effectiveness as a teaching tool. He found students using it scored better overall on long-term retention than those using a textbook.

Jamal suggests a possible explanation: in real life, it's hard to tell one part of the brain from another by look or colour but virtual reality may help overcome that hurdle.

"So, you're learning spatial orientation of 3D structures that you can't necessarily tell apart just by looking with the naked eye," Jamal

explained. "I think that's where virtual reality is helpful. You are able to see the delineations within virtual reality that you weren't necessarily able to see in real life."

(And perhaps with greater difficulty in two-dimensional images and 3D plastic models.)

Over the next year, Sprockety plans to work with Mendez on a series of VR brain modules for teaching medical students and residents about various brain structures and pathways, and educating patients with brain tumours about their medical situations.

They believe one day it may also be possible for surgeons to plan an operation using virtual reality, perhaps even perform a dry run, to avert mistakes with potentially devastating consequences.



Mateen

Mobile health

Smartphones have become so ubiquitous and so loaded with features, it's no surprise that researchers have latched on to them as revolutionary tools in health care.

Dr. Farrah Mateen (MD '05) has confirmed their usefulness in testing for epilepsy in patients living far away from the standard equipment and expertise, with little or no means to access it.

Now a neurologist at Massachusetts General Hospital and Harvard Medical School, Mateen is leading research on the use of Android devices to conduct EEGs in some of the most remote and poverty-stricken parts of the world. (EEG, or electroencephalography, tracks and records brain wave patterns.)

Mateen estimates more than 80 countries worldwide don't have EEG, and in many others, it's only available in the capital cities.

"We're trying to use technological innovation for neurological care, bring neurology out of the dark ages in terms of mobile health," she explained.

Mateen launched the project in 2013, testing a newly-developed smartphone-based EEG with about 200 patients in Bhutan, a tiny country on the eastern edge of the Himalayas. People would walk for several days to be in the study, she said.

Up to one per cent of the population, or about 10,000 people, in Bhutan may have epilepsy, Mateen explained, adding that infection with tapeworms from contaminated water and undercooked pork may be a factor. Larval cysts in the brain can trigger epileptic seizures.

Affordable medication has been available for a long time, but the problem is linking patients to it, she said, through appropriate diagnostic testing.

Smartphone EEGs offer a low-cost solution. A health-care worker can run the test. A cap with electrodes is wirelessly connected to the app on a smartphone or tablet. Recordings can then be sent to neurologists anywhere in the world for interpretation. The equipment cost runs about \$300 USD, compared with \$20,000-30,000 for the standard EEG, Mateen said. And she points out, the smartphone EEG is portable and does not require electricity.

In April this year, she and her colleagues published their findings in the journal *Scientific Reports*. They concluded that smartphone ▶

EEGs yield very specific but less sensitive results than regular EEGs, making the smartphone version better for confirming suspected cases of epilepsy than as a screening device.

Mateen is expanding her research to West Africa, beginning in Guinea where she has seen about 140 patients as of mid-July.



Risling

Patient empowerment

At the U of S the College of Nursing, assistant professor Tracie Risling (BA'98, BSN'03, MN'07, PhD'14) sees digital technology as the fast lane to patient empowerment and engagement.

"We are used to living in a society and an age where information is at your fingertips," Risling observed.

In an era when parents can use smartphones to transfer their kids' allowance to them, teachers can upload their students' grades, and everyone can get an up-to-the-minute weather forecast, patients are demanding digital access to their own health records, Risling said.

"Technology is going to be a means to truly deliver on this long-held promise of patient-centred care."

Risling worked on a six-month pilot project last year with the province's electronic health records system eHealth Saskatchewan. Citizen Health Information Portal (CHIP) gave 1,100 patients secure access to their own electronic health records: lab results, vaccines and immunizations, prescriptions, and hospital and acute care visits. The patients were also able to add personal health information, set reminders to take medications and record upcoming appointments. Their physicians were able to see what patients added to their profiles.

The information put one patient literally on the same page as her doctor when a bloodwork anomaly led to a cancer diagnosis and surgery. The patient saw the test result and raised it with her doctor. Risling said the doctor was already planning to discuss it with the patient and "they met in the middle."

"When she talked to me that evening prior to her surgery, she was still feeling like she was in control of that situation. And she was leading that whole process because she had the information," Risling recalled.

Herself the mother of a teen with Crohn's, Risling is also working on the use of smartphones and social media to help teens with inflammatory bowel disease take the lead in their own care. Dual messages go out to both caregivers and the teen. The more times the young person said "yeah I got my bloodwork done, yeah I filled my prescription," the fewer messages go to the caregiver.

Risling is also putting tablets into the hands of parents with children in hospital, enabling them to see pictures of their care team and their child's vital statistics for the day. Parents can also post three top things staff can do to comfort their child when the parents aren't there, and what not to do.

Intuitively, it seems clear that access to their own health records with the click of button gives patients greater control in their medical journey. But how to prove it? That's the next step for Risling and her collaborators, using computers to create a scientific measure of patient empowerment.

"When she talked to me that evening prior to her surgery, she was still feeling like she was in control of that situation. And she was leading that whole process because she had the information."

TRACIE RISLING



Osgood

Hand-held research labs

Over in the Department of Computer Science, what began as a smartphone app has morphed into an enterprise that is taking health-care research in directions hard to imagine a decade ago.

About eight years ago, associate professors Nathaniel Osgood and Kevin Stanley began work on a sensor device to track the movement of study participants, useful data for predicting health risks such as how flu viruses may spread. The project developed into the iEpi smartphone app.

They realized that mobile devices "can be formidable for not only measuring what (people are) doing at a given time, but also for asking them questions and for getting them to volunteer information, let's say when they're taking some medication ... or feeling ill ... or if they've just encountered an advertisement about tobacco or what have you," Osgood said.

The app collects information from sensors built into the smartphones, along with information volunteered through questionnaires, photographs, even sound and video recordings. It can be linked with wearable devices such as Fitbit and other smartwatches to measure heart rate and electrodermal response, an indicator of stress or arousal.

It is a micro research lab that enables the collection of an unprecedented level of data, both in volume and detail. For instance, when a study participant takes a photo of a tobacco billboard, researchers will know where it is, what time the person came across it and if they smoked afterwards.

Before long, Osgood and Stanley were approached by researchers wanting to use the app in some very large studies, with tens or hundreds of thousands of participants. So, last year with help from the Innovation Enterprise office at the U of S (formerly the Industry Liaison Office), they formed a start-up called Ethica Data.

The company collects data from smartphones (either Androids or iPhones), aggregates it, streams it to servers, and allows both study administrators and subjects to browse their own data.

"What we've designed is a robust, easy-to-use, flexible, powerful and integrated system," Osgood explained.

Notably, it enables health researchers to very quickly and easily launch a new study without the need for custom programming and the help of computer scientists, Osgood said. Think of on-the-spot research into sudden public health crises such as food contamination or disease outbreaks. ▶

But the system is also valuable in researching such intractable problems as tobacco addiction or the high rate of suicide in northern communities. Or, studies to answer such questions as whether e-cigarettes help break nicotine addiction or act as a gateway.

Another key feature: the capacity to not only obtain informed consent from study participants online, but also to enable them to suspend data collection at any time, even delete their data retroactively.

Osgood maintains this does not jeopardize the validity of a study, because in practice very few people exercise this option. And yet it's important, particularly to disadvantaged people, who may be anxious about providing personal information.

And in a kind of spy vs. spy scenario, Ethica can also capture the internet browsing patterns of study participants (with their consent). For instance, when they click on links with tobacco-related words researchers can learn about the advertising they see. Osgood said corporate interests are also mining data from online behaviour and using it to promote their products.

"And by providing the option of people to join studies like this we provide an avenue for us to counter that effectively and in a very flexible way," he explained.

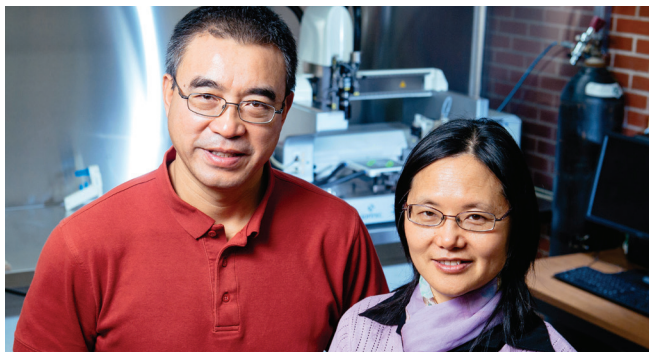
Osgood and others, including various public health agencies, are now looking at creating an ongoing pool of respondents they can tap into for studies from time to time, a kind of population observatory or sentinel group comprising perhaps five per cent of the population. This proverbial canary in the coal mine can provide an early warning of threats, and allow for both quick responses in an emergency and better decision-making overall, Osgood said.

Perhaps some data will be held in escrow, he goes on, to be retroactively mined for retrospective analysis.

And, using big data or machine learning techniques, we may one day see the creation of digital nudges that prompt people to, say, dial up the tobacco quit line when they pick up a cigarette.

"I think here we have a wide-open set of possibilities and it's a privilege to be at the forefront of this," Osgood said.

Internal engineering



Chen and Yang

Meanwhile, the College of Engineering is discovering solutions for problems as varied as weakened hearts and worn out joints.

For the past decade, Daniel Chen (PhD'02), a professor of mechanical and biomedical engineering at the U of S, has led the Tissue Engineering Research Group, a collaboration between

engineering and life sciences researchers. Their quest is to find ways to grow various types of human tissue that can be implanted in patients to repair or replace damaged body parts.

Three-dimensional scaffolds are fabricated with a 3D printer, using biodegradable and biocompatible materials that can support living cells. Patients' cells are then seeded onto the scaffold so tissue for implantation can grow.

It may sound simple, Chen said, but it requires a lot of research on how to design and fabricate the scaffolds, how to implant the living cells and make sure they grow into the desired tissue.

There has been progress. Since 2014, the focus has been on growing tissue to replace muscle damaged in heart attacks and damaged cartilage. Success could lessen or eliminate the need for donor heart transplants and artificial hearts and joints.

"That would be great. So, I'm really excited about this," Chen said.

In lab mice and rats, the cardiac procedure has been tested by inducing heart attacks and then implanting the cell-laden scaffold (or patch as it's also called).

So far it has worked well, Chen said. Next is testing on larger animals before moving on to human clinical trials, steps that will depend on the continued flow of research funds.

Similarly, he and his colleagues have been testing cartilage replacement on mice and rats, with work in that area also continuing.

But work is also proceeding on a way to make artificial joints last longer. Qiaoqin Yang, also a professor of mechanical engineering and Canada Research Chair in Nanoengineering Coating Technologies, is leading research on that path.

Success would have a significant impact. The number of Canadians undergoing hip and knee replacements has topped 100,000 in a single year. But like cartilage, artificial joints wear out too, lasting an average 15-20 years.

Yang is working on microscopically thin coatings, measured in nanometers—one billionth of a meter. (A sheet of paper is about 100,000 nanometers thick.) She is searching for a biocompatible nanocoating that will keep friction low, and increase wear and corrosion resistance.

She has developed a diamond-like carbon coating combined with nanoparticles, but so far, the major challenge has been to get this coating to adhere well to metals suitable as medical implants.

Yang has approached this challenge by designing different types of interlayers and surface treatments to enhance adhesion of the diamond-like material.

"From lab tests the adhesion has been significantly enhanced," Yang said.

She has found the use of different kinds of nanoparticles has decreased stress, and hopes this will lead to the next step—measuring friction, wear and corrosion in an implant simulator. If the results are successful, human trials would follow.

Another concern is the possible release of toxic ions, which the coating is intended to prevent. That, too, will require testing.

Only time will tell how these technologies will exactly change the health-care landscape, but one thing is for certain: technology in the hands of U of S alumni and researchers is bound to improve patient outcomes. ■

A healthy campus



6,407

visits to Student Wellness Initiative Toward Community Health (SWITCH) in 2016, where students from the College of Medicine volunteer their time providing much-needed services for Saskatoon's core neighbourhoods.

186

animals brought to a two-day veterinary clinic in May in the northern community of La Ronge, Sask. run by the Western College of Veterinary Medicine and Northern Animal Rescue.

6

tennis courts on campus.

88

years that Rutherford Rink has been home to hockey on campus.

18.9

percentage of Aboriginal students in the College of Nursing's undergraduate program.

13,000 ft²

in the College of Kinesiology's Fitness Centre at the Physical Activity Complex.

3,437

seats in Merlis Belsher Place which began construction in April 2017.

19,042

appointments made by students at U of S Student Health Centre in 2016-17.

10,000

approximate specimens in the College of Dentistry's tooth bank, a resource in the college for more than 40 years.

397

Huskie athletes who will be competing on 15 teams in eight different sports this year.

18,004

in-clinic small animal and large animal cases—everything from dogs and cats to horses and cows—at the WCVM's Veterinary Medical Centre in 2016.

2

swimming pools on campus; one in the PAC and one in the Education Building.

24

cooking and prep stations in the recently opened nutrition lab in the College of Pharmacy and Nutrition.

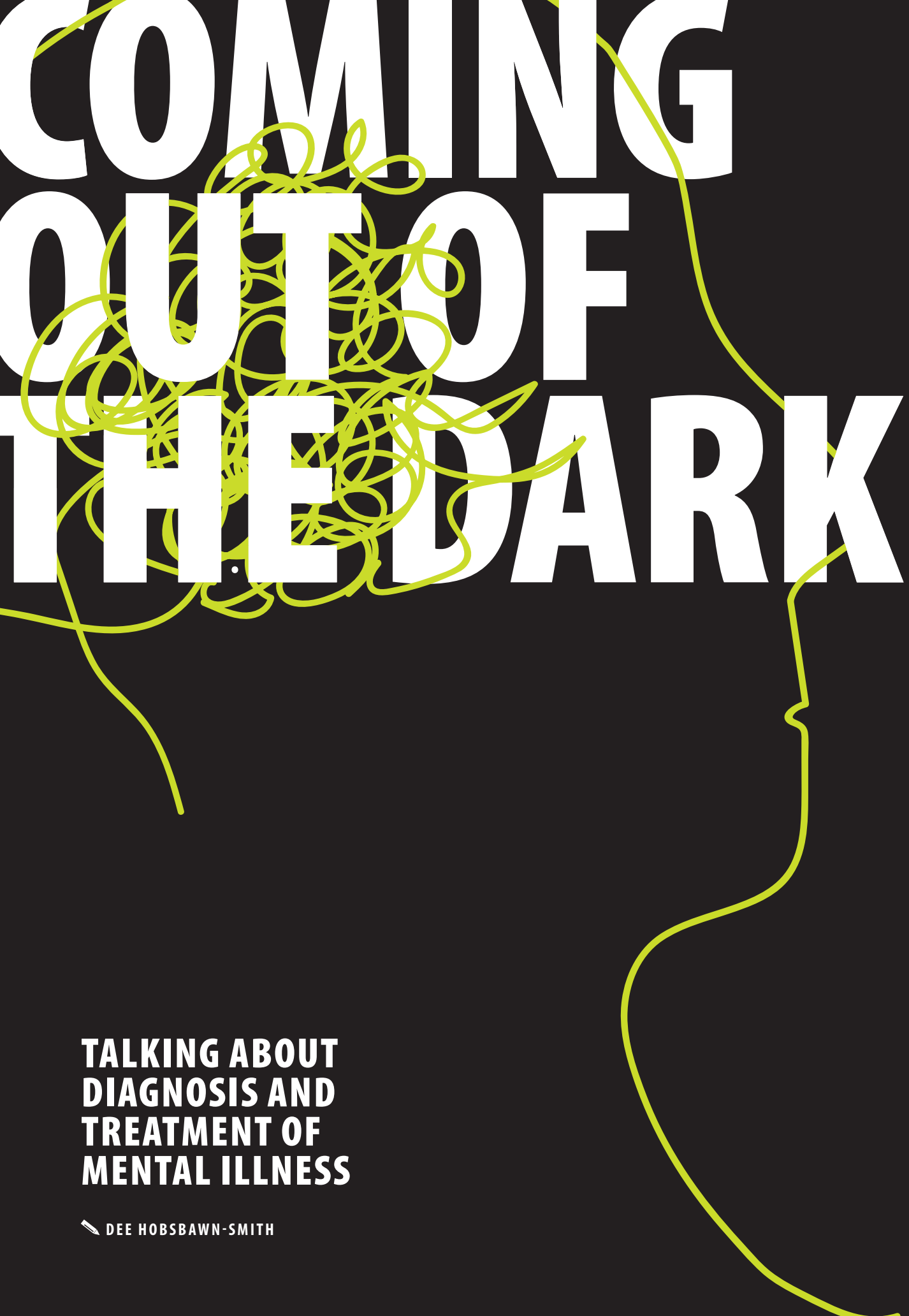
1,700

patient consultations at the Medication Assessment Centre per year, in the College of Pharmacy and Nutrition.

40 ft

climbing wall in the Physical Activity Complex.

COMING OUT OF THE DARK



**TALKING ABOUT
DIAGNOSIS AND
TREATMENT OF
MENTAL ILLNESS**

 DEE HOBSBAWN-SMITH

The forbidden topic

Mental illness was a forbidden topic when Prime Minister Justin Trudeau was growing up in 1980s Canada. The stigma didn't ease until his twenties, when he was looking at family photos; his mother, Margaret Sinclair Trudeau, appeared dishevelled and thin, and she frankly admitted that those pictures were taken while she was fighting depression. She went on to write about her struggle with bipolar disorder in her memoir, *Changing My Mind*, in 2006.

Trudeau isn't the only one to go public with his family's struggles. Britain's Prince William and his younger brother, Harry, have taken to openly speaking about how they dealt with their personal trauma in the wake of the unexpected and violent death of their mother, Princess Diana.

The end of the silent treatment



Holt

More and more 21st century artists, musicians and politicians have taken to the internet and other media platforms to speak frankly about mental illness.

"Normalizing conversation [about mental illness] helps," said Dr. Alana Holt (BSN'95, MD'00), a psychiatrist who works in the U of S's Student Health and Physician Health programs as well as the Early Psychosis Intervention program. "But there is still stigma, and it impacts how long people suffer before seeking care—despite the risk of not treating it far outweighing the alternative. The big improvement is in the younger generation, who are far more apt to seek help."

One in five Canadians suffer some sort of mental illness, Holt noted, adding that a primary component in stigma reduction is education.

However, Holt pointed to disheartening single- and double-digit percentage increases in mental health issues being both reported and treated. She cited a mixed bag of diagnoses, ranging from eating disorders, ADHD, obsessive-compulsive disorder and anxiety, to bipolar disorder, schizophrenia, panic attacks and phobias.

Holt works exclusively with young adults

between 18 and 20, a critically important age in the development of the brain, social maturity and the incidence of mental illness onset.

"There is a biological piece to why [mental illness] shows up at that age," she explained. The brain does not complete developing until the early 20s. The brain's frontal lobe is the home of insight, self-awareness, inhibitions, healthy judgment, planning, abstraction and impulse control—which is the last to develop, as any parent of risk-prone teenagers can attest. Youth must deal with the significant stresses that accompany that age—when all the big choices in life are made, solidifying identity, choosing career and partner, growing a social network.

"These illnesses can be severe and debilitating," Holt said. "Sometimes patients don't take meds, don't respond to meds, or take other drugs." She said that 50 per cent of people suffering from substance abuse also have "a co-morbid psychological disorder and are at 20 times the risk to commit suicide," and, on the flip side, that those suffering from depression, anxiety, bipolar disorder and schizophrenia are at escalating risk of substance abuse as self-medication.

Brain development can be adversely impacted by drug use. A prime example is the sudden onset of schizophrenia in that youthful age bracket, sometimes exacerbated by concurrent marijuana use, which impacts dopamine levels. Today's pot is not what it was: the percentage of THC (the "stone" component whose presence increases risk of psychosis in the undeveloped brain) has escalated in modern marijuana, from three per cent in the 1960s and '70s to between 11 and 20 per cent now.

In looking at the modern path of treating mental illness, we spoke with several other healers whose practice embraces a wide range of approaches, from pharmaceuticals to animal therapy and integrated medicine.

Treatment with pharmaceuticals

Pharmaceuticals remain the primary first tool in treatment. According to Fred Remillard, a long-time professor in the College of Pharmacy and Nutrition who is a board certified psychiatric pharmacist, treatment of mental illness is still a relatively new field, but approaches have ▶

“We do big picture medicine first, then dive in deep, into exercise, yoga, spirituality, diet—who they are, what brings them joy, what do they eat daily, do they see family and friends, pets? What do they value? What’s their passion? How can I facilitate that?”

DR. DEEDEE MALTMAN

come a long way from the 1930s, when shock therapy was in vogue. Tricyclic antidepressants (TCAs) are modified into antipsychotic drugs to treat schizophrenia’s chronic psychosis issues. Side effects have changed; patients used to feel zombie-ish, their emotions stripped away. “Now



Remillard

there are neurological side effects—tremors, muscle stiffness and weight gain is a big issue.”

Bipolar disorder requires a mood stabilizer, the most well-known of which is lithium. It and schizophrenia are debilitating illnesses, and psychotherapy alone won’t help. The modern generation of SSRIs (“mood drugs”) have fewer side effects than their predecessors—blood pressure problems, blurred vision, dried mouth, racing heart and weight gain were classic side effects that have been lessened, although headaches and sexual dysfunction are still common.

“It’s hard to stay on those meds,” he said, echoing Holt. “Fifty to 60 per cent of patients respond well, but many quit taking them, especially after discharge. When you stop taking drugs, your body becomes resistant to the treatment. Brain damage occurs as a result of mental illness, and with chronic schizophrenia, the brain changes.”

Integrated medicine

“As a glass-half-full person, I prefer to call it neural health, not mental illness,” said Dr. DeeDee Maltman (BSc’79, Sc’80, MD’85). As a practicing physician for 32 years, she saw the full spectrum of mental illness, from the quotidian melancholy to the truly depressed. She is currently a consulting physician, teaches undergraduate

integrative medicine at the U of S, and is part of the Neural Health Project, which documents the outcomes of using an integrated medical approach to treating mental illness.

Maltman described integrative medicine as a combination of traditional and alternative treatments and philosophies, all evidence-based, and “meeting each patient where they are at, emphasizing the relationship between the patient and the practitioner, approaching each patient from a mind, body, spiritual and community point of view.” As a physician, she prescribes medications if needed as part of a broader approach to healing, but she also facilitates support via experiential tools. “We do big picture medicine first, then dive in deep, into exercise, yoga, spirituality, diet—who they are, what brings them joy, what do they eat daily, do they see family and friends, pets? What do they value? What’s their passion? How can I facilitate that?”

Food has always been central to Maltman’s philosophy. “Seventy-seven per cent of our health-care budget goes to treating chronic disease,” she said. “But what drives chronic disease? Underlying inflammation. We treat it with diet, starting with the correct oils. What’s important to remember is that our forefathers moved their bodies and ate from the land, but we’ve moved to a place of inactivity and overeating.”



Maltman

Maltman always brings food to lectures, not just to give clients a taste of what to eat, but as an ice breaker and community-builder; it was a natural progression when, in 2013, she opened Leyda’s, a restaurant specializing in whole food, gluten-free and nut-free cooking, in the Riversdale district of Saskatoon. ▶



Dell

Animal therapy

Food helps; so do animals.

“Dogs don’t judge,” said Colleen Dell, a professor in the Department of Sociology and School of Public Health. Dell was appointed a Centennial Enhancement Chair in One Health and Wellness at the U of S in 2016, with a focus on addiction and mental health. One Health is a collaboration of health science professions working to attain optimal health for people, domestic animals, wildlife, plants and the environment on a local, national and global scale. Dell’s chair builds on the concept of “zootherapy” which is defined as “the positive benefits to human health from interacting with animals, focusing on the companion animal.” Her research into how animal therapy can help recovering addicts brought therapy animals into treatment centres, including a methadone maintenance program.

“Those people suffering from mental illness and addictions are the most judged,” Dell said. “Dogs want to be with you and only you and show you that love and affection.”

She explained that love, comfort and support are what people feel with animals. Dogs can break the ice and make a client feel comfortable, and frequently, trust develops that much faster with the presence of a dog—the client can trust the dog and by extension the therapist.

“We provide the dogs and they open up their hearts a little bit,” she said. “To heal, we have to talk about love. It’s not something we talk about in academia, but that’s the reality.”

She added that physical touch is incredibly important. “A counsellor can’t teach you that, but horses can. Abused kids with horses hug them all the time, it is how they can experience healthy touch.”

Dell never thought about the role of animals until she attended a canine psychology course. “Dogs live in the

moment,” she said. “Ever see a dog shake from head to tail? They literally shake off the stress, and that moment is gone.”

Indigenous approaches

Any discussion of mental illness and addiction in the Indigenous population is permanently stained by the horrific truths of residential schools, the last of which in Saskatchewan closed in the 1990s.



Tait

“Part of the challenge we have around this public telling of truth is the compounding stigma of poverty,” said Caroline Tait, a U of S researcher who runs First Peoples First Person, a national research and intervention network focused on improving the wellness and mental health of Indigenous peoples.

“In Indigenous cultures, there are healing traditions that support [recovery from] mental anxiety, distress and illness,” said Tait, who is Métis and from MacDowall, Sask. “Traditional healers’ practices depend on the cultural group, but take a holistic approach, grounded in identity, family and community. So brutally treated these children were, it gives an image of a very damaged population. But when you look at what happened and how well Indigenous people have done in this country after cultural genocide, it’s remarkable.”

But the stigma is by far increased for Indigenous persons, she asserted, and commented that people are more stigmatized for mental illness than for serving a life sentence for murder. Add on racism and discrimination, and what you have are people doubly stigmatized because of their identity on top of their illness.

“Not surprisingly,” Tait observed, “Indigenous people tend to look for services where other Indigenous people are both attending and providing the service, where it feels safer to be open and they will be treated with respect, their experiences understood and respected.” ■

“We provide the dogs and they open up their hearts a little bit. To heal, we have to talk about love. It’s not something we talk about in academia, but that’s the reality.”

COLLEEN DELL

SASKATCHEWAN HEALTH CARE TRIAGE

Universal health care in Canada may have its roots in Saskatchewan, but the province still has its fair share of health issues to address. HIV rates on Saskatchewan First Nations are among the highest in the world. Rural communities are difficult to serve, especially those in the north. There are huge gaps in the quality of health in disadvantaged populations. Adding to the complications is that health care by its nature is highly political.

There is hope, though, thanks to dedicated U of S graduates who are passionate about health and health care, and are actively working to bring about positive changes.

 ASHLEIGH MATTERN



McKinney

Empowering Indigenous communities

The health disparity in Saskatchewan's Indigenous populations is staggering, with five times the rate of diabetes, 11 times the rate of HIV and 90 times the rate of tuberculosis.

"We don't have the longevity that the rest of the population has," said Dr. Veronica McKinney (MD'98), director of Northern Medical Services at the U of S College of Medicine. "For any disease or illness, the rate is worse ... The morbidity and mortality rate in some communities is equal to that of Third World countries."

A division of the Department of Academic Family Medicine, Northern Medical Services (NMS) has been working to provide equitable, accessible health care in the north for more than 30 years. Establishing relationships is one of the key solutions, said McKinney.

"When you work together, the solutions come forward ... We're in the communities. We go to the births, we go to the wakes, we're with the people in between. We're truly there with our communities, and that's an amazing gift they give to us, to allow us to be there."

NMS physicians are in Pelican Narrows, La Ronge, Stony Rapids, La Loche and Île-à-la-Crosse, and they provide services to outposts at up to four different communities outside of those towns. NMS mandates include providing primary health-care services in the north, consultant care and referrals, research and education, and procurement, recruitment and retention of Indigenous faculty at the U of S.

"Most importantly, we're trying to foster and develop the community voice and support their endeavours to make change for themselves around health and health care," McKinney said.

On the university level, NMS is working within the College of Medicine to develop the Truth and Reconciliation calls to action, and to indigenize the curriculum. The improved curriculum provides lectures on topics including cultural safety and how history impacts patient-doctor relationships. ▶

“People are more and more not happy with health-care services; they’re looking for a sense of being heard and getting the care they feel they want and need.”

DR. VERONICA MCKINNEY

“When you treat people in the approach we’re asking people to take, it works for everybody. People are more and more not happy with health-care services; they’re looking for a sense of being heard and getting the care they feel they want and need. It’s timely to do this because it speaks to all Canadians and all Saskatchewan people, not just the Indigenous population.”

In the general population, McKinney said there is a “silver tsunami” of older adults, but in the Indigenous population, 50 per cent are 25 years of age and younger. If health policies are geared more towards the general population, they’ll also be more likely to be geared towards the elderly, which is at odds with Indigenous trends. Currently 16.5 per cent of Saskatchewan people are Indigenous, and that number is expected to grow to a third by 2045.

“If we continue to have this kind of health disparity, there’s no way we can manage that,” McKinney said.

Part of the solution will be bringing more Indigenous doctors into the fold, and ensuring there are physician mentors in the community is one way they do that. Many of the Indigenous physicians NMS supports go back to the communities they came from to become mentors.

“It’s a very strong circular process, and it’s a true investment in the community and well worth it to see the benefits.”



Lewis

Changing the conversation

Steven Lewis (BA’72, MA’73), president at Access Consulting, has been working full-time as a health policy consultant since 1999. He’s served on various boards and committees, including the Governing Council of the Canadian Institutes of Health Research, the Saskatchewan Health Quality Council and the Health Council of Canada.

He has also headed a health research granting agency, and spent seven years as CEO of the Health Services Utilization and Research Commission in Saskatchewan.

—When he thinks about the challenges in Canada’s health-care system, he sees a disconnect between health and health care.

“We tend to think of major health problems in terms of diseases like cancer and heart disease, which are real issues, but many of the diseases and their consequences originate in equality,” Lewis said. “So the system does a pretty good job of dealing with acute health problems—if you walk into an emergency room clutching your chest, you’ll get good service right away—but if you have chronic problems; if you’re a frail, elderly person; if you have some kind of communicable disease where the risk factors include where you live ... even a well-nourished system can only patch you up. It can’t really solve the basic problems in poor health.”

It’s easy to agree that primary care should be more effective, but the steps that need to be taken to improve it are less clear. Complicating matters is the natural push and pull of politics, with health care in the crosshairs. When you talk about health, Lewis said, “You do have to talk about politics, but you can also talk basic arithmetic. We can quantify the cost of failure. It’s not like the absence of investment in effective social programs is free money for the rest of us that keeps our taxes down—we pay the consequences of ill health for people. Marginalized people use more health care than non-marginalized.”

Lewis said Canadians need to start moving in an evidence-based direction. The first step is to have conversations about what might be possible with a different approach; the next step is to have public policy backed by adequate resources. And every step along the way will be a small step because health care is a complicated system that can’t be changed overnight. “What are the experiments we need to get underway to start evolving towards a better future?” Lewis asked.

While we still have a long way to go before we’re treating the source of ill health rather than the symptoms, Lewis said there is a growing appetite in primary health care to look at problems more holistically.

“People have identified primary care as the foundation of a system that is more effective and more efficient for decades, but now we’re getting to a point where there’s greater interest to make that a reality. I’m cautiously optimistic something will come of that. It may be an opportunity with the new single health authority, with all its disruption, to rethink some of these issues.” ▶



Meili

Looking upstream

Ryan Meili (BSc'00, MD'04), a family doctor and Member of the Legislative Assembly for Saskatoon Meewasin, worked as a family physician for 10 years all over rural Saskatchewan, and spent time in Mozambique, but most of his work as a doctor has taken place in inner-city Saskatoon at the West Side Community Clinic. Issues he has witnessed firsthand include some of the highest HIV rates in Canada, and

issues related to poverty, such as diabetes, depression, cancer and substance abuse.

“There are lots of elements that weren’t hopeful... but what I am hopeful about is that people are starting to notice,” said Meili. “People are starting to understand we need to do harm reduction. We need to have treatment available for HIV. People are starting to understand the social factor and that health outcomes ultimately have to manifest in political change in terms of choice.”

Meili said his work as a doctor drove his decision to go into politics because he saw the potential to create more far-reaching change as a politician.

“It’s actually political decisions that have the biggest impact ... We need to be doing a good job in Regina, and that’s my focus now. I’m trying to create the conditions for people to be healthy rather than spending time with them when they’re already sick.”

Often when politics come up, lines are drawn, and people start seeing red, but Meili said health is something that appeals across party lines. If you take partisanship out of the debate, and look at what is commonly valued in health, you can use evidence to make sound decisions.

“It’s extremely political, but it’s not about a party or an ideology, but what do we want our politics to achieve? What’s best for us all? What better measure than how healthy we are?”

Meili is also the founding director of Upstream, a national non-profit organization located in Saskatoon that aims to spark public conversations and guide recommendations about social determinants of health. The name comes from the analogy that our current health-care system keeps fishing people out of the river instead of going upstream to find out why they’re ending up there in the first place.

Upstream factors include how much money you make, access to healthy food, employment status and access to education. “What actually makes a difference?” Meili asked. “What would have the biggest impact on our health? We usually get stuck thinking about doctors in hospitals and pharmacists and nurses, but health care is only kind of after the fact.”

One way Meili would like to address these upstream health challenges is through a concept called “health in all policies.” The idea is to shift the measure of success in a society to health. Every ministry would be encouraged to make their choices based on what will improve health.

“It requires that you have a whole government approach to improving health rather than leaving everything up to the Ministry of Health,” Meili explained.

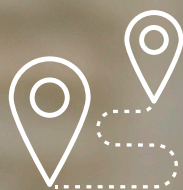
Health in all policies started in Europe and is beginning to pop up elsewhere in North America, including in Canadian provinces like Manitoba, Quebec, Newfoundland and New Brunswick.

“You don’t change the whole system, but you change the way you approach your problems ... I actually think if we did this right, it would cost less. When you invest in keeping people healthy it’s less expensive in the long run than responding when people are sick.” ■

“When you invest in keeping people healthy it's less expensive in the long run than responding when people are sick.”

DR. RYAN MEILI

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The search for MS solutions

The rates of multiple sclerosis (MS), a debilitating neurological disease, are among the highest in the world in Canada. In Saskatchewan, they may be even higher, where an estimated 3,500 to 3,700 people live with MS.



Dr. Michael Levin, inaugural chair in Multiple Sclerosis Clinical Research at the U of S.

With \$8.4 million in funding, the U of S has recruited Dr. Michael Levin as the inaugural Chair in Multiple Sclerosis Clinical Research. Levin, who began his seven-year term in March 2017, will lead the research program focused on identifying causes of MS and developing new or improved treatments.

"I've dedicated most of my adult life to exploring the causes of MS and the care of people with MS and I am grateful and humbled to be named the inaugural chair," said Levin, a neurologist who was previously a professor in the College of Medicine at the University of Tennessee Health Science Center, and director of the Multiple Sclerosis Center and Laboratory of Viral and Demyelinating Diseases, in Memphis, Tenn.

Levin, who has always been interested in neurosciences and completed his medical degree at Pennsylvania State University and a post-doctoral fellowship focused on multiple sclerosis at the National Institutes of Health in Bethesda, Md., said his interest in MS was sparked in the early '90s.

"I met a couple of MS patients at the

hospital. They were always strikingly young, intelligent and mid-career, so watching them become disabled was disturbing and at that time there were no FDA-approved medications."

Since then, his research has focused on the relationship between viruses, autoantibodies and acquired DNA mutations as potential causes of multiple sclerosis.

At the U of S, Levin will lead a team of researchers, clinicians and students that includes Dr. Ilia Poliakov, director of the MS Clinic, and U of S researchers Dr. Katherine Knox, who focuses on MS and mobility, and Valerie Verge, director of the Cameco Neuroscience Research Centre, who focuses on nerve injury and repair mechanisms.

"There really is a fair amount of infrastructure here already," said Levin. "As a research chair, I think one of my major responsibilities is to get the pieces here to collaborate ... We will make significant advances in MS by providing world-class care and cutting-edge research, garnering a national and international reputation for excellence." ■

"There really is a fair amount of infrastructure here already. As a research chair, I think one of my major responsibilities is to get the pieces here to collaborate."

DR. MICHAEL LEVIN

ALUMNI NEWS

President's message

Join the conversation

on official alumni social media channels to stay connected.



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As I had the pleasure of enjoying the Alumni Weekend festivities on campus back in May, it struck me as perfect reaffirmation of my service as a board member of the Alumni Association. Seeing graduates of our university come from across the province, across the country and across the border to return to a special place in their lives, was meaningful to me and my fellow board members. It was the type of experience we strive to build for our 150,000 alumni worldwide—

that wherever you are, the U of S will always be home and that as alumni, we are forever connected.

Alumni Weekend punctuated our year-long celebration of the Alumni Association's centennial. These months have been memorable, and I have found myself thinking about the years ahead, towards the next 100.

While we don't know what 100 years into the future may hold, I know this is true: our bond with the U of S is lifelong. Whatever your culture, your background, what you studied, and wherever your studies have taken you, our history is incomplete without your story and your passion.

As our collective history unfolds, I invite you to be an active part of it!

There are so many different ways to stay involved with your alma mater. Whether you attend any of the events hosted by the Alumni Association, show your team spirit at a Huskies game, connect with your college, volunteer at a U of S event, make a gift to support current students, or just stop by the Bowl for a serene morning walk on the weekend, I invite you to take advantage of the many ways to feel the pulse of our university.

I promise you, even though you may no longer be on campus every single day, the bond between you and your alma mater can be as rewarding as you want to make it.

Home is never far away. ■

Kelly Strueby (BComm'84)
President, Alumni Association

ALUMNI

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Fighting fetal alcohol syndrome disorder

 SEAN CONROY

Health Canada lists fetal alcohol syndrome disorder (FASD) as the leading known preventable developmental disability among Canadians, and Adebola Obayan (PhD'04) has devoted his medical career to finding innovative solutions for this significant health issue.



Obayan

FASD is a condition caused when an unborn baby is exposed to alcohol during pregnancy, and Obayan has prioritized its diagnosis and treatment since attending medical school in Nigeria in 1987. Now the author of three patents, Obayan's work in this area reached new heights during his U of S postgraduate research.

One patent, Assay for overall Oxidative Stress, provided the finding that screening for FASD can be improved using a dipstick to measure oxidative stress, which occurs when there is an excess of free radicals (molecules with an odd number of electrons) and a decrease in antioxidant levels in the body.

Using blood samples of patients and healthy controls, Obayan's dipstick test discovered a significant difference in free-radical levels in sick patients, making the assay a relevant tool for FASD diagnosis and therapy monitoring.

"This method has been used to measure oxidative stress in a study on sick newborns in the Royal University Hospital's neonatal intensive care unit," said Obayan, who now works as a general

surgeon. "I believe this has potential for bedside and laboratory testing for oxidative stress."

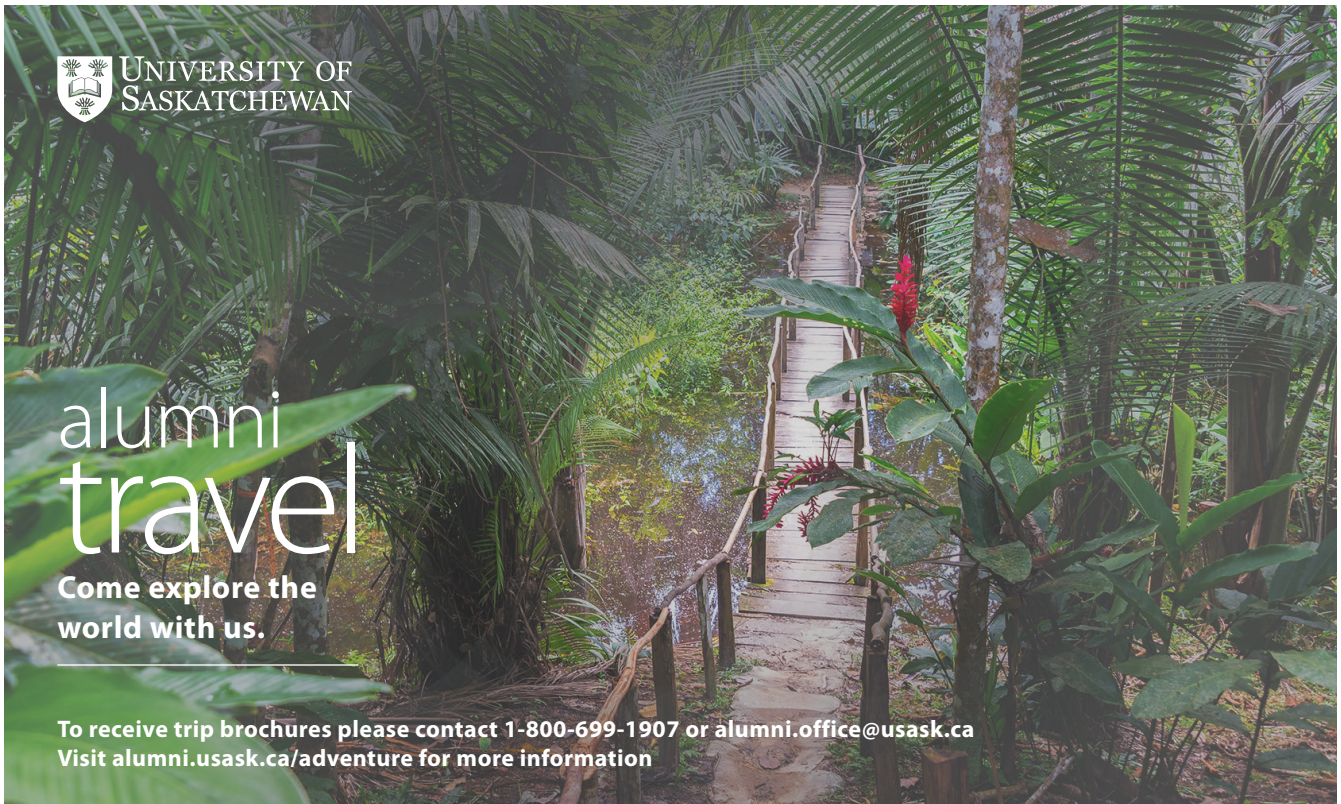
While there is no medical cure for FASD, Obayan remains optimistic that his research could ultimately help make lives more manageable for those with the condition.


"Early diagnosis and intervention services are crucial for modifying the impact on the affected individuals," he said.

He also undertook the first animal study model for FASD and the role oxidative stress plays in the disorder. Obayan and Dr. Mansfield Mela, faculty in the College of Medicine, have assessed the effects of alcohol on the brain of euthanized rats and the hope is that the findings will promote early diagnosis of FASD by screening newborns for oxidative stress using the test.

Obayan said his postgraduate study at the U of S is the foundation on which research has served his career.

"I opted for clinically relevant innovations using basic science concepts," he said. "My PhD work gave me exposure on the gap between clinical and basic sciences." ■



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Alumni weekend

Hundreds of alumni returned to campus in May for Alumni Weekend, the culmination of the Alumni Association Centennial festivities. In addition to several college reunions and milestone celebrations, our alumni got reacquainted with the U of S with tours of campus, Patterson Garden and the Canadian Light Source. Golden graduates (those who graduated in 1967 or earlier) were honoured during a special ceremony in Convocation Hall celebrating 50 years since earning their degree.

The Bowl was the destination for alumni (and future alumni) at the Family Carnival. Alumni were also illuminated by talks from Dr. Todd Shury (DVM'93), wildlife veterinarian with Parks Canada, and the U of S Space Design Team. Alumni Weekend was an action-packed celebration of 100 years of the Alumni Association and the millions of memories forged through the years. ■



homecoming 2017



All roads lead home

The University of Saskatchewan Alumni Association was the proud sponsor of this year's Homecoming football game. More than 8,000 fans packed Griffiths Stadium to cheer on the Huskies to a 43-17 victory over the University of Alberta Golden Bears. Alumni enjoyed games, food and live music inside the Wyant Group Rally Alley before watching the game under the lights. Homecoming 2017 was the celebration of our connection with our alma mater. No matter how far away life may take you from campus, the U of S is always home.



Read it anywhere, on any device online at usask.ca/greenandwhite

If you no longer wish to receive a printed copy, visit alumni.usask.ca or call us at 306-966-5186 or 1-800-699-1907 and we'll sign you up to receive only a digital version.

Update your contact info at alumni.usask.ca/update

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

Alumni achievement awards

The University of Saskatchewan Alumni Association is proud to honour those who have excelled in their respective fields and enhanced their communities.

On October 26, we pay tribute to these esteemed individuals and their achievements at the annual U of S Alumni Association Honouring Our Alumni event, an evening recognizing their determination and influence.



**Dr. Gregg Adams
(DVM'82)**

Presented for his excellence in education and research.

Dr. Gregg Adams, U of S professor of veterinary biomedical sciences since 1991, has worked with colleagues across campus to develop an innovative reproductive research program. Gregg's team recently celebrated the birth of the world's first bison babies from in vitro fertilization and frozen embryos, paving the way for species recovery. Among his numerous awards is the U of S Distinguished Researcher Award.



**Dr. John Conly
(MD'78)**

Presented for his commitment to advancing the medical profession and his dedication to public service.

Dr. John Conly is internationally recognized as one of the world's leading infectious diseases specialists and a pre-eminent expert on antimicrobial resistance, serving on advisory groups within the World Health Organization in this capacity. John was the recipient of the Distinguished Service Medal from the Alberta Medical Association, which is awarded for outstanding personal contributions to the medical profession.



**Max FineDay
(BA'15)**

Presented for his excellence in Aboriginal initiatives and community leadership.

Max FineDay is the co-executive director of Canadian Roots Exchange, a national charity that brings together Indigenous and non-Indigenous youth to explore reconciliation through exchange programs, national conferences and leadership development. He co-developed Next Up: First Nations and Métis Youth in Action in 2014, a Saskatchewan-wide program focused on supporting emerging Indigenous youth leaders through skills and issues-based training.



**Sherril Gelmon
(PT'76)**

Presented for her outstanding contributions to education and research.

Sherril Gelmon's career has been devoted to developing management, policy and organizational research in health care. She received the 2017 Filerman Prize for Educational Leadership from the Association of University Programs in Health Administration for her contributions to health administration, education and leadership. She is currently a professor at the Oregon Health and Science University and Portland State University School of Public Health.



Jo-Ann Hnatiuk (BSN'95)

Presented for her outstanding public service.

In 2003, Jo-Ann Hnatiuk was deployed to Afghanistan as a critical care nursing officer for the Canadian Forces. She served in the intensive care unit and emergency room, and provided clinical education on-air transport and pediatrics. In 2007, Jo-Ann was redeployed as an air medevac nurse with the Task Force Afghanistan Corsair Medevac Unit in an effort to augment the U.S. Blackhawks' medevac.



Dr. David Mulder (MD'62)

Presented for his commitment to athletics, sports, wellness, education and research.

Dr. David Mulder became surgeon-in-chief at the Montréal General Hospital in 1977. Among the positions he holds are medical director of the McGill Sports Medicine Centre and consulting staff for the Montréal Canadiens and Montréal Alouettes. David helped develop a trauma care system in Quebec based on regionalization of care. In 1997, he was recognized as a member of the Order of Canada.



Jeff Norris (BA'97)

Presented for his outstanding community leadership and philanthropy.

Jeff Norris's career in non-profit organizations began in the '90s when he led The Big Bike Ride for the Heart and Stroke Foundation. Jeff, currently president and CEO of Royal Columbian Hospital Foundation in New Westminster B.C, received the Giving Hearts Award by the Association of Fundraising Professionals (Vancouver chapter) and a Forty under 40 Award by *Business in Vancouver*.



Brian Towriss (BComm'78)

Presented for his commitment to athletics, sports and wellness.

As the head coach of Huskie football for 33 years, Brian Towriss has left a legacy of leadership and excellence. The winningest coach in Canadian university football history, Brian led the Huskies to nine Vanier Cup appearances and three national championships (1990, 1996 and 1998). Brian was awarded the Saskatchewan Order of Merit in 2007 and was inducted into the Canadian Football Hall of Fame in 2017.



Ralph Young (BE'67)

Presented for his excellence in business and industry, and community service.

For 43 years, 16 as president and CEO, Ralph Young was integral to the success of Melcor Developments Ltd., a real estate development company based in Edmonton. Ralph's work has been recognized with several awards, including the Queen's Golden Jubilee Medal, Alberta Centennial Medal, and the City of Edmonton Salute to Excellence. He served as the chancellor of the University of Alberta from 2012-2016.



For more information about this year's award winners, go to alumni.usask.ca/achieve

CLASS NOTES

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 *Green & White* or in college publications. Visit alumni.usask.ca/classnotes.

1910

Mr. Emmett M. Hall, LLB'19, DCL'64, of Saskatoon, SK, was posthumously inducted into the Canadian Medical Hall of Fame on May 4, 2017.

1940

Mr. George Cooper, AGRIC'44, of Foam Lake, SK, was posthumously inducted into the Saskatchewan Agricultural Hall of Fame on April 22, 2017.

Dr. Jean L. Pettifor, BA'44, of Calgary, AB, received the Wilhelm Wundt - William James Award given jointly by the American Psychological Association and the European Federation of Psychological Associations. The award ceremony took place in Stockholm, Sweden in 2013. It was given in recognition of her work in the development of international codes of ethics for psychologists.

1950

Mr. Robert W. Mitchell, BA'57, LLB'59, of Regina, SK, has been posthumously named as a 2017 recipient of the Saskatchewan Order of Merit.

Mr. Wally A. Pieczonka, BE'53, of Burlington, ON, has been named the 2017 Philanthropist of the Year by the Burlington Foundation.

Mr. Gunter E. Rochow, BA'58, of Cumberland, ON, retired as president of Capra International Inc., the consulting company that he had founded. Under his leadership the firm achieved an international reach of 194 countries. The Canadian Evaluation Society awarded him Credentialed Evaluator status.

1960

Mr. Shakeel M. Akhtar, PhD'68, of Saskatoon, SK, was presented with the Governor General's Caring Canadian Award on March 4, 2016, in recognition of his 32 years of dedication to promoting social harmony, intercultural understanding and diversity.

Professor Emeritus Ron G. Britton, BE'62, of Sanford, MB, was named the initial recipient of the Canadian Engineering Education Association Lifetime Service Award on June 6, 2017. The Ron Britton Engineering Education Vanguard Award, was also announced, and this will be offered beginning in 2018.

Mr. Stuart N. Cram, BA'67, Educ'68, of Regina, SK, was a 2017 Saskatchewan Sports Hall of Fame inductee for the sport of gymnastics in the Founder Category. Stuart has been an athlete, coach and judge and created the computer scoring program "GymScore" that is still used by gym clubs around the globe.

Professor Emeritus Ronald J. Fisher, BA'66, MA'68, of Victoria, BC, received a Distinguished Scholar Award from the Peace Studies Section of the International Studies Association at the annual convention in February 2017. In 2016, Ron published an autobiographical collection of selected articles, entitled *Ronald J. Fisher, A North American Pioneer in Interactive Conflict Resolution in the Springer Briefs Pioneer Series*.

Mr. Robert D. Laing, BA'62, LLB'67, of Saskatoon, SK, has been named as a 2017 recipient of the Saskatchewan Order of Merit.

Mr. Jack C. Lee, BA'69, BComm'72, of Calgary, AB, entered the oil and gas industry after university and last served as president and CEO of Acclaim Energy Trust, which he held until 2002. Jack took the

directors course at U of C and attained ICD.D designation from the Institute of Corporate Directors and has since been chair of Acclaim EnergyTrust, Canetic Energy Trust and is currently chair of Alaris Royalty Corp and Sprott Inc.

Dr. Barrie B. McCombs, BA'64, MD'68, of Calgary, AB, and 60 other Calgary square dancers were part of Alberta Ballet's *Our Canada* production to the music of Gordon Lightfoot in May 2017. He remembers hearing Lightfoot's music for the first time while working as the custodian at the U of S Memorial Union Building in the 1960s.

Mr. Dale J. McHarg, BA'69, of Melfort, SK, was inducted into the Legends of Curling in the Curler/Builder Category by CurlSask on April 25, 2015.

Dr. Roberta M. McKay, Nurs'64, BSN'69, BA'80, MD'81, of Regina, SK, has been named as a 2017 recipient of the Saskatchewan Order of Merit.

Mr. Frederick F. Mulder, BA'64, LLD'17, of London, UK, received a honorary Doctor of Laws at the U of S spring convocation ceremonies on June 6, 2017.

Mr. Herb C. Pinder, BA'67, LLD'17, of Saskatoon, SK, received a honorary Doctor of Laws at the U of S spring convocation ceremonies on June 8, 2017.

Mr. Robert B. Pletch, BA'67, of Regina, SK, was appointed as a director to the new Saskatchewan Health Authority on June 14, 2017.

Mr. Douglas H. Porteous, BA'68, Educ'69, BEd'75, MEd'77, of Saskatoon, SK, was named interim CEO of the Meewasin Valley Authority on May 18, 2017.

Ms. Anne M. Stang, BA'61, Educ'65, BEd'68, of Calgary, AB, recently translated two books from German to English. Both will be published by the American Historical Society of Germans from Russia.

Mr. Harvey G. Walker, BA'64, LLB'69, of Battleford, SK, was elected as the mayor of Cochin, SK for a four-year term on July 30, 2016.

Mr. Peter E. Zakreski, BA'61, of Saskatoon, SK, was awarded the Saskatchewan Volunteer Medal on April 24, 2017.

1970

Ms. June A. Avivi, BEd'76, of Saskatoon, SK, was named as a 2017 recipient of the Saskatchewan Order of Merit.

Mr. Colin B. Bachynski, BComm'79, of Regina, SK, was awarded the Saskatchewan Volunteer Medal on April 24, 2017.

Dr. Bob T. Bellamy, DVM'76, of Moose Jaw, SK, received the President's Awards from the Canadian Veterinary Medical Association.

Mr. Neil B. Bishop, BEd'70, BA'71, MA'72, of St. John's, NL, published a short story, *My Night in the 'Injun Inn'*, largely set in and near Saskatoon's former Barry Hotel located on 20th St. W. Focused on the Aboriginal experience in Saskatoon as observed by him and described to him by others, including a Métis woman who had "worked the street" starting age 12, the story appeared in *Grain* summer 2016.

Mr. Dwayne S. Brenna, BA'77, MA'83, of Saskatoon, SK, received the 2017 Saskatchewan Book Award (Muslims for Peace and Justice Fiction Award) for his book *New Albion*.

Ms. Darlene E. Danyliw, BSHEC'76, BEd'77, PGD'90, of Saskatoon, SK, received the YWCA Women of Distinction Award for Athletics on May 31, 2017.

Mr. Partha R. Das Gupta, PhD'72, of Kolkata, India, authored *Commercial Agriculture by Indian Smallholders: From Farm Prospects to Firm Realities*, which formally launched on April 21, 2017 at the India International Centre in New Delhi. Partha, retired in 2014 as principal advisor agronomy of Syngenta Foundation for Sustainable Agriculture, and is now advisor emeritus.

Ms. Kathy J. Ford, BA'71, of Saskatoon, SK, received the 2017 Women of Distinction Lifetime Achievement Award on May 31, 2017.

Mr. Jack G. Fulton, BA'76, BEd'85, of Tisdale, SK, retired in 2013, after 30 years teaching Grades 1 to 12. Once retired Jack started to write. His first effort was a humorous understanding of his mom and their relationship entitled *Take off Your Hat, I Want to Stand Up*. His second book is *Fu Hou, The Golden Buddha*.

Mr. Brian F. Gable, BA'70, DLet'15, of Toronto, ON, was appointed as a Member of the Order of Canada on June 30, 2017.

Mr. Marianne L. Greer, BSP'75, MCTGED'84, of Saskatoon, SK, since retiring, earned certification as a Fellow of the Canadian Gemmological Association and started a jewelry business, MG Gems, specializing in chainmail, incorporating gemstones. Recently, Marianne published her first historical fiction novel, *Thrice Blest*.

Ms. Betty-Ann L. Heggie, BEd'75, of Toronto, ON, was inducted into the Junior Achievement Business Hall of Fame on June 7, 2017.

Dr. Vicki R. Holmes, MD'73, of Saskatoon, SK, received the YWCA Women of Distinction Award for Health and Wellness on May 31, 2017.

Mr. Jim A. Kells, BE'77, MSc'80, PhD'95, of Saskatoon, SK, was the recipient of the 2017 Provost's College Award for Outstanding Teaching (College of Engineering) from the U of S.

Mrs. Cathy H. Mills, BEd'77, of Saskatoon, SK, received the YWCA Women of Distinction Award for Education on May 31, 2017.

Ms. Phyllis G. Paterson, BSHEC'78, MSc'83, of Saskatoon, SK, was the recipient of the 2017 Provost's College Award for Outstanding Teaching (College of Pharmacy and Nutrition) from the U of S.

Mr. Bill M. Rafoss, BA'74, Arts'97, MA'05, of Saskatoon, SK, was acclaimed the board chair of Amnesty International Canada to serve a two-year term on June 4, 2017.

Professor Emeritus Bill A. Waiser, MA'76, PhD'83, DLitt'10, of Saskatoon, SK, was appointed as a Member of the Order of Canada on June 30, 2017. Bill also received the

2017 Saskatchewan Book Award - University of Saskatchewan Non-Fiction Award for *A World We Have Lost: Saskatchewan Before 1905*.

Mr. Grant D. Wood, BSA'79, MSc'94, of Saskatoon, SK, was the recipient of the Saskatchewan Institute of Agrologists Distinguished Agrologist Award.

Mr. Wayne G. Wouters, BComm'74, LLD'12, of Ottawa, ON, was appointed an Officer of the Order of Canada on June 30, 2017.

Mr. Brian W. Zulkoskey, BSc'78, MSc'82, of Saskatoon, SK, received the USSU Teaching Excellence Award for 2017 on April 2, 2017.

1980

Mr. Graham G. Addley, BA'87, of Saskatoon, SK, was elected to the Board of Directors of the Saskatoon Co-op in April 2017.

Ms. Beverley A. Brenna, BEd'84, MEduc'91, BA'02, of Saskatoon, SK, recently published a middle-grade novel, *Fox Magic*, adding to her long list of books for young people, including a Governor General's shortlisting and winner of a Printz Honor for *The White Bicycle*, a Dolly Gray Award for *Waiting for No One*, and a listing for *Wild Orchid* on CBC's 100 Young Adult Books That Make You Proud To Be Canadian.

Mrs. Laura B. Budd, AGRIC'85, of Kelliher, SK, received a 2017 YWCA Regina's Women of Distinction Award on May 11, 2017.

Mr. Doug K. Burnett, JD'83, of Regina, SK, assumed the position of acting president and CEO of SaskTel on July 1, 2017.

Ms. Bonnie L. Chapman, BEd'80, of Regina, SK, received a 2017 YWCA Regina's Women of Distinction Award on May 11, 2017.

Mr. Ali A. Chowdhury, MSc'84, of Rancho Cordova, CA, was recognized by the non-profit group, Asians in Energy, as an Energy Leader.

Mr. Earl N. Cook, BEd'80, PGD'85, LLD'17, of La Ronge, SK, received an honorary Doctor of Laws at the U of S spring convocation ceremonies on June 7, 2017.

Dr. Sandor J. Demeter, ASSOC'83, BSc'86, MD'89, of Winnipeg, MB, was recently appointed to serve a one-year term on the Canadian Nuclear Safety Commission.

Ms. Louise G. Greenberg, PhD'86, of Regina, SK, is retiring after a distinguished career spanning 32 years in the Saskatchewan public service, including senior roles in agriculture, health and social services before being appointed deputy minister of advanced education in 2012.

Ms. Arlene A. Jorgenson, BSN'81, of Saskatoon, SK, founded and built HEALTHSERV (SASK), the first private occupational health clinics in Regina and Saskatoon. They won numerous business and industry awards for innovation and customer service. Arlene sold the company in 2014. Recently she was appointed to the Board of Directors for the St. Paul's Hospital Foundation for 2017/2018.

Judge Kevin D. Kelly, BA'81, of Wellington, New Zealand, is a district court judge in New Zealand. After graduating from the U of S, Kevin obtained a law degree from Victoria University of Wellington. Kevin also holds a Masters of Public Policy and a Masters of Public Administration and was appointed a judge in 2016.

Mr. Grant J. Kook, BComm'85, of Saskatoon, SK, was appointed as a director to the new Saskatchewan Health Authority on June 14, 2017. He will serve as vice-chairperson.

Mr. Paul M. Lee, BE'81, BSc'83, Sc'86, MSc'89, PhD'97, of Saskatoon, SK, was the recipient of the 2017 Provost's College Award for Outstanding Teaching (College of Medicine) from the U of S.

Mr. Barry G. Munro, BComm'84, of Calgary, AB, has been awarded a FCPA from CPA Alberta.

Ms. Jan N. Olesko, BEd'86, BA'95, of Prince Albert, SK, was awarded the Saskatchewan Volunteer Medal on April 24, 2017.

Dr. Volker V. Rininsland, MD'81, of Moose Jaw, SK, has been named 2017 Physician of the Year by The Saskatchewan Medical Association.

Ms. Susan E. Ross, BA'86, LLB'86, LLM'00, of Moose Jaw, SK, was appointed president of the Water Security Agency for the province of Saskatchewan on March 16, 2017.

Mr. Jeff J. Schoenau, BSA'84, PhD'88, of Saskatoon, SK, received the USSU Teaching Excellence Award for 2017 on April 2, 2017.

Ms. Karen V. Schwan-Lardner, BSA'85, MSc'95, PhD'12, of Saskatoon, SK, received the USSU Teaching Excellence Award for 2017 on April 2, 2017.

Mr. Cameron B. Swan, BSA'89, of Regina, SK, was appointed president and CEO of Saskatchewan Liquor and Gaming Authority on May 11, 2017.

Judge Donna L. Taylor, BSc'81, LLB'82, of Yorkton, SK, was appointed as a judge to the Provincial Court in Yorkton on March 10, 2017.

Ms. Shari L. Watson, BSN'86, of Saskatoon, SK, has been appointed to the Board of Directors for the St. Paul's Hospital Foundation for 2017/18.

Mr. Neil F. Weber, BComm'89, of Saskatoon, SK, has been re-appointed to the Board of Directors for the St. Paul's Hospital Foundation for 2017/18. He currently serves as vice chair.

Ms. Janet L. Whitridge, BA'88, LLB'92, of Regina, SK, has been appointed to the Government of Saskatchewan's Legal Services Task Force. The task force's mandate is to examine the possibility of allowing non-lawyers to provide some legal services to Saskatchewan residents.

1990

Mr. Jason A. Aebig, BA'99, of Saskatoon, SK, was elected for a two-year term to the Greater Saskatoon Chamber of Commerce Board of Directors for 2017-18.

Mr. Dean J. Bernhard, BComm'91, of Calgary, AB, has been appointed as director of RMP Energy Inc.

Mr. Tom R. Caldwell, BA'96, of Regina, SK, helped to launch *Good Evening: An Alfred Hitchcock Podcast*, with hosts from Canada and England.

Ms. Sylvia C. Domaradzki, BA'94, LLB'02, of Halifax, NS, was appointed a Crown attorney in the Special Prosecutions section of the Public Prosecution Service in the province of Nova Scotia on June 5, 2017.

Ms. Erika E. Dyck, BA'98, MA'00, of Saskatoon, SK, received the YWCA Women of Distinction Award for Research and Technology on May 31, 2017.

Ms. Shannon D. Forrester, BSPE'98, MSc'01, of Saskatoon, SK, was the recipient of the 2017 Provost's College Award for Outstanding Teaching (College of Kinesiology) from the U of S.

Madam Justice Michele H. Hollins, LLB'92, of Calgary, AB, was appointed a Justice of the Court of Queen's Bench of Alberta on March 24, 2017.

Mr. Zoran Jankovic, BSc'98, of Calgary, AB, was appointed the vice-president exploration for RMP Energy Inc. effective August 1, 2017.

Ms. Cara L. Keating, BComm'99, of Toronto, ON, was appointed vice-president, customer development of PepsiCo Foods Canada on December 1, 2016.

Mr. Robert W. Maguire, BComm'90, MBA'92, of Ajax, ON, was appointed by the deputy minister as the associate regional director general, SK Region for Indigenous and Northern Affairs Canada as of March 1, 2017.

Ms. Debbie Mineault, BEd'92, of Spruce Grove, AB, spent eight years teaching in Saskatchewan and Alberta classrooms and received a master's degree in Alberta. Currently, Debbie is an education manager with the First Nations, Métis and Inuit Division in Alberta Education. She continues to provide leadership to impact transformational changes for First Nations, Métis and Inuit student success.

Mr. Shane R. Parker, BA'99, of Saskatoon, SK, has been reappointed to the Social Security Tribunal. His new three-year term begins October 1, 2017.

Mr. Dion R. Pollard, BSPE'97, of Vermilion, AB, assumed the position of chief administrative officer for the City of Lacombe, AB on April 24, 2017.

Mr. Curtis A. Potyondi, BComm'91, of High River, AB, was nominated for the EY Canadian Entrepreneur of the Year Award for 2017.

Madam Justice Palbinder K. Shergill, LLB'90, of Surrey, BC, was appointed to serve as judge on the

British Columbia Supreme Court on June 23, 2017.

Ms. Qi Tang, MSc'95, of Toronto, ON, was promoted to senior vice president and CFO of RioCan Real Estate Investment Trust on June 8, 2017.

Dr. Janet J. Tootoosis, MD'99, of North Battleford, SK, was appointed as a director to the new Saskatchewan Health Authority on June 14, 2017.

Mr. Edward P. Van Vliet, BFA'93, BA'01, of Edmonton, AB, recently became facility supervisor for two Provincial Historic Sites: Rutherford House and Stephansson House. He is on the board of the Alberta Museums Association as a director.

Mr. Daniel J. Zrymiak, Bcomm'91, of Surrey, BC, was presented with the ASQ Crosby Medal on April 30, 2017 for being co-author of the *ASQ Six Sigma Green Belt handbook*.

2000

Mr. Muiyiwa S. Adaramola, PhD'08, of Aas, Norway, is a professor of renewable energy at the Norwegian University of Life Sciences, Norway.

Mr. John J. Agioritis, BA'00, LLB'03, of Saskatoon, SK, has been re-appointed to the Board of Directors for the St. Paul's Hospital Foundation for 2017/18.

Judge Michelle E. Baldwin, LLB'06, of Meadow Lake, SK, was appointed as a judge to the Provincial Court in Meadow Lake, SK on June 9, 2017.

Ms. Alicia D. Bjarnason, BSc'00, of Calgary, AB, is currently a masters student at the University of Calgary, studying human geography. In 2016, she received an Alberta Graduate Citizenship Award. Alicia volunteers as the president of the Alberta Women's Science Network and sits on multiple boards promoting science literacy.

Mr. Brent E. Bobick, BSc'02, PhD'07, of Saskatoon, SK, received the USSU Teaching Excellence Award for 2017 on April 2, 2017.

Mr. Collin D. Espeseth, BSc'04, BEd'06, BA'09, of Eastleigh, U.K., is currently a lecturer of mathematics at Chichester College in Chichester,

U.K. Collin has a wife and two young boys and recently published his first novel *Visions - Knights of Salucia - Book 1*.

Ms. Maud Ferrari, PhD'09, of Saskatoon, SK, received the New Researcher Award at the 2017 U of S spring convocation ceremonies.

Ms. Kris J. Horudko, BSP'03, of Charlottetown, PEI, was the recipient of the PEI Pharmacist Association's Patient Focused Practitioner Award on May 6, 2017.

Ms. Namarta Kochar, BA'00, Arts'00, of Saskatoon, SK, was the recipient of the SABEX Community Leadership Award on February 2, 2017.

Mr. Alan M. Koop, BComm'07, MPAcc'09, of Saskatoon, SK, has been re-appointed to the Board of Directors for the St. Paul's Hospital Foundation for 2017/18.

Mrs. Sally R. Meadows, BEd'04, of Saskatoon, SK, recently had her song, *Holy Spirit*, shortlisted for the 2017 Word Awards, category Terrence L. Bingley Award for Best Song Lyrics. This is the third time Sally has been nominated in this category, and the fourth time she has been nominated for The Word Awards.

Mr. David A. Piche, BA'09, JD'15, of Saskatoon, SK, was recognized by MD Ambulance at the 2017 Badge, Shield and Star Dinner for saving the life of a woman who had gone into cardiac arrest.

Mrs. Andrea J. Regier, BEd'01, of Saskatoon, SK, was the recipient of the 2016-17 Prime Minister's Award for Teaching Excellence.

Ms. Ainsley K. Robertson, BComm'09, of North Vancouver, BC, was presented with the 2017 Red Cross Young Humanitarian of the Year Award on April 26, 2017.

Ms. Nicole L. Sarauer, JD'09, of Regina, SK, was elected interim leader of the Saskatchewan NDP on June 21, 2017. She is the first woman to lead the Saskatchewan NDP party.

2010

Ms. Brooke A. Johnson, BA'12, JD'16, of Saskatoon, SK, recently joined the firm of McDougall Gauley LLP as an associate.

Mr. Rajesh Kavia, BusAdm'16, of Saskatoon, SK, received a Newcomer Entrepreneur of the Year Award from Saskatoon Regional Economic Development Authority on June 7, 2017.

Dr. Zafrina Poonja, BSc'10, MD'14, of Edmonton, AB, was presented with the Resident Doctors of Canada Puddester Award for Resident Wellness on April 30, 2017.

Mr. Gabe W. Senecal, BA'16, of Burnaby, BC, was appointed to serve as a member of the Prime Minister's Youth Council in December 2016. The council is designed to bring a diversity of youth voices from across the country to the highest reaches of government.

Mr. Derek E. Tannis, MEd'10, of Saskatoon, SK, received the Doug Favell Staff Spirit Award for 2017 on April 2, 2017.

IN MEMORIAM

The Alumni Association has noted, with sorrow, the passing of the following graduates.

In Memoriam include those who have passed prior to March 15, 2017. Names are listed by decade of receipt of their first U of S degree. Date of death and last-known address can be found online at usask.ca/greenandwhite.

1930

- Smeltzer, Morrison F, BA'39, BEd'48, MA'50

1940

- Allin, Clifford E, BA'47, BEd'48
- Banks, Ruth N (Penny), BEd'48, BA'48, MEd'69
- Boulter, Charles E, BComm'49
- Clarke, Harvey C, BA'47, MEd'77
- Dolsen, Winnifred N, BACC'43
- Enns, Delbert E, AGRIC'48
- Flaa, Margaret B (Parker), BSN'46
- Hardy, Hugh S, BComm'48
- Harry, Robert M (Bob), BE'49
- Kenny, Lois E (Watts), BComm'47
- Kjeldson, Robert C (Bob), BComm'49
- Lampman, Margery I (Docking), BHSC'47
- Logan, Robert I, BA'42, MEd'42
- MacKenzie, Alma A (Jean), BEd'49
- Morrison, Dorothy E (Carbert), BHSC'43
- Pow, John R, BE'48
- Smithwick, Jerry M, BA'41
- Speers, Archibald W, BE'47
- Towill, William B, BSA'49
- Trainor, Helen M (Dixon), BA'45, MA'47
- Traynor, Elinore E, BA'42
- Trembley, James A, Pharm'49, BA'56
- Wozniak, Roman R (Roy), Pharm'48, BSP'49
- Zip, Bohdan, BA'49

1950

- Adolph, Jack, BA'50, MEd'52
- Andre, Marie, BEd'57
- Belcourt, Edmond L, BSP'58
- Bowler, Edward J, AGRIC'59, BSA'68

- Broatch, Joanne (Legger), BA'52
- Brown, William Z, BA'53, LLB'56
- Burnett, James A, BEd'58, MEd'65
- Callfas, Aline G (Taylor), NURS'57
- Cameron, James H (Jim), BSP'56
- Casswell, Campbell G (Cam), BSA'50, MSc'51
- Davis, Harold C (Hal), BA'58, PHYS'59
- Francis, Robert E (Bob), BE'53
- Garratt, Albert J, BSA'51
- Johnson, Lorne E, BE'59, Educ'62, BEd'71
- Johnston, Donald K (Keith), BA'50
- Kachur, Peter, BEd'54, BA'61
- Klassen, William W, MEd'52
- Lane, Douglas A, BE'50, MSc'52
- Lang, Larry L, BEd'59
- Legault, Leonard H (Len), BA'57, LLB'59
- Lewchuk, Eugene A, BA'55, LLB'57
- Martenson, William J, BE'52
- McKague, Ormond K, BA'59, Educ'60, BEd'62
- Peyton, Noel C, BA'59, Educ'64, BEd'65
- Piasta, Edward, BA'57, LLB'59
- Robinson, Dorothy F (Ferne), BEd'50, BA'68, PGD'69
- Salamon, Lawrence G, BEd'52, BA'70
- Stewart, Robert C, BEd'58, BA'60
- Stewart, William H, BA'56
- Thomas, Dennis D, BusAdm'57
- Torgerson, Charles, AGRIC'56
- Wallace, Herbert F, BE'58
- Wurts, Elwood G, BE'56

1960

- Adamack, Helen A, BEd'67
- Arnold, Ronald B, BEd'66, BSc'70, PGD'76, PGD'84, MEd'95
- Bitner, Curt A, BSP'67
- Boxall, Robert G (Grant), BSP'64
- Brown, Shirley I (Bauming), BEd'68
- Cameron, Audrey M, BA'65
- Chrones, Matina, BA'67, MA'75

- Czornobay, Michael A, LOCADM'63, LOCADM'65, PUBADM'69
- Dell, James E, BEd'67
- Deutscher, Thomas B, BA'69, Arts'70, MA'71
- Eckstrand, Nels L, BE'62
- Gareau, Andre J, BComm'63
- Gibbons, Patricia, BA'64
- Hanson, Elaine M (Huseby), BEd'67, BA'67
- Hein, Hubert S, BA'61
- Hodges, Ronald K, BEd'61, BA'65, PGD'79
- Horsman, Kenneth R, BA'67, BEd'72, EDADM'73
- Jamieson, Geoffrey G, MD'65
- Lane, Edward G, BE'60
- Leblanc, Rheel J, HOSADM'69
- Madsen, Margaret E (Kristjansson), BA'60
- Martin, Dennise L, BSN'69
- Mathieu, Alfred L, PhD'60
- Mighton, John D (Jack), BA'64
- Ng, Yuen S (Ernie), BE'61
- Olinyk, Eugene T, BE'65
- Redekop, Walter B, BSA'63, Educ'64, BEd'64
- Selme, Gerald E, BE'65, MSc'67
- Serdachny, Leonard J, BComm'64
- Simoneau, Maurice L, BA'61
- Simpson, Marian E (McGirr), BSN'63
- Suderman, Victor P, BE'62, BusAdm'66
- Taylor, Wesley G, BSP'69
- Thompson, Clinton M, BE'67
- Tidsbury, Kenneth G (Ken), BEd'61, BAPE'62
- Varughese, George, MSc'62
- Young, Valerie A (Hoskins), BEd'67
- Yuzak, Zygmunt, BEd'61, BA'62
- Zsombor, Edgar D (Ed), BE'67

1970

- Baker, Douglas N, BComm'75
- Barnstable, Robert A, BA'74
- Baron, David W, BSc'71
- Brewer, Elizabeth A (Erickson), BEd'77, BA'79
- Buswell, John C, BSA'72
- Christopherson, David A, BA'79, BSA'79, MSc'87
- Classen, Dwayne C, BAPE'72
- Cleveland, Carol A (Roberts), BSN'70
- Cram, Barbara J, BA'71, LLB'79
- Dixon, Ronald G, BSP'72
- Dormuth, Alice A, BA'74
- Dorval, Theresa L (Tetreault), BEd'72, BA'82
- Fehr, David L, BEd'78
- Finell, Garry R, BSA'75, DVM'79
- Gabert, Ronald D, BSA'70
- Goranson, Brian C, BA'74
- Gordon, Neil W, BA'77
- Harley, Dennis W, BEd'71, MEd'75
- Hibbert, Donald A, BEd'77
- Higgins, Sharon L (Lynne), BE'78, BusAdm'87, PGD'97
- Hinz, Ronald J, BEd'77, BSc'83
- Hitchcock, John C, BE'74
- Leipert, Gerald F (Gerry), BE'72
- Machin, Brenda R, BSA'79
- Martens, Erna I, BEd'71
- McCartney, Dennis J, DVM'75
- Murphy, Angela M, MEd'73
- Parker, Elizabeth (Bette) (Cuthbert), BEd'74
- Parker, Roy P, BEd'71, BSc'73, PGD'75, MEd'75, Arts'90
- Parkinson, Ruby J (Jamison), BEd'75
- Peacock, Mary D (Williams), BA'71
- Pepper, Elizabeth F, MEd'73
- Richards, James E, HOSADM'73
- Sunquist, Diana M (Tomalin), ADMIN'70
- Wing, Kenneth E, BE'75
- York, Terrance D, BEd'71, MEd'75

1980

- Batten, Justine J, LLB'80
- Binsfeld, Ernst J, BEd'81
- Bodnar, Robert J, MEd'84
- Buchanan, Daisy B (Armitage), BEd'89
- Coad, David A, MSc'84
- Dyck, Karen L, BEd'86
- Emery, Giselle F, BSP'82
- Johnson, Thomas A, MD'80
- Kaushal, Rakesh K, BE'80
- Shier, Dean M, BSA'83, BE'91
- Shiplett, Patricia A, BComm'89
- Smith, Stephanie L, BEd'83
- Spencer, Violet A (Sloan), BEd'88
- Styles, Suzanne M (Bibaud), BEd'89
- Weber, Ellen J (Boyle), BusAdm'86
- Worman, Betty M, BEd'85

1990

- Crawford, Donald N, BusAdm'95
- Day, Ruth F (Voegeli), BA'95
- Haggag, Yosr A, CPTHL'97, MEd'15
- Hanson, Tracy L, BA'96, BEd'01
- Jamieson, Penelope L (Meckling), BA'94
- Kurenoff, Ward P, BComm'94
- MacDonald, Duncan N (Neil), BEd'90, BA'90
- Norrish, Colleen R (Kerr), BusAdm'93
- Reddekopp, Marilyn S, BusAdm'92
- Thiessen, Denise M, BusAdm'96

2000

- Aisaican, Melvin J, BEd'00
- Grant, Derek J, BSP'00
- Munson, Matthew J, BSc'08

Faculty and staff

- Anderson, James D
- Day, Ruth F (Voegeli)
- Dyck, Karen L
- Hanson, Elaine M (Huseby)
- Klassen, William W
- Krawchuk, John S
- Mario, Marlene D
- McCabe, Neil S
- McKinnon, Douglas R (Doug)
- Meredith, Henry T
- Morley, Wayne A
- Munson, Matthew J
- Nazarali, Adil J
- Peacock, Mary D (Williams)
- Reimer, Maxine N
- Searcy, Gene P
- Servranckx, Roger V
- Strohan, Askenty (Al)
- Szombathy, Jane P
- Thompson, Claud A
- Vibert, Marjory J
- Waterfield, Merle R
- Weinberger, Leo
- Williams, Helen M
- Wright, Anne



Nominations open for University Senate members

Senators connect the university to the community and have authority over matters such as selection of the chancellor, awarding of honorary degrees and making regulations concerning non-academic student discipline.

Nominations are open for five member-at-large and five district positions. Elected senators will serve a three-year term beginning July 1 and are eligible for re-election after three years.

Election procedures

Only members of convocation¹ can be nominated. Nominees for district members must reside in that district; there are no restrictions on where members-at-large reside.

Nomination forms and more information are available at usask.ca/secretariat or by calling 306-966-4632. You may also draft your own form. Nominations must include a 200-word biography, be signed by at least three members of convocation and be endorsed by the candidate.

Send your nomination by March 1, 2018 to:
Beth Bilson, University Secretary
University of Saskatchewan
E281 Administration Building, 107 Administration Place
Saskatoon, SK S7N 5A2
Or by email: senate.nominations@usask.ca

usask.ca/secretariat

1. Convocation includes the chancellor, members of Senate and all graduates of the U of S.



Your gift keeps students in the game.



Jesse Gordon likes a challenge—whether it’s contemplating synchrotron physics or tackling an opponent seconds before a touchdown, he is determined to give it his all.

The fourth-year student has taken on the task of balancing a demanding athletic schedule while pursuing a degree in engineering physics—a discipline he chose based on its daunting reputation.

But Jesse faced an additional challenge this year—a serious hip injury that required surgery. Recovery would mean that not only would he have to take a seat on the sideline with the Huskies, but his plan for a full-time summer job would interfere with his physiotherapy. Jesse was about to make a difficult decision between his education and health.

Enter Eber and Ruth Pollard—two individuals whose generosity would reward Jesse’s hard work and dedication. Thanks to the Eber and Ruth Pollard Scholarship, Jesse was able to take a summer class and focus on his studies while recovering. Legacy gifts ensure that deserving students, like Jesse, have access to support when they need it most, giving them the opportunity to fulfill their potential.

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“No matter what the recipient is going through, the support of receiving an award can only bring about positive change. For that I would like to thank the Pollards and all other university donors for their inspiring generosity.”

JESSE GORDON
COLLEGE OF ENGINEERING

Bev Cooper, Gift Planning, University Relations
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