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ALUMNI MAGAZINE





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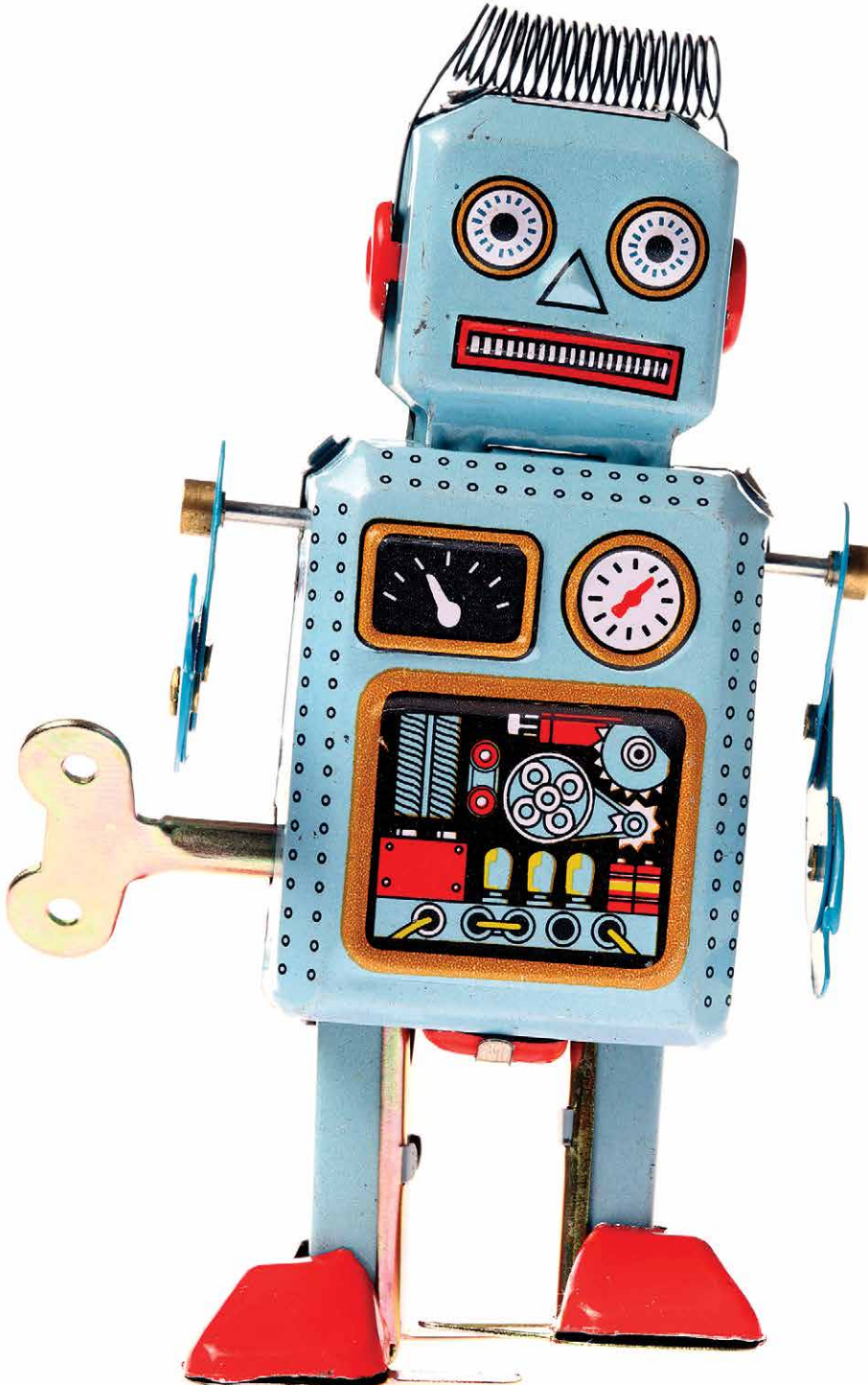
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contents

ON THE COVER

THE ADVANCE*OF_AI

Ready or not, artificial intelligence is here. Go behind the hype with some of the world's best (human) minds. Page 22



feature

22

Artificial Intelligence
Forget everything you've learned in the movies. AI is so much less—and more.

departments

3

Your Letters

5

Notes

What's new and noteworthy

12

Continuing Education

Column by Curtis Gillespie

15

Thesis

All about you

37

Trails

Where you've been and where you're going

38

Books

42

Class Notes

51

In Memoriam

* 56

Small Talk

Always Time to Give Back

AS A REAL ESTATE BROKER, I spend a lot of time in my car. As I rush from appointment to appointment, drive-thrus are my vital supply line for food, coffee and a few moments to catch my breath and think.

One day, a small act shook me out of my thoughts. As I picked up my coffee from the window at Tim Hortons, the server told me the driver in front of me had paid for my order. I was stunned that someone would take the time to make this gesture—for a person they didn't know.

Our generosity, big and small, can bring us closer to the kind of person we strive to be. The people I admire live by this credo: my high school friend Mo, who organized dances and barbecues to build a sense of belonging; my university friend Salim, who took 20 minutes every weekday to set up a room in the basement of the education building for prayers. Their guidance convinced me to look beyond my studies at the U of A and run for vice-president of the Ismaili Students Association—to build community for students who need it.

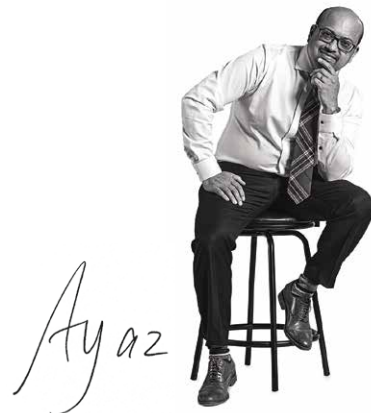
After we graduate, our focus shifts to career and family. As responsibilities mount, how do we balance our time? How do we stay connected with the kind of person we want to be? How do we give back? As a father, business owner and volunteer, I wrestle with these questions every day.

I draw great inspiration from my friend **Firoz Rasul**, '17 DSc (Honorary), who started his

career as an engineer but who grew restless as he yearned to implement his own ideas. He founded two multinational companies: one in wireless technology, the other in fuel cells. He taught me to take risks, to be a problem-solver, to be my own boss. His example led me to change my career. I went back to school and started my own business. He also taught me that volunteering my time, knowledge and talent to better my community brings more joy than any material success.

Whether you're in line for coffee or building your career, there are always ways to give back and lead by example. Take a junior colleague for coffee, or share your wisdom online on Switchboard, a new career networking platform specifically for U of A grads. (ualberta.switchboardhq.com).

When you pay it forward, you bring forward the best in yourself and others.



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We would like to hear your comments about the magazine. Send us your letters by post or email to the addresses on page 4. Letters may be edited for length or clarity.



Cinnamon Buns, Anyone?

Thank you for the latest edition of *New Trail*, Winter 2017. I read the email from Teri Nichol, in New Zealand, about the cinnamon buns in the CAB. I was also a student at the U of A in the '70s and remember those buns. I have a recipe for cinnamon buns from the Tuck Shop. I don't know if they are the same buns but I am willing to share with anyone who may want it. (Editor's note: email *New Trail* if you would like a copy of Henley's recipe.)

—Marleen Henley, '75 BEd, Edmonton

@MyBodyCouture:
Todd Babiak was at *The Gateway* in my young adulthood, with the *New Trail* in my actual adulthood ... and now you are telling me that I am going to have to face my middle age without his words? Hmph.

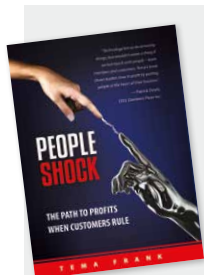
JANIS ISAMAN, '99 BCOM



How a Chemist Sees It

What is interesting to me about the photo ["Self Portrait in 2045," page 18] in your Winter 2017 issue is the question that I asked of our grandchildren: is there anything wrong with this photo? The robot is drawing his hand but he is not viewing a robotic hand on the desk beside him, as would a painter drawing a model. The robot has the algorithms necessary for "a hand" with no orientation, whether right or left. And, for those who were taught organic chemistry, it is obviously not a mirror image of the right hand that is creating the drawing—in our jargon, not an enantiomer, not having handedness, not chiral. These are issues that intrigue an organic chemist in terms of robots recognizing this property of humans, of gloves, of earbuds, of iPhones.

—Victor Snieckus, '59 BSc(Hons), Kingston, Ont.



CORRECTION

Tema Frank, '82 BCom, wrote in to tell us we goofed. "It seems that somewhere along the line you

got my record and my mother's confused. My mother, Rheva Frank, was '68 BA, '75 MSc. So, while I was pleased to see my book, *PeopleShock*, in *New Trail* [Books, page 44], I'm not as old as that makes me seem!" We apologize for aging Tema before her time.

MORE ONLINE Find these stories and more at ualberta.ca/newtrail.



Check Your Blind Spots

If you have a brain, you have a bias. So says Candy Khan, '08 MEd, who offers four tips to help uncover and overcome your unconscious biases.



They Saw What on YouTube?

Tips on how parents (and social media companies) can make the internet safer for children, including how to advocate for change on the site.



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notes

WHAT'S NEW AND NOTEWORTHY



Snap Solution

Scientists unlock the evolutionary history of what makes the snapping shrimp's distinctive sound

IT'S A SNAP 150 million years in the making. After two years researching 114 species of shrimp, a U of A team has figured out how snapping shrimp evolved sophisticated super-fast claws from simpler pinching ones. The claw closes so quickly, in fact, that jetted water creates a cavitation bubble—a localized vacuum. When the bubble collapses, it results in a powerful snap. The claw has a mechanism that works like a spring and latch to release stored energy, says biological sciences professor Rich Palmer, who was part of the study. It's like the difference in speed between using a bow to launch an arrow versus just throwing it. Tomonari Kaji, the study's lead author, is a post-doctoral student in Palmer's lab.

IN MEMORIAM

Nobel Prize Winner Dies at 88

Richard Taylor earned the honour for his work in proving the existence of quarks

When **Richard Taylor**, '50 BSc, '52 MSc, '91 DSc (Honorary), won the Nobel Prize in Physics in 1990, the Nobel committee described his work as finding a "new rung in the ladder of creation." Taylor, 88, who died at his home in California in February, was the only University of Alberta alumnus to win a Nobel Prize. He is survived by his wife, **Rita Taylor**, '50 BEd, and son.

Born in Medicine Hat in 1929, Taylor said he wasn't a strong student and often played poker in residence at the U of A. He managed to graduate, however, and

was accepted to Stanford University, where he earned his PhD and spent most of his working life. It was while in California that Taylor and colleagues from the Massachusetts Institute of Technology ran experiments that would, in 1968, prove the existence of quarks, the subatomic particles that form the basis of 99 per cent of all matter.

Though Taylor lived much of his life in California, his alma mater and Alberta were never far from his mind. In 1994, he was part of the first cohort added to the

Alumni Wall of Recognition. Taylor joined the U of A's physics department as an adviser in 1992 and made annual visits for the next 20 years. His last visit to the U of A came when he helped open the Centennial Centre for Interdisciplinary Science in 2011.

Taylor's love of the unknown was evident whenever he spoke. During his Nobel banquet speech, he had a poignant message. "I have some last words for the students: the quarks and the stars were here when you came, and they will be here when you go. They have no sense of humour, so if you want a world where more people smile, you will have to fix things yourselves. I am confident that you will try, and hopeful that you will succeed."

—WITH FILES FROM MICHAEL BROWN

NUMBERS

60

The number of hours required to train as a crisis intervention volunteer at the U of A's Sexual Assault Centre.

BUDGET

4 PER CENT CUT FOR 2018-19

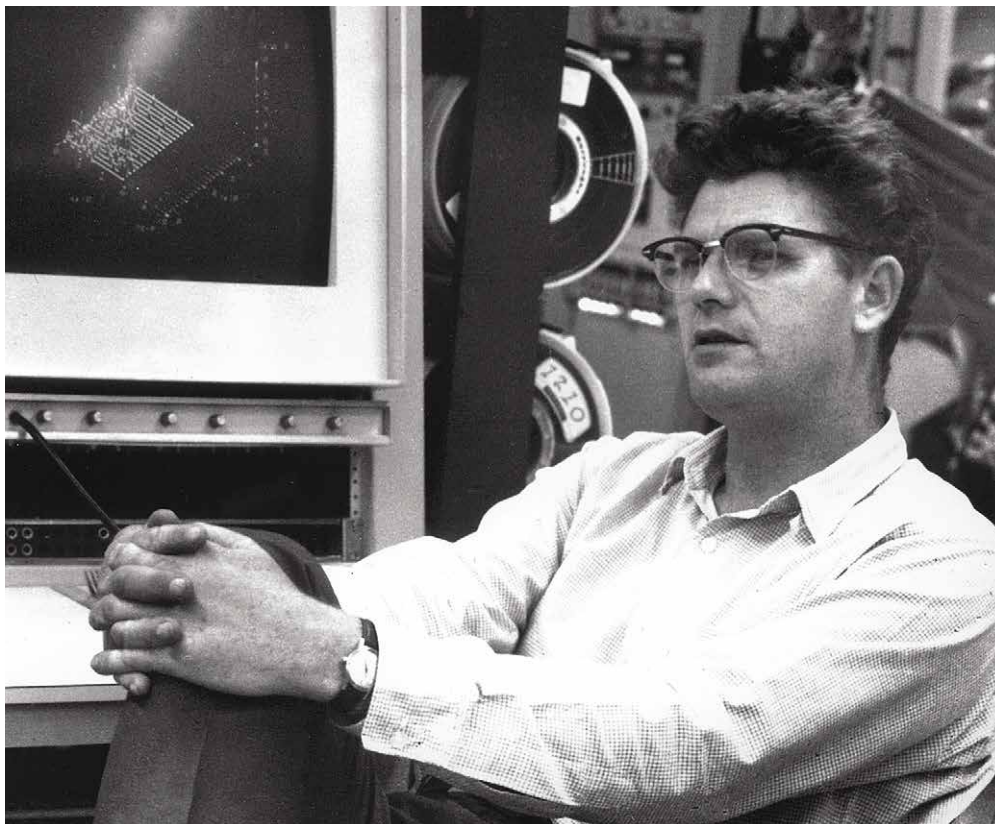
The Board of Governors approved a budget in March that included a four per cent overall reduction in expenditures, and fee increases for international student tuition, residence rates and residence meal plans for 2018-19. The budget didn't go over well in some quarters, with students protesting at a town hall held by President David Turpin.

The measures were designed to address the university's \$14-million structural deficit and rising cost pressures while reducing reliance on short-term investment income, Turpin said. Neither the residences nor the meal plans receive any funding from the provincial government, he said, and both services need to be self-financing.

The provincial government made it clear to the university that international students pay the full cost of their education, he added. "We have to be very careful that we aren't taking money that is targeted for domestic student support and using it to support international students."

The board's vote was not an easy decision, said board chair Michael Phair. "We understand the short-term impacts on students, faculty and staff alike. But we also understand the dangers of not taking action," he said.

—WITH FILES FROM MICHAEL BROWN





CONFRONTING FEAR, VIRTUALLY Can augmented reality help people overcome phobias? Anna Chakravorty, who won the 2018 Images of Research contest for this illustration, asks this in her master's research. The contest asks grad students to represent their research in one image. Of those who suffer phobias, 60 to 80 per cent never get treatment, says the visual communication, design student. A quarter of those who seek help either refuse exposure therapy, a common treatment, or drop out. She hypothesizes that exposing phobia sufferers to their fears in a virtual world could help.

HEALTH

A PAIN IN THE NECK

Surprising nobody, research shows that using smartphones can be a pain in the neck. A 2014 study in the journal *Surgical Technology International* indicates that the more we bend our necks, the heavier the strain. The human head weighs four to five kilograms, but tipping your chin down by 15 degrees increases the weight on the neck to 12 kilograms. At 45 degrees, it's 22 kilograms. Though it's almost impossible to avoid using hand-held devices and live in the 21st century, there are ways to dial back the chance of pain, says Judy Chepeha, professor in the Faculty of Rehabilitation Medicine. —BEV BETKOWSKI

LOOK UP

Keep your head and neck upright when using your devices. Support your arms by propping them on something when sitting, or keeping them at countertop level when standing.

SET A LIMIT

Avoid looking at your device for more than 30 minutes at a time. "Even a two- to five-minute change of position is enough for your body to realign," says Chepeha. "Try not to do everything on your phone."

STRETCH

Try these stretches throughout the day. 1) Keep your head up, shoulder blades back, chin slightly tucked, and hold for 30 seconds. 2) Tip your head from side to side and hold to stretch neck muscles.

Footnotes

A brief look at what's new at the U

The Butterdome Visits California

A fictional university has been caught using the University of Alberta's vitals. California South University is fake but it has a real website that boasts locations such as the Butterdome and Timms Centre on its Irvine, Calif., "campus." CSU's president is listed as Justin Trudeau.

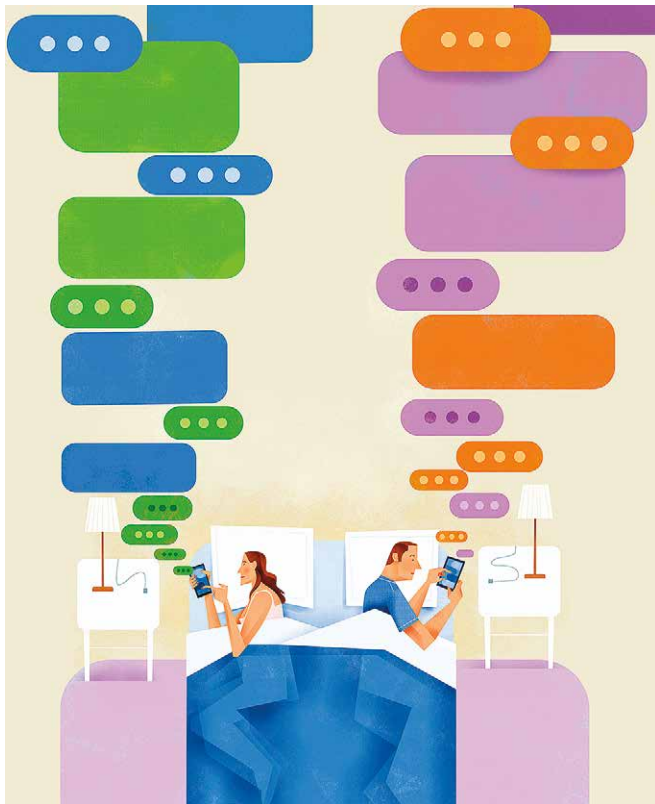
The U of A's legal department is working to have the site, which appears to support a predatory fake journal, permanently removed.

Where Fashion Meets Business

As of September, the university will offer a new four-year bachelor of science in fashion business management. The program, offered by the Department of Human Ecology and Alberta School of Business, will be the only one of its kind in Western Canada.

Bears, Pandas Take National Titles

The Golden Bears hockey team defeated the St. Francis Xavier X-Men in March to claim its 16th national title in the program's history. Meanwhile, both the Bears and Pandas curling teams captured the national titles and will represent Team Canada at the 2019 Winter Universiade in Krasnoyarsk, Russia.



RELATIONSHIPS

Sexting Not a Sign of a Healthy Relationship

Couples need to get real with good old-fashioned conversation, suggests the study's author

SEXTING—sharing sexual messages and images electronically—can spice up your sex life, but it could come at the expense of other important aspects of your relationship, says a new study led by the University of Alberta.

People who sext a romantic partner frequently report greater sexual satisfaction than non-sexters. However, frequent sexters are far less satisfied with many other aspects of their relationship, says Adam Galovan, lead author

of the study and a family scientist in the Department of Human Ecology. Frequent sexters have a higher degree of couple conflict and are more ambivalent about the relationship continuing than non-sexters. They also report feeling less secure attachment in their relationships and lower levels of commitment.

“Sexting doesn’t seem to be a feature of a healthy relationship,” says Galovan.

Letting technology take precedence over personal interaction could explain what’s contributing to the poor scores in other aspects of their romance, says Galovan. “They need to put the phone down and have a good old-fashioned conversation—spend some time together nurturing the relationship—instead of short-cutting with sexting to try to get a quality relationship.”

The study surveyed nationally representative groups of Canadian and American adults, all in committed heterosexual or same-sex relationships, of various ages, ethnicities, income and education levels.

The study was published in the journal *Computers in Human Behavior*.

—HELEN METELLA

NUMBERS

\$1,000

Cost per patient the health system could save by using fecal transplant capsules instead of a colonoscopy for treating *C. difficile* in the gut, according to **Dina Kao**, '94 BSc(Spec), '99 MD, '08 MSc, associate professor and gastroenterologist at the University of Alberta Hospital.—GLOBAL NEWS



SCIENCE

CELLULAR STORY FINALLY STACKS UP

Joel Dacks, '95 BSc(Hons), likens the Golgi bodies found in our cells to a post office that “sorts material as it’s made and directs it to different locations.” Understanding the Golgi could shed light on diseases involving cell membrane systems gone awry, such as Alzheimer’s.

Dacks, who holds the Canada Research Chair in Evolutionary Cell Biology, co-wrote a study in *BMC Biology*. His research challenges existing assumptions that a single gene is responsible for the Golgi’s distinctive shape.

The authors suggest, instead, the Golgi is created by many genes acting in overlapping and complementary ways. It gives a new understanding of a critical part of our cells and peers deep into our evolutionary history.

—LESLEY YOUNG

QUOTED

“Could you consume a gram in an hour and then wait an hour and drive? We don’t know the answer to that.”

▼ **Scot Purdon**, '83 BA, clinical professor in the Department of Psychiatry, on the question of how long to abstain from using marijuana before driving.—CBC

"SCIENCE IS NOT ONLY A DISCIPLE OF REASON BUT ALSO ONE OF ROMANCE AND PASSION."

Stephen Hawking

GREAT MINDS

Remembering Stephen Hawking

U of A physicist reflects on his greatest influence

WHEN FACULTY OF SCIENCE PROFESSOR DON PAGE REMEMBERS THE late Stephen Hawking, it's the famous physicist's humanity he recalls even more than the science. Hawking died March 14.

Over the years, Page came to understand Hawking on a deeper level as the two contemplated how to create simple laws to make sense of complex quantum cosmology. Hawking co-supervised Page's PhD at Caltech, and the two physicists worked together on numerous publications. Their partnership will live on for students of the universe in the famous Hawking-Page transition in black-hole thermodynamics.

How did Professor Hawking influence your path as a scientist?

Stephen Hawking had the greatest influence on my career in physics. He was an outstanding scientist and an excellent mentor. Seeing how he got to the heart of a matter was a great inspiration to me as well as his enormous courage in the face of adversity. We wrote a total of eight papers together, and his ideas have stimulated dozens of other papers I have written, 10 of which have "Hawking" in the title.

What was it like being supervised as a graduate student by one of the world's best scientific minds?

My main PhD supervisor was Kip Thorne [Nobel laureate 2017], but Stephen Hawking was my co-supervisor during the 1974-75 year that he spent at Caltech. He and I would discuss the physics of a problem, I would do the mathematical calculations,

and he would dictate the paper to me. In those days I wrote it out in longhand and a secretary would type it up.

What is your favourite memory of working with Professor Hawking?

Perhaps my favourite memory was when Paul Dirac — discoverer of the equation for the electron that also predicted the existence of antimatter — came to visit Stephen Hawking. We sat in the garden behind the Hawkings' home in Cambridge. I was with two of the most famous physicists of the 20th century, neither of whom was saying anything. To break the ice, I asked, "Professor Dirac, what are you working on now?" He mumbled something I did not understand and then said, "Did you know that Olivia Newton-John is the granddaughter of Max Born?" Born was a German physicist and 1954 Nobel laureate.

—JENNIFER PASCOE, '02 BA





PHYSICAL ACTIVITY

Keep Gym-class Dropouts in the Game

Tips to reframe what it means to be active

AH, HIGH SCHOOL GYM CLASS. A chance for some to excel, but for other children it brings nothing but humiliation and angst. In fact, a survey shows that a bad experience can stick with you for many years. “It’s not just academic. It could affect someone’s health for the rest of their life,” says Billy Strean, who teaches future phys-ed teachers through the Faculty of Kinesiology, Sport, and Recreation. Strean offers these tips to help parents and educators create more positive physical activity experiences for young people—and help them become healthier, more active adults.

1 Embrace Variety
The traditional gym class curriculum tends to focus heavily on competitive sports like soccer or track and field. Providing a wider variety of activities—including individual pursuits like dance, yoga and personal fitness—gives young people a greater chance of finding an activity that excites them and that they feel comfortable doing.

2 Show Empathy
Imagine what it feels like to fail and still have to go to phys-ed class every day with that in your head, says Strean. The best way to exercise empathy? Listen carefully, ask questions and avoid assuming that a child’s experiences are the same as yours were.

3 Remove Barriers
A 2011 survey of more than 3,600 high-school-age Canadians found that half of gender and sexual minority youth, and 59 per cent of female sexual minority students, considered locker rooms unsafe. Creating co-ed teams and gender-neutral changing facilities can help all students feel more comfortable. For your child, suggest using a bathroom stall or wearing athletic gear to school that day. Or work out a plan with the school.

4 Don’t Despair
Even for gym-class dropouts, there’s a way back to physical activity. “It’s a reasonably common story,” Strean says. “Someone says ‘forget about this phys-ed stuff,’ and then they discover something more fitness-related.” Whether it’s yoga or weightlifting, barre class or pickle ball, it’s never too late to make physical activity a lifelong habit. —ALIX KEMP, ‘11 BA



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Wear a Helmet

When riding off-highway vehicles, CSA-compliant helmets must be worn when riding on public land. Head injuries were the cause of 41 per cent of deaths; 77 per cent of those who died were not wearing a helmet.

Avoid Costly Mistakes

ATV injuries cost Alberta \$16 million every year in direct health-care costs.

Don't Assume It's Safe

Nearly all of the deaths were in common, seemingly easy-to-manoeuvre areas — 46 per cent in the bush or a meadow and 42 per cent on a highway or roadway ditch.

Don't Drink and Drive

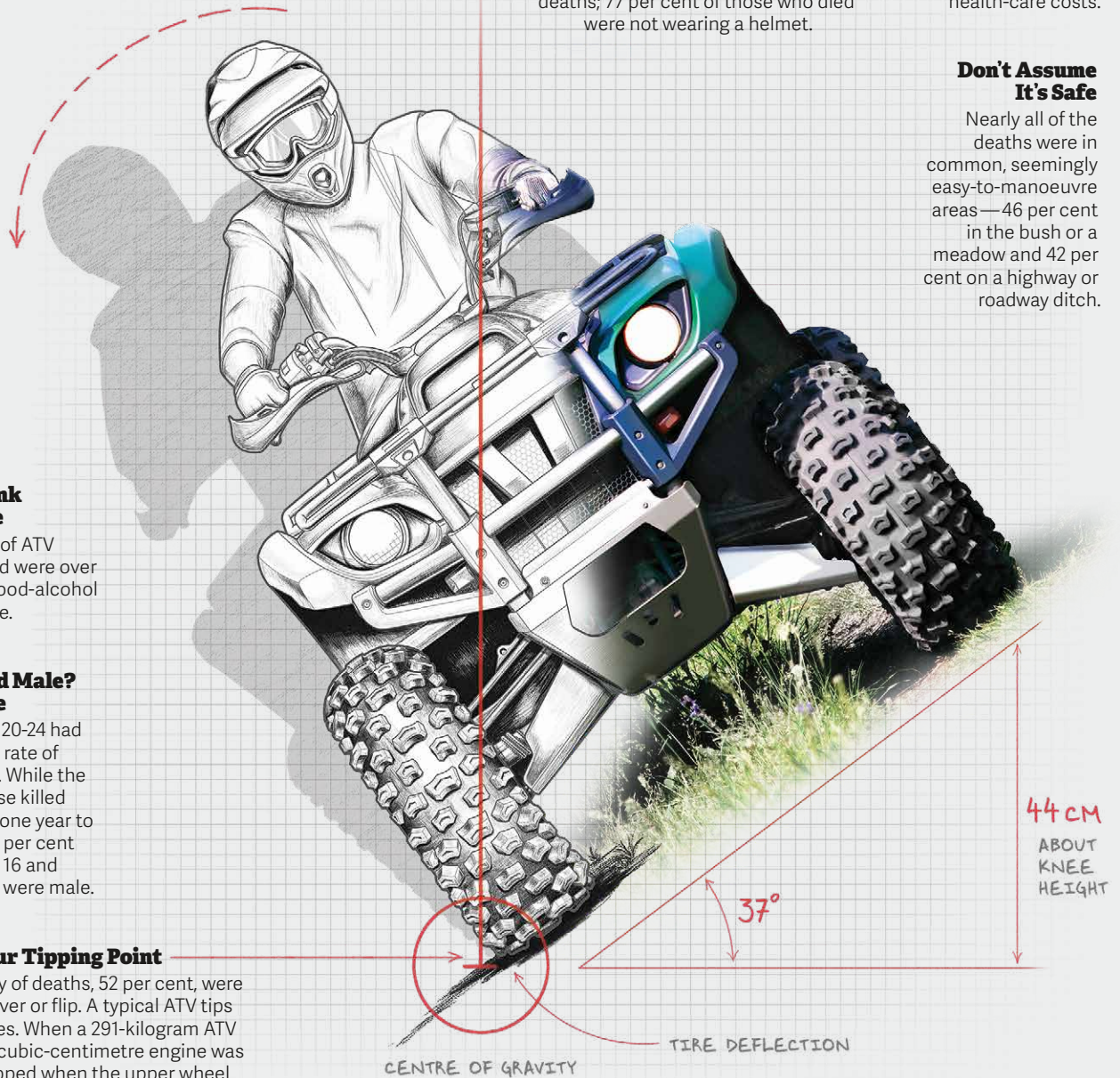
51 per cent of ATV drivers killed were over the legal blood-alcohol limit to drive.

Young and Male? Take Care

Young men 20-24 had the highest rate of ATV deaths. While the ages of those killed range from one year to 86 years, 18 per cent were under 16 and 85 per cent were male.

Know Your Tipping Point

The majority of deaths, 52 per cent, were from a rollover or flip. A typical ATV tips at 37 degrees. When a 291-kilogram ATV with a 660-cubic-centimetre engine was tested, it tipped when the upper wheel was at about knee-height.



Warning: This Is Not a Toy

By Sarah Pratt

➔ If you're hitting the trails this spring, don't forget about the "vehicle" part of an "all-terrain vehicle." They're machines that need to be taken seriously. There were 185 ATV-related deaths in Alberta between 2002 and 2013. That's an average of 16 deaths per year and more than half

resulted from a rollover or a flip. **David Checkel**, '76 BSc(MechEng), professor emeritus and mechanical engineer, tested the tipping points of ATVs and has a few pointers on how to ride more safely. His first reminder before you even get on one? Remember the human body

was not designed to absorb an impact at the speed of an ATV. "If the ATV can go faster than you can run, you're in danger of serious harm," he says.

Remember, a helmet law took effect in May 2017, so this spring is a good time to review ATV safety before heading out. ■

Learning doesn't end when you accept your degree. We are all lifelong learners, whether we pursue lessons in a class or a lecture hall—or these lessons pursue us. **Curtis Gillespie**, '85 BA(Spec), reflects on the continuing opportunities for education that life throws our way, sometimes when we least expect them.



by Curtis Gillespie



Grant Me the Serenity to Accept My Inner Volcano

AFTER FIVE DECADES ON THE PLANET, I'M STILL SEARCHING FOR THE BALANCE BETWEEN 'LAID BACK' AND 'LAVA'

There's a commercial on a radio sports channel I listen to, and the stupidity of the jingle so offends me that I literally stab at the off button every time it comes on. The base idiocy of the ad not only makes me angry, it's making me angrier every time I hear it. I mutter. I talk to the radio. I shake my head. I question the prospects for humanity.

And I think about volcanoes.

Most of the volcanoes I've seen in person—in Hawaii, Mexico, Guatemala, Italy—have been a letdown, frankly. They were scenic but dormant, meaning I had to use my imagination to picture spewing lava, billowing ash clouds and rivers of molten flame. Which, now that I think about it, is probably best left to the imagination. I suspect most ancient Pompeiians would agree.

I've been thinking about volcanoes more of late, not because I'm hankering to see

one in action, but because I'm growing increasingly attuned to the workings of my inner volcano. That's a metaphor, by the way, not an intestinal confession. I think it's fair to say, I'm generally regarded as a calm and relaxed person. I don't yell at people. I don't pick fights. I don't hold grudges. I conduct myself with relative maturity. (Though I refuse to test any of those statements against my behaviour as husband and parent.)

This is why I'm fascinated and perplexed by my inner volcano. There is a certain amount of magma bubbling away in there, waiting for the pressure to build just enough to blow the plug off the caldera, at which point ash, smoke, steam, lava and rivers of flame will scorch everything in their path. OK, maybe that's a bit dramatic. But I do get angry sometimes, and I wonder where that anger—substitute impatience, irritation or annoyance—comes from and whether I should plug it up or let it out.

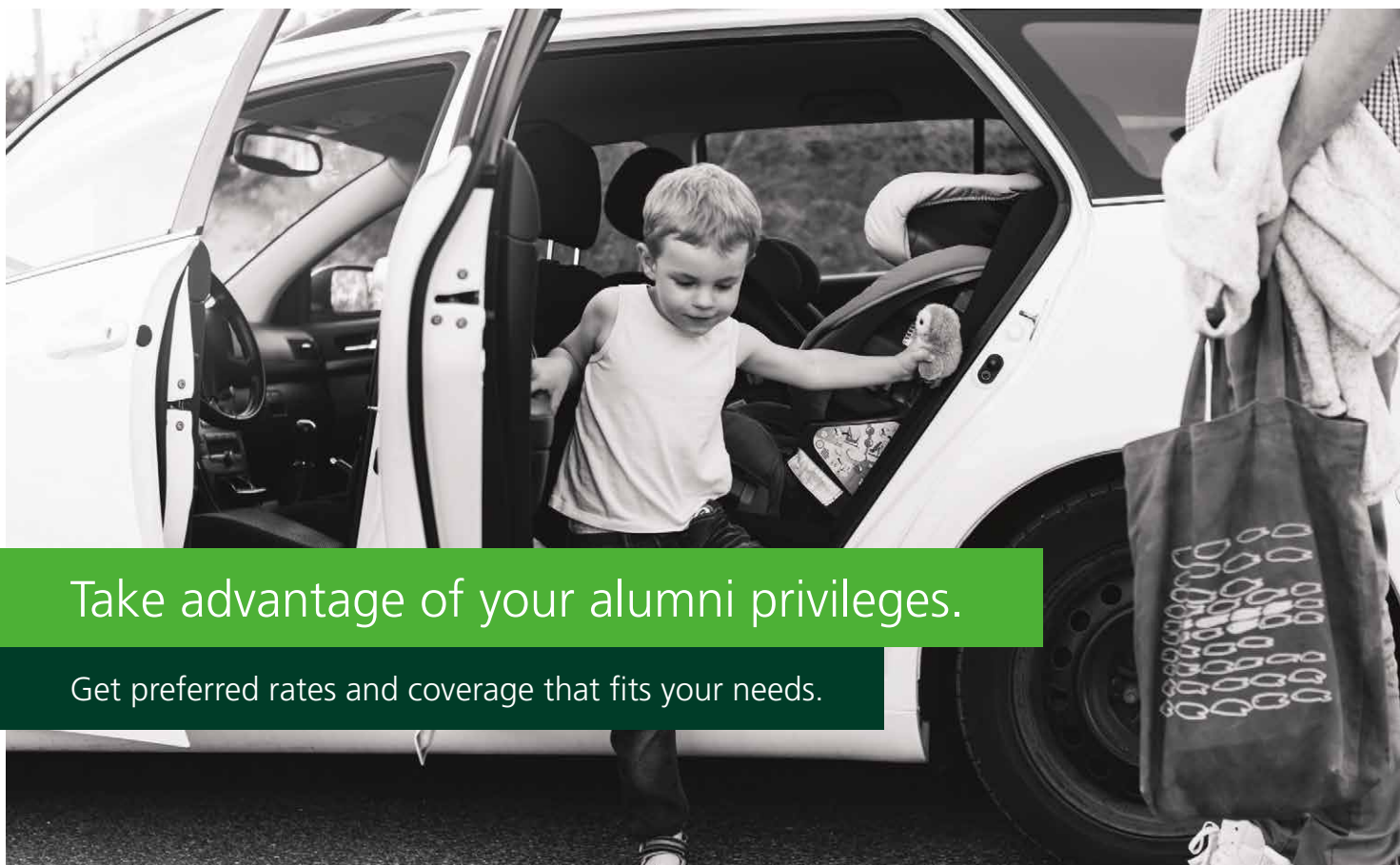
Recently, during a long cold snap, our car broke down. We have been members of a well-known automobile service off and on for many years, so I took out my membership card and dialled the number on the back. It turned out we had forgotten to renew our membership about six months earlier. No problem, I said to the friendly customer service representative, just charge it to the credit card on file. Everything was fine.

Until she told me there would be an extra \$40 charge for a roadside use fee. I politely asked what that was, and the cheerful customer service rep said it was a surcharge for getting roadside assistance the same day you sign up for a membership.

Sulphurous fumes began bubbling. "Excuse me," I said, "but isn't the annual membership fee what the roadside assistance is for? Why am I being charged an extra \$40?"

"Because," she explained, with extreme pleasantness, "at the time of your vehicle's breakdown you were not a member."

With the lava gurgling, I expressed my extreme dissatisfaction with



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this policy. She offered her deepest commiseration and asked if there was anything else I needed. I asked to be put through to her manager. When I had him on the line, I said the same things. He offered the same commiserations.

The charge stayed on my credit card.

I think I first became aware of my inner volcano a few years ago. I went into a national chain coffee shop near our house, a place I would often go to work or read. They have a row of banquettes near a fake fireplace that, during the winter, can be warm and inviting. On the afternoon in question, however, there were “reserved” signs on every good table. The café was nearly empty. After ordering my coffee, I asked the server if I could sit at a banquette because I found them conducive to working.

“They’re reserved,” she said.

“Well, yes,” I replied. “But I guess I’m wondering for who. I mean, there’s no one here.”

“It’s reserved for big groups that come in. Like, running groups or whatever.”

“When do they come in?”

She shrugged. “They don’t always come in, but if they do it’s around 5:30.”

I looked at my watch. It was 4 p.m. “OK, I’ll tell you what. How about I sit there, and if a big group comes in I’ll move right away.”

She gave me a bored stare. “Like I said, it’s reserved.”

Lava began to bubble but I decided to contain it. I sat somewhere else. A few weeks later, I went back to the same café. Feeling like I needed a really perky coffee, I ordered a dark-roast coffee with a shot of espresso.

“Oh, right,” said the server who’d refused me the banquette. “A Red Eye.”

I’d never heard that term before.

“Sure,” I said. “If that’s what you call it.”

She made the drink and then rang in a price that was just under \$5. I gave her a \$10 bill and was calculating a tip when something occurred to me. “Excuse me, but isn’t a medium coffee a couple of dollars and a shot of espresso a buck fifty?”

She looked at the menu board behind her, then turned back to me. “I guess.”

“So why are you charging me nearly \$5?”

She shrugged. “All I know is that what you asked for is a Red Eye. There’s a button for it on the till.”

I looked at the coffee sitting on the counter between us. There was no containing this eruption. “That is ridiculous. I’ve decided I don’t want it.”

“What?”

“I’ve changed my mind. I think that’s an unfair practice.”

She said fine and removed the cup.

“But,” I said, “I’d still like a medium coffee.”

She eyed me, then moved away and came back with a medium coffee.

“And,” I added, “I’d like a single espresso on the side.”

“But you’re just going to add that to your coffee! It’s exactly the same thing!”

“I might add it,” I said. “I might not. I haven’t decided.”

“Fine,” she said. “But I’m going to share this with the owner.”

She went off in a semi-huff and made my espresso. After I’d paid, I thanked her and turned around. The first thing I saw was the banquette section with “reserved” signs on all the nice tables. What the hell, I thought, I’m already the devil in her eyes.

I sat down right in the middle of them, moved a sign, spread out my books and laptop and coffees, and delicately poured my espresso into my coffee. I haven’t had as good a cup since.

The point of detailing my possibly juvenile but highly satisfying behaviour is this: I am learning, for better or worse, that getting older and gaining experience does not always bring equanimity. And maybe it shouldn’t. Wisdom and insight are not the same things as patience and placidity. Yes, patience is a wonderful thing to have, but maybe it’s a tool to be used for certain jobs rather than a coat of paint you put on top of everything.

A common piece of pop psychology wisdom is, “Don’t sweat the small stuff,” which is but an echo of the more famous Reinhold Niebuhr aphorism, “God grant me the serenity to accept the things I cannot change, the courage

to change the things I can, and the wisdom to know the difference.” Sure, I understand the reasoning. Don’t worry about inconsequential things you can’t change. If someone is rude to you, or if a bureaucrat mindlessly follows a stupid rule, or if a family member is needlessly insensitive, then the rationale is to just let it go. Fair enough.

It’s the third clause of the Niebuhr aphorism I question. How many of us genuinely know what we’re capable of changing until we’re smack in the middle of it or, more commonly, it’s already over and done with and we realize that we did, in fact, change something?

I like to think I have become better at recognizing what are trivial battles and what are battles worth having. I’m also learning that a small battle is not the same thing as an insignificant battle. A fight against a small injustice or a minor stupidity can still, to my mind, be worth the effort. Because who’s to say where the line is? What if we don’t sweat the small stuff and it morphs into big stuff? If we don’t at least occasionally sweat the small stuff, if we simply accept the things we think we can’t change, then nothing changes.

Just because it might look like there isn’t much at stake doesn’t mean nothing is at stake. What’s worse: getting upset and speaking out about a minor injustice, or not letting the world know that what transpired wasn’t cool?

I’m not sure there’s a right or wrong answer, only that I’ve been on this planet for more than five decades and I’m still searching for that balance. I like to think my inner volcano is turned down, with just enough lava on hand in case of an outbreak of stupidity or rudeness or injustice ... even (or especially) if it’s my own. But I’ll keep it so the top doesn’t blow off, spewing lava and ash and flame all over the place. No one needs to see that. A low simmer will suffice.

Unless someone tries to overcharge me for coffee again. ■

Curtis Gillespie has written five books, including the novel Crown Shyness, and has earned seven National Magazine Awards. He lives in Edmonton with his wife and their two daughters.

thesis

TAKING YOU DEEPER ON ONE TOPIC



Is That You?

Where does consciousness live? What if medicine was made just for you? Does your dog *really* love you? Get ready to examine “you” from every angle

WHAT MAKES YOU, YOU? It’s one of those questions that consume philosophers and blow the minds of first-year students. More than 300 years ago, René Descartes postulated that even if all else around him were illusory, the fact that he was noodling on it must mean that, at bare minimum, he could ponder. I think, therefore I am.

In this issue’s Thesis, we look at the subject of “you” from different angles: your health, your relationship to tech and

even how your dog sees you. But there is only one question that can kick off the discussion: what even *is* you? Is our consciousness, the seat of self, the thing that makes us who we are?

“As far as the sense of self and consciousness, that’s somewhat controversial and, to be quite honest, I almost treat it as a hobby,” says physics professor Jack Tuszynski, who holds the Allard Chair in Experimental Oncology in the Faculty of Medicine & Dentistry. In his spare time, he is popping the hood on human consciousness to find out where it lies physically.

Where his job and his hobby intersect are the polymers called microtubules that exist in each of our cells. They provide structural stability and act as conduits among various parts of the cell—a kind of road along which motor proteins move cellular material. Tuszynski’s team has demonstrated that microtubules also conduct electricity. They grow or shrink and participate in the movement of the mighty mitochondria, the generators of the cell. And microtubules are involved in cell division, a process that, run amok, is the hallmark of cancer.

On the hobby side of things, he is looking at quantum behaviour, the odd behaviour of microtubules at the atomic or subatomic level. “At least parts of their interaction could be at the quantum level,” he says. He points to anesthesia as evidence.

Despite 150 years of using anesthesia, we don’t have a good understanding of how it flips the switch that turns us off. Tuszynski might be getting there. “We’ve

done some studies trying to find out if anesthetic molecules bind to proteins in microtubules—they do. In the absence of anesthetic molecules in the microtubules, consciousness comes back.” He says anesthetics shift the frequency of the jiggling proteins in microtubules, slowing them down.

If, as Tuszynski believes, he has found the physical seat of consciousness, the place in each cell where you live, it makes consciousness a field of scientific inquiry rather than strictly in the domain of philosophy or religion.

“Being a physicist, I try to understand it at the most fundamental level. I stay away from philosophy,” Tuszynski says. “I’m not trained to deal with it.”

Nathan Kowalsky, ’98 BA(Hons), is trained to deal with it. He is a professor of philosophy and faculty member in the Faculty of Arts multidisciplinary science, technology and society program.

“It’s common to think of us as removable from our physical selves,” he says. Even the divide between mental and physical health demonstrates our inclination to imagine our brains as things apart from our bodies. As if a living brain in a vat could somehow still be us.

“We are always being in our relation to other things,” says Kowalsky, who specializes in environmental philosophy. “To understand our humanity we must understand ourselves as situated in a place. Cut off, we lose part of ourselves. We are a composite and we cannot divorce ourselves from our actions and interactions.”

—MIFI PURVIS, ’93 BA



You and Your Dog

Does your dog really love you that much, or is he just hungry?



WE LOVE TO LOOK AT OUR DOGS. They've been present in our art from cave paintings through to GIFs. Harder to find in the annals of culture—presumably because writing or painting with paws is hard—is what our dogs see when they look at us. That's why it's exciting that modern animal science is at last giving us a glimpse of how *Canis lupus familiaris* views *Homo sapiens*.

The research shows that dogs don't see themselves as human, nor do they consider us dogs, says Connie Varnhagen, professor

emeritus of psychology at the U of A. Dogs who live in shelters surrounded by other canines become less stressed if they spend time with a human.

"After even 15 minutes, dogs show lower cortisol levels in their blood, their saliva and their urine," Varnhagen says. In other words, their stress decreases and they get something out of human interaction that they don't get with dogs.

Several somethings, in fact. Varnhagen, who teaches a course about researching

the animal-human bond, says petting a dog causes its brain to release oxytocin and other feel-good chemicals, just as our brains do when we pet them.

Does that mean Fido gets excited when you come home because he loves you and not just because he knows it's dinnertime? Varnhagen isn't sure. "But does that really matter?" she asks. "If dogs have learned that humans are associated with food and love and protection ... isn't that how we come to love other humans?" —LEWIS KELLEY

When Medicine Is Designed Just for You

Research into metabolism could design your optimal diet or offer years of advance warning on disease

YOUR DOCTOR CALLS. The bad news? You're at risk of diabetes. The good news? Blood tests have caught it 10 years before you develop the disease. With changes in diet and lifestyle, you'll probably be able to avoid it altogether.

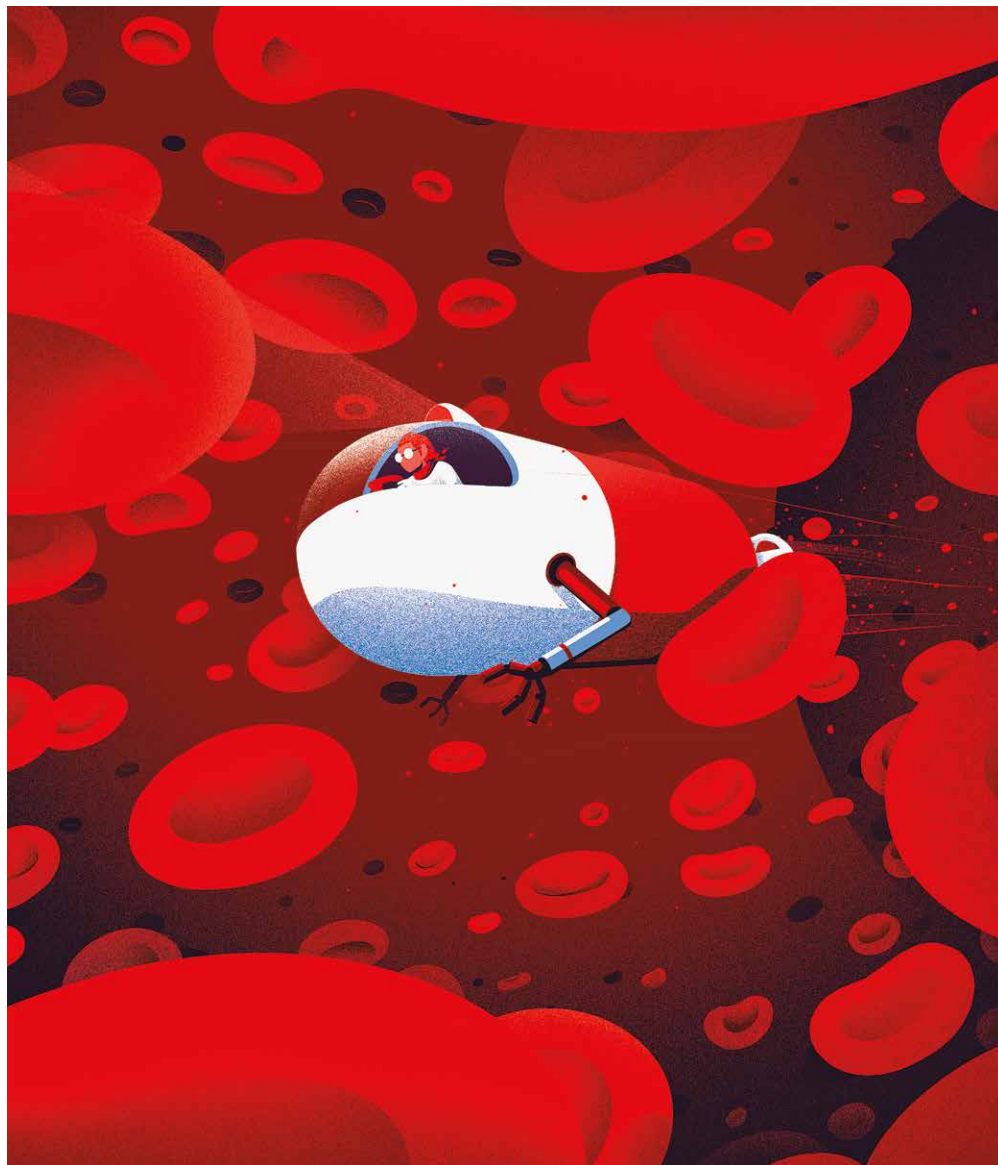
At the heart of this scenario is a science called metabolomics. You might have already heard the term in connection with that promising health-care field called predictive medicine. Metabolomics is one key to detecting disease earlier — sometimes long before it occurs — and tailoring care for each patient based on that person's makeup at a molecular level.

"There's a huge impact in terms of lives saved and quality of life, not to mention dollars," says researcher **David Wishart**, '83 BSc(Hons).

He tells us a little more about what this science is and what it will mean for health care.

It's basically the study of metabolism

► Metabolism is more than just how quickly your body processes food. It includes all the chemical processes inside our bodies. Metabolomics is the study of metabolites, tiny molecular compounds produced by, or involved in, metabolism. Think of eating an apple. Your body breaks the apple down into its chemical components through digestion and rebuilds them into whatever it needs, such as the proteins needed to create DNA.



Metabolites can predict diseases before they start

► Some metabolites are biomarkers, molecules that can indicate disease. So, when researchers analyze a sample of blood or urine, they can look for biomarkers to see if a person has — or is at risk for — developing

diseases. One pilot study is working to detect early-stage diabetes, says Wishart. "In many cases, we can predict the disease up to 10 years before it actually develops. If you can make an intervention before the disease develops, that can save thousands of lives."

There is even a urine test to detect colon cancer

► The test, not yet available in Canada, will catch colon cancer at the polyp stage, without a colonoscopy. This early detection could improve cure rates from 50 to 95 per cent — with no need for invasive testing. It could

WHAT IS PRECISION HEALTH?

► Rather than treating the “average patient,” precision health looks at factors that affect an individual’s health, such as genetics and environment, to deliver care based on each person’s unique characteristics. The goal is to diagnose and treat people more accurately and effectively—and even predict and prevent disease—by combining data from large populations with information about a patient’s physical and social characteristics.

also reduce health-care costs by about \$2 billion annually, says Wishart.

What else can metabolomics do?

► Potential applications of metabolomics research go far beyond disease. There’s personalized nutrition, understanding how and why foods affect people in different ways. There are implications for agriculture, understanding the nutritional content of different strains and species of plants and animals. Research can also be applied to veterinary science as well as to ecology.

And they share what they’ve learned

► Wishart’s lab makes its data freely available to anyone in the world. The Human Metabolome Project’s database is accessed by millions of users each year. “Making ideas available for other scientists moves our whole field forward faster,” he says. “We’re helping patients, we’re treating people and we’re changing lives for the better.” —KATIE WILLIS, ’13 BA

YOUR HEALTH, PERSONALIZED

If we knew more about our genetics and how each person’s body works differently, could we make better decisions about health care? Four experts addressed this question at a recent panel on precision health—the study of factors such as genetics and the environment to better understand a patient’s unique health conditions. The panellists shared their thoughts with nearly 250 attendees as part of the Alumni Association’s Calgary lecture series. Below are a few highlights.



How can artificial intelligence help?

My colleagues around the world who are interested in precision health want to turn data into wellness. I’m one of the people who disrupts things by saying, ‘Well, maybe our hospitals don’t need to grow; maybe we need to use data to shrink the number of customers we create.’

Randy Goebel, ’77 MSc, professor in the Department of Computing Science (More on Goebel’s work on page 33.)



How does precision medicine help in cancer care?

Every cancer is as unique as every patient and unique in every patient. Rather than treat on the one-size-fits-all philosophy like we usually do, we now say, ‘You should have this treatment and you have a much better chance to have a response if I use the information we understand from the genetics.’

John Mackey, ’90 MD, professor in the Department of Oncology



Are body weight and body mass index (BMI) still the best ways to measure health?

People can have the same weight, the same BMI, but their proportion of muscle and fat can be different. We are studying the relationship of low muscle to health. When you don’t have enough muscle, you can have a variety of health problems. In an effort to advance precision health, we have opened our unit to the public. You can use specialized equipment to measure your body composition and your energy metabolism. Our plan is to work with stakeholders and offer it free to people with certain diseases.

Carla Prado, ’09 PhD, assistant professor in the Faculty of Agricultural, Life & Environmental Sciences, and director of the Human Nutrition Research Unit



Is there a role precision health can play in opioid addiction?

People metabolize drugs differently based on genetics. We put a lot of people on opioids hoping to improve their lives, and we made people addicts. Maybe we could figure out before we give you a drug that you shouldn’t have that drug. We think we can come up with a genetic test that will be able to figure out if you have pain because your nerves are firing incorrectly or differently or whether you could go on a small dose of morphine that could be quite safe. We’re calling it precision analgesia.

Patrick Mayo, ’82 BSc(Pharm), ’00 PhD, clinical associate professor in the Faculty of Pharmacy and Pharmaceutical Sciences

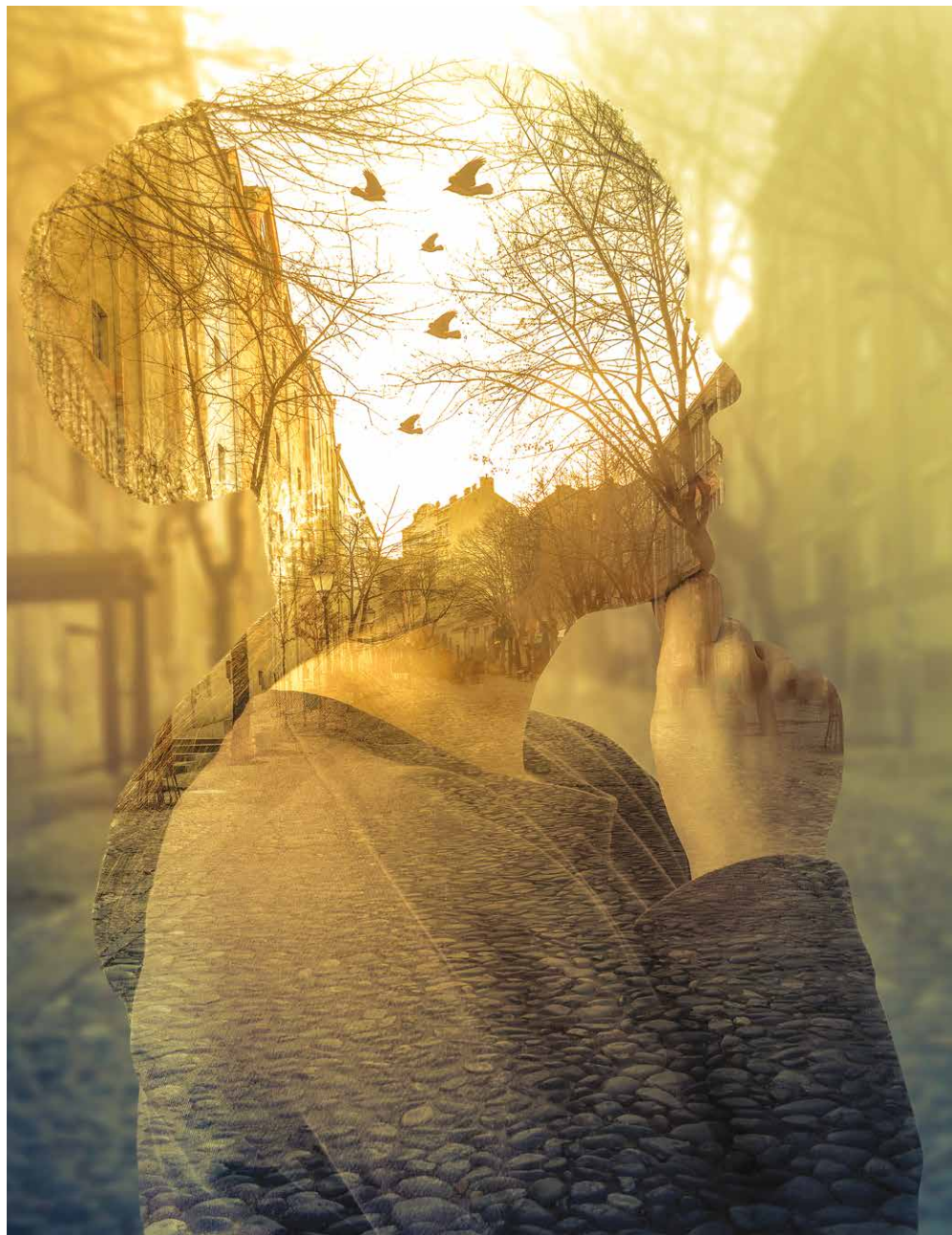
To learn about upcoming lectures, visit ualberta.ca/alumni/events or watch for Alumni Insider in your inbox.

Why You Remember the Things You Do

We forget almost everything, so what sticks and why?

A GUST OF COLD WIND. Perfume in an elevator. Where you parked your car. We forget most of it. But that time you almost cut your finger off while slicing your bagel—that stays with you. Why?

Only a small portion of our experience is captured in long-term memory, says psychology professor Norman R. Brown. And most of those memories are formed for one of three reasons.



1. Repeated Experiences

What did you do this morning? Most people have a general memory of getting out of bed, getting dressed—but do you remember the specifics of this particular morning? “In a certain sense, memory for specific events is secondary and a lot less accurate than our memory of a generic understanding of the past,” says Brown.

2. Distinctiveness

Your daily bus commutes blend into one another through repetition to produce general memories, but that process makes it difficult to recall the ride you took last Wednesday. You may well remember, though, the trip that involved a particularly long detour, a near accident or the commentary of an overly talkative stranger.

3. Blood and Emotion

In experiments, Brown gave people words like “tree” or “automobile,” then asked them to recall something specific. For such generic ideas, detailed memories are rare and exceptional. But when Brown suggested the word “cut,” everyone in the study could recall a time when, for example, they stepped on a piece of glass or were sliced while cutting bread. “A little bit of blood and a little bit of emotion and you’ll remember it for the rest of your life,” says Brown. —SARAH PRATT

YOUR TECH, YOUR SELF

IN FEBRUARY, Netflix launched its latest spectacle, *Altered Carbon*, based on Richard Morgan's novel—produced and written in part by **Steve Blackman**, '97 LL.B. A cyberpunk manifesto, the show takes place 500 years from now when all your life's experiences are recorded on a piece of technology that is implanted in your neck. When your body dies, the device can be moved into another body or even be reanimated in a virtual space. It's as though the essence of you lived on a thumb drive.

But if it's a storage device for your consciousness, would that tech really be *you*? In other words, are we inching nearer a time when people are tied to their technology?

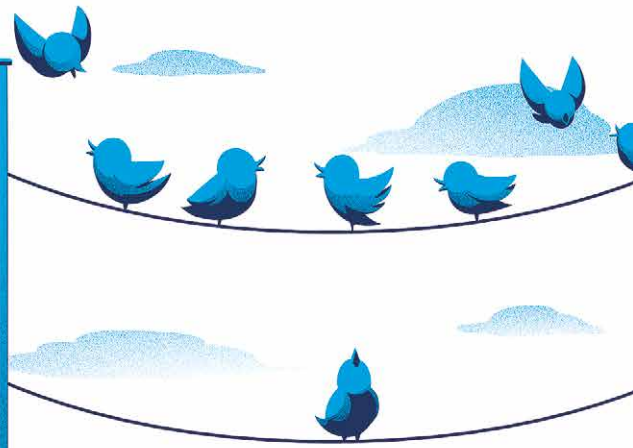
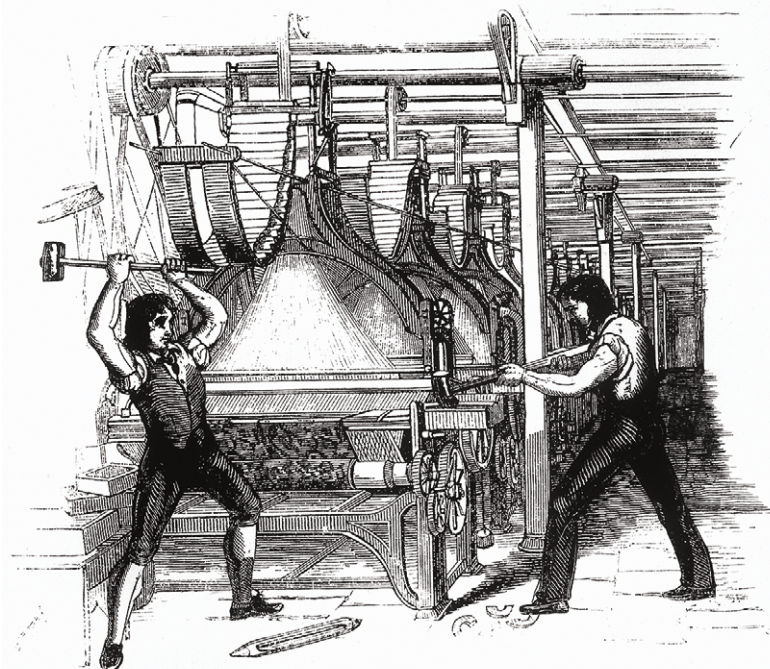
"That's an interesting question," says Andrew Ede, a historian in the Faculty of Arts and director of the science, technology and society program. He points to 1811 England when the Luddites, weavers who saw their livelihood threatened by increased automation, began breaking looms in protest. This became known as frame-breaking and soon new laws made it a capital crime. It put the crime on the same level as killing a person. In other

words, it was a property crime to knock down your neighbour's fence, but wreck a weaving machine? You could find yourself sentenced to death or shipped to the colonies.

Busting up a loom as an act of high rebellion might seem charmingly anachronistic, but there are modern parallels. "Most industrial countries have laws preventing attacks against the internet or communications networks," Ede says. And the penalties can be serious.

You realize that we are inseparable from our tech once you realize *all* tools are technology. Where would we be without clay pots or urban infrastructure? "Technology is a system, and we couldn't survive without it," Ede says, including education as a technology. "Education is probably the most powerful technology we've ever developed."

Our technology is a hallmark of our humanity. And maybe it really is what makes us ... us. So when we rail against these things—a thumb drive, an education system, a computer network, a loom—maybe we rail against ourselves. —MIFI PURVIS, '93 BA



Why You Feel Like Your Friends Are Having More Fun on Social Media

IF YOU'VE HAD A SOCIAL media account for more than five minutes, you have no doubt looked at your friends' posts and thought, "Wow, they have a lot more friends than I do." Well, there's a reason for that.

They really are more popular than you.

But don't feel bad, it's not your fault—it's just sociology. This all comes down to something called the friendship paradox: the counterintuitive idea that most people are less popular than their friends. The phenomenon was first observed by sociologist Scott Feld in 1991, a very pre-Instagram time.

David Brake, a communications researcher and instructor in the Faculty of Extension, breaks down the phenomenon like this. The friendship paradox starts with a truism: popular people have more friends. So then, it follows that more-popular people are more likely to be your friends than less-popular people.

In other words, your odds of being friends with Gregarious Greg are better than your odds of being friends

with Quiet Quinn simply because Greg has more friendships than Quinn. While this isn't a phenomenon that was birthed by the internet, Brake points to 2016 research in the journal *PLOS One* that shows the friendship paradox has found new life on social media.

It is exacerbated, of course, by the kinds of photos people choose to post. "People tend not to share a complete view of their lives," says Brake. While the choice to not share one's toenail clippings online makes perfect sense, in aggregate these choices can paint a picture that looks far more exciting and positive than the genuine article. And, of course, the social platforms contribute to feelings of anxiety and inferiority thanks to our tendency to compare ourselves with others. All of this can leave you with a fear of missing out, or as they put it online: #FOMO.

The best way out of this social media quagmire lies in evolving a more mature measure of what others post, says Brake. "Social norms change more slowly than technology," he points out. —LEWIS KELLEY

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Walking into a lab at the Alberta Machine Intelligence Institute on North Campus, it's hard to believe it's home to some of the latest research in artificial intelligence.

Humanoid robots? Nope. One battered-looking Roomba roams a fenced-off quadrant barely bigger than a dining room table. In another corner, a robotic hand is poised on a table but it just sits there, unmoving.

It turns out that the really interesting work in this lab—and many others in the Faculty of Science—is going on at a bank of unremarkable-looking computers, where human beings are writing, rewriting and testing algorithms.

While most of us think of robots when we think of AI, the reality is that the leading edge of research resides in computers and hieroglyphic algorithms. And the humans sitting in front of the computers at the U of A are some of the best minds in AI.

For decades, the computing science department has been quietly knocking down one artificial intelligence barrier after another, often in the form of beating humans at their own games. U of A researchers and alumni have been part of AI's triumph over human experts in checkers, chess, poker and Go, teaching computers to play mind-bending games to replicate the way humans learn. We rank second in the world in a branch of AI called machine learning

(*CSRankings.org*) and are home to the Alberta Machine Intelligence Institute.

Last July, one of the world's foremost AI research and development firms, DeepMind, announced it was setting up its first research lab outside the United Kingdom in Edmonton. The reason? It wanted to work with Richard Sutton and other U of A researchers. That's a big deal in the AI world.

So, suffice it to say, if you have questions about AI, you've come to the right place. What is AI? What isn't? (Page 25) How will AI affect our lives and our very selves? (Page 26) How will it change our day-to-day lives? (Page 28) We call on U of A experts to help you distinguish the hyperbole from the truly cool.

Speaking of cool—that Roomba wandering around in its pen? It's busy learning how to avoid the walls *before* it runs into them. Actually learning on its own about the world around it. It turns out that AI doesn't need to look as if it was designed in Hollywood to be amazing. ■

4 THINGS YOU SHOULD KNOW ABOUT AI

Almost daily, we read about how AI is changing our lives. It's learning to do our jobs. It's finding planets that human eyes can't. It's driving our vehicles, invading our privacy, disrupting financial markets and helping us shop. In short, it's either making our lives better or threatening our place on the planet. Maybe both.

Help make sense of it all with this quick explainer on the what, why and when of artificial intelligence.

3 THINGS AI CAN DO FOR US

AI is not about replacing humans, says researcher and computing science professor Mike Bowling. It's a tool to make us better. Here's what it can do for us, he says.

- ▶ Things humans aren't very good at but do anyway because nobody else can or is doing them.
- ▶ Things we just don't want to do.
- ▶ Things we aren't able to do at all.

\from_A(I)^to+Z*

*terms you should know

ARTIFICIAL INTELLIGENCE

Even the experts don't agree on exactly what is and isn't AI. But in general terms, it's a computer system capable of performing tasks that normally require human intelligence, such as solving problems, making decisions, processing language and recognizing images.

ALGORITHM

A step-by-step process or set of rules that guide a computer to make calculations or solve problems. In computers, these are written in a programming language; in everyday life, a recipe or assembly instructions are algorithms.

NATURAL LANGUAGE PROCESSING (NLP)

A branch of AI focused on helping computers understand and use human language.

MACHINE LEARNING

A branch of AI aimed at creating systems that can learn from and adapt to a complex, uncertain environment without being explicitly programmed.

REINFORCEMENT LEARNING

An area of machine learning inspired by behavioural psychology that uses reward or punishment to reinforce the machine's predictions or actions, much like humans learn from trial and error. Take a game of checkers: if the computer makes a move that costs it a checker, it learns to avoid that scenario next time.

DEEP LEARNING

Also called deep or artificial neural networks, deep learning is built on the idea that high-level abstract concepts can be learned from low-level ones. Simple computing nodes are layered and interconnected much like a human brain, with each layer's output serving as input for the next.

MACHINE INTELLIGENCE

Artificial intelligence and machine learning are together often referred to as machine intelligence. They enable machines to interact with their environments in intelligent ways.

ROBOT OVERLORDS? NOT REALLY

How close are we to creating robots that could take over the world? Most AI researchers agree it's a long way off—if it ever happens at all. Here's why.

GENERAL AI

When we think of artificial intelligence, most of us think of the pop culture version, à la *Ex Machina's* Ava or *Star Wars'* R2-D2. Most researchers agree artificial intelligence is many decades away from being able to match this breadth and complexity of human ability.

NARROW AI

Most artificial intelligence systems around us today are narrow or "weak" artificial intelligence. That means the system can do one specialized task but can't yet be trained to reason its way past that specific goal. For example, a chess program will only play chess.

To create general AI—in other words, for computers to be able to do what humans can do—a wealth of narrow AI "problems" have to be solved. Even the most advanced research today is focused on narrow fields, such as training computers to reason, plan, understand language, recognize and respond to visual cues, and learn through trial and error.

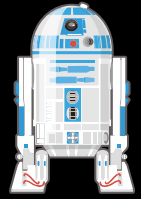
FROM R2-D2 TO ROSIE

How close are we to these sci-fi classics? Let's rank 6 of pop culture's favourite robots

By Jaden Travnik

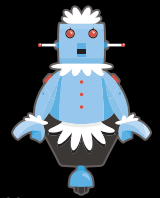
NOT EVEN CLOSE

(check back in a future far, far away)



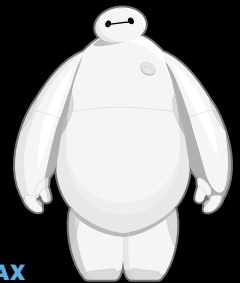
R2-D2
Star Wars

We have welding robots that work in factories following programmed directions but none yet that can repair a spaceship in the middle of battle while cracking wise.



ROSIE
The Jetsons

The price tag on robot maids is well beyond most cars, and they only work in certain kitchens, so don't expect your household chore list to get shorter any time soon.



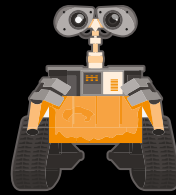
BAYMAX
Big Hero 6

Robots have an exciting role in health care, from helping with surgery to being used as prosthetic devices to delivering medication. Given these advances, some of the medical functions Baymax has at its disposal will soon be carried out by robots at a hospital near you.



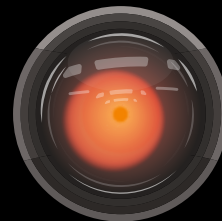
T-1000
Terminator 2

A lab at RMIT University in Australia has made a conductive liquid metal that can move and change shape based on what is around it, but the T-1000 is still a long way off.



WALL-E
WALL-E

Although his shovel hands, all-terrain treads and solar-power technology are all readily available today, the robot's curiosity is still science fiction—partly because there is no agreed-upon way to mathematically define curiosity.



HAL 9000

2001: A Space Odyssey
HAL 9000 is basically a personal assistant attached to a spaceship. It's easy to imagine going from, "Siri, call home" to "OK Google, open the pod bay doors." But so far, our digital assistants are neither sentient nor homicidal.

BUY ONE TODAY

Jaden Travnik, '15 BSc(Spec) is a researcher in the Bionic Limbs for Improved Natural Control (BLINC) Lab at the University of Alberta.



$$V(s_t) \leftarrow V(s_t) + \alpha [r_{t+1} + \gamma V(s_{t+1}) - V(s_t)]$$

OUR TRANSHUMAN * FUTURE }

With artificial intelligence, we are creating a new being—one that's 'a billion times smarter' than humans. Should we be worried?

By **Bruce Grierson**, '86 BA(Spec)

▶ Last spring, Anthony Levandowski, a Silicon Valley engineer, filed papers with the U.S. Internal Revenue Service to register his new non-profit. Its mission: "the realization, acceptance and worship of a Godhead based on Artificial Intelligence developed through computer hardware and software." The IRS granted Levandowski's brainchild, called "The Way of the Future," tax-exempt status. And just like that, the first church of AI, with its own "dean," disciples and holy book (called "the manual") was born—and set to commence communion with the new god on Earth, when she comes.

"Not a god in the sense that it makes lightning or hurricanes," Levandowski told *Wired* magazine not long ago. "But if there is something a billion times smarter than the smartest human, what else are you going to call it?"

Now, we've heard this kind of talk for at least a half-century. A balky machine called the Perceptron was supposed to be poised to take our lunch money in 1958. The device, which ran on an IBM mainframe, could "reproduce itself and be conscious of its own existence," bugled the *New York Times*.

But a recent event has many observers believing we've finally cracked the nut. In the second game of its match with the legendary world Go champion Lee Se-dol, the computer program AlphaGo (developed by Google's AI project DeepMind, led by University of Alberta grad **David Silver**, '09 PhD, and

former U of A post-doctoral fellow Aja Huang) made a move that flummoxed all the analysts. It made no sense. Yet it broke the back of the human champion and sent murmurs through the culture that a kind of tipping-point moment may finally be close: a machine can think in moves that people don't understand. It smacked of the cognitive jump that AI enthusiasts have been waiting for—what AI theorist Eliezer Yudkowsky calls the "intelligence explosion." When machines can learn from their own mistakes and then go wide, creatively connecting dots as we do—but astronomically faster—it's a whole new ball game. We're talking, according to "explosionists" like Yudkowsky and cryptologist I.J. Good, about an evolutionary leap at least as big as the one from water to land, or from Earth to interplanetary life.

That's a good thing if you think the new intelligence we're uncorking is friendly. That we're heading for a happy synergy of human and machine, in which our messes will be cleaned up by a higher level of thinking than the one that created them in the first place. "The Singularity," as it has been hailed. (Or "Rapture of the Nerds," in the coinage of the movement's chief pitchman, the futurist Ray Kurzweil.)

For his part, Levandowski, a pioneer of self-driving cars, envisions our relationship with AI as more like a New Testament God. Equal partners in this arrangement we are not. He favours the

term "The Transition" for the moment when machines finally outsmart us and we hand over power. The only question is whether this god will treat us as pets or livestock.

The Swedish philosopher Nick Bostrom ups the ante. Let's say you program machines to produce paper clips. Off they merrily go, mining minerals until they deplete the Earth. Then they turn to us. "The AI does not hate you, nor does it love you," Yudkowsky said of this thought experiment. "But you are made of atoms, which it can use for something else."

The rest of us could dismiss all this talk as loopy dorm-room catastrophizing if it weren't for some of the names in the conversation. Bill Gates, Elon Musk and the late Stephen Hawking have said they're worried. Should we be?

Last year, dozens of high-impact social visionaries—physicists, roboticists, philosophers, tech CEOs and the odd Nobel laureate economist among them—gathered on California's Monterey Peninsula to put some rules in place while humans still have the upper hand. They aimed to create a kind of founding document of guiding principles, a road map to Friendly AI. Ferocious debates erupted around the ethical dimensions of AI research. Strategies to foster AI's best pro-social self. Worst-case scenarios. Big questions: how to prevent an arms race of AI-enabled weapons? How to steer this thing without unduly constraining it?

Few would disagree that we need to inject into AI the ability for a human referee to step in and intervene, to prevent a program from improvising on the instructions we whisper in its ear and charging off to pursue its own agenda. But how?

"Stop button," says Mike Bowling, U of A professor of computing science.

"You wouldn't build an escalator without a stop button. You don't build a robot without a stop button. If something unpredictable were to happen—just as with any other tool—we'd stop using it, turn it off, investigate, fix, and return it to working order." (This reasoning applies to an AI system we might deploy in the near future, Bowling says. Beyond that, things get pretty speculative—which

isn't to say we shouldn't be speculating.)

After one too many viewings of *The Terminator*, a conversation with Bowling is guaranteed to bring your blood pressure back down. "The level of existential fear in the machine-learning community is quite a bit less than among the public," says Bowling, whose research focus is machine learning, games and robotics. (Machine learning being an area in which U of A researchers are considered at the forefront.)

Bowling is untroubled by reports that have made some people turn pale and draw the shades. Like the news two years ago about Microsoft's self-learning bot, Tay. The company equipped Tay with a sunny disposition and parachuted it into the Twitterverse. Within 24 hours, Tay turned into a jackleg neo-Nazi, churning out poisonously racist tweets. But Tay wasn't revealing some innate germ of malevolence. It was learning how people talk on the internet. "When your children start parroting things they hear on the playground," Bowling notes, "it just looks foolish."

Plenty of AI's foremost researchers openly doubt computers will assume apex-predator status any time soon, (including Richard Sutton, profiled on page 34). Then again, we've seen this movie before. When there's a big technological disruption, the Cassandras line up against the skeptics who insist the unimaginable can't possibly happen ... until it does and the whole culture heaves. Is this revolution different?

"Well, it's different in the sense that computers are the first machines designed to control other machines," says Andrew Ede, a professor who lectures on the history of technology. "In earlier technological shifts, more jobs were created than were lost. This one's going to take jobs without replacing them, and that's a valid worry." Indeed, Ede says, there's lots to be troubled by as computing power accelerates. At the top of the list is the disappearance of privacy. The "algorithms that keep such close tabs on us," as he puts it, AI will put all of that into overdrive.

WHAT CAN IT DO?

What does artificial intelligence research look like in the lab? And what will AI look like as it becomes more prevalent in our day-to-day lives? These eight examples offer a pretty good idea.



Bowling worries about bad human habits so engrained that we pass them on to machines without even realizing it. For instance, "the gender bias baked into the language manifests as sexism or racism." Then we proudly teach AI everything we know. "What if [that programming] is then used to process university admissions or mortgage applications?" But as far as a hostile takeover by robots in our lifetime, these two don't buy it.

"I think the true believers in the Singularity kind of misunderstand how different the human mind is from computers," Ede says. "[Futurist, Ray] Kurzweil, in particular, thinks that once we've mapped out all the connections in the brain we can just download ourselves onto some kind of software or hardware. But our brains don't work on a binary system — ones and zeros. They work on a much more complicated electrochemical system."

At present, the fanciest computer in the world is roughly as bright as a cockroach. No one has yet made a robot that can successfully fold laundry and cook an egg. AlphaGo's victory, while remarkable, was a triumph in an extremely narrow space. We're still a long way from creating a kind of intelligence that mimics even the worst of us on our worst day.

"Neil Postman argued that information isn't knowledge — and I'd add that knowledge isn't wisdom," says Ede. "That's something people who are waiting for the Singularity don't seem to grasp." ■



create_sur

➤ Inside a lab at the U of A, there is an artificial world where digital rabbits and wolves are born, live, reproduce and die. It's nothing fancy, just 2D shapes made of pixels to create a predator-prey environment, but those rabbits and wolves have artificial neural networks—or brains.

It's an experiment that seems part sci-fi, part Hollywood. Researchers, students and a powerful monitoring computer are analyzing every move in the colony, watching its evolution and looking for evidence of novel behaviour.

For Vadim Bulitko, lead researcher and computing

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+\alpha[r_{t+1}]
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prising^worlds*}

science professor, this “petri dish” could provide clues to how artificial beings learn through interaction. Will they develop language, ethics or desires? Artistic creativity? Personalities?

The research team cuts across a swath of arts, science and humanities, including fine arts professor Marilène Oliver, Marcia Spetch, a psychologist with an expertise in animal cognition, and computational philosopher John Simpson. Invaluable, as well, is a second computer, also built with deep neural networks, which monitors the colony and is being trained to look

for anomalies that may be missed by humans.

The project looks for surprises, and researchers got one when the rabbits, which were programmed identically, separated into distinct groups of leaders and followers.

Each rabbit was programmed to automatically eat when it came across a patch of grass. As new rabbits were born into the environment, however, researchers found that some actively sought out the grass, while others didn’t—in fact, they would avoid it.

Yet this second group would follow the leaders onto the grass, where the followers

would automatically eat and, therefore, survive. When the leaders were removed, the followers stopped eating and died.

The researchers did not expect the leader and follower rabbits to emerge, it just happened. “Who knows what’s going to happen next?” asks Bulitko.

Eventually, variables will be added to the environment, such as utterances that the rabbits or wolves could use to create a language.

“What will be the role of these things? If they do develop their own desires are they going to be hostile to us? Friendly to us? Ignoring us? These are some important questions. We can’t solve them by pretending that they don’t exist.”—THERESE KEHLER

HEALTH & WELLNESS

DIAGNOSE AND SOMEDAY PREDICT MENTAL ILLNESS

THE PROBLEM

For people with psychiatric disorders like schizophrenia, autism, ADHD and depression, arriving at correct diagnosis and treatment can take months. It’s grueling for patients and their families and costly for the health system.

THE AI SOLUTION

Russ Greiner, computing science professor and researcher, and his colleagues are testing machine learning-based software that analyzes brain scans to see if it can help doctors determine the correct diagnosis.

HOW DOES IT WORK?

Greiner and his team use supervised machine learning to analyze the data of many hundreds of anonymized patients who have information about their diagnoses. Algorithms seek patterns in the information from patients’ fMRI scans (functional magnetic resonance imaging) that can help determine whether a person has a disease.

HIGHLY ACCURATE

The team has shown that an algorithm can learn to predict whether a person has schizophrenia with an accuracy rate of 74 per cent. Other algorithms have produced similar accuracy rates for ADHD and autism.

WHAT’S NEXT?

The technology is still in research stages but could eventually help doctors diagnose, predict and even treat patients more effectively.

—WENDY GLAUSER



UNCOVER THE SECRETS OF AN ANCIENT MANUSCRIPT

➤ Researchers are hoping to help unlock the tantalizing secrets of a 15th-century document that has bewildered cryptographers for decades.

The 240-page Voynich Manuscript, which has been radiocarbon dated to 1404-1438, is handwritten on parchment in an unknown language. **Greg Kondrak**, '94 MSc, a computing science expert in natural language processing and computational cryptography at the U of A, became intrigued by the manuscript after hearing about it at a conference. He enlisted the help of graduate student Bradley Hauer to try to crack the code.

The pair created a computer program that's capable of recognizing 380 languages, with 97.1 per cent accuracy, by finding patterns using symbol frequency. Of the languages tested, Hebrew was closest to the one in the manuscript.

But there was another hurdle. The symbols seem to be anagrams—letters of a word rearranged to form new words—so even if the letters are a form of Hebrew, the words aren't. (It would be like translating something into the English alphabet and coming up with "tsprie.") So they created two more algorithms to map the text and decode the resulting anagrams into something readable.


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= localtime; $now[0] -- 7; $now[4] -- 14; $now[7] -- 9; print scalar localtime mktime @now'
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sum_{k=0}^{\infty}
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PT^

Unable to find a medieval Hebrew expert and cryptologist on campus, Kondrak fed the first line into Google Translate as a test. The line read, “She made recommendations to the priest, man of the house and me and people.”

While critics have since questioned the use of Google Translate, Kondrak says that step had little to do with the focus of the research. It was just an interesting aside.

The project is complete for now but Kondrak hopes others might pick up the quest and build on the findings. “If we are presented with new clues and information, we would definitely consider revisiting the manuscript.” —SARAH PRATT

PROSTHETICS

CREATE HUMAN LIMBS MORE LIKE THE REAL THING

For most of us, reaching for a cup of coffee is a natural motion performed without thought. For a person with a prosthetic limb, it involves a complex sequence of motions. Researchers at the BLINC Lab—Bionic Limbs for Improved Natural Control—are using AI to help create “smart” bionic limbs that operate more naturally with a person’s body.

THE PROBLEM

Modern robotic prosthetics are sophisticated yet frustratingly difficult for people to use in daily life. “They have a robot for an arm, but it’s really hard for them to tell it what to do,” says **Patrick Pilarski**, ’09 PhD, an AI researcher and Canada Research Chair in the department of medicine. Intelligent technology could increase the success rate of prosthetics and help people live fuller lives.

settings and the results have been promising. Pilarski hopes to be able to share the open-source code with the world for free within 12 months. “Our goal is to take technology that has shown success in a research setting and put it in a form that companies, developers and designers can use as a foundation for building the prosthetic technologies of tomorrow.”

THE AI SOLUTION

Using a branch of AI called reinforcement learning, the research team is training prosthetics to track patterns in a person’s movements and eventually predict the motions. Called adaptive switching technology, it allows a person to communicate with the device. “That’s the bit where AI can help. It’s the ‘brains’ of the operation, so to speak,” says Pilarski, who also works with the U of A’s Alberta Machine Intelligence Institute.

BEYOND HUMAN ABILITY

While the current research is focused on building better prosthetics to replace the abilities people have lost through injury or illness, the “big grand slam,” as Pilarski calls it, would be to use technology to help people become “super-abled”—to do more than they could before. “The seamless communication, the interaction between humans and machines to solve problems together, to make the world a better place—this is one of the biggest challenges remaining to our species.” —ALEX ZABJEK AND THERESE KEHLER

WHAT’S NEXT?

Amputees have tested the technology in lab



\make 'em {laugh*}

➤ When **Kory Mathewson**, '10 BSc(ElecEng), '14 MSc, takes the stage with Blueberry, the improv comic robot, he starts by telling the audience, "It looks really fancy, so take a deep breath and lower your expectations."

So why combine AI and improv? Because Kory Mathewson, improv comic, is also Kory Mathewson, AI researcher. Neither improv nor AI research really works without embracing repeated failures. The risk that a scene might go off the rails makes watching improv such a fun ride. Likewise, the secret sauce behind training a robot to do improv is that it tries, it fails, it learns, it tries again. And, as Mathewson recounts, there have been a lot of failures to work with.

How was your first show with Blueberry? It was awful! It was mostly watching someone debug a computer on stage. It said something pretty racy—I had thought I'd filtered for that but I didn't. The audience was like "Whoa! We didn't know it could say that."

Wait—you mean Blueberry has a foul mouth? [Blueberry's software] uses a database of hundreds of thousands of movie scripts from the last hundred years of cinema. There's a lot of really, really blue content in old movie scripts, so we try to do a lot of filtering in

terms of the words we're actually consuming.

Beyond performing, does improv actually help your research? Robots are really good at doing precise, constrained actions. And that's exactly what improv isn't. Improv is an art form that is judged with a long leash. The audience wants to watch the performers flounder and then succeed in the end. I think that dialogue—improvised dialogue—is the best way for us to watch humans and machines interact.

So working with Blueberry has given you a different perspective? Blueberry allows me to tell certain stories about

the human condition that I wasn't able to frame before—about what our interaction as humans is with these technologies. I'm building a system that I'd love to walk into a dinner party and talk to one day. And wouldn't that be the greatest tragedy? If I walked into a dinner party and didn't talk to you but talked with the robot that was sitting in the corner? So, it's really made me understand and appreciate the moments where I am connected and disconnected.

—SHANE RICZU, '12 MA

How Does It Work?

Blueberry is a machine-learning dialogue system inspired by AI research and fed a diet of a hundred years of movie scripts. Blueberry runs software called A.L.Ex. or Artificial Language Experiment, made in collaboration with Piotr Mirowski with HumanMachine in London, England. Here, in a nutshell, is how Blueberry maps language.

- ▶ It reads a database of movie scripts to map what sentences look like.
- ▶ It tries to make its own sentence, word by word, that looks like sentences from the database.
- ▶ If the new sentence reads as though it could come directly from the database, the system increases the probability of making similar sentences.
- ▶ Over several guesses and corrections, the system improves its language map.
- ▶ When you ask a question, it groups words that occur together, like "hospital, doctor, needle," into topics.
- ▶ It uses these perceived topics to create responses that stay within the same topic, mimicking a sentence from the database.



SAFETY

FIGHT FIRE WITH DATA

> When a wildfire starts, it can take less than an hour to grow into an out-of-control burn. What if we could predict the likelihood of wildfires before they started so we could get crews on the ground faster or minimize the danger with a controlled burn?

Wildfire expert Mike Flannigan is working on a machine learning system that helps predict extreme weather conditions associated with wildfires. Flannigan, a professor in the Department of Renewable Resources and director of Canada Wildfire, and research partner **Ryan Lagerquist**, '14 BSc(Hons), a PhD student at the University of Oklahoma's School of Meteorology, hope the system will be ready within five years.

TAKE HISTORICAL WEATHER INFO

The two have created a computer program that can sort through historical meteorological data linked to wildfires, then use it to predict where extreme weather is most likely to create the right—or wrong—conditions.

ADD SOME PRESSURE DATA

Fire weather is traditionally forecast using precipitation, but this new algorithm uses pressure data for greater accuracy. For example, high pressure is associated with warm, dry weather and low pressure means cooler, wet conditions.

THE RESULT IS MORE ACCURATE

"Artificial intelligence can help us better predict wildfire weather based on pressure levels, which is more accurate than using precipitation patterns alone," says Flannigan. "AI enhances existing systems and can predict this weather further in advance." —SARAH PRATT

LAW & ORDER

MAKE^THE*
LAW MORE_ACCESSIBLE}

Researchers behind an AI program that scored 72 per cent on a bar exam see huge potential to help lawyers and speed up justice

> Legal professionals often have to comb through hundreds of precedents and legal statutes to prepare for a single case. Could AI help?

Researcher **Randy Goebel**, '77 MSc, thinks so. Last year, his team scored 72 per cent in a law school bar exam at an international competition

that tests AI law programs against each other. That's big.

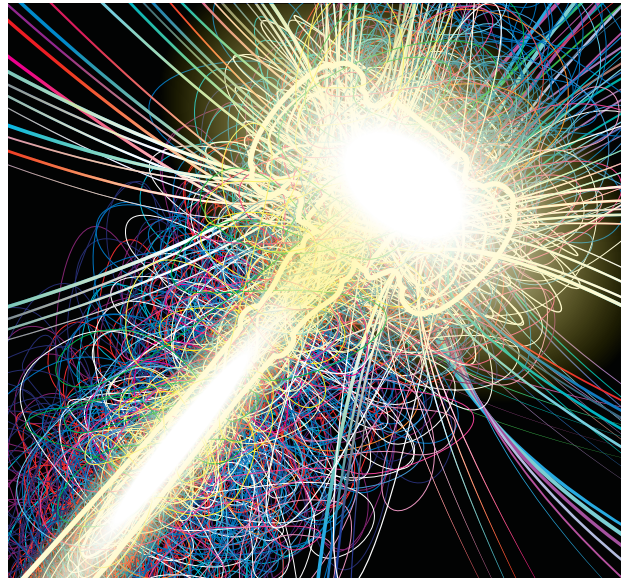
"Artificial intelligence could democratize access to law," says Goebel, a computing science professor who works with the U of A's Alberta Machine Intelligence Institute. "[With AI] mere mortals like you and me could

ask a question about a legal problem and get some results back."

Using AI to more quickly sort through huge amounts of legal data could also cut down on lawyers' billable hours, making legal representation cheaper. Faster turnaround could reduce backlogs, ensuring that the accused aren't waiting unnecessarily for trial and that victims see swifter justice, says Goebel.

For four of the last five years, a U of A team headed by Goebel and Mi-Young Kim, assistant science professor at Augustana, has won the AI bar exam competition in Japan. Using natural language processing, teams create algorithms that can respond to yes-or-no statements in a typical Japanese bar exam.

Goebel and Kim are now organizing a competition that would require programs to interpret precedent-setting cases, a more complicated task than analyzing statutes. —WENDY GLAUSER



ENERGY SYSTEMS

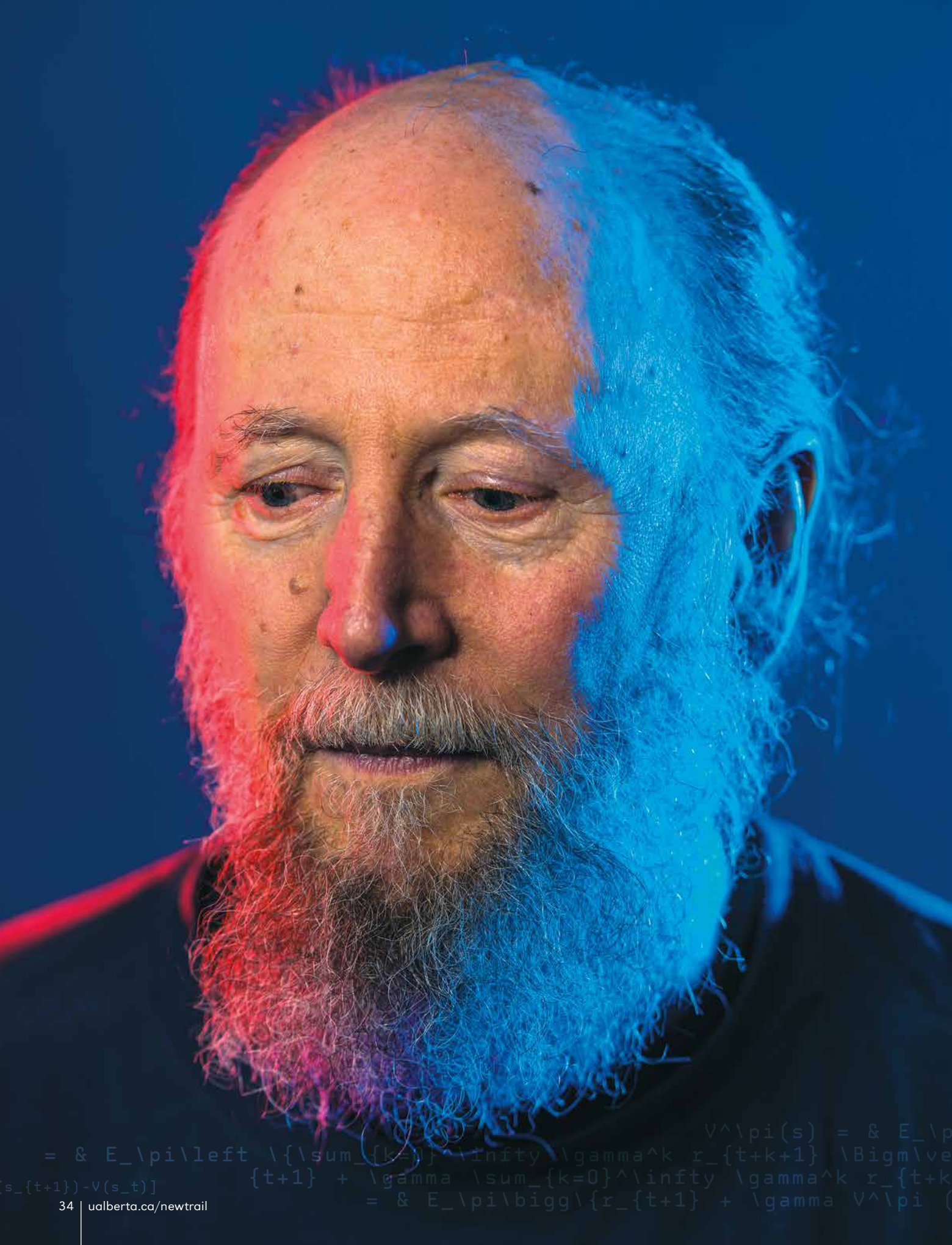
PLAN PROJECTS MORE EFFICIENTLY

> "When it comes to energy infrastructure, planning is everything," says Aminah Robinson Fayek. But how do you plan a completely novel project when the data are limited or non-existent? "You don't need exact information to make excellent decisions,"

Fayek says. With her team, the professor in construction engineering and management is creating decision-support systems that incorporate fuzzy logic—a way of integrating subjective information into solutions.

The team uses a custom-built taxonomy to describe steps common to large construction projects, regardless of the type. They feed that information to an AI program equipped with the taxonomy, which takes into account variables such as cost, scheduling, safety, environmental impact, efficiency and stakeholder interactions. The team will eventually be able to provide processes and software tools for project managers to make good decisions despite limited data.

—MIFI PURVIS, '93 BA



$$\begin{aligned} &= & E_{\pi} \left[\sum_{k=0}^{\infty} \gamma^k r_{t+k+1} \right] - V(s_t) \\ &= & E_{\pi} \left[\sum_{k=0}^{\infty} \gamma^k r_{t+k+1} \right] + \gamma V^{\pi}(s) - V(s_t) \end{aligned}$$

$\{\sum_{k=0}^{\infty} \gamma^k r_{t+k+1}\}$
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\THE DEEP * MIND ^ O F RICHARD SUTTON}

If computing science superstars were like rock stars, Richard Sutton would be all four of The Beatles. The icon shares what he has learned about AI, and himself, over his groundbreaking career

By **Scot Morison**, '80 BSc(Spec)

➤ When Richard Sutton stood in front of his first class at the U of A in 2003, he told the students he might not be around to finish the course. But he would try.

Sutton's cancer had returned. He had endured four major surgeries, chemotherapy and immunotherapy after aggressive melanoma spread to major organs, including his brain, years earlier. The cancer was in remission when he arrived in Canada to start his new position, but now the tumours were back.

"My odds were never very good, but we just kept fighting," Sutton says of his years of treatment.

Doctors at the Cross Cancer Institute in Edmonton treated Sutton with temozolomide, a powerful oral chemotherapy drug. His tumours were last seen in 2004, and he stopped all treatment in 2005. "Twelve years clear—it looks like I survived," he said in an interview last fall.

Sutton is considered a founding father of reinforcement learning—a key methodology in artificial intelligence research. Twenty years ago, he co-wrote *Reinforcement Learning: An Introduction*, which is still considered the definitive book on the subject.

Despite his already significant renown in the field of artificial intelligence, at the time Sutton's health issues made it a bit of a gamble to bring him to the university, says Jonathan Schaeffer, U of A dean of science.

"And it was a brilliant one."

Sutton is now one of the top dozen or two computing science superstars in the world, says Schaeffer. "If we had a Nobel Prize in computing science, his is the kind of name that people behind the scenes would be whispering about."

Sutton's field, reinforcement learning, is the computation

IT'S*THE DESIRE TO^ UNDERSTAND THE_WORLD

Richard Sutton, the man who literally wrote the book on reinforcement learning, shares some of his thoughts about artificial intelligence

It's Not Really Artificial

► It's really too bad we have this name "artificial intelligence." Let's just call it intelligence. It's not really so much making an alternative to humanity; it's understanding humanity. It's the desire to understand the world, the desire to make tools to make ourselves better. It's really totally human—the natural continuation of what humans are.

The Appeal of AI

► I think of it as a great scientific objective, a scientific prize, if you will, and maybe the greatest scientific prize of all time. We will understand how a mind works. We will understand ourselves, in outline, not in the specifics of ourselves; the important parts of ourselves; the ability to achieve goals and to understand the world. ... And that's a really big deal. You can compare it to Darwin's discovery of how evolution works.

Why We're Afraid

► The source of the fear, I think, is that we are creating a new kind of being, and people have a long history of being scared of newcomers.

We've been scared of our technology since the '60s, and the Industrial Revolution long before that. In the end, they [newcomers and new technology] take the jobs we didn't want to do anyway, and we end up having plenty of things to do. It's true that some people have to change their jobs, but that's just change and it's improvement.

How AI Could Change Us

► It's very hard to say, even in outline, how things will change when we understand this. Even what we want to do will be different, our goals and objectives. What if we can digitize people? Then life and death are different. You don't have to die if you can have a backup and be restored from the backup. Then you have to decide, 'Well, if I die and I'm restored from my backup, am I the same person or am I a new person? And would that be satisfactory?' Suppose you are digitized and could be brought back from a backup. You could also be brought back twice; your digital mind would have to be instantiated in a hardware body but you could do it. And if you could do it once, why couldn't you do it twice, or 1,000 times?

version of how an animal or person learns, he explains. "You try something and if it works you get positive feedback. And if it doesn't, you get negative feedback. Eventually, you learn what is good behaviour and what is bad." The field has links to behavioural psychology, Sutton's first area of study as an undergraduate at Stanford in the 1970s.

Most recently, Sutton was asked to serve as distinguished research scientist for DeepMind, Alphabet's artificial intelligence research and development firm. (Alphabet is the parent company of Google, among other companies.) In July, DeepMind opened an office

in downtown Edmonton, marking the first time DeepMind set up a research lab outside London. The move made serious waves through the world of AI.

"Would DeepMind be in Edmonton without Rich Sutton? Probably not," says Schaeffer. "They could have set up at Stanford or Carnegie Mellon — anywhere they wanted — but their first place was 'the Subarctic of Canada,' as one of my colleagues likes to call this place."

DeepMind's arrival here has opened the eyes of many other tech companies to Alberta's potential, adds Schaeffer. "The knock-on effect is enormous."

For all Sutton's global influence and renown, those

who know him are struck by his essential modesty. "He is one of the truly great computing scientists working in the world today, but I don't think he's at all interested in fame or fortune. I admire that," says Martin Müller, a longtime colleague in the U of A's computing science department. Müller calls Sutton a "pure researcher and a deep thinker."

As to his own future, Sutton sounds like many people who have faced life-threatening illness.

"The first thing it does is make you realize that life is very valuable and not infinite, and so you should figure out what you want to do and work on what you want to work on." ■

AT THE FOREFRONT OF REINFORCEMENT LEARNING

► The announcement by DeepMind last July that it was opening a research lab in Edmonton—its first international research base outside the United Kingdom—was seen in the AI world as clear recognition of the U of A's strength in the AI field of reinforcement learning.

The university's connections to DeepMind run deep, with roughly a dozen U of A alumni already working at the company. Some (including **David Silver**, '09 PhD, and Aja Huang, who did his post-doc at the U of A) played important roles in DeepMind's signature advances in reinforcement learning: the creation of the AlphaGo program that bested the world's best Go player and a program that taught itself how to play and win at 49 different Atari titles.

Richard Sutton, a U of A researcher and one of the world's most renowned computing scientists, was DeepMind's first adviser when the company was established in 2010.

"I first met with Rich seven years ago when DeepMind was just a handful of people with a big idea. He saw our potential and encouraged us from day one," says Demis Hassabis, CEO and co-founder of DeepMind. "I look forward to us making many more scientific breakthroughs together in the years ahead."

Sutton and a team that includes professors Michael Bowling, Patrick Pilarski and seven other U of A researchers will focus on fundamental AI research. They'll also continue teaching and supervising students to further foster the AI talent pipeline.

—JENNIFER PASCOE, '02 BA



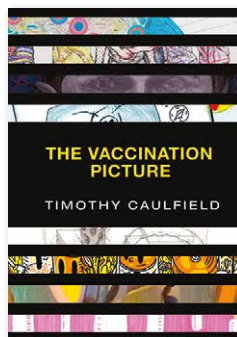
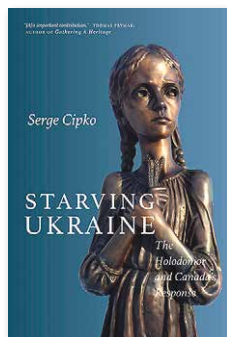
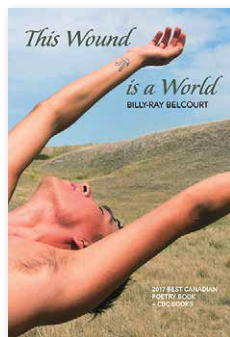
trails

WHERE YOU'VE BEEN AND WHERE YOU'RE GOING



Alysia Rissling, '11 BSc(Kinesiology), front, and Heather Moyses greet the crowd after a run in the women's bobsleigh final at the Pyeongchang Olympics in South Korea. The pair finished sixth. More U of A Olympic news on page 48.

Books



U of A alumni of all vintages have been busy penning books that reach from Canadian history to kids' lit, and popular science to parenting.

Compiled by *Kate Black*, '16 BA

▼ POETRY

This Wound is a World by **Billy-Ray Belcourt**, '16 BA(Hons), Frontenac House, frontenachouse.com

In his debut collection, this recent Rhodes Scholar draws together memoir, manifesto and poetry to explore queer Indigeneity and imagine decolonial futures.

▼ HISTORY

Starving Ukraine: The Holodomor and Canada's Response by **Serge Cipko**, '95 PhD, University of Regina Press, uofrpress.ca

Cipko analyzes Canada's response to the devastating Ukrainian famine of the 1930s, highlighting the role of journalists and activists.

▼ HEALTH

The Moral Work of Nursing: Asking and Living With the Questions (Second Edition) by **Hazel J. Magnussen (Schattschneider)**, '64 Dip(Nu), '72 BSc(Nu), Promontory Press, promontorypress.com

Magnussen reflects on her 35-year nursing career, studies in health-care ethics and

developments, highlighting moral challenges facing nurses in current care settings.

▼ SCIENCE

The Vaccination Picture by **Timothy Caulfield**, '87 BSc, '90 LLB, Penguin Random House, penguinrandomhouse.com

Caulfield uses original art and essays to explore common beliefs and debunk myths surrounding vaccine safety.

▼ FICTION

The Amoeba-Ox Continuum by **Trent Portigal**, '12 MA, Roundfire Books, roundfire-books.com

A series of deaths within a workers' utopia prompts an investigator to question what lengths she'd go to in order to save the community's tenuous artistic brilliance.

▼ HOW-TO

The Parents' Guide to Baby-Led Weaning by **Jennifer House**, '03 BSc(EnvSci), Robert Rose Inc., robertrose.ca

The author, a registered dietitian for more than 14 years, leads you through the whys

and hows of skipping your baby's puréed food stage.

▼ FICTION

When Pete Was a Kid by **Dennis Perrier**, '72 BPE, '73 Dip(Ed), '83 MEd, One Thousand Trees, ottbookstore.com

Inspired by Perrier's own childhood in a village of 120 inhabitants, the story follows Pete's coming of age in rural Saskatchewan.

▼ HOW-TO

Social Citizens: A Positive Approach to Social Media & Parenting in a Digital World by **Nancy Smith**, '02 BA (RecAdmin), Self-published, socialcitizens.ca/book

Social media instructor Nancy Smith helps parents look beyond attention-grabbing headlines and negative stories to responsibly navigate social media with their families.

▼ YOUNG ADULT

Blades Against the Dark by **Juliet Fazan McMaster**, '63 MA, '65 PhD, '09 DLitt (Honorary), FriesenPress, friesenpress.com

Young outlaws band together to stand against a corrupt military coup and liberate their imprisoned parents.

▼ SHORT FICTION

Clouds and Shadows by **Glenn W. Arnold**, '88 BCom, translated by

Xinhui Liu, '10 PhD, World Affairs Press, available at moosewanderer.com

This bilingual collection of nine short stories explores themes of isolation, loneliness, loss and redemption. It takes place in settings that bend reality.

▼ PEDAGOGY

Contemplative and Artful Openings: Researching Women and Teaching by **Susan Casey Walsh**, '79 BEd, '90 MEd, '03 PhD, Routledge, routledge.com

Walsh, a Mount Saint Vincent University professor, explores the difficulties faced by female teachers. She invokes feminism and Buddhist-inspired practices as a way forward.

▼ CHILDREN'S LITERATURE

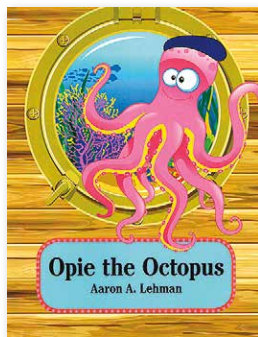
Ten Cents a Pound by **Nhung N. Tran-Davies**, '96 BSc(Spec), '02 MD, Second Story Press, secondstorypress.ca

A loving exchange between a young girl and her mother illustrates the lengths to which a parent will go for the sake of her child's future.

▼ HISTORY

Trust Not in Princes: The New Holland Settlers and the Last Best West by **Robert Westra**, '75 MSc, '78 PhD, Word Alive Press, wordalivepress.ca

Westra tells the story of the Dutch Twenty—the first



20 Dutch settlers in Medicine Hat, Alta., who leaned on their faith while trying to farm the arid region.

▼ CHILDREN'S LITERATURE

Opie the Octopus
by **Aaron A. Lehman**, '83 MEd, Self-published, aaronalehman.wordpress.com

Opie learns to love his eight legs after meeting a friend who has 100.

▼ POETRY

Wild Heart, Gypsy Soul
by **E.D. Woodford**, '08 BEd, Self-published, amazon.com

Imagine never settling for bad coffee again: this collection of poetry details this and other lessons of a life lived authentically.

▼ FICTION E-BOOK

The Sand Trap
by **Dave Marshall**, '78 MEd, '80 PhD, Talon Lake Press, amazon.ca

Two former golf proteges join forces to face down hidden secrets, Mexican cartels and the professional golf world.

Tell us about your recent publication. Mail your write-up and book to New Trail Books, Office of Advancement, Third Floor, Enterprise Square, 3-501, 10230 Jasper Ave. NW, Edmonton, AB, T5J 4P6. Or email a write-up with a high-resolution cover image to alumni@ualberta.ca. Inclusion on this list does not denote endorsement by New Trail.

▼ FICTION

Project Compass
by **Matthew Stepanic**, '12 BA, Lizzie Derksen, Robert Strong, **Kristina Vyskocil**, '16 MA, Monto Books, montobooks.ca

This novel is written from the perspectives of four people on the longest day of the year. The stories—written independently—are set in different quadrants of Edmonton.

▼ FICTION

Art Lessons
by **Katherine Koller**, '78 BA(Hons), '87 MA, Great Plains, greatplains.mb.ca

In an Edmonton coming-of-age story, Cassie draws on her grandmother's wisdom to realize the transformative power of visual art.

▼ FICTION

Jasper Wild
by **George Mercer**, '94 BSc(Hons), Self-published, georgemercer.com

In the third of the *Dyed in the Green* series, Ben and Kate uncover a plot to build a backcountry lodge in Jasper's wilderness, leaving no stone unturned to stop an international mining giant from carving off a piece of the park for himself.

▼ SHORT FICTION

You Can't Stay Here
by **Jasmina Odor**, '03 BA(Hons), '06 MA, Thistledown Press, thistledownpress.com

Odor, a finalist in the CBC Short Story Prize competition, explores the meanings of home and belonging as she illustrates the trauma and triumph of immigrants, travellers and refugees.

▼ HOW-TO

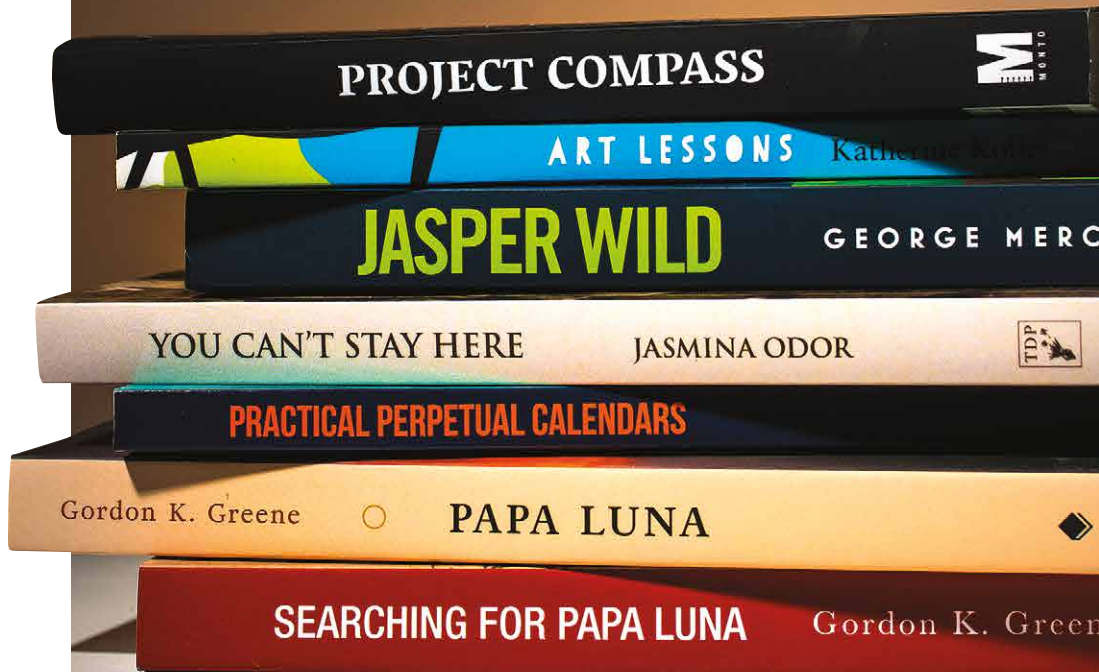
Practical Perpetual Calendars: Innovative, Convenient and Green
by **James R. Saltvold**, '64 BScEng, iUniverse, iuniverse.com

Saltvold offers a comprehensive how-to manual on making perpetual calendars for office and home use.

▼ FICTION

Papa Luna and Searching for Papa Luna
by **Gordon K. Greene**, '54 BA, '55 BEd, '58 MA, FriesenPress, friesenpress.com

Papa Luna offers a retelling of the life of antipope Benedict XIII (a.k.a. el Papa Luna), suggesting that he was the legitimate pope of his time. Its companion novel follows a music historian as he stumbles upon a clue that may lead to Papa Luna's hidden journals.





Five Things I've Learned About...

By Craille Maguire Gillies

PERSEVERANCE

Natalie Shanahan, '06 BSc(Kinesiology), '09 MSc, ultramarathoner and physical therapist



NATALIE SHANAHAN'S CHILDHOOD DREAM WAS TO PLAY

> Olympic soccer with Team Canada. While that never came to be, she did find her athletic calling in ultramarathons, including representing the country at an international event last summer in Belfast, Northern Ireland. Shanahan ran almost 210 kilometres in one race—the equivalent of five traditional marathons in a row—and placed 36th out of 130 women competitors at the International Association of Ultrarunners 24-Hour World Championships.

"[Ultramarathoners] don't have an Olympic sport because I don't think people want to see us run in circles for 24 hours," she jokes.

Here's what Shanahan has learned about strength, stamina and stepping outside her comfort zone.

YOU CAN ALWAYS GO FURTHER

1 "It's about setting a goal and working toward it one step at a time," says Shanahan. "When I ran my first relay, I had such a sense of accomplishment. It seemed impossible, but it turned out to be totally possible. I began to excel at running and then I started racing. With amazing people surrounding me, I set a goal to make Canada's national team, and when I made the team I knew I had to work harder."

TURN WEAKNESS INTO STRENGTH

2 Extreme sports make Shanahan confront her own Achilles heel: a history of eating disorders. Running forces her to eat properly to achieve peak performance. "I've found a positive way to fuel that challenge," she says. "Sometimes, I'll 'bonk' [feel lightheaded or weak] in a race and have to withdraw. But the more I eat and train properly, the further I can go."

FIND YOUR TRIBE

3 Teamwork, even in the solitary sport of long-distance running, is essential. "A good friend told me, 'I'll train you and crew you during [the national team's qualifying race]. If it wasn't for her, I wouldn't be on this journey,'" Shanahan says. Staying accountable and pushing through is easier with a support network,

which includes her new husband, **Liam Shanahan**, '99 BSc, '99 BSc(SpecCert), '05 BSc(CivEng). During the world championships, he camped out in the crew tent for the entire 24 hours. "His job was to check on me every lap, hand me water bottles and food, and provide moral support."

EMBRACE ADVERSITY

4 Shanahan takes inspiration from her paraplegic father, as well as her physical therapy patients at the Mazankowski Alberta Heart Institute. "They're my heroes. They have overcome incredible health challenges and have to work so hard just to be able to walk, breathe and live. When I'm struggling in a race, I think of them and how hard they had to push to overcome."

FACE YOUR FEARS, THEN BANISH THEM

5 Though new challenges can be scary, you never know what you're capable of until you try, says Shanahan. For many years, her fear of gaining weight was so strong that she couldn't eat. "During that time, my sports performance plateaued. But as I learned to deal with my fear of food, I was able to excel in my sports." Shanahan gets butterflies before a race but once the starter pistol is fired and she begins running, the fear disappears. "I have proven time and time again that I can succeed." ■

Class Notes

1950s

'59 **Eric Schloss**, BA, '63 MD, has been invested into the Order of Canada in recognition of his international medical service and philanthropy, which includes his donation of more than 40,000 books to the Canadian Literature Centre at the University of Alberta.

1970s

'70 **Dean Befus**, BSc, a Department of Medicine professor emeritus, and professor **Sumit (Me2) Majumdar**, '92 MD, were elected to the Canadian Academy of Health Sciences. Election to the academy is a prestigious honour for health sciences scholars, who are

inducted annually to provide unbiased, expert opinion to the federal government on pressing health topics. Sadly, Majumdar died in January 2018.

'75 **Michael Owen**, DipEd, '76 DipEd, '79 Med, has been appointed dean of the Faculty of Education at Brock

Dean Befus



Diana Anderson

Sumit (Me2) Majumdar



University in St. Catharines, Ont. He previously served seven years at the University of Ontario Institute of Technology as the vice-president of research, innovation and international, and as dean of its education faculty.

'77 **Josh Miller**, BA, has been named the inaugural CEO of the Edmonton Screen Industries Office, where he will lead the new organization in its mission to establish Edmonton as a national and international centre for media production.



DID YOU KNOW?

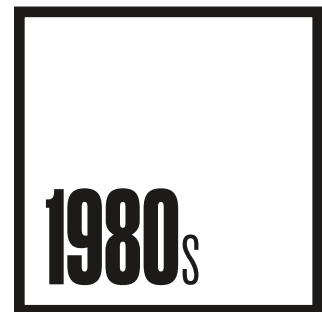
In 1911, the U of A allowed students to hold black-tie social nights called Conversazioni but, to the chagrin of then-president Henry Marshall Tory, students preferred dancing to chatting.

'78 **Diana Anderson**, BA(Spec), was honoured by the Red Deer & District Community Foundation with a 2017 Women of Excellence Award in recognition of her nearly 40-year career promoting central Alberta artists. Anderson acted as the exhibits co-ordinator at the Red Deer Museum

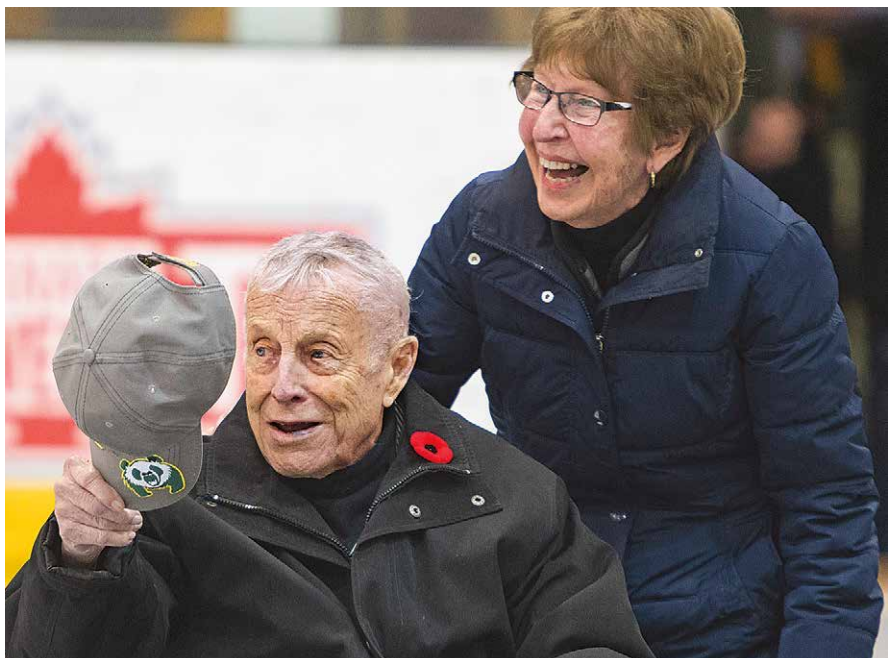
and Art Gallery for 30 years and writes that she is just beginning her eighth year as co-ordinator of the Red Deer Arts Council.

'78 **Don Tapscott**, MEd, '01 LLD (Honorary), was named the world's most influential leader in digital thinking and the second-most influential management thinker overall at the 2017 Thinkers50 awards ceremony, considered the "Oscars of Management Thinking." Tapscott was recognized for his work as CEO of the think-tank Tapscott Group, as the author of more than 15 books on the digital

economy, and as an adjunct professor at the University of Toronto's Rotman School of Management.



'80 **Paul Godel**, BEd, founded a grassroots emergency medical services training system in Kampala, Uganda, enlisting the expertise of



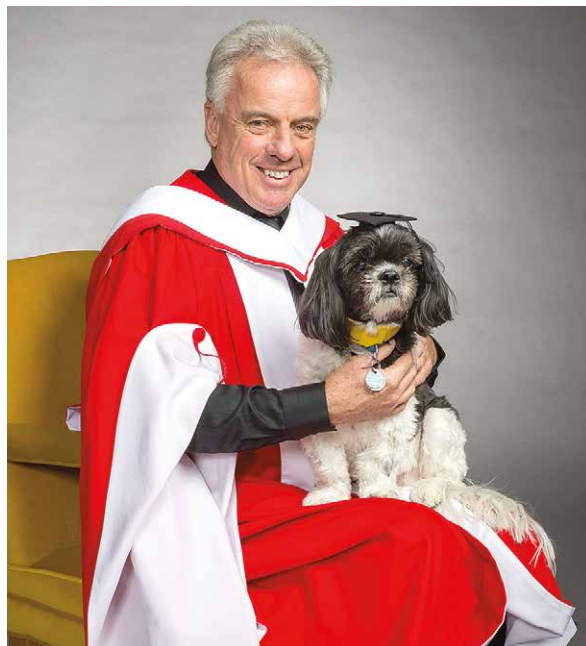
IN THE NEWS

Clare Drake Honoured

Ask anyone in Canadian hockey circles about the induction of coach **Clare Drake**, '58 BED, '95 LLD (Honorary), 89, into the Hockey Hall of Fame and they'll say: "About time." At the time of his retirement, he was the winningest university hockey coach ever, but it was his influence on the game—his "genius," according to nominator Ken Hitchcock, head coach of the Dallas Stars—that was honoured. "[Drake's] influence is as big, or bigger, than any instructor has ever had in our sport." —TORONTO SUN

The Faculty of Science has honoured Ruby the Science Dog with an honorary dog-ree. After countless hours socializing and studying with science students, she is now officially retired as the faculty's pet therapy dog. Ruby is pictured here with Bob McDonald, host of CBC's *Quirks & Quarks*, who received an honorary doctor of science this past fall.

Students Nicole Davidson-Quibell (left) and Jessica Hagel enjoy Augustana's Hot Chocolate Day in February. Alumni volunteers also gave out hot chocolate at North Campus and Campus Saint-Jean this winter.



Margaret Omand, '13 BSc. Godel, a paramedic, and Omand, a registered nurse and emergency medical responder, trained 40 local medical clinic workers in the basics of emergency medical

care. Godel says he was inspired to start the Ugandan EMS pilot project to honour his late father, **John Godel**, '53 BSc, '55 MD, and his lifetime of medical service across the African continent.

'83 **David Wishart**, BSc, and **Sean Caulfield**, '92 BFA, '96 MFA, were elected to the Royal Society of Canada, the country's most prestigious accolade for artists and scholars. In the

1990s, Wishart discovered methods to help determine protein structures. In the mid-2000s, he directed the Human Metabolome Project, which led to the founding of the field of metabolomics. (More on page 18.) Caulfield, a Centennial Professor at the U of As Department of Art & Design, creates sculpture and prints exploring the impact of technology on the environment and human bodies.

'85 **Leslie Bland**, BFA, passed along some news about his documentary *Gone South: How Canada Invented Hollywood*. The comedic feature-length film—which examines the history and influence Canadians have had on the development of Hollywood and American popular culture—premiered in January on the specialty movie channel Hollywood Suite. The lighthearted film has already had a theatrical run and toured 22 film festivals, winning Best

Syrian Mission a 'Profound Experience'

In November 2017, **Emma Treadwell**, '02 BScN, '16 MPH, completed a one-week medical mission trip with the Syrian American Medical Society, a non-political, non-profit organization providing medical relief in Syria and neighbouring countries. Treadwell joined a team of 60 volunteers at the Zaatari refugee camp in Jordan, home to 80,000 Syrian refugees.

She had previously completed her master's of public health field practicum at a clinic in Edmonton providing health care for newly resettled refugees, many of whom were Syrian. "Now that I have seen first-hand the conditions in the Zaatari refugee camp, their resilience is so much more tangible," she says.

A profound experience has stuck with Treadwell. Every day, a clinic volunteer would try to buy falafel from a seller in the camp, but the seller would not accept money. One of the American doctors, Treadwell reflects, said it best: "I am a cardiologist from Florida. He is a Syrian refugee living in a refugee camp, and he is feeding me."

While the camp and the remote clinics were full of patients with stories of trauma, loss and suffering, Treadwell recalls the smiles of the patients in the camp. "People who have fled their homes and experienced so much loss can find reasons to smile," she writes. "Despite so many stories of loss, of trauma and of war, the best of humanity shone through."



▲ SAMS volunteers in Zaatari: Rahaf Al Balkhi, Aileen Byrne, Emma Treadwell



DID YOU KNOW?

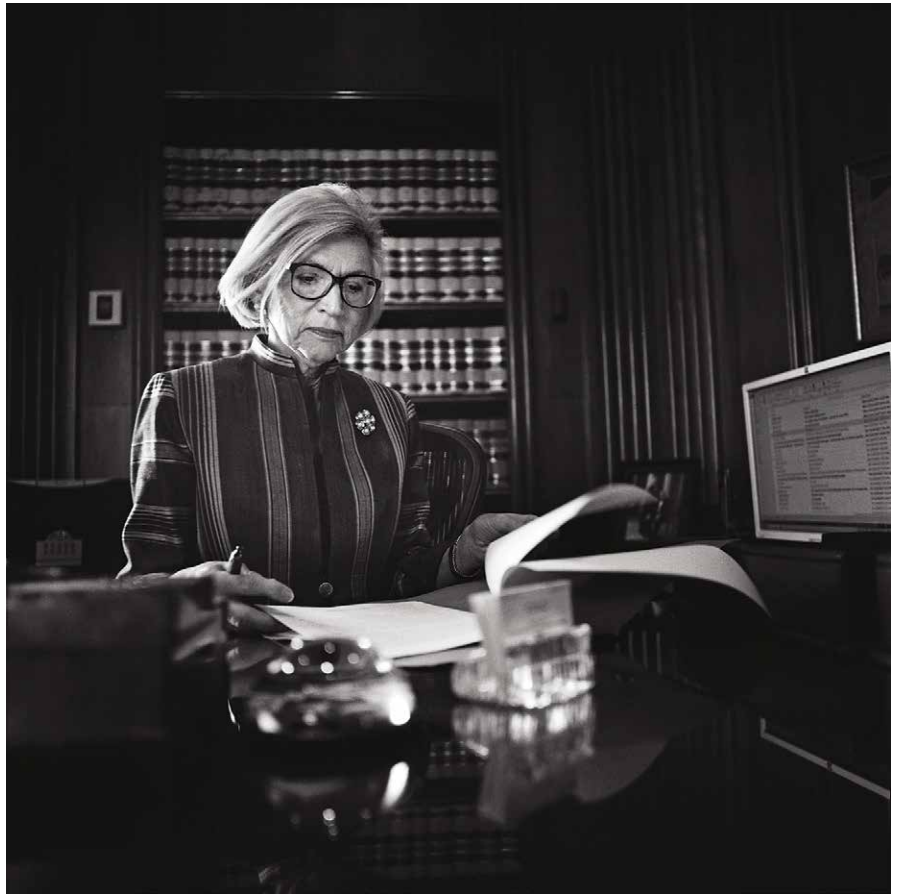
In the 1950s, Jerry's Barber Shop was located in SUB and offered patrons all of four styles to choose from: "We specialize in brushcuts, boogycuts, collegecuts and ducktails."

Documentary at the Glendale (Calif.) International Film Festival. The documentary was also featured on Air Canada flights and was recently acquired by Discovery Networks.

'85 **Valerie Henitiuk**, BA, '88 MA, '00 MA, '05 PhD, has been appointed vice-president academic and provost at Concordia University of Edmonton. Henitiuk's work focuses primarily on world literature and translation. She reports that she is in the latter stages of a Social Sciences and Humanities Research Council grant related to translation and circulation of Inuit literature in English and French.

1990s

'93 **Todd Cherniawsky**, BFA, who helped the film *Avatar* take home the Academy Award for Best Art Direction



IN THE NEWS

In the Service of Justice

Growing up in rural southern Alberta, **Beverley McLachlin**, '65 BA, '68 LLB, '68 MA, '91 LLD (Honorary), wanted a vocation, she says. "I didn't know what it was, but I knew, as a teenager, I would try to find it." In 28 years on the Supreme Court of Canada—17 as chief justice—she helped interpret legislation on issues from assisted death to Indigenous rights. Says McLachlin, who retired in December, "It's the humanity in every case that is so important to me." —THE GLOBE AND MAIL

From the 'It's a Small World' Files

Daniel Cammaert, '11 BSc(MechEng), shares a story from attending a Calgary alumni lecture series: "I approached an older gentleman who was standing by himself. We introduced ourselves and examined each other's name tags. I was excited to see that Don was an engineering alumnus from several decades before me. I hoped he might give me some golden career tips or timeless wisdom. Before I could get far, Don asked about my family as he had seen my last name on my name tag. He not only knew my grandparents but used to visit my family's farm near Rockyford, Alta. I thought it might be fun to reunite Don and my grandmother for coffee. Unfortunately, I wasn't present during the reunion but Don was grateful we were able to arrange this. It was really heartwarming that Don had remembered after all these years."

Alison Clarke (left) with her mom, Jean



in 2010, recently served as art director of *Star Wars: The Last Jedi* and as production designer on five episodes of *Star Trek: Discovery*.

'94 **George Mercer**, BSc(Hons), began writing a fiction series about Canada's national parks once he retired as the monitoring ecologist for

the Gulf Islands National Park Reserve in 2012. *Fat Cats*, the fourth book in the series, is due for release in the summer. "Through my fiction writing, I hope to attract readers who might not otherwise be interested in stories about our national parks, and do it in a way that is both entertaining and educational," Mercer writes. (See page 39 for more.)

'94 **Robert Opp**, BA, was named the first director of the Innovation and Change Management division for the United Nations' World Food Programme in 2015. As director, Opp leads the division in improving humanitarian aid with technologies like ShareTheMeal, a crowdfunding app that

enables users to donate to specific projects and track their progress.

'95 **Alison Clarke**, BA, attended the international Chapter.Con book convention in London, England, in August to promote *Racine*, the latest novel in her fantasy fiction series *The Sisterhood*. Clarke also appeared on a Chapter.Con panel to discuss the importance of diversity in young adult literature. It was not the first time Clarke was recognized for her stance on highlighting marginalized voices; she was named *Writer of the Year* by *Diversity Magazine* in 2016.

'96 **Todd Cooper**, MA, has taken a post as associate professor at the National

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Institute of Technology,
Toyama College in Imizu
City, Japan.

2000s

'06 **Phillip Peters, LLB**, recently completed his LLM in tax law at Osgoode Hall Law School in Toronto and has started a job as a legislative audit legal adviser for the Auditor General of Alberta. In this new position, Peters will provide counsel regarding legal matters arising from the office's financial statement and performance audits. Peters credits his wife, Janice, for supporting his graduate work while planning their wedding.

'07 **Nate Box, BSc**, opened his latest Edmonton restaurant in October. The eight-seat Salz, which serves up locally made Bavarian-style brews and beer-hall eats, joins Box's existing eateries Elm Cafe, District Cafe and Bakery, Little Brick and Burrow.

2010s

'11 **Austin Mardon, LL.D** (Honorary), is a longtime mental illness activist

flashback

AUTHOR **JASON LEE NORMAN**, '06 BA, TRANSFORMS A CAMPUS MEMORY INTO A WORK OF FLASH FICTION.



IN LISTER TOWN

Imagine a town of 700 people. Imagine its houses and shops and schools. Imagine Main Street (every town has a Main Street). Now imagine they built this town all at once, over just one summer — furnished every house, poured every foundation, laid every pipe and stocked all the shops. That was Lister Hall.

We were the first citizens of Lister Hall and everything we did was the first thing ever done there. We were the first to flush the toilets, lie on the mattresses, slam the doors, mark up the walls. I sat in my room, the first to arrive and therefore the first to choose my side. The inaugural resident waiting for her roommate. I could feel her presence before she walked in. The kind of energy you get from rubbing your wool socks on the carpet, the anticipation before the spark. That was Tina. Her opinions entered the room before she did. "I never wanted to live here. I wanted to live in Pembina." Well, I'm Ellen, I said.

They built us a town and we built a friendship. Fifty-three years later, she still reminds me she never even wanted a roommate.

*This piece of flash fiction was inspired by **Ellen Ogilvy**, '67 BA, '84 Dip(Ed), who remembers her first meeting with her new roommate, **Tina Matiisen**, '67 BA. Submit your own memory at newtrail@ualberta.ca.*

who was invested into the Pontifical Order of Pope Saint Sylvester, one of the five rare Orders of Knighthood awarded by the Pope. Mardon is a tireless advocate in Alberta and beyond, writing and speaking about faith and schizophrenia. He also serves as an assistant adjunct professor in the University of Alberta's Department of Psychiatry.

'13 **Qasim Rasi**, MBA, developed an app called Nelo with U of A students Pavlo Malynin and Hammad Jutt. Nelo has been licensed by Universal Studios as an official partner app to the movie *Pitch Perfect 3*. With Nelo, fans can shop outfits and products worn by TV and movie characters, create lookbooks and request personal style consultations from Hollywood costume designers.

'14 **Yuan Shi**, BSc, has taken on a new role as venture manager at the Creative Destruction Lab in Vancouver. The lab, which has five offices across Canada, supports science and technology startup companies in early stages of growth.

'17 **Marnie Colborne**, BScN, and U of A nursing professor Sherry Dahlke published an article titled "Nurses' Perceptions and Management of Urinary Incontinence in Hospitalized Older Adults: An Integrative Review." It appeared in the *Journal of Gerontological Nursing*, one of the field's top academic journals. ■

Physiotherapists Tyson Plesuk and Lauren Vickery at Pyeongchang, South Korea



Alysia Rissling



GREEN AND GOLD MEET RED AND WHITE

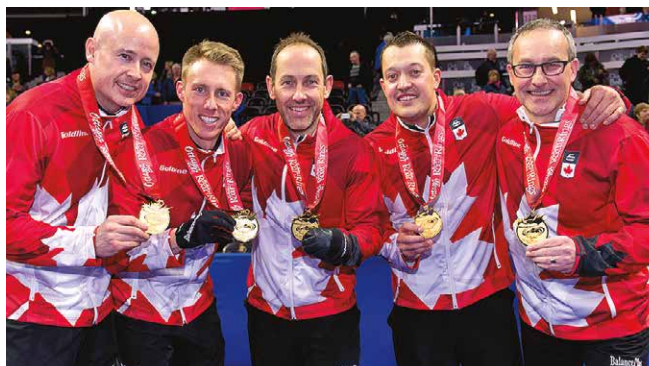
THE CANADIAN CURLING teams didn't do as well as expected at the 2018 Winter Olympics in Pyeongchang, South Korea. But perhaps it's a sign the world is finally catching on to the great Canadian pastime. Representing Canada and the U of A, **Joanne Courtney**, '11 BScN, joined student Rachel Homan on the women's curling team. The Homan rink went 4-5 at the Games after not losing a single game at the 2017 world championships. The men's curling team, which lost the bronze-medal match, included **Marc Kennedy**, '05 BCom, and **Scott Pfeifer**, '00 BSc(Spec), '04 MBA.

A number of bobsleigh athletes are also members of the U of A community. Students Christine de Bruin and Melissa Lotholz competed in the women's

2-man event, **Alysia Rissling**, '11 BSc(Kinesiology), in the women's 2-man, and **Neville Wright**, '07 BPE, in the open 4-man competition.

Alongside the athletes, you could find coaches and support staff with a U of A connection. Professor in the Faculty of Kinesiology, Sport, and Recreation, **John Dunn**, '92 MA, '98 PhD, served

as a mental skills coach for the Canadian men's curling team, while **Marcel Rocque**, '96 BED, coached the Chinese men's curling team. **Erika Persson**, '99 BSc(MedLabSci), '05 MD, an assistant clinical professor of pediatric sport and exercise medicine, was a physician for the Canadian figure skating team. On the icy track, **Tyson Plesuk**, '08



Happier days for Team Koe at the 2017 Roar of the Rings: (left to right) Kevin Koe, Marc Kennedy, Brent Laing, Ben Hebert and Scott Pfeifer



MSc, was a physiotherapist for the bobsleigh and skeleton teams, and **Lauren Vickery**, '06 BSc(Kinesiology), '10 MSc, was a physiotherapist for luge athletes. Three-time Olympic gold medal winner **Melody Davidson**, '86 BPE, was general manager of the silver medal-winning women's hockey team.

A lovely Olympics tale came to us about two Pi Beta Phi sorority sisters whose grandsons competed in the Games. **Jean (Hunter) Bolger**, '53 BSc, and **Robin (Williams) Harvie**, '53 BCom, were roommates in the Alberta Alpha house in 1952 and '53. They've kept in touch and live about 30 kilometres apart in Calgary and Cochrane, Alta., still meeting monthly for lunch. Bolger's grandson, Tristan Walker, won a silver medal for Canada in the luge team relay. Harvie's grandson, Mason Raymond, played and scored for the Canadian hockey team during its journey to a bronze medal. —SARAH PRATT

ILLUSTRATION BY JEFF KULAK, '07 BDES; PHOTO BY CITY OF EDMONTON



IN THE NEWS

Exploring the Art of a Landfill

Leanne Olson, '03 BA, is fascinated by society's drive for consumption and the garbage it produces. For six months, the photo artist will explore those themes, camera in hand, as the first artist-in-residence at Edmonton's landfill. "I think it's kind of this forgotten part of society," says Olson, who will take thousands of photos at the 233-hectare waste management facility. An exhibition of her work is set for after the residency ends in August. —CBC EDMONTON



DID YOU KNOW?

In 1980, punk bands were banned from playing in SUB Theatre, RATT and Dinwoodie Lounge because of an incident in which police were called in to break up a fight.



IN THE NEWS

Sanctuary for the Future

Teeming with songbirds, waterfowl and wildlife, there is a parcel of undisturbed wetlands west of Edmonton known as the region's best for birding. Thanks to wildlife biologist **Lu Carbyn**, '67 MSc, it will stay that way. Carbyn bought the 62 hectares in 2014 to use with his family and students. In 2017, he donated it to the Edmonton and Area Land Trust to protect its biodiversity. The Lu Carbyn Nature Sanctuary is set to open this spring. —CBC EDMONTON

Alumni Achieve Excellence

The Alberta Order of Excellence has inducted three alumni: **Steve Hrudehy**, '70 BSc(MechEng), '12 DSc (Honorary), professor emeritus in laboratory medicine and pathology, led life-saving initiatives to improve drinking water around the world; **Marie Gordon**, '79 LLB, is a writer, reformer and activist in family law whose work has improved the lives of women and families in Canada; **Vivian Manasc**, '82 MBA, with her innovative architectural approach and sensitivity to Indigenous ways of knowing, has spearheaded a new creativity in Canadian architecture.

ALUMNI ADVICE

HOW TO ROCK YOUR LOOK

Forget the fads. Three grads help you create a style that's all your own

By Elizabeth Withey

It's spring, which means spring fashions are already out of style. Ready to hop off the merry-go-round that is seasonal trends? We asked three alumni designers how you can sidestep fast fashion and create your own look.

Be yourself

Fashion is about who we are, how we want to be seen and how we feel about our bodies, says **Kathleen Todoruk**, '92 BSc(HEc). For 25 years, Todoruk has been designing custom-made garments for women from all walks of life with Todoruk Designs. Bespoke design is an opportunity to create an original and enduring look that reflects you, she says.

Think longevity

It's easy to fall prey to the consumption machine that



▲ A look from designer Jessica Kennedy's Vera Véro collection

is the fashion industry, says **Jessica Kennedy**, '04 BSc(HEcol). Exercise caution when it comes to the latest fad, says the co-creator of the Vera Véro capsule collection. Look for pieces designed to be worn regardless of season, "Whether it's to work or a social event or taking your kid to the playground," Kennedy says. Which also allows you to ...

Get comfortable

For Kennedy, fashion is about wearing what you love and what makes you comfortable. Think beyond the latest styles. "It's about how you feel. If you're not comfortable, it's not working," agrees **Derek Jagodzinsky**, '10 BDes, creator of Lxxx.

Dress up, not down

But while there's a time and place for ultra-casual, in situations where it could go either way, designers say a little overdressed is best. "You want to feel good about yourself," says Kennedy. "It's about that confidence."

Colour is the new black

Black is inoffensive, flattering and a safe bet. But don't be afraid to try something exciting. Todoruk's clients will often look at textile swatches and get excited. Go with that instinct, she says.

Accessories: less is more

People tend to over-accessorize, says Jagodzinsky, and that's where they run into trouble. "Less is more." His favourite accessory? Earrings. "It's something really simple, a little shine."

Make the right statement

The most important thing to consider when it comes to getting dressed? Ask yourself what message you're conveying with your wardrobe. "Fashion is an instant language. It says who you are in the first 10 seconds you see someone," says Jagodzinsky. ■

The Alumni Association notes with sorrow the passing of the following graduates (based on information received between October 2017 and January 2018).

In Memoriam

1930s

'36 **Dorothy Muriel Ross**, BSc(HEc), of Edmonton, AB, in September 2017

'37 **Kathleen Gertrude Hutton**, BA, of Toronto, ON, in May 2016

1940s

'40 **Jean Elizabeth Robertson**, BSc(HEc), '44 BEd, '60 MEd, '66 PhD, of Sherwood Park, AB, in January 2018

'40 **Phyllis Dorothy M. Steinbach**, BA, '42 Dip(Ed), of Trochu, AB, in September 2017

'42 **Sidney Bernard Slen**, BA, '43 BSc(Ag), of Lethbridge, AB, in December 2017

'43 **James Charles Nichol**, BSc, '45 MSc, of Island Lake, AB, in June 2017

'44 **Audrey Jeanne Barton (Appleton)**, Dip(Nu), of Bellingham, WA, in October 2017

'44 **Frances Eleanor L. Kohn (Holdom)**, BSc(HEc), of Delta, BC, in December 2017

'44 **Zella Eileen Norem (Hoar)**, BSc, '46 MD, of Nanaimo, BC

'44 **Verna Elizabeth Siga (Bowen)**, Dip(Nu), of Jasper, AB, in September 2017

'45 **Murray L. Jacques**, BCom, of Calgary, AB, in December 2017

'47 **John Stuart Blackie**, BSc(Ag), of St. Albert, AB, in November 2017

'47 **Ines Antonie Farmer**, Dip(Ed), '48 BEd, of Calgary, AB, in October 2017

'48 **Helen Dolores Causgrove (Turcotte)**, Dip(Nu), of Edmonton, AB, in November 2017

'48 **Van Evangelos Christou**, DDS, of Lethbridge, AB, in September 2017

'48 **Elizabeth J. Graham**, BA, '64 BEd, '66 MEd, of Edmonton, AB, in December 2017

'48 **James Stanley Harris**, BSc(CivEng), of Vancouver, BC, in January 2018

'48 **Norma Adelaide Robertson (Smith)**, BSc(HEc), of Edmonton, AB, in December 2017

'49 **Evelyn Mae Brown**, BSc, of Calgary, AB, in October 2017

'49 **Thomas Alan Campbell**, BSc(MiningEng), of Calgary, AB, in December 2017

'49 **William Philip Campbell**, BSc(Ag), of Nepean, ON, in December 2017

'49 **Michael Gudzowaty**, Dip(Ed), '50 Dip(Ed), '51 BEd, of Olds, AB, in January 2018

'49 **Ronald Webster Jones**, BSc(CivEng), of Kelowna, BC, in December 2017

'49 **Leonard Albert Motiuk**, BSc, of Calgary, AB, in October 2017

'49 **Doreen Ruth Newby (Hill)**, Dip(Nu),

of Calgary, AB, in December 2017

'49 **Samuel R. Rogers**, BSc(Pharm), of Edmonton, AB, in December 2017

'49 **Clifford Paul Ronden**, BSc(ChemEng), of Edmonton, AB, in November 2017

'49 **Donald John L. Shep**, BSc, of Spruce Grove, AB, in December 2017

1950s

'50 **Felix Waldemar Appelt**, BSc(CivEng), of Edmonton, AB, in January 2018

'50 **Frank Morgan Brock**, BSc(ElecEng), of Pennington, NJ, in January 2018

'50 **Evison Ives Carefoot**, BSc(CivEng), of Edmonton, AB, in October 2017

'50 **James Edward Greenaway**, BSc, '60 DDS, of Edmonton, AB, in November 2017

'50 **Albert E. Hohol**, BEd, '54 MEd, of Edmonton, AB, in November 2017

'50 **Arthur Kowalchuk**, BSc(MiningEng), of Athabasca, AB, in November 2017

'50 **Lyonel Wesley Kruger**, BEd, '77 MEd, of Edmonton, AB, in October 2017

'50 **Douglas Burrows Leitch**, BSc, of Calgary, AB, in November 2017

'50 **John Donald Lind**, BSc, '52 DDS, of Calgary, AB, in September 2017

'50 **Roy Leonard Millar**, BSc(Ag), '52 MSc, of Prairie Village, KS, in August 2017

'50 **E. Ruth Miller (Gauld)**, Dip(Ed), '52 BEd, of Calgary, AB, in October 2017

'50 **Marguerite Ora Olson (Burnfield)**, Dip(Nu), of Calgary, AB, in November 2017

'50 **Gordon Phil Peterson**, BA, '51 LLB, of Edmonton, AB, in November 2017

'51 **David Macindoo Fawcett**, BSc, '59 MD, of Edmonton, AB, in December 2017

'51 **Robina Letitia Hood**, BSc(HEc), of Coquitlam, BC, in December 2017

'51 **Gerald Douglas Johnston**, BCom, of Edmonton, AB, in December 2017

'51 **Walter Leroy McNary**, BSc(Ag), of Camrose, AB, in September 2017

'51 **Kenneth Arthur Millions**, BSc(CivEng), '59 MSc, of Timmins, ON, in December 2017

'52 **Margaret Anne Bell (Hansen)**, BSc(HEc), of Chandler, AZ, in October 2017

'52 **John K. Church**, BSc(Ag), of Calgary, AB, in October 2017

'52 **Joan Elizabeth Gibson (Hannah)**, BSc, of Victoria, BC, in August 2017

'52 **Vera Lenore Henderson**, Dip(Ed), '76 BEd, of Medicine Hat, AB, in October 2017

'52 **Nestor Ludwick**, BSc(PetEng), of Calgary, AB, in December 2017

'52 **Vera Ponich (Chumer)**, Dip(Nu), '53 BSc(Nu), of Edmonton, AB, in January 2018

'53 **Patricia Jean Duggan**, BSc(HEc), of Atlanta, GA, in April 2017

'53 **Oryst Dan Gorgichuk**, BSc, of Calgary, AB, in October 2017

'53 **William Muir Graham**, BSc, of Kelowna, BC, in August 2017

'53 **John Markovich**, BSc(Ag), of Edmonton, AB, in November 2017

'53 **Delores M. Tymos**, Dip(Ed), '58 Dip(Ed), of Surrey, BC, in June 2017

'53 **Norah Wilton (Day)**, Dip(Nu), '54 BSc(Nu), of Olds, AB, in November 2017

'54 **Katherine Ann Carey**, BEd, of Vermillion, AB, in September 2017

'54 **Harry Vernon Donaldson**, BSc, '56 MD, of Calgary, AB, in December 2017

'54 **C. Ronald Hill**, DDS, of Qualicum Beach, BC, in November 2017

'54 **James Andrew Lore**, BSc(Ag), of Carstairs, AB, in December 2017

'54 **Archie Durward Marzolf**, BEd, '61 MEd, of Edmonton, AB, in October 2017

'54 **Clifford Odell Paulson**, BSc(PetEng), of Calgary, AB, in December 2017

'54 **Robert John Plotkins**, BSc(PetEng), of Calgary, AB, in November 2017

'54 **Stephen George Sorokan**, BSc, '63 BEd, '67 MD, of Calgary, AB, in October 2017

'54 **Orman Ann Van**, Dip(Ed), of Penticton, BC, in October 2017

'54 **Jean Marion Watt**, BSc, of Edmonton, AB, in October 2017

'55 **Calvin Cecil Cibart**, BSc(Ag), of Regina, SK, in August 2017

'55 **David Bruce MacDougall**, BEd, of Edmonton, AB, in November 2017

'55 **Brendan Edward Quirin**, BA, '58 BSc(MiningEng), of Barrington, IL, in December 2017

'55 **Thelma Joyce Raines (Tandberg)**, Dip(Nu), of Calgary, AB, in December 2017

'56 **James Taylor Gilfillan**, BPE, of Edmonton, AB, in January 2018

'56 **Delores Frances Harrison (Roose)**, Dip(Ed), of Kelowna, BC, in November 2017

'56 **Robert Vincent Kubicek**, BEd, '58 MA, of Vancouver, BC, in October 2017

'56 **Constance Marguerite Nixon**, BPE, of Calgary, AB, in December 2017

'56 **Don Edward Ruskin**, BSc(ChemEng), of Burlington, ON, in January 2017

'56 **Sheila Anne Schlesinger**, BA, of Edmonton, AB, in October 2017

'56 **Theodore Strang Sorensen**, BSc, of Calgary, AB, in October 2017

'57 **David Archibald Boag**, BSc, '58 MSc, of Calgary, AB, in December 2017

'57 **Robert William Cromarty**, BSc(Ag), '60 MSc, of Richland, WA, in October 2017

'57 **George Donald Enns**, DDS, '66 MD, of Chilliwack, BC, in September 2017

'57 **Lilly Therese Gervais**, Dip(Ed), '66 BEd, of Sturgeon County, AB, in October 2017

'57 **Bernard Henri Lemay**, BCom, '63 BEd, of Edmonton, AB, in January 2018

'57 **Sheila Isobel Nikiforuk**, BSc(Nu), of Edmonton, AB, in September 2017

'57 **Alfred V. Widholm**, BSc(CivEng), of Windsor, ON, in November 2017

'58 **Richard Herbert M. Anthony**, BA, '61 LLB, of Duncan, BC, in November 2017

'58 **Kenneth Edward Glover**, BSc, '62 DDS, of Edmonton, AB, in December 2017

'58 **Alexander Sadesky**, BSc(ElecEng), of Salmon Arm, BC, in August 2017

'59 **Frederick Arthur Alexander**, BSc(MetEng),

of Vancouver, BC, in January 2018

'59 **David Eli Grossman**, BCom, '62 LLB, of Calgary, AB, in November 2017

'59 **Donald Bruce Harrison**, BSc(ElecEng), '63 BEd, '67 PhD, of Calgary, AB, in December 2017

'59 **Brian Maldwyn Jones**, BEd, '66 MEd, of Edmonton, AB, in December 2017

'59 **Daryl Goodwin Lunder**, BSc(CivEng), of Okotoks, AB, in September 2017

'59 **Luella Yvonne M. Yakymyshyn (Nykiforuk)**, BSc, '76 MSc, of Edmonton, AB, in October 2017

1960s

'60 **Edward Robert Blasken**, BCom, of Calgary, AB, in November 2017

'60 **Patrick Barry Dawson**, BSc(Pharm), '66 BEd, '74 Dip(Ed), of Comox, BC, in October 2017

'60 **Maryetta Harper (Thornton)**, BSc(HEc), of Edmonton, AB, in October 2017

'60 **William Donald Swanson**, BSc(MiningEng), '63 MSc, '70 DDS, of Edmonton, AB, in November 2017

'61 **Gerald Ernest Dahms**, BEd, '74 BA, of Ponoka, AB, in July 2017

'61 **Anthea Lynne M. Lee**, BA, '74 Dip(Ed), '81 Dip(Ed), of Victoria, BC, in July 2017

'61 **Thomas Frederick Mowat**, BSc, '68 BEd, '75 Dip(Ed), of Stony Plain, AB, in December 2017

'61 **Walter Muir**, BEd, '65 MEd, '71 PhD, of Victoria, BC, in October 2017

'61 **Allan Lee Pollock**, BSc(ChemEng), of Lakeland, FL, in May 2017

'61 **Mary Anne Schreiner**, Dip(Nu), of Edmonton, AB, in November 2017

'62 **Terrence Allan Cockrall**, BCom, '65 LLB, of Edmonton, AB, in December 2017

'62 **John Edwin Law**, BEd, of Edmonton, AB, in October 2017

'63 **Alonso Manuel Tascon**, MSc, of Encino, CA, in October 2017

'64 **Thomas Andrew Casey**, BEd, of Toronto, ON, in October 2017

'64 **Paul Ajibe Chalifoux**, BEd, '72 BA, of St. Albert, AB, in November 2017

'64 **Ronald Mitchell Kachman**, BSc(ElecEng), '70 MSc, of Spruce Grove, AB, in January 2018

'64 **James D.L. Ross**, BEd, of Victoria, BC, in December 2017

'64 **Leonard Roy Shymoniak**, BEd, '68 MEd, of Citrus Heights, CA, in November 2017

'64 **Guy Roger West**, MD, '70 MSc, of Calgary, AB, in December 2017

'65 **Margaret Elizabeth Andrews (Steele)**, BEd, of Edmonton, AB, in January 2018

'65 **Marylynn Dianne Howard**, BEd, of Calgary, AB, in October 2017

'65 **Hans George Kratz**, BEd, '77 MEd, of Qualicum Beach, BC, in November 2017

'65 **Norman Thomas Markert**, BEd(VocEd), of Calgary, AB, in July 2017

'65 **John Michael Rehman**, BSc(Pharm), of Calgary, AB, in September 2017

'65 **John Charles Strick**, PhD, of Windsor, ON, in September 2017

'66 **Edwin Joseph Batiuk**, BEd, of Edmonton, AB, in December 2017

'66 **Robert Lloyd McKay**, BSc(CivEng), of Surrey, BC, in November 2017

'66 **Haukur Melax**, MSc, of Red Deer, AB, in November 2017

'66 **Myer Rabin**, BA, '67 LLB, '83 PostgradDip,

of Riverview, NB, in November 2017

'66 **Linda Louella Westcott**, BA, of Saskatoon, SK, in December 2017

'66 **Ronald Wilfred Ziebart**, BEd, '72 LLB, of Edmonton, AB, in December 2017

'67 **Alan David Bleiviss**, BA, of New York, NY, in December 2017

'67 **John Edward Blott**, BSc(MiningEng), of Centennial, CO, in December 2017

'67 **Frank Harrickson P. Boodram**, BSc(ChemEng), of Edmonton, AB, in October 2017

'67 **James Robert Boylan**, BSc, '68 BSc(Pharm), of Medicine Hat, AB, in October 2017

'67 **Lloyd Carswell**, BCom, of Parksville, BC, in October 2008

'67 **Ronald Clyde Krause**, BSc(Ag), of Calgary, AB, in October 2017

'67 **Emily Tekla Kruchowski**, BSc, '95 MLIS, of Edmonton, AB, in October 2017

'67 **Leonard Gene Rodwell**, BSc(MechEng), of Spruce Grove, AB, in September 2017

'67 **Stephen Gordon D. Thompson**, BCom, of St. Albert, AB, in December 2017

'67 **Eimar Virkus**, BSc(CivEng), of Houston, TX, in November 2017

'68 **Clifford Ryerson Driver**, Dip(Ed), of Edmonton, AB, in September 2017

'68 **David Lawson**, MD, '86 BSc, of Calgary, AB, in October 2017

'68 **Rodney Howard Moore**, BSc, of Edmonton, AB, in October 2017

'69 **Forrest Hugh R. Bard**, BA, of Edmonton, AB, in September 2017

'69 **Julia Mary Holt (Sweryda)**, BEd, of

Stony Plain, AB, in December 2017

'69 **Gwendolyn Stephens Newsham**, MEd, of Montreal, QC, in January 2018

'69 **Linda M. Todd**, BSc(OT), of Edmonton, AB, in November 2017

1970s

'70 **Raymond Bosch**, BCom, of Calgary, AB, in December 2017

'70 **Dennis Frederick Buckle**, BCom, of Edmonton, AB, in November 2017

'70 **Elton R. Dunk**, BSc(Ag), of Edmonton, AB, in April 2017

'70 **Russell Glenn Good**, BSc(ElecEng), of Edmonton, AB, in December 2017

'70 **Francis Ivan A. Hall**, LLB, of Edmonton, AB, in September 2017

'70 **Phillip Richard Nelson**, BSc(CivEng), of St. Albert, AB, in October 2017

'70 **George Edward Parrott**, BEd(VocEd), of St. Paul, AB, in June 2017

'70 **Douglas Bruce Patterson**, BSc(Ag), of Calgary, AB, in January 2018

'70 **Harry Andrew Pichonsky**, BEd(IndArts), of Thorsby, AB, in December 2017

'70 **Pauline Romanchuk**, BEd, of Barrhead, AB, in September 2017

'70 **Frieda Wahl**, BEd, of Calgary, AB, in October 2017

'70 **Dacrisson D. Worrell**, BSc, of Gibbons, AB, in October 2017

'71 **Donald Cheung**, MSc, of Edmonton, AB, in October 2017

'71 **Elmer Philemon Derrick**, BEd, of Terrace, BC, in September 2017

'71 **Ida Marie Jardine**, BMus, of Slave Lake, AB, in December 2017

'71 **Dominic Man S. Leung**, BSc(ChemEng), '75 MD, of Edmonton, AB, in November 2017

'71 **Evelyn June Shapka**, BEd, of Edmonton, AB, in December 2017

'71 **Kenneth Ross Valens**, BEd(VocEd), of Edmonton, AB, in September 2017

'72 **Vonna Mary A. Arsenault (Siga)**, BEd, of Jasper, AB, in April 2017

'72 **Dick Arie De Klerk**, BEd(VocEd), of Leduc, AB, in September 2017

'72 **Lis Densmore**, BSc(Med), '74 MD, of Whitehorse, YT, in January 2018

'72 **Barbara Florence Hansen (Bell)**, BSc(HEC), '97 MBA, of Edmonton, AB, in October 2017

'72 **Dianna Mah-Jones**, Dip(RM), '79 BSc(OT), of Vancouver, BC, in September 2017

'72 **Shirley June Sefton (Hodgins)**, BLS, of Regina, SK, in November 2017

'72 **Donald Robert Shaw**, BEd(IndArts), '99 MEd, of Edmonton, AB, in November 2017

'72 **Gerald Brian Wolfe**, BCom, of Danville, CA, in November 2016

'73 **Myrna Ann Andruko (Prodaniuk)**, BEd, '80 MEd, of Edmonton, AB, in September 2017

'73 **James Warren Carr**, BA, '78 LLB, of Edmonton, AB, in October 2017

'73 **Johnnie Clifford Johnston**, BSc(ElecEng), of Gibsons, BC, in October 2017

'73 **Bonnie Gail Massing**, BSc(MedLabSci), '77 MD, of Vancouver, BC, in September 2017

'73 **Larry James Olexiuk**, BCom, of St. Albert, AB, in December 2017

'74 **Alexander Watson Carmichael**, BSc(MechEng), of St. Brieux, SK, in December 2017

'74 **Robert Charles Guest**, BEd, of Nanaimo, BC, in June 2017

'74 **Patricia Hayes**, MHSA, of Edmonton, AB, in October 2017

'74 **Tudor Williams**, BEd, of Surrey, BC, in May 2017

'75 **Barbara Brown**, BSc(Pharm), of Red Deer, AB, in November 2016

'75 **Thora Eva G. Burgess (Oddan)**, BSc(Nu), of St. Albert, AB, in November 2017

'75 **Shirley Pearl Gorman**, Dip(Ed), of Edmonton, AB, in September 2017

'75 **Robert Allan Lanman**, BEd, of Sherwood Park, AB, in September 2017

'75 **Wayne Lyle Lord**, BA(Spec), of Orleans, ON, in November 2017

'75 **Lois Allison Soderstrom**, Dip(Ed), '82 Dip(Ed), of Edmonton, AB, in December 2017

'76 **Vernon Bruce Gabriel**, Dip(Ed), '93 BEd, of Kingston, ON, in December 2017

'76 **Douglas Ernest Hall**, BEd, of Edmonton, AB, in September 2017

'76 **Wendy Mae Lien**, BPE, of Brooks, AB, in January 2017

'76 **Vernon Roy Oberg**, BSc(MechEng), of Edmonton, AB, in November 2017

'76 **Chester Alan Perry**, BSc(ElecEng), of Calgary, AB, in January 2018

'76 **Thomas Frank Pontin**, LLB, of Millet, AB, in October 2017

'76 **Gloria Jean Tremblay**, BA, of Edmonton, AB, in December 2017

'77 **Ralph Gordon Brown**, BEd, of Calgary, AB, in November 2017

'77 **Bhagwan Dass Dua**, PhD, of Lethbridge, AB, in January 2018

'77 **Eileen Rose Iwaniuk**, BEd, of Edmonton, AB, in October 2017

'77 **Karen Dale Louie (Mimura)**, BSc(HEC),

of Calgary, AB, in November 2017

'77 **Leonard Owen Nelson**, BCom, of Calgary, AB, in November 2017

'78 **Therese Germaine Beaudoin (Laplante)**, BSc(HEC), of Edmonton, AB, in September 2017

'78 **Kenneth Gregory Bowen**, BA, of Cochrane, AB, in November 2017

'78 **Carol Anne Daniels**, BEd, of Cranbrook, BC, in October 2017

'78 **Allyson Embury**, BA, '81 BEd, of Edmonton, AB, in January 2018

'78 **James Donald Gray**, BEd, of Edmonton, AB, in October 2017

'78 **Clinton John MacPhail**, BSc, '82 BCom, of Vancouver, BC, in May 2017

'78 **Martin Keli McNicholl**, PhD, of Burnaby, BC, in December 2017

'79 **John Corbett Bilsland**, BA, '83 LLB, of Edmonton, AB, in January 2018

'79 **Gordon Evan Evans**, BA, of Edmonton, AB, in November 2017

'79 **Clinton William Ford**, BA, of Calgary, AB, in December 2017

'79 **Joyce Vera Townsend (Waddell)**, BEd, of Aurora, ON, in August 2017

1980s

'80 **Donald Gordon Kneller**, BSc, of Seattle, WA, in September 2017

'80 **Anne Kathleen Spelliscy**, BCom, of Kelowna, BC, in November 2017

'81 **Joost Bernard De Bruijn**, BEd, of 108 Mile Ranch, BC, in September 2017

'81 **Barbara Dawn Fanning**, MSc, of Oakville, ON, in September 2017

'81 **James John Gerwing**, MEd, of Victoria, BC, in April 2017

'81 **Sylvia Florence Lange (Newman)**, BA, of Edmonton, AB, in November 2017

'81 **Martin Kelly Long**, BSc, '85 DDS, of Edmonton, AB, in December 2017

'82 **Diana Rosemary Kary (Brookwell)**, BEd, of Calgary, AB, in October 2017

'83 **Laurette Therese Brooker (Legault)**, BEd, of Fort Saskatchewan, AB, in September 2017

'83 **Richard Peter Newton**, LLB, of Edmonton, AB, in September 2017

'83 **Kevyn Noble**, BSc(Nu), '89 MNu, of Edmonton, AB, in December 2017

'84 **Sylvia Betts**, BA, of Vancouver, BC, in November 2016

'84 **Bernadette Janine M. Finestone**, BEd, of Calgary, AB, in October 2017

'84 **Brinda Isings**, BSc(ChemEng), of Switzerland, in June 2017

'85 **Simone Annette Schroeder (Lebel)**, BCom, of Calgary, AB, in December 2017

'86 **Justino Gozum Roque**, Dip(Ed), of Edmonton, AB, in September 2017

'87 **Thomas B. Banks**, LL.D (Honorary), of Edmonton, AB, in January 2018 '87 June Anne Buchanan, PhD, of Middle Musquodoboit, NS, in October 2017

'87 **Anne Mary Hodgson (Hutchinson)**, MSc, of Maple Bay, BC, in November 2017

'87 **Daniel Curtis Orydzuk**, BSc(ElecEng), of Calgary, AB, in September 2017

'88 **Frederic James Johnson**, BSc(CivEng), '93 MEng, of Edmonton, AB, in December 2017

'88 **Sharon Marie M. McGuire (McCool)**,

PhD, of Athabasca, AB, in November 2017

'88 **Jeffery Allen Strong**, BEd, of Red Deer, AB, in December 2017

'88 **Douglas Murray Stuve**, BA, of Calgary, AB, in November 2017

'88 **Marianne Szabo**, BEd, of Edmonton, AB, in October 2017

'89 **David Stephen Heathcote**, BEd(VocEd), of St. Albert, AB, in October 2017

'89 **Blaine Robert McIntyre**, BSc(ChemEng), of Cochrane, AB, in September 2017

1990s

'92 **Darlene Bartkowski**, BSc(HEC), of Edmonton, AB, in January 2018

'92 **Sumit Ranjan Majumdar**, MD, of Edmonton, AB, in January 2018

'93 **Joshua Christopher Stebbins**, BSc(MechEng), of Asheville, NC, in June 2017

'93 **Brenda Jean Zacharuk**, BA(Criminology), of Surrey, BC, in December 2017

'97 **Bernice Muriel Prather (Nipshank)**, BEd, of St. Albert, AB, in November 2017

'98 **Cory Paul Womacks**, BSc, of Sherwood Park, AB, in December 2017

2000s

'03 **Jennifer Rachelle Bodner**, BA, of Edson, AB, in September 2017

'07 **Ewing Hunter Harrison**, LL.D (Honorary), of Calgary, AB, in December 2017

'08 **Felix Blache Fraser**, DLitt (Honorary), of Edmonton, AB, in December 2017

'09 **Sana Ayesha Ghani**, BA, '11 MA, '15

BEd, of Cadotte Lake, AB, in January 2018

2010s

'10 **Robert George Glashoerster**, BSc(MiningEng), of Fort McMurray, AB, in November 2017

'17 **Luke Murray Jansen**, BA(Hons), of Edmonton, AB, in October 2017

If you've lost a loved one who is a University of Alberta alumnus, contact alumni records at alumrec@ualberta.ca, 780-492-3471 or 1-866-492-7516.

Alumni Events



UPCOMING EVENTS

Stay involved with the U of A through one of the more than 50 active alumni chapters around the world. Check online for information about events near you.

CALGARY | MAY 10

Lecture: Truth and Reconciliation

CALGARY | MAY 12

Journey to Blackfoot Crossing Historical Park

EDMONTON | MAY 23

Educated Lifestyle: Meaningful Leisure Time

EDMONTON | MAY 29

Law Alumni & Friends Spring Reception and Silent Auction

LETHBRIDGE | MAY 31

Alumni Reception: The Future of Wildfires

CALGARY | JUNE 7

23rd Annual Alumni Dinner at Spruce Meadows



Alumni Weekend

SEPTEMBER 21 - 24, 2018

Reunite, reminisce and make new friends. With events and activities including performances, tours, speakers and more, there's something for everyone. Whether you're celebrating a reunion or just want to see what's new at the U of A, come and join the fun.

uab.ca/aw2018

VOLUNTEER OPPORTUNITIES

GROCERY RUN ASSISTANT

EDMONTON | ONGOING

Help distribute food to refugee and immigrant families in need at the Edmonton Intercultural Centre on Thursday mornings.

DINO LAB

EDMONTON | ONGOING

Channel your inner paleontologist by helping to clean and prepare new fossils for research.

PRAIRIE URBAN FARM: SUMMER HARVESTING

EDMONTON | JULY 15

Tour the South Campus farm, learn about urban gardening and help harvest fruits and vegetables.

ROOT FOR TREES

EDMONTON | JULY 21

Help grow Edmonton's urban forest. Join us for a family-friendly tree planting activity and volunteer appreciation barbecue.

PRAIRIE URBAN FARM: SUMMER HARVESTING

EDMONTON | AUG. 15

Tour the South Campus farm, learn about urban gardening and help harvest fruits and vegetables.

More at ualberta.ca/alumni/volunteer

Dates are subject to change; events are added daily. For more or to register, visit ualberta.ca/alumni/events.

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learning alive.

uab.ca/AlumniTravel



folio

A team of U of A health and fitness experts.

An aging, heavier generation.

Here's how baby boomers can beat
the belly bulge.

folio.ca. Get news right from the source.



Modern Campus Life

➔ Laptops! Facebook! The new SUB space! We asked, “What modern convenience do you wish you’d had as a student?” Many of you also reminisced about the challenges from your own days at the U of A. Read more or share your own at facebook.com/UAlbertaAlumni.

Memorizing my student number, then using a ruler to figure out my bell curve score on a giant piece of paper full of numbers with scratched-across pen lines on the wall outside my professor’s office.

—Verena Hoskins, '97 BEd

Google, the internet and a computer! I remember searching through rows and rows of card catalogues, falling asleep in the library because it was so quiet, wishing I could have a coffee to stay awake. Now everything is at your fingertips; you can do your research at home, with coffee when you want and in your pyjamas if you want!

—Tracy Innes, '94 BEd



Getting to university was a great chore. Three to four buses and we were jammed in like sardines. Several times I was inside the bus but my books were hanging outside of it. ... And people complain about the LRT.

—Cosima Vicente, '75 BEd

The courage to take the courses I wanted, even if viewed as unnecessary by peers and family. Looking back, I should have just gone and taken them.

—Jennifer York, '97 BSc, '01 BCom, '14 MBA

I wish I would have had a deeper relationship with the river valley. It barely registered that it was a few steps away.

—Donna McKinnon, '87 BFA

I remember the lonnnnnnnng lines! And buying all the texts at the bookstore and then trying to walk home with them.

—Janice Epp, '92 BScN

A place to get coffee that wasn't a machine.

—Terry Donovan, '88 BA, '03 MLIS

Back in school now and loving the ease of online periodicals. In the 1990s, I spent hours in the stacks, narrowing down the ones to take home on overnight loan. Many a night on the LRT with a 50-pound-plus backpack.

—Elizabeth Gleason, '00 BA





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For general inquiries about ***New Trail*** or the Alumni Association, please contact us:
780-492-3224 | alumni@ualberta.ca