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UNIVERSITY OF ALBERTA
ALUMNI MAGAZINE

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contents

ON THE COVER:

The planet is warming. Sea ice is melting. Research is key to understanding the climate change problems facing polar bears and other species—including humans. Page 16.



16

features

16 *Climate Change*

It's not too late, is it? Researchers weigh in



34

34 *Hope and Healing*

One alumnus takes his medical expertise overseas



52

52 *From Indie to Mainstream*

An author shares her publishing journey



57

57 *Red-Carpet Rush*

Josh Miller's international film festival moment

departments

3 **Your Letters** Our Readers Write

4 **Bear Country** The U of A Community

12 **Continuing Education** Column by Curtis Gillespie

14 **Whatever Things Are True** Column by Todd Babiak

44 **Question Period** Christine Dow on Her Love of Ice

46 **What's Brewing** Column by Greg Zeschuk

48 **Events** In Edmonton and Beyond

50 **Books** Alumni Share Their New Work

54 **Class Notes** Keeping Classmates up to Date

62 **In Memoriam** Bidding Farewell to Friends

64 **Photo Finish** The Picture-Perfect Finale

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upfront

I saw my daughter, Caitlyne, become an adult at the University of Alberta.

She started to notice the world around her like never before. She began to question, test and explore ideas. She found her voice and point of view—expressing independent opinions and debating issues.

Rather than just move *through the world*, she awakened to the fact that she has a role to play *in the world* and started to contribute.

Looking back, I'd say the same thing happened to me in my university experience.

Gaining a degree is important—it's a motivator and often a prerequisite to a career. At the same time, perhaps the deeper value of a university education is the engaged and active citizens it produces. University provides a freedom to explore and express that helps us realize that *community* is something we build, together. And, as community members, we have a responsibility to contribute where we can.

My role with the U of A Alumni Association connects me to a wide range of people who care enough to get involved and build community. U of A alumni are everywhere—in business, non-profits, the public service and every sector of our economy. Alumni are active locally, nationally and worldwide, contributing in their chosen occupations but also, and perhaps more importantly, in volunteer pursuits.

The U of A is exceptional in providing students and alumni volunteers with leadership and citizen development opportunities. A diverse army of volunteers contributes to the U of A board of governors, senate, alumni council, faculty student associations and an almost endless number of events, activities, forums, committees and advisory groups.

Alumni council is currently seeking to fill a number of positions. Have a look at who we are and what we do and consider what it might mean to you. Our role is community building—connecting alumni to the U of A, and the U of A to alumni. It's fun. It is fulfilling. It could be exactly what you are looking for. The application form to join is online at uab.ca/joincouncil. Deadline for applications is April 15.

And if not alumni council, there are many other roles you might play. Even alumni who live outside Edmonton can get involved; the alumni community has volunteer opportunities in many communities. You can see them at ualberta.ca/alumni/volunteer.

Community is something we build together. And that is the greater legacy of a University of Alberta education.



Mary Pat Barry
Mary Pat Barry, '04 MA,
President, Alumni Association

your letters

We would like to hear your comments about the magazine. Send us your letters by post or email to the addresses on page 1. Letters may be edited for length or clarity.

Looking Back at Past Predictions

I read with great interest Lisa Cook's article "One Giant Leap Forward" and related articles in the Winter 2015 issue of *New Trail*. I did not see in these articles, however, a discussion about how accurate past attempts have been. For example, on the occasion of the Columbian Exposition of 1893, 74 American leaders were asked to envision the world 100 years into the future. The responses are summarized in *Today Then: America's Best Minds Look 100 Years into the Future on the Occasion of the 1893 World's Columbian Exposition* by David Walter, published in 1992. These predictions from 1893, from our current perspective, are in some ways quite humorous and go to show it is very hard to predict the future outside the influence of current technology and societal norms. Some of the predictions included travel by fast trains and balloons (keep in mind, the aeroplane was not invented yet, and only an early version of a noisy contraption called the automobile existed); government colleges to train servants; three-hour workdays for factory workers; mostly aluminum houses because most forests would have been harvested; laws so simple there would be little demand for lawyers. I wish we could time travel to see what the reactions will be about the predictions in the *New Trail* articles. I really enjoyed reading and thinking about the ideas and predictions in this issue. Keep up the great work. —Brad Hawkes, '79 MSc, Victoria

New Trail Named Best Magazine in Alberta

If your *New Trail* feels a little different this issue, you're not imagining things. It's probably our pride at being able to put this seal in the magazine.



New Trail was named Magazine of the Year at the Alberta Magazine Publishers Association Awards gala in March. AMPA represents all kinds of magazines: alumni magazines, trade magazines and the ones you buy on the newsstand. Which means our team had the privilege of accepting this award in the company of the best publications in Alberta—*Avenue*, *Alberta Venture*, *Alberta Views* and more. Magazines that we read and admire.

Four years ago we asked you to complete a survey that, among questions

about the alumni experience, asked about this magazine. You told us things like: Give us information that's useful. Make us feel connected beyond the institution, to each other. And, we still crave the discovery and inspiration we felt as students. (I might be paraphrasing, but that was the gist.)

Since then, we've worked to give you the alumni magazine you asked for: one that's relevant, useful and feeds your love of learning. We strive to reflect the calibre of university you attended and the calibre of citizen you have become.

Because, in the end, our most important recognition comes from alumni. When you make comments, fill out those pesky surveys or send us a class note, you're showing us how to be better at telling your stories.

So here's to all of you. Thank you for being the "best" part of Alberta's best magazine. —Lisa Cook, editor-in-chief

@timmy_ira:
Sincere thanks @UofA_Alumni for the most interesting and inspirational issue of #NewTrail I've ever received. Such a good read. #ualberta



CORRECTION

In the article "The Future of Energy is in Our Hands" (page 34, Winter 2015), we indicated that global energy use increased from 101 trillion kilowatt hours to 153 trillion kilowatt hours between 1990 and 2012. We miscalculated this time span later in the same sentence, which should have read, "an increase of more than 50 per cent in 22 years."



Keep in touch between *New Trail* issues. Find web-exclusive stories, videos and more online, or sign up for our monthly e-publication, *Thought Box*, by visiting newtrail.ualberta.ca.



More on Climate Change

Go deeper on climate change with stories on the Paris accords, the economy and more about "zombie" sea stars (page 25).



Break Out Your Brogue

If you've got six minutes, drama professor David Ley can teach you to speak—or sing—with an authentic Irish accent.



5 Tips to Make Feeders Safe

Our Bird Nerd delves into research about bird collisions with windows and comes away with some tips on the best placement for feeders.



Batman Is No Hero

At least not the Batman created in Frank Miller's graphic novel *The Dark Knight Returns*, argues our Curmudgeonly Critic.



Put This in Your Thought Box

Read more stories like this in *Thought Box*. Not already getting it? Update your contact information online.

That Mid-life Slump is a Myth, Study Finds

Happiness does not stall in mid-life, as many sit-coms and muscle car ads would have you believe. In fact, we get happier as we age, according to a new study that asked participants, “How happy are you with your life right now?”

Researchers found that the participants sampled were happier in their 30s and early 40s than in their late teens and early 20s. The Edmonton-based study, led by Nancy Galambos, a professor in the Department of Psychology, tracked one cohort of people from ages 18 to 43 and another from ages 23 to 37 for 25 years. The study was published in the journal *Developmental Psychology*.

Although the happiness trajectory from age 18 to 43 generally pointed upward, not everyone in the study followed the trend. Not surprisingly, the research shows that no stage of life is exempt from unhappiness.

“If I’m divorced and unemployed, and I have poor health at age 43, I’m not going to be happier than I was at age 18,” says Galambos.

“It’s important to recognize the diversity of experiences as people move across life.”

Students are the most depressed in society, notes Galambos.

“Things can improve, and if you take care of some mental health problems such as depression and anxiety now, you might prevent them worsening in the future,” she says.

Happiness does matter, says study co-author Harvey Krahn, a professor in the Department of Sociology. “Let’s design a more social world that allows more people to be happy, even if they’re grumps at heart.” —DONNA MCKINNON



‘Welding’ Neurons Opens Door to Repairing Nerves

Electrical engineering PhD student Nir Katchinskiy had an idea: what if you could weld a severed nerve together right after it’s injured?

The essence of the idea is now reality. Led by Katchinskiy, a research team in the Faculty of Engineering has developed a method of connecting neurons using ultrashort laser pulses—a breakthrough technique that opens the door to new medical research and treatment.

Neurons are cells in the nervous system responsible for transferring information between the brain and the rest of the body. U of A research, published in the journal *Nature Scientific Reports*, involved putting neurons into a special solution that prevents them from sticking together. The neurons are then brought into contact. When femtosecond laser pulses—each ultrashort pulse occurring every 10^{-15} seconds—were delivered to the meeting point of the two cells,

they established solid bonds that formed a common membrane at the targeted area. The cells remained viable and the connection strong throughout multiple experiments, the study reports. The neurons took 15 milliseconds to stick to each other; the process would take hours to occur naturally.

The researchers have applied the method to three types of cells so far but believe the potential for research and treatment is unlimited. “You may not be able to go in and treat the human spine with this, but it brings you closer,” says electrical engineering professor Abdul Elezzabi, who co-authored the paper and is Katchinskiy’s research supervisor.

Femtosecond lasers could also prove effective in prostate, brain and ocular cancer research and treatment, according to Elezzabi. Another possible application is in post-cancer surgery treatment.

—OLGA IVANOVA AND RICHARD CAIRNEY

ALAMY

RESEARCH IN THE NEWS

U of A research is always garnering media attention. Here’s the lowdown on what’s been causing a buzz.



COMPUTER MASTERS WORLD’S HARDEST BOARD GAME

Mark another victory for artificial intelligence. A team of computing scientists at Google DeepMind—led by **David Silver**, ’09 PhD, and former U of A post-doctorate fellow Aja Huang—has used artificial intelligence to beat human masters of the complicated Chinese board game Go.

DeepMind’s AlphaGo program was able to defeat one of the world’s best professional Go players four games to one in March. Go has long been viewed as the most challenging game for artificial intelligence because of the enormous number of possible board configurations.

The victory highlighted the remarkable way AlphaGo was able to teach itself

to become a better player, even since defeating the European Go champ a few months earlier. The program, which has played millions of games against itself, learns new strategies through a trial-and-error process DeepMind calls “reinforcement learning.” The underlying technology is general enough that real-world applications could include climate modelling and disease analysis, according to Google DeepMind. —FORBES

Editor’s note: Murray Campbell, ’79 BSc (Hons), ’81 MSc, played a central role in another historic AI feat. He was one of the three scientists who created Deep Blue, the IBM computer that beat world chess champion Garry Kasparov in 1997.

Living Next to Lottery Winners Could Be Losing Bet

If your neighbour wins the lottery, you could be at risk of bankruptcy.

A study about inequality and financial distress co-authored by U of A business professor Barry Scholnick found a higher number of bankruptcies among households living near someone who won a lottery jackpot.

The study’s authors theorize that neighbours

of the instant rich feel pressured to “keep up with the Joneses” and accumulate conspicuous assets such as cars, sometimes going deep into debt to do so.

The study used postal codes in an unnamed province to analyze lottery winners and bankruptcy filings over 10 years. It found that for every \$1,000 increase in the lottery prize, there was a 2.4 per

cent increase in bankruptcy filings by the winners’ neighbours over the next few years. The results were more pronounced for low-income neighbourhoods and areas with high income inequality.

The research contributes to data on income inequality and financial disaster, as well as the economic and social effects of sudden income windfalls. —THE NEW YORK POST

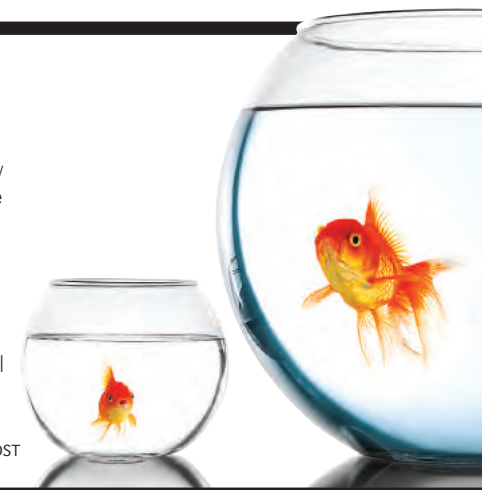
Students Serve Latest Scoop on Dairy-Free Gelato

Three students are turning heads and waking up appetites with a gelato that is healthier, dairy-free and lower in calories than the conventional recipe.

How? All three flavours of BiotaGelata gelato—maple walnut, passionfruit and dark chocolate cassis—are made by replacing the milk with fermented beans.

Nutrition and food science students Nicolle Mah, Austen Neil and Chandre Van De Merwe concocted the treat for Pulse Canada’s Mission ImPULSEible competition, which challenged post-secondary students to create a food product using pulse crops, including peas, beans, chickpeas and lentils.

Although BiotaGelata placed second, the judges were so impressed they paid for the students to attend the Institute of Food Technologists food expo in Chicago this summer, one of the largest food industry expos in the world. —CBC



THINKSTOCK

ALUMNI IN THE NEWS

U of A alumni who made headlines recently



You'll never see **Stephanie Bahniuk**, '15 BFA, in sweatpants. If she can't dress herself, she says, how can other people trust her to dress them? The recent theatre design grad spent three summers designing at the Williamstown Theatre Festival in Massachusetts. Bahniuk, who loved fashion from an early age, says when she's designing, she analyzes the characters to figure out what motivates their clothing choices. She has worked with Alberta Opera, NextFest and Shumka in Edmonton. —EDMONTON JOURNAL

A new National Film Board production co-directed by **Heidi Janz**, '93 BA(Hons), '95 MA, '03 PhD, offers a rare glimpse into the challenges of living with a disability. *We Regret to Inform You* shows snippets of a day in the life of Janz, who was born with cerebral palsy. The film was screened at the Victoria Film Festival and will be available on the NFB website. —EDMONTON EXAMINER

An audition dish of spiced pumpkin roulade served with pumpkin maple truffles and salted caramel maple sauce has landed **Terry Adido**, '10 LLM, on season 3 of *MasterChef Canada*, a competitive cooking game show. Competitors are vying for a \$100,000 cash prize and the title of Canada's next MasterChef. Edmonton-based Adido says his cooking is inspired by his family and his hometown of Lagos, Nigeria. His dream is to open his own baking studio. The competition wraps up in May. —CTV



Beyond the Books in Italy

7 LESSONS FROM A SEMESTER ABROAD

By **Breanna Mroczek**, '12 MA

Four University of Alberta graduates tell us what lessons they brought home from the university's School in Cortona, Italy, which offers students from any faculty the opportunity to learn about language, art, history, politics and—especially—life.

1

HOW TO BE AN ADULT

Courtney Gleiberman, '11 BA

Managing money is different in another country, where you don't know the culture or speak the language, says Gleiberman. The experience taught her to be frugal and adaptable.

2

COMMUNICATION TRANSCENDS LANGUAGE

Christina Seal (Wolinski), '12 BCom, '13 Cert(HRMgt)

One of Seal's first memories of arriving in Italy was a smiling Italian who stepped up to help as she struggled to pull her heavy luggage off the carousel. She experienced this type of kindness frequently during her trip.

3

HISTORY IS REAL

For Gleiberman, the experience was like travelling back in time. Seeing first-hand

how people created cities and culture made the learning more meaningful and encouraged her to go further with her education.

4

IT'S GOOD, USUALLY, TO EXPLORE NEW THINGS

Kelty Hawley, '09 BA, '14 MEd

Along with pizza, pasta and wine, Italy offered some foodie surprises. Hawley learned that Italian hot chocolate is so thick it has to be eaten with a spoon. (She usually ordered tea after that.)

5

BE NICE TO EVERYONE; YOU NEVER KNOW WHO MIGHT GIVE YOU FREE WINE

Before leaving Italy, Seal visited a café the students frequented to give the baristas a gift of latte syrup. One of the young men ran to the back and came out with 15 bottles of wine as a gift. "Learning the beauty in giving—that is a lesson we all need," she says.

6

HAPPY MISTAKES CAN HAPPEN ANYWHERE

Brandon Bailey-Cummings, '09 BCom

A favourite local drink is *Negroni sbagliato* (which translates, roughly, to mistake). Legend has it that a Milanese bartender was mixing a *Negroni* and grabbed sparkling wine instead of gin. Bailey-Cummings now makes them at home.

7

GOING ABROAD OPENS YOUR EYES

Studying abroad was "life-changing," says Bailey-Cummings—and not just because he met his wife, **Caitlynn Bailey-Cummings**, '10 BA. Cortona was his first time outside North America. Since then, the couple has travelled to 13 countries and lived in Edinburgh, Scotland. "Living abroad is eye-opening," he says. "And humbling. You think you know a lot—and then you travel."

LEFT PHOTO BY EDMONTON JOURNAL/GREG SOUTHAM; TOP LEFT AND MIDDLE PHOTOS ALAMY; TOP RIGHT PHOTO BY RICHARD SIEMENS

Puppy Love Goes Way Back

Our human ancestors treated their canine companions a lot like we do today, right down to the table scraps, a new study suggests.

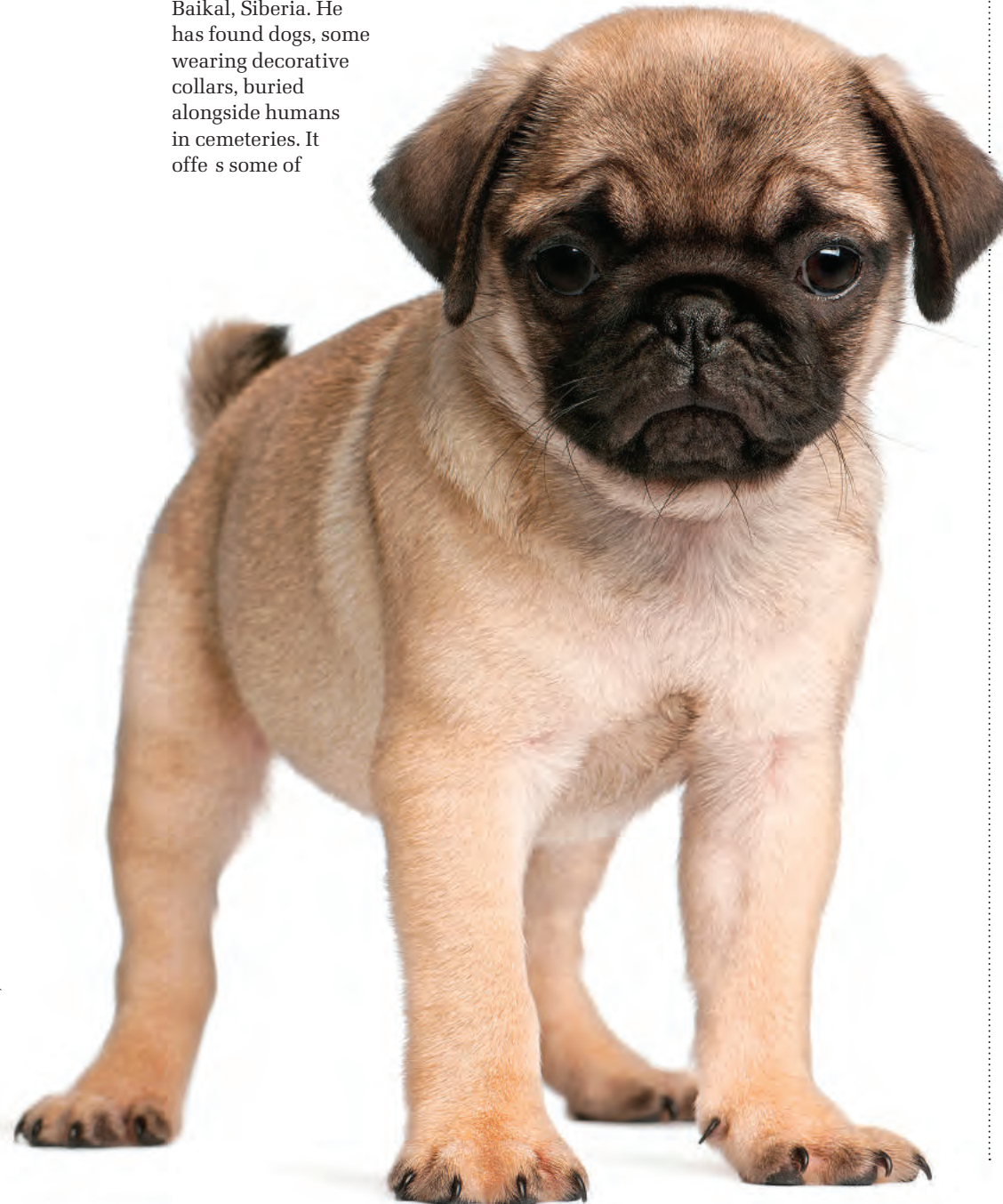
U of A anthropologist Robert Losey studies 5,000- to 8,000-year-old dog skeletons from Lake Baikal, Siberia. He has found dogs, some wearing decorative collars, buried alongside humans in cemeteries. It offers some of

the earliest evidence of dog domestication and suggests dogs were held in the same high esteem as humans.

Through chemical analysis of dog bones, Losey also determined the Lake Baikal dogs

had the same diet as humans. He hopes the archeological record will ultimately help us better understand what lies at the heart of perhaps our most enduring interspecies relationship.

—GEOFF MCMASTER



CAMPUS NEWS

A brief look at what's new at the U



» **Michael Phair, a former longtime Edmonton city councillor who is widely acknowledged for his leadership in the early years of AIDS, has been named chair of the University of Alberta Board of Governors for a three-year term.** Phair is an adjunct professor with the Faculty of Education and a member of the Institute for Sexual Minority Studies and Services advisory committee. He replaces Dick Wilson, who served as acting chair since Doug Goss stepped down in August 2015. Wilson will continue to serve as vice-chair.

» **The university has launched UAlberta North to promote northern research and bring together educators, researchers and northern peoples.** More than 100 faculty at the university call themselves northern researchers in fields as diverse as climate-change adaptation, cross-cultural medicine, food security, water, Indigenous knowledge and polar bears. UAlberta North renews work previously taken on by the retired Canadian Circumpolar Institute.

» **The university is implementing recommendations from a new report aimed at enhancing the campus community's response to sexual assault.** The report by a sexual violence review group examined the supports and services available at the U of A. The result was 46 recommendations in six areas that will be acted on by a new working committee led by the Office of the Dean of Students. A priority is creating a stand-alone sexual assault policy and procedures that clearly outline expected behaviour, practices and standards for the university community.

» **Three students have been awarded the prestigious Rhodes Scholarship, the largest number of students ever chosen in a single year in the university's history.** Billy-Ray Belcourt, Zia Saleh and Carley-Jane Stanton were among 11 Canadian students selected to study for two years at Oxford University in England.

REDEFINING ABILITY

STUDENT LIFE

Q | A Daniel Ennett was five when he first faced the wide lens of a television camera. He was recovering from a quadruple amputation at Edmonton's Glenrose Rehabilitation Hospital as a result of meningitis. CBC footage shows a blond boy playing video games and making smoothies. The camera pans to his mom: "Nothing seems to stop him," she says. "Give him something to do and he finds a way to do it." Now, 17 years later, the third-year psychology student is host of a Telus Optik web series, *Invincible*, which just released its third season. In the series, he tries scuba diving, skiing and dancing and talks to others with disabilities about how they're redefining the meaning of "ability."

Q | What activity did you like best on the show?

A | In the third season, I got an open-water scuba diving certification from Disabled Divers International and went diving with sharks in the Florida Keys. We managed to get a few feet away from hammerheads. There's something surreal about chasing these sharks to get a close-up glimpse of them.

Q | In the course of filming, what did you learn about the world of disability?

A | A lot of disability associations are born from people who did a sport, then had an accident and realized they needed to get back in the saddle. There are cool activities designed for people with disabilities—you just have to look for them. The thing about disabilities is that the range is so varied: what works for one person who is disabled will not work for another. Take skiing. You won't use the same mechanism to help a

paralegic ski as someone who is blind. People are often open about their limitations and learn to get past them.

Q | Why did you take psychology?

A | I coasted into it, but recently, when I was trying to come up with a thesis idea, I got excited about research studying people's perceptions of minority groups. That and attribution theory—how people assign causation to different situations—interest me.

Q | Do you need any accommodations to be successful in class?

A | I'm taking a reduced course load, so my degree will take me a little longer. I use PDF textbooks and have an aide who takes notes in class. We use Google Docs so that as the aide types, I can add things using an onscreen keyboard controlled by my mouse.

Q | What do you see in your future after U of A?



A | Graduate research. More and more research. I love it.

Q | If *Invincible* films a fourth season, what's in store for you?

A | I just want to go really fast [laughs]. It would be cool to do something in a high-speed, high-octane vehicle. I've been on these four wheels for a very long time. —CARISSA HALTON, '03 BA

PHOTO BY JOHN ULAN



Paleontologists Discover Complete Baby Dino Skeleton

The discovery of a 75-million-year-old baby dinosaur skeleton by U of A paleontologists has been hailed as one of the rarest finds to date.

It's the first complete skeleton found of a baby ceratopsid, the group of dinosaurs that includes triceratops. The fossils of *Chasmosaurus* were discovered in 2010 at Dinosaur Provincial Park near Brooks, Alta., by Philip Currie, who holds the Canada Research Chair in Dinosaur Paleobiology, and his colleagues. The findings made international headlines when published in the *Journal of Vertebrate Paleontology*.

The discovery offers insights into the life, growth rates and physiology of *Chasmosaurus* and fills gaps in our understanding of the evolution of other horned dinosaurs, says Currie. "We've only had a few isolated bones before to give us an idea of what these animals should look like as youngsters, but we've never had anything to connect all the pieces," he says.

Currie and his co-authors—Michael Ryan, '85 BEd, of the Cleveland Museum of Natural History and Rob Holmes and Clive Coy of the U of A—worked with renowned paleo-artist Michael Skrepnick to create a life-size reconstruction of what the animal might have looked like. —JENNIFER PASCOE

ILLUSTRATION BY MICHAEL SKREPKNICK

U OF A TACKLES ZIKA VIRUS DETECTION

Researchers across campus are working to develop an inexpensive hand-held device that can detect the potentially deadly Zika virus within minutes.

The mosquito-born virus is linked to a recent dramatic rise in microcephaly—an often fatal congenital condition associated with incomplete brain development—in babies born to mothers infected during pregnancy. As of early February, Zika had been reported in 52 countries and experts estimate it will spread even further. The virus could cause autoimmune and neurological complications in those infected.

A team of virologists led by Tom Hobman in the Department of Cell Biology—among the first in the world to join the battle against Zika virus—has combined efforts with the Ingenuity Lab, an interdisciplinary group of more than 120 researchers, in a quest to develop the detection device. The device would be similar to a glucometer, which people with diabetes use to monitor blood-sugar levels. The current test is expensive, time-consuming and can only be done in a hospital.

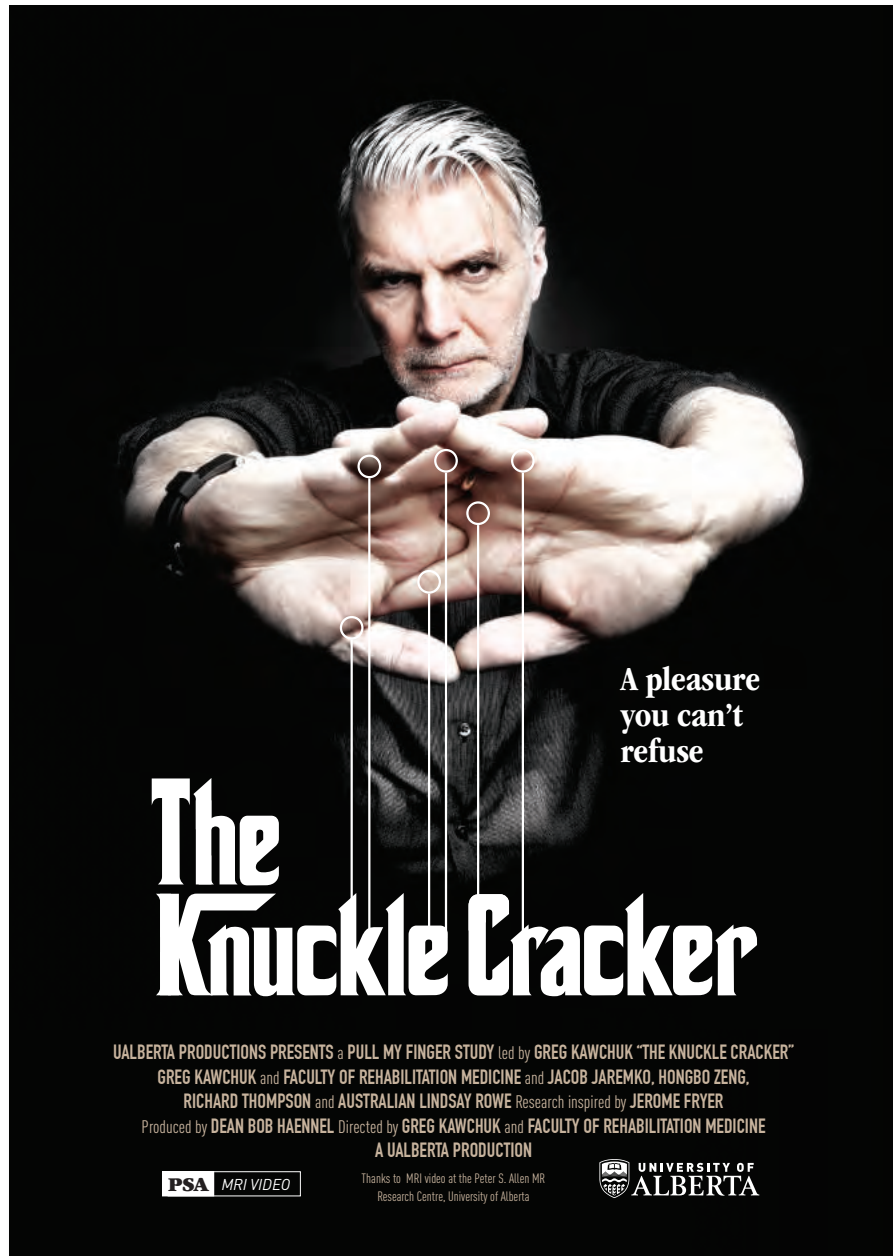
Ingenuity Lab director Carlo Montemagno says the first Zika virus detection device could be ready by August 2016. —MICHAEL BROWN

U of A Goes Hollywood

ANSWERING THE QUESTION: WHAT IF OUR BIGGEST DISCOVERIES WERE MADE INTO MOVIES?

Epic discoveries and incredible feats occur every year at the University of Alberta. Some are so fantastic it's hard to believe they really happened. (They did, we promise.) We took some of last year's most popular stories and gave them the Hollywood treatment.

Poster design and illustrations by **TREVOR HORBACHEWSKY**



A group of high-octane hockey players ensure the Golden Bears win back-to-back University Cup titles. It's the team's 15th national title, a Canadian Interuniversity Sport record. This movie is guaranteed to feature at least one inspirational locker-room speech.

This is a gritty tale of what happens when knuckles crack (also known as the "pull my finger study"). Consumed by curiosity, researchers use MRI video to determine what happens inside finger joints to cause the popping sound. The dramatic conclusion (spoiler alert): a gas-filled cavity rapidly forms inside.

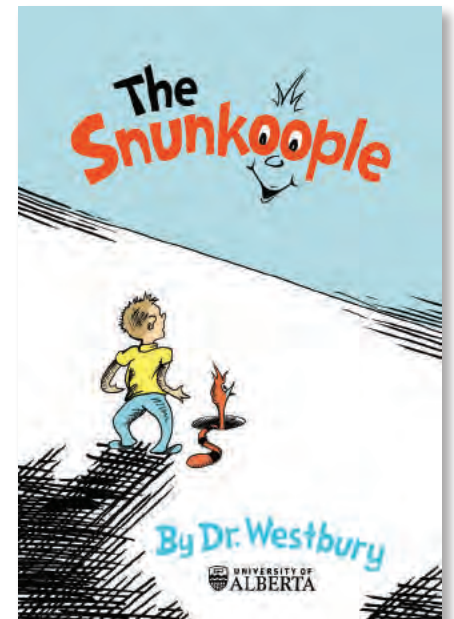
U of A paleontologists uncover a new species of long-necked dinosaur after discovering a remarkably intact 160 million-year-old fossil near Qijiang City, China. The creature is named Qijianglong (pronounced "CHI-jyang-lon"), which means "dragon of Qijiang." The dino's agent denies rumours that it will star in the *Jurassic World* sequel.

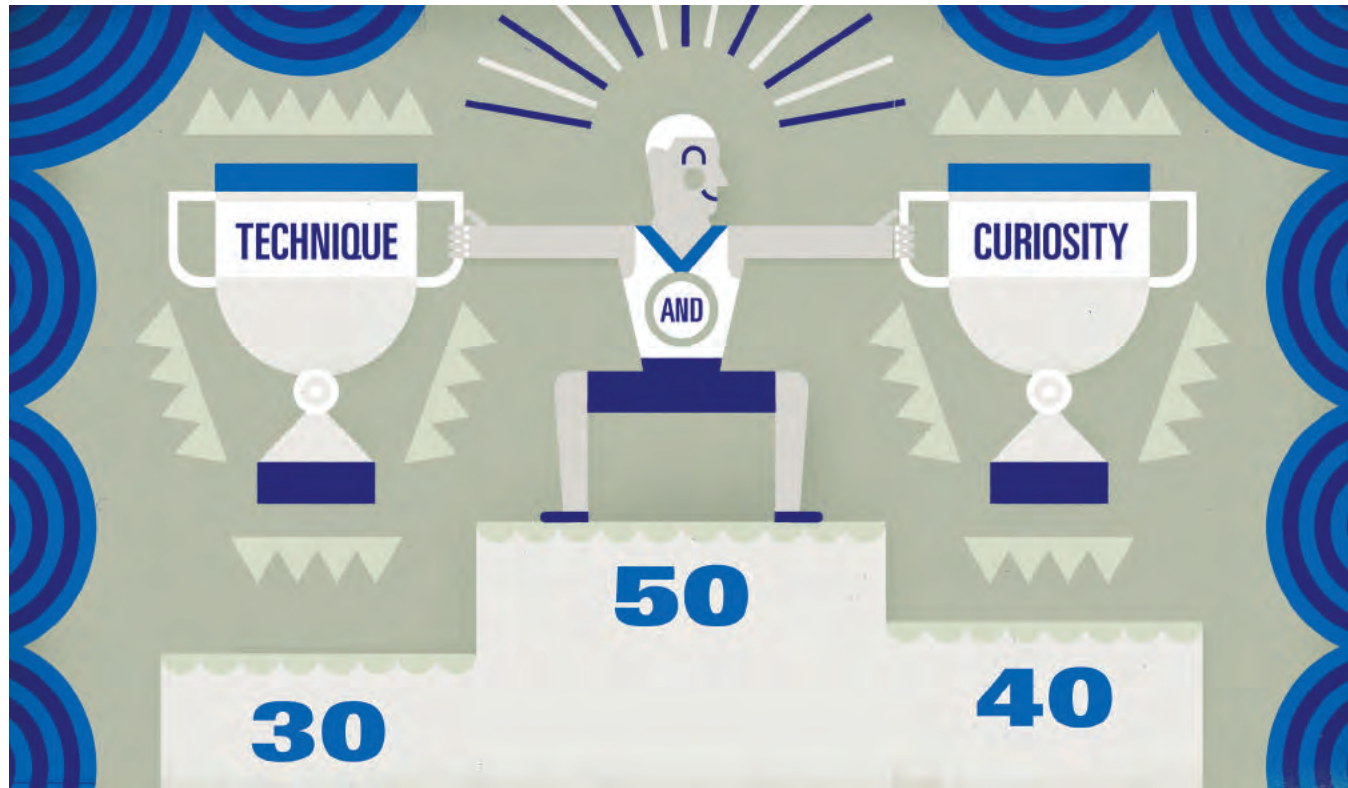


A world fit! Researchers in the Computer Poker Research Group solve the card game known as heads-up limit Texas hold 'em poker with a program called Cepheus. No word on whether poker-playing robots play for the fate of the world in the sequel.



What happens when you combine math and humour? You get a predictive model that shows words are funnier when they have uncommon letter combinations. Starring "snunkoople" and "fi glam."





Going For Tiger, Not Chimp

HUMBLING ATHLETIC DISSONANCE IS THE START OF A JOURNEY FROM AWKWARD INSTABILITY TO TECHNICAL FLUIDITY

IN 1986, I WAS DOING GRAD WORK at the University of St. Andrews in Scotland. It was not academically rewarding (enough said) but it turned out to be athletically agreeable, in that I somehow managed to make the varsity golf team. Yes, that's correct; I played college golf at the University of St. Andrews. On the iconic Old Course, the "home of golf." I would not consider you uncharitable if you suspected that maybe, just maybe, there was a link between my underwhelming academic performance and my golfing exploits. But here's the

relevant point: up until then, as well as throughout that year (and, in fact, for the three decades that followed), I played some decent golf. Although I was inconsistent, I always thought my swing was esthetically solid. OK, I'll admit it—I thought I looked good out there. It wasn't irrational; I mean, I'd played some pretty high-level golf.

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.

Oh, the lies we tell ourselves. Four years ago, my older daughter, Jessica, decided she liked golf. Wanting to encourage that notion, I enrolled her in some lessons and, to make her more comfortable, I agreed to take lessons, too—though I knew I didn't need them. Off we went on a wintry January night to Golf Town. The instructor spent most of his time with Jessica, showing her the fundamentals of the grip, the stance, the takeaway. He took some video of her swing. Jess seemed happy about it all.

Then came my turn. I stepped onto the practice mat feeling confident but curious because I'd never actually seen my swing. I hit a few balls. The pro put a hand to his chin and said, "OK, it might be best to work with video here."

After taping a few swings, he stopped me. All three of us watched the monitor as he replayed the video. I was momentarily confused. There was someone onscreen who kind of looked like me (except the guy had a belly and double chin), but the man's swing did

not resemble mine at all as I saw it in my head. He hunched over the ball like he was about to vomit on it. Then he drew the club back in an ungainly arc, wrapped it clumsily around the top of his head and lashed it back onto the ball like an angry primate beating on a rival with a tree branch.

"Who is that?" I said.

The pro looked up, confused at first, though he quickly understood. He put a hand on my shoulder. "Don't worry," he said. "It can be fixed ... well, maybe not fixed, but we can make it better. We can at least make it more workmanlike."

"I don't want workmanlike," I half wept. "I want elegant, powerful, flowing. I want Tiger, not chimp."

It turned out—to cut a years-long process into a couple of sentences—that I had been getting by in golf on pure guile and graft. Rather than succeeding through athletic skill, I was manoeuvring around a lack of it.

But that was only half of a really bad month. A couple of weeks later I was refereeing at a squash tournament. I have played squash for decades and, though I've never been particularly fleet of foot, a certain amount of hand-eye co-ordination allowed me to beat a few decent players here and there. Yet there was always something holding me back, something I usually blamed on life's (happily embraced) realities of marriage, kids and work (which despite the happy embrace do tend to inhibit one's ascension to sporting greatness).

There was new video technology at the tournament and, after I'd reffed a match with the video, I played on the same court, then watched it back. It was even more punishingly humbling than the Golf Town fiasco. On court, I felt quickish and active, full of hustle and invention. The video revealed a sweaty, floid hunchback scuttling around a dungeon floor looking for bugs to eat.

The depression hit me hard. I was experiencing severe athletic dissonance. Watching myself, it all looked so painful, so awkward, so ... unathletic. I vowed to change my athletic technique, that I *could* change, that, in fact, I could

improve as an athlete in a proper way, despite my age. The conventional wisdom says we learn best as children, when our plasticity is working at its peak to allow brain and body to soak up information and skill. But as we age—the wisdom goes—our skin and muscle and brain desiccate and habituate in ways we can't alter. We are lumps of soft clay that are shaped through youth but that inevitably ossify into a permanent shape.

However, these beliefs are proving less accurate than once thought. There has been considerable research over the last couple of decades about not just the value of lifelong physical activity but also the limit-pushing and reinvention of one's physical self. Books such as Bruce Grierson's *What Makes Olga Run?* are showing us that even athletes in their 90s can break new ground.

Essentially, your body is like your mind: it stays sharp if you keep it off balance. Your body should not be a train you ride down a prescribed track but a bucking bronco (or at least a mechanical bull) that can spin and twist and surprise. You can't teach an old dog a new trick? Wrong. The best way to stop yourself from becoming an old dog is to learn new tricks.

It has been a fascinating, if often painful, journey for me from athletic ungainliness to something closer to sound technique. The details almost aren't worth going into because they are so arcane, but essentially I have worked on my golf swing to alter the clubhead path so that ... see what I mean? I'm even falling asleep writing about it. But it has made a difference in my game and in the *look* of my game.

In squash, I had the added benefit of regularly refereeing great players. Last fall, while reffing the No. 7-ranked player in the world, Egyptian Karim Abdel Gawad, I noticed he never seemed to be hurrying to the ball. I pointed this out to a fellow ref and he said, "Oh he's hurrying, but watch ... he does a super-quick split step and hustles early so he doesn't feel rushed when he gets to the ball."

I couldn't wait to get on the court and try it out. My first match back, I played a longtime league adversary, a guy who beat me regularly though most of the matches were close. I won the match, handily, and my first thought was, "Why didn't anyone tell me these things years ago?!"

Actually, my first thought was, "Where can I buy a new lung?" but, still, it was almost a small miracle; I was retrieving balls in my 50s that I'd given up on in my 30s.

Playing better is not the only benefit of my late application of athletic technique. The secondary benefit (which might actually be the primary benefit) is that my curiosity and fascination with each sport have been reanimated. In some ways, it feels as if I'm just getting started.

Naturally, I am alive to the irony of finally starting to gain real insight into the esthetics and mechanics of athletic performance just as my body is shouting, "Hey, take it easy, buddy!" Even getting out of bed in the morning is something of a biokinetic challenge. I pulled a calf muscle kicking the quilt off recently.

Still, don't fear what you might do to your body. I'm usually sore after I exercise, but I'm also usually sore *before* I exercise. I know that one day my body is going refuse to do the things I'm asking it to do but, for now, trying to improve is keeping me physically and psychologically motivated.

I'm more curious than ever about the mechanics of athletic movement because, in the end, all these muscles are going to respond best when you keep the muscle upstairs warm and well-stretched. Curiosity might have killed the cat, goes the old proverb, yet we are rarely told the second half of the saying, which is actually the point of it. "Curiosity killed the cat ... but satisfaction brought it back." ■

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.

ILLUSTRATION BY LUC MELANSON

PHOTO BY JOHN ULAN



by Todd Babiak

It's OK. Look in the Mirror. You'll Like What You See

TOUGH TIMES ARE, WELL, TOUGH. BUT WE EMERGE A MORE CREATIVE, RESILIENT AND COMMITTED COMMUNITY WHEN WE TACKLE THEM TOGETHER

THE DARK TEMPTATION DURING AN ECONOMIC DOWNTURN—or any tough time—is to give in to grievance. It's someone else's fault. It's the fault of a province, a region, a people. We focus on real or imagined enemies. We do anything but focus on ourselves.

This is normal. It's human. But there is a better way and the proof is all around us.

Growing up in Alberta, I believed Pierre Trudeau—one man—destroyed the province in the 1980s. We all believed. While the national energy program was profoundly flawed and unfair, the story about Prime Minister Trudeau had a religious quality. The story avoided facts like an international oversupply of oil, ridiculously high interest rates and what was arguably the worst global downturn since the Great Depression. It made hapless victims of Albertans, these passive and unfortunate people ruined by the evil whims of a single man who spoke French.

It's happening again. Albertans are suffering another economic shock, though this time we don't have one convenient Goliath. Some are certainly trying. It's Rachel Notley's fault or Denis Coderre's fault. We try to blame King Salman of Saudi Arabia and Greenpeace supporters in British Columbia. But none of it quite works, not this time.

I was out of the country in early 2015 when Alberta's premier Jim Prentice, speaking of falling revenue and rising costs, said, "In terms of who is responsible, we all need only look in the mirror, right? Basically all of us have had the best of everything and have not had to pay for what it costs."

By the time I returned it was a scandal. Yes, he spoke awkwardly. No one should begin a phrase with "in

terms of." Making an enemy of "we" is a difficult political strategy. Other Alberta politicians would have at least tried to blame someone with a French-sounding last name (like Trudeau) or possibly the Opposition.

But let's be honest. He wasn't wrong. There is a pattern of success here. Almost every great co-operative achievement in Alberta history began with people being honest about a problem they helped create, a problem they could solve together.

Not long ago I had an opportunity to ask people to look in the mirror as part of my research about Edmonton. Frankly, when you get them alone, over a coffee or a glass of wine or on a dog walk, they're startlingly honest and funny and clever about failure and success—and their roles in it. Almost no one spoke of feeling like a passive victim of outside forces.

They spoke instead of imagination and action, working together to achieve something unexpected. More surprising: they almost never spoke happily or movingly of boom times. Boom times were marvellous financially. But they also came with rushed decisions, architectural tragedies, price spikes for everything, government overspending, labour shortages and the stress of keeping up.

Some Edmonton institutions, like PCL Construction and ATB Financial, defined themselves during the Great Depression. Not as a few plucky

individuals but with the help of a community. Companies like McCoy Global and places like Alberta Avenue found the recession years of the late 2000s a time to reimagine themselves. The founders of Maclab talked about losing money in the beginning, in the tricky time after the Second World War, and how competitors helped them.

Many people spoke of the rotten days of the 1980s with a sort of glow, as though suffering had brought out the best in them—in us, together.

What we do as a community, when times are tough, defines us.

In the early 1980s, many organizations failed. At the same time, Edmontonians launched the Canadian Food Bank and the North American Fringe Theatre movement. Golden years of the Edmonton Oilers, the Citadel Theatre and the Edmonton Public Library came when few people had money to spare. The U of A built a new building for the Faculty of Business when business was at its worst. Those who survived downturns emerged different: more creative, more resilient, more committed, more co-operative.

Alberta has a small population. We're landlocked and far from large markets. We have winters, at least some years, and a reputation problem. The advantage of living here isn't the fortunes of a single industry or the particulars of our provincial tax regime.

Many of us like the word "maverick," but there are better places for the lonesome hero because when people talk about what makes this place special, they rarely speak of singular heroes. They don't talk about grievances and enemies.

People delight in surprising each other about what is possible here. They talk about a community, even of competitors, building things together when it would be easier to give up. ■

Todd Babiak, '95 BA, co-founded the company *Story Engine* and has just published the latest of several books, *Son of France: A Christopher Kruse Novel*.



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PHOTO BY SELENA PHILLIPS-BOYLE



The climate is changing

and these four species

By Sarah Pratt

might be

in over their heads.

Here's what

they can teach us.

SINK
OR
SINK

A seal's-eye view of a polar bear swimming in Frozen Strait along Hudson Bay.



The images are hard to look at. Vibrant coral reefs reduced to ghostly white graveyards. Polar bears gazing across open water instead of ice. Then there are the human and financial tolls: crop failure, health consequences, extreme weather.

In Alberta alone, extreme weather events have hit hard this decade. The Calgary-and-area flood of 2013 cost more than \$6 billion and left five dead. The Slave Lake wildfires in 2011 (see page 29) burned more than a third of the town and caused more than \$700 million in damage; three weeks later, torrential rains caused flooding in the area.

The costs of climate change are immense, and we can only expect them to intensify. But what does that mean for humans and how can we plan for it? And just how grim is the prognosis?

While we don't have a crystal ball, we do have something a lot more reliable: decades of data collected across the globe. The researchers who have dedicated their careers to recording details of our changing natural world, down to the last temperature degree and centimetre of rainfall, have provided us with tools to better predict how climate change might affect humans. And perhaps more important, given the current rate of climate change, how humans can adapt to those changes that can't be halted.

The insights can come from some surprising places. What could we possibly have to learn from the collared pika, perched up in the mountains of the Yukon? (See page 20.) Researchers often use the analogy of the "canary in the coal mine" to refer to these sorts of indicator species that can serve as an early warning of danger—animals especially sensitive to changes in their environment. Research indicates that pikas, polar bears, bees and corals are already responding to climate change, showing us the intense effects of a warming atmosphere. We are also learning that not all species will be able to adapt quickly enough to keep up with the current rate of climate change.

Our climate is changing faster than at any other time in the past 800,000 years, according to data collected by NASA. In the past, changes to the climate occurred much more slowly, taking



“Reversing climate change is much more difficult than trying to stay on the right side [of it].”

—David Hik

about 5,000 years to warm five degrees, and this gave species enough time to adapt to their new realities. But human-induced climate change—whether caused by greenhouse gases or aerosols (minute particles in the atmosphere) or changes in land use—is pushing our world toward a tipping point where the changes are coming faster than plants and animals can adapt. Those that can't adapt must move to an ecosystem that will sustain them. Those that can't move or adapt will die.

And, of course, every living thing (in fact, everything on the planet) is interconnected in innumerable and complex ways. Think of the food web: altering one link in the chain affects an

3 Sobering Thoughts and 1 Hopeful Quote

Extinction Risks

1 in 6 species is at risk of becoming extinct if climate changes follow the current trajectory.

Science magazine

CO₂ Levels

There is more carbon dioxide in the atmosphere now than at any other time in the last 650,000 years.

NASA

Health Costs

Health-care costs related to climate change are estimated to rise to between US \$2 billion and \$4 billion a year by 2030. Particular areas of concern will be malnutrition, malaria, diarrhea and heat stress.

World Health Organization

Research Solutions

“The data that we have can be powerful, and we have to use it and come up with a plan.”

U of A professor Erin Bayne discussing research and climate change

array of species, including humans. So even if you don't care much about polar bears and pikas, climate change will affect your life, whether it's the food you eat, the job you have or the state of your health.

“There are thresholds, and once they are crossed you can't go back,” says David Hik, a University of Alberta biologist. “Reversing climate change is much more difficult than trying to stay on the right side [of it].”

“If you think there's been a humanitarian crisis with Syria, wait until the sea level rises a metre and forces hundreds of thousands of people around the world from their homes. These are the things that scare me.”

Research is essential in the hunt for solutions—and it's not just scientists saying so.

“I think we really need to emphasize the importance of research,” **Todd Hirsch**, '89 BA(Hons), chief economist with ATB Financial, told alumni at the Community Development, Climate Change and the Environment Workshop at the Banff Centre in February.

“We need to be looking for the next big idea, the future,” Hirsch said. “We need to pioneer systems that people will come to us, to Alberta, for. There are roles that the university can play in developing new technologies.”

The urgent need to address this issue is being recognized across the globe. At the December Paris climate conference, 195 countries, including Canada, adopted the first legally binding climate agreement to limit global warming to fewer than two Celsius degrees. The agreement comes into force in 2020.

While this series focuses on species-related research, the U of A is home to a wealth of research across diverse disciplines that will help humans change, adapt and manage. The university has 7,000 students enrolled in energy and environmental programs, a number anticipated to grow by nearly 15 per cent in the next four years. Research into ways to balance our need for energy with environmental stewardship is growing and gaining in prominence.

As with all other species, humans will be forced to adapt to changes in climate. Unlike other species, humans have an incredible ability to solve complex problems—to research, to create, to discover and invent. So, while the statistics can sometimes feel apocalyptic, there is hope, as long as we don't delay too long and are armed with the right information.

“It's not all bad news. There will be winners and losers in nature,” says Richard Schneider, a research associate in the U of A Department of Biological Sciences. “We have to be flexible in our projections and plans—move with the flow as things change.”

Hik concurs.

“I don't like to turn this into a doomsday thing. Some of the consequences of climate change are pretty severe, but if we accept these things and try to understand the consequences of these changes, we can make decisions now that will mitigate some of the worst effects.” ■



**RESEARCH
AT A GLANCE:**

A North that's warming faster than average combined with rapidly warming mountains has led scientists to list collared pikas as a species "of special concern." Pikas will need to adapt to their quickly changing conditions in order to survive in parts of their current ranges.

Pikas are harbingers of climate change because they are so sensitive to extreme conditions.

A LIFE OF EXTREMES



It's summer on the Yukon's Mount Logan, Canada's tallest peak at 5,959 metres. If you climb to 2,100 metres the only other mammal is the collared pika. Its fluffy, round body — about the size and shape of a guinea pig — perches on a rock, nose twitching and whiskers shivering. Suddenly the pika is gone, bounding over rocks with agility reminiscent of its cousin, the rabbit. The pika is collecting leaves and grasses for its winter pantry, but this hearty lagomorph doesn't go far in its search. Pikas live in the same 30-metre radius throughout their adult lives, preferring granite boulder fields that provide shelter and protective snowpacks.

Winter temperatures in the Yukon mountains often go to -40C and lower, yet pikas don't hibernate. When University of Alberta biologist David Hik began his observations of Yukon pika in 1994, he was worried. In one season, 90 per cent of the pikas that were alive at the end of the summer didn't make it through winter. What allowed the population to recover, though, was the cold, snowy winter that followed. Since snow is an excellent insulator, the creatures burrow beneath it to keep extreme cold at bay. This allowed the surviving pikas to replenish the population.

But winters are getting warmer in the Arctic and Subarctic. That might otherwise be good news for these exposed creatures, but the higher frequency of warm winters means more rain. The rain turns to ice, and that means a shallow snowpack. Less protection for the pika. Reduced chance of survival.

Things are further complicated by the fact that the northern mountains where pikas live tend to have a bit of a "double whammy," Hik says. Not only is the Arctic warming at about twice the global average

Stay Cool

Pikas are well-suited to the cold, and they are diurnal. When summer temperatures climb too high, they must restrict their movement and foraging to the cooler parts of the daylight hours.

but mountains are also warming more rapidly than low altitudes in what is called “elevation-dependent warming.”

We’ve also lost millions of square metres of snow cover in North America in the last 30 years, according to **Scott Williamson**, ’99 BSc(Spec), ’07 MSc, a post-doctoral fellow involved in research on elevation-dependent warming.

So what does all of this mean for pikas? They are listed as a species of special concern by Environment Canada but the real future of the pika lies in how the creature adapts — and how quickly — to increasing changes to their habitat and more extreme conditions.

“Right now we are moving outside the normal conditions of the past 10,000 years,” Hik says, “and we don’t know how quickly species will be able to change and adapt.”

These challenges are an opportunity to understand how species and ecosystems are going to change in the future. Robust observation and monitoring efforts are essential to understand and respond to climate change. Hik likens it to weather forecasting — we can predict the weather only because of the vast quantity of meteorological data we’ve collected for centuries from around the world. “Things will continue to change. We have to learn how to adapt from species such as pikas,” says Hik. “Species will need to move, adapt or die.”

Hik is optimistic the pikas will find a way to cope. “I’m fascinated by their ability to deal with extreme conditions.” ■

How Warmer Winters Are Affecting Pikas

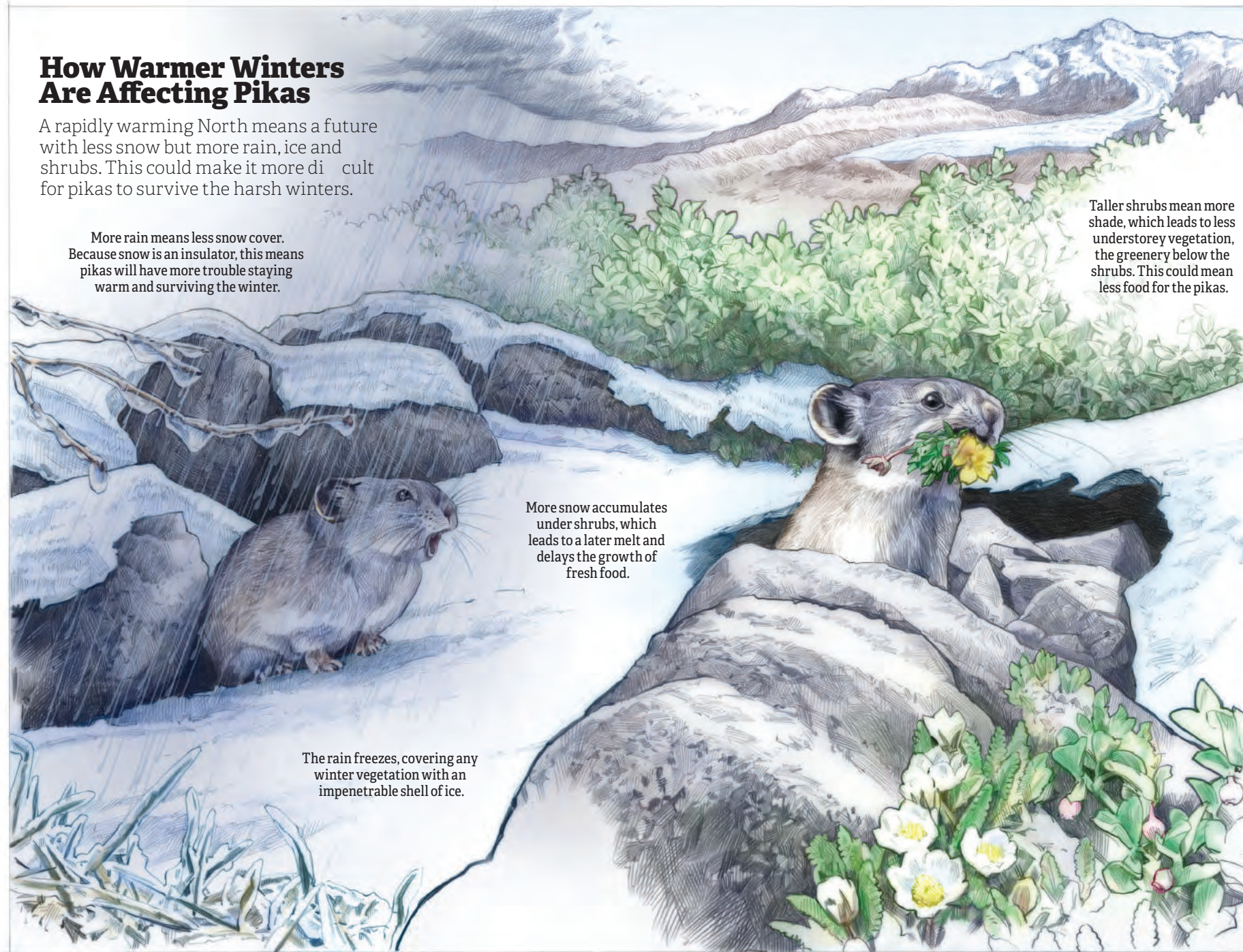
A rapidly warming North means a future with less snow but more rain, ice and shrubs. This could make it more difficult for pikas to survive the harsh winters.

More rain means less snow cover. Because snow is an insulator, this means pikas will have more trouble staying warm and surviving the winter.

Taller shrubs mean more shade, which leads to less understory vegetation, the greenery below the shrubs. This could mean less food for the pikas.

More snow accumulates under shrubs, which leads to a later melt and delays the growth of fresh food.

The rain freezes, covering any winter vegetation with an impenetrable shell of ice.



Our Water Supply Retreats With the Glaciers

When U of A biologist David Hik takes students to the mountains every summer, he is witness to their realization that the glaciers are getting smaller by the day.

Part of the melting is due to seasonal patterns, but Hik can see from aerial photos and satellite images over the past 50 years that the glaciers are changing as the climate warms. “Melting glaciers on top of mountains directly affect the freshwater in lakes and rivers downstream,” says Hik. “And melting glaciers also contribute to increasing sea level around the world.”

“What happens in the mountains doesn’t stay in the mountains. One of the things we’re learning is that there are strong connections between land and water and weather patterns, locally and globally.”

Ocean currents are linked in a system that carries water around the world, redistributing heat and water like a conveyor belt.

Mountains also function a bit like Earth’s water towers in that they are the major source of water for large populations in lower elevations. As glaciers disappear, the effects on freshwater resources could be severe, says post-doctoral fellow Scott Williamson, who contributed to this study about elevation-dependent warming.

Edmonton, for example, relies on the mountains for water. The city draws its drinking water from the North Saskatchewan River, which originates 1,800 metres above sea level in the Rocky Mountains’ Columbia Icefield. The river usually has flow rates of 355 to 500 cubic metres per second, but in July 2015 it was only 152 cubic metres per second, says Williamson.

“With mountain glaciers and winter snowpack melting faster, there could be much less stream flow in summer by mid-century and this could lead to water shortages for agriculture, industrial and urban use,” he says.

Models suggest this river flow in mid- to late summer could fall by 50 per cent by 2050. This would have serious consequences for the environment, economy and society. ■

Between 1960 and 2011, most of the Arctic warmed by at least two degrees, more than double the global average.

Why Global Weather is Turning Extreme

What scientists call a “lazy jet stream” can amplify extreme weather. The jet stream, a band of fast-moving air that guides our atmospheric systems (low-pressure systems, storms, etc.), gets its energy from the temperature difference between equatorial regions and, in Canada’s case, polar regions. As polar regions warm more quickly relative to equatorial regions, the temperature difference narrows, weakening the air current. This can stall weather systems, causing long stretches of hot, dry weather or long bouts of rain that oversaturate the soil.



PERMAFROST: ANOTHER NORTHERN CONCERN

More than half of the Canadian land mass sits on permafrost, soil that stays at or below freezing for two or more years. Most permafrost exists at high latitudes, including the Arctic and Subarctic.

The North’s rapidly warming climate means that, in some

areas, ground once as hard as concrete is thawing into a surface with the consistency of mashed potatoes, says Duane Froese, an associate professor in the U of A’s Department of Earth and Atmospheric Sciences. In the Subarctic, infrastructure such as roads and buildings is becoming unstable as the permafrost thaws. The cost to maintain or rebuild these structures hasn’t

even begun to be evaluated.

As permafrost thaws, it also releases greenhouse gases. Organic carbon in the ground breaks down, leading to a gradual and prolonged release of carbon dioxide and methane into the atmosphere, according to a 2015 study. David Olefeldt, assistant professor in the U of A’s Department of Renewable Resources, contributed to the study, which

concluded that we will need more research in order to understand — and prepare for — the implications. Olefeldt estimates that these emissions could represent the equivalent of five per cent of what humans will emit into the atmosphere during this century.

“There’s a lot of uncertainty, but we think it will be a slow burn over decades and centuries.”

A WORLD WITH LESS COLOUR

W

When marine biologist **Drew Harvell**, '78 BSc(Hons), '81 MSc, recalls weaving her way through a bustling Indonesian fish market, it's the diversity that resonates with her. Even with nearly 30 years of experience as a professor and research scientist, Harvell marvels at the selection of fish and invertebrates: snapper, tuna, mackerel, octopus, shrimp—even stingray.

"It's mind-blowing to see all the food people get from the ocean, especially from coral reef habitats," says

Harvell, who studies outbreaks of infectious disease in marine organisms.

You can draw a direct line from coral reefs, with their rich habitat, to the economic well-being of the fisheries industry. Coral reefs provide food, fishing jobs and tourism-related employment. There are about 30 million people worldwide who are almost totally dependent on coral reefs—either for their livelihoods or for the land they live on—and about 500 million people with some level of dependence, according to a National Oceanic and Atmospheric Administration report for the U.S. Department of Commerce.

Beyond the bottom line, coral reefs provide erosion protection for coastlines, a sense of cultural identity and a potential for medicines that could tackle everything from cancer and HIV to arthritis and heart disease.

But climate change is threatening the health of the world's 284,300 square kilometres of coral reefs.

"I can say very definitively that climate change is basically driving whole ecosystems to endangerment," says Harvell, who is a professor of ecology and evolutionary biology at Cornell University in Ithaca, N.Y. "It's happening all around the world: Mexico, East Africa, Australia, Indonesia, and even the Florida Keys, where corals are on the northern edge of their temperature limits."

Warmer water temperatures stress the coral, which causes its resident symbiotic algae to leave. These single-cell algae that normally live in healthy coral are the source of the coral's food and its signature colour. As the algae depart, so do the bright hues of the coral, which begin to turn white in a process called bleaching. A bleached coral won't necessarily die—though some do melt away—but the stress caused by the rising water temperature can lead to outbreaks of disease among the coral.

An increase in CO₂ levels in the air is also putting stress on the marine

RESEARCH AT A GLANCE:

Climate change is warming oceans and making them increasingly acidic, resulting in marine organisms that are at higher risk of infectious diseases. Coral reefs are already being decimated. In the case of this hard coral from Bunaken Sulawesi, Indonesia, the polyps are beginning to bleach.

Coral reefs cover less than one per cent of the Earth's surface yet provide food and shelter for one-quarter of the world's ocean species.

"I can say very definitively that climate change is basically driving whole ecosystems to endangerment."

—Drew Harvell



IS CLIMATE CHANGE TURNING SEA STARS INTO ZOMBIES?

The largest example of marine disease outbreak in wild species is turning sea stars into the walking dead.

A wasting disease has attacked at least 20 species of sea stars along the Pacific coast. The infected creatures first show lesions, then their tissues decay, leaving their bodies to fragment and melt into piles of white goo. This grim death led the media to dub infected sea stars "zombie starfish."

The die-off is so drastic that sunflower stars have nearly disappeared all the way to Alaska, says Drew Harvell. In 2014, 70 to 90 per cent of the intertidal sea stars died at her research sites along the West Coast, including Bamfield, B.C., and Washington State's San Juan islands.

"This die-off is unprecedented in the 40-plus years that Bamfield Marine Sciences Centre has been in operation," says director **Brad Anholt**, '79 BSc(Hons). Though there is evidence that the outbreak is related to water temperature, it's still too early to say for sure whether climate change is the culprit, he says.

Harvell doesn't know if the sea stars will rebound. She continues to monitor populations while researching the immune systems of sea stars, working to understand how they naturally fight infection. "It's a means of doing something," she says. "They are a big concern and right now we just don't know what's going to happen to them."

environment. Oceans absorb about one-third of human-made carbon dioxide, totalling 20 million tonnes per day. As more CO₂ is released into the atmosphere, the chemistry of the oceans changes, lowering the pH and making the water more acidic.

Over recent decades, as oceans warm and become more acidic, outbreaks of disease in coral have increased in severity and

frequency, according to a 2014 study, "Climate Change Influences on Marine Infectious Disease," to which Harvell contributed. The ocean has become 30 per cent more acidic over the past century and the rate of acidification is accelerating. All of this adds up to conditions not seen in the past 300 million years, according to the 2014 study, and the effects go far beyond the creatures living

underwater. "Oceans and people are inextricably linked, and marine diseases can both directly and indirectly affect human health, livelihoods and well-being," the study's authors wrote.

As far north as the Baltic Sea and Alaska, people have reported outbreaks of *Vibrio* bacterial infections. The bacteria are present in marine environments and can cause infectious diarrhea, wound infections and sepsis from eating raw or undercooked shellfish or from exposure to contaminated seawater.

The good news: there still appears to be time to reverse this course by halting human-induced climate change while restoring reefs. Using sea grass is one way researchers are looking to help—sea grass beds can be filtration systems and restorative agents for reefs, says Harvell.

"It's a huge process to bring back a reef, but there are restoration efforts going on," she says. "Let's see if we can stop recording things dying and find ways to bring them back. We have to learn from the science to help us manage or avert what we are seeing." ■

RESEARCH AT A GLANCE:

A lack of long-term bee studies in Alberta means we don't know how many wild bees and which species live in the province. Long-term data from elsewhere suggest that the range of some bee species in North America and Europe are shrinking.

Where Research Warms Up

At the edge of the Pacific on the west side of Vancouver Island, Bamfi ld Marine Sciences Centre is home to a University of Alberta branch campus. Researchers like Drew Harvell value the centre for its long-term data, which help demonstrate the effects of climate change. The branch campus and facility are also at the locus of warming coastal waters.

"Bamfi ld, along with the entire West Coast, has been humoured by phenomenally warming water," Harvell says. "I read in the New York Times a phrase—they called it the 'cauldron-like waters of the Pacific.'"

"The bees are not able to adapt fast enough. These are animals that are built to adapt, but they can't keep up."

—Jessamyn Manson



THE FLOWERS MISS THE BEES

Milder winters mean flowers bloom earlier, raising the risk that bees won't be there to pollinate early risers.

85 SPECIES AND COUNTING

Jessamyn Manson and her students have spent the past two summers systematically collecting bees in Alberta, from the Montana border to Grande Prairie. The days are hot and long—sometimes they are in the truck for 12 hours or more.

Wearing bug shirts with hoods and mesh panels so they can avoid using insect repellent, the small army of bee biologists strategically sets up pan traps along a planned grid.

On days where there is only a light breeze, the students might also use nets to capture the bees.

But it's when they return to the lab that the truly painstaking work begins.

The students have collected an estimated 18,800 bees from more than 200 sites and identified more than 85 species of wild bees living in Alberta.

The team also measures air temperatures and precipitation to learn how bees relate to habitat and climate variables.

W

We can thank bees for one of every three bites of food we eat. Bees pollinate crops that range

from blueberries and cherries to almonds, squash and coffee beans. Bees also help ecosystems thrive by encouraging a diversity of plants, keeping water and soil healthy, and providing food for animals that forage.

We need bees.

But we don't know a lot about bees in Alberta—there isn't even a complete record of what species live in the province. Jessamyn Manson, an assistant professor in the Department of Biological Sciences, is helping change that; essentially, her goal is to figure out how many bees and which species are in the province, and where.

"We don't know what bees were doing years ago so we don't know if things have changed," says Manson. "There's a very good

chance we're losing species, and we don't know. This work is the foundation of our tracking."

Manson also wants to know which wild bees are pollinating which plants. The data she gathers will help lay the foundation for what we know about bees across Alberta. It builds on the university's current collections of bees found in the province. She is also collaborating with the researchers working on the Alberta Biodiversity Monitoring Institute's Ecosystem Services Assessment project, which aims to assess pollination services provided by native bees and provide new information on the diversity of species and their ranges across Alberta.

Manson echoes what you hear from other biologists: research is vital to understanding and addressing issues of human-induced climate change. Without long-term, comprehensive data, you can't see the patterns of a

species' behaviour or determine whether climate change is affecting that species. Her work is a first step in a long process, but Alberta is a great place to do it, given its abundance of agricultural and natural regions, says Manson.

In general, most studies examining changes in bee communities have focused on the effects of pesticides and land use; researchers have only recently started to consider the role of climate change in current and future bee distributions. Manson refers to a paper published in summer



A Backyard for Bees

You can help by planting a bee-friendly garden with flowers that bloom at different times. Bee species have different tongue lengths, so a variety of shapes and sizes will attract a diversity of bees. Native or heirloom plants are excellent choices.

The Concern Over Early Blooms

Crocuses are popping out of the snow two weeks earlier than they did in the 1940s. So what happens if pollinators can't follow suit?

Who doesn't love an early spring? Certainly the prairie crocus and the aspen crocus have been taking advantage of warmer weather by flowering earlier.

A study by two researchers from the U of A's Department of Renewable Resources shows that over 71 years, from 1936 to 2006, these Alberta plant species bloomed two weeks earlier at the end of the study than they had at the beginning. Aspen and prairie crocus awoke earlier in the season due to less snow cover and substantial warming—a mean monthly temperature increase of 5.3C in February and 1.5C in May, found **Elisabeth Beaubien**, '91 MSc, '13 PhD, research associate and longtime co-ordinator of Alberta PlantWatch (a citizen science effort to record plant bloom times), and Andreas Hamann, associate chair of research in the renewable resources department.

Spring plant phenology (when flowers emerge) is one of the most immediate and easily observed responses to climate change in temperate regions, according to the study. So what does an earlier bloom mean for bees? Bee researcher Jessamyn Manson isn't sure if the flowers and bees will meet up in the spring.

"The change is happening so quickly," she says. "Two weeks doesn't sound like a lot

but it's scary. The bees are not able to adapt fast enough. These are animals that are built to adapt, but they can't keep up."

If the bees and flowers don't meet to perform their pollen dance, the consequences will be severe. It would mean a reduction in flower diversity from alpine meadows to backyard gardens. This would lead to decreased soil quality and lower-quality forage for animals, including cattle. Agriculture would suffer and only self-fertilizing plants would persist. There would be less biodiversity, fewer plants and animals, poorer water quality and more soil erosion.

In fact, it's already happening. Beaubien cites a 2015 study by the U.S. Geological Survey that found berry harvests in Alaska may be declining or becoming increasingly unpredictable due to less snowfall and warmer winters. Studies like this have her concerned.

"Things seem to be a little out of whack.

We need our PlantWatch citizen scientists to note down bloom dates so we can better understand the changes that result when the climate warms up," Beaubien says.

"There are strange things happening." ■



2015, led by Jeremy Kerr from the University of Ottawa. "It was one of the first really big papers looking at wild bees and climate change," Manson says.

The study used observations across North America and Europe over 110 years. Manson expected it would show a decrease in the southern range of bees coupled with an increase in the northern range—basically assuming that bees were moving into the cooler north as the south heated up. Instead, the study indicates that, while the more southerly bees are moving north, northerly bees are not shifting their range northward; the bottom end of their range is shrinking while the top end of their range is staying the same. The bees are being squeezed into a smaller area.

"It was a surprise," says Manson.

Researchers aren't certain what is causing the bees to leave the southern part of their range, but it's worth noting that the study ruled out land use and pesticides as causes for the shift.

Temperature, however, is correlated. The research is young, but Manson says the data show that climate change is probably affecting bees. As for what that means in Alberta, the research is only beginning.

"They're doing their job in the background," Manson says of her study subjects. "We don't really notice bees until they're not there." ■

A Living Lab

Alberta can be a dream laboratory for natural scientists thanks to its incredible diversity. More than 60,000 species live in the province's six unique natural regions, including the Rocky Mountains, Canadian Shield and grasslands. To learn more about the species and ecosystems that call Alberta home, visit the Alberta Biodiversity Monitoring Institute's website, abmi.ca.

THE RISING COST OF FIRES

An increase in fire activity is one of the first indicators of a changing climate—and the average number of hectares that burn annually in Canada has doubled since the 1970s. With more extreme weather predicted for the future, we can expect to see warmer, drier conditions, more lightning and a longer fire season. That adds up to more wildfires, at a growing financial and personal cost.

Wildfire, Smoke and the GDP

On Friday, May 13, 2011, central Alberta had been through days of windy, dry and seasonal temperatures, with previous cool days delaying tree greening. The forest floor was parched. By Sunday morning, the area had blustery southeast winds and Sahara-dry air. The conditions were perfect for a wildfire.

When the fire started, 100 km/h winds helped the flames spread quickly. Continuing strong winds shorted out power lines and sparked more fires. Fire crews had to keep their distance for their own safety.

It's important to learn about

fire ignition and management from the Slave Lake fires because we're going to see more wildfires in the future, says Mike Flannigan, whose research specializes in fires and weather/climate interactions. He contributed to a paper that shows how human-induced climate change has created a detectable increase in the area burned by forest fires in Canada in recent decades.

The area burned in Canada has doubled since the 1970s, says Flannigan, a professor with the Department of Renewable Resources. "It doesn't take much change in climate to cause a fire."

The wildfires happening now and predicted for the future will affect us in ways beyond evacuations and damage.

Smoke is what Flannigan calls a "toxic soup." It's the smoke that causes most evacuations, and it exacerbates health problems like asthma and lung and heart disease. It's also simply bad for everyone's health.

And, of course, there's the cost of wildfires that you can measure in dollars: homes destroyed, cleanup bills, shutdowns in local businesses and industries. In the spring of 2011 and 2015, forest fires played a part in causing shutdowns so wide-ranging that they triggered a drop in our national GDP, says Flannigan.

"Fires are expensive," he says. "We can't keep throwing money at the problem, we have to figure out our strategy for dealing with fire." ■

PEAT FIRES DEEPEN CONCERN

Peat fires don't behave like other wildfires.

Peatlands feature carbon-rich organic material accumulated on the forest floor over thousands of years. They are common in Alberta and the Canadian boreal region, where they can stretch 40 or more centimetres deep. Peatlands are a vast storehouse, locking away carbon. Until they catch fire.

"There have always been peat fires," says Mike Flannigan. "We are starting to believe there are more peat fires burning deeper, which will release significant amounts of greenhouse gases."

Studies from Indonesia show peat fires in 1997—a particularly bad year—released the equivalent of 20 to 40 per cent of the world's fossil fuel emissions for the year, he says. The peat in Canada's boreal forest covers 30 times the area of Indonesia. Peat can even smoulder through the winter.

"It gets down in the ground and keeps on burning until it runs out of fuel or you get some significant rain."

8,000

Number of wildfires in Canada annually. They burn two million hectares, or roughly half the size of Nova Scotia.

474

Cost, in millions, of Alberta wildfires in 2015. This includes \$99 million in emergency funds.

65

Percentage of fires caused by human activity. The other major cause of wildfires is lightning strikes.

800

Average annual Canadian wildfire management costs in millions of dollars; 2015 topped \$1 billion.

1

The number of months earlier that the official fire season now begins in Alberta: March 1 instead of April 1.

BEYOND THE POLAR BEAR

University of Alberta scientists predict polar bears will largely disappear from the southern portions of their range, including Hudson Bay and the southern Beaufort Sea, by mid-century.



Ian Stirling
Adjunct professor in the Department of Biological Sciences

Between the two of them, Ian Stirling and Andrew Derocher have more than 70 years of experience studying the Ursus maritimus (sea bear).



Andrew Derocher
'87 MSc, '91 PhD
Professor in the Department of Biological Sciences

Ian Stirling and Andrew Derocher are two of the world's foremost polar bear researchers. Together they pioneered research on the possible effects a warming world could have on the species. But they certainly couldn't have predicted the degree to which climate change would dominate their work over the long term. Listening to these experts as they bounce opinions, memories and ideas off one another offers a rare opportunity. The conversation is eye-opening as they discuss the state of polar bears, research and how climate change forced itself into their field.

SARAH PRATT: When I talk to researchers about climate change, they repeatedly use the term "canary in the coal mine." Is that how you see polar bears: as a species that is an early indicator of changes in our climate?

ANDREW DEROCHE: Yes, that's exactly what's happening. They are big, furry, meat-eating canaries. [laughs] I always say it's a simple story. It all comes down to the No. 1 concern globally: habitat loss. We lose the sea ice, we lose the bears. This is not an issue about polar bears; really, it's a global issue.

We could see the likelihood of climate warming coming early on, so we wrote a paper in 1993 about possible effects of warming on polar bears. Those predictions were borne out. Subsequently, we

reviewed the topic in more detail in 2004 and again in 2012. You know, when Ian and I wrote our 1993 paper, we thought climate change was still far away on the horizon. I am absolutely stunned by how quickly the changes have come.

IAN STIRLING: Leading up to the 1993 paper, I was originally interested in natural fluctuations in ecosystems. It didn't have anything to do with climate change. One day after looking at our long-term population-monitoring data from my project in western Hudson Bay, I said to Andy, "You know, there are some longer-term things going on underneath what we're seeing up front." I had set out to look at some completely legitimate

but totally different questions, and climate change forced its way onto the agenda. We had to figure out what on earth was going on here; it was something besides what we were looking for. Andy left to study polar bears in Svalbard [Arctic Norway], and in 1999, with Nick Lunn, my colleague on the population ecology of polar bears in western Hudson Bay, I published the first paper that statistically confirmed the negative effects of climate warming on polar bears in the area.

AD: Climate change has become a driving force in our continuing research, but not all of it. For example, I do work on toxicology and exposure to disease, while a lot of Ian's work has focused on

relationships between polar bears, seals and sea ice. In other words, we had ongoing research interests long before climate change forced itself onto our agendas. I'd be happy if I die and was wrong about polar bears and climate change. [Gestures as though imagining the headlines.] "He was wrong and he died happy."

IS: Sadly, the predictions we made in the 1993 paper came true. I'm not happy about being right.

AD: Then the 2004 review paper really kick-started another process. It was instrumental for conservation groups who told us they were waiting for something they could move on for polar bears so they could push for endangered species listing in the United States.

A Threat to Survival

"Although polar bears have survived previous warm phases, the present circumstances are much different. Low genetic diversity and future loss of habitat, as well as additional stressors that did not exist during past warm periods, such as human habitation throughout the Arctic, industrial activities, toxic substances in the food web, and reduced populations of some potential prey species, could magnify the impact of current climate warming, posing a profound threat to polar bear survival."

Effects of Climate Warming on Polar Bears; a Review of the Evidence," Stirling and Derocher, 2012

IS: I had used my position as a research scientist with Environment Canada and an adjunct professor with the U of A to maintain the long-term population studies. I was able to keep the database going for several decades and train a number of graduate students. When everyone's efforts were pooled, we had a long-term database. A critical point is if you took pretty much any 10 years of our [polar bear] database or those on sea ice, there wouldn't be enough data to detect a statistically significant trend. But if you took 20 or 30 years, like we have in some places now, the trends become clear.

I think that's an aspect that's not well understood. It's fair to say that if the combined support from the U of A and Environment Canada hadn't made the long-term study possible, I think we would only now be finding statistically reliable stuff.

SP: That makes sense. **Observation and data collection are vital. How about mitigation and adaptation? How do these relate to polar bears?**

AD: This is not a species that is going to adapt to climate change. At the end of the last glaciation, they used to be as far south as Denmark and they're no longer there. They didn't adapt—they disappeared and moved farther north. The peril now is we can't move a northern species farther north. There are some big changes coming and the question is when.

You know, people say, "You're an advocate for polar bears," and I always come back and say, "I'm actually an advocate for the science of how polar bears are affected by climate change." It's clear in the Arctic because changes are amplified in the North.

Changes will happen in Edmonton, too. We might not have trees here in 100 years.

SP: Most of the province will likely be grasslands, according to U of A research that predicts a warmer, drier province.

Polar Bear Facts

The polar bear is a force of nature, sitting atop the Arctic food chain. Get to know these kings of the North.



Walking speed is five to six km/h.

Canada is home to about 60 per cent of the world's polar bears. They also live in Alaska, Greenland, Russia and Norway.

They can sprint up to 40 km/h but only over short distances.

They have black skin and each hair shaft is transparent.

Cubs are born 30-35 cm long and weighing half a kilogram. They stay with their mother for 2½ years.

Their paws are up to 30 cm across. Each claw is five centimetres or longer.

The average lifespan for a bear in the wild is 15 to 18 years. Biologists have found bears in their early 30s.

Their main prey is ringed seals. They often wait near the seals' breathing holes when hunting.

The U of A has produced more grad students who work on polar bears than any other institution. —Andrew Derocher

AD: Yeah, it will all be grasslands, and different ecosystems will come here. It's the same thing in the North. We will have a new top predator, the killer whale. It has been shown their range is expanding in the North, especially Hudson Bay.

IS: And as ice decreases, killer whales will also prey on narwhals and belugas.

AD: I don't really enjoy talking about climate change; there's nothing fun about it. It has been extremely frustrating. If you read the literature about sea ice and climate, it's really hard to remain ignorant. You have to really work to be ignorant on this topic.

IS: I would add that we are outrageously attacked on a regular basis by climate deniers. I think what

the deniers don't like about the polar bear studies is that the relationships are so clear: polar bears need ice to hunt seals.

SP: Do you feel a heightened sense of responsibility to the public when it comes to polar bears and climate change? After all, you are the faces of this issue.

AD: Often I come back to the issue of intergenerational unfairness. The current generation really doesn't have the right to leave the mess to future generations that we're currently leaving.

IS: I feel very strongly as a scientist that we need to make research available to the public in an accessible manner so they can make their own decisions based on real information. I think both of us feel a pretty strong moral obligation to do that.

I have grandchildren now and I believe very much in intergenerational unfairness—and that's just my own family, not to mention people in other countries.

Even in the United States, Florida is so low-lying, the cost of sea rise change there is huge.

SP: And you have a front-row view of the situation. When I see photos of you with polar bear cubs, it's amazing. What's it like to hold one, to be near them?

AD: It's a mix of emotions. They are incredibly beautiful, feel incredibly fragile, but you're also looking at incredible potential. This cub could grow into a huge bear that could walk to Russia, getting bigger and bigger along the way. The scary thing is to look into the future. In the Beaufort Sea area, the changes there are catastrophic. Many cubs in western Hudson Bay are starving.

IS: There are almost no yearlings in the western Hudson Bay populations. It doesn't take a rocket scientist to figure out the new cubs are not surviving well.

SP: Are you able to put on your scientist hat and see this happening and not feel... well, if it was me, I'd be so sad.

IS: I can't look at starving animals and think, "Oh that's life." You always have some unhealthy bears in any population, they all die sometime, but in places like western Hudson Bay we are seeing much higher proportions of skinny ones.

SP: So what can we do? Could we feed the bears?

AD: Actually, we proposed that in a recent paper. Trying to feed polar bears is interesting.

IS: And hugely expensive.

AD: But the problems people will face are more of an issue, with rising sea levels and so on.

IS: Eventually, the biggest wake-up call will be catastrophic. I think we're going to see world wars over water. We are totally unprepared, nationally, for climate change.

AD: I'm fairly optimistic we can change, I just don't think we're going to change quickly enough to save polar bears. ■



FROM SEEDS COME TREES

*John Dushinski extends a family
practice of volunteer medical service*

By **SCOT MORISON**, '80 BSc(Spec)

Photos by **Heidi Levine**

Canadian surgeon John Dushinski stands at the Qalandiya checkpoint, a major crossing point on the West Bank, waiting to travel between Ramallah and Jerusalem. It's the fifth time the Calgary urologist has travelled to the West Bank to perform surgery on Palestinian patients.

To a layperson, the qualities

of a great surgeon begin with steady hands and an unflappable disposition. The latter is evident in **John Dushinski**, '84 BSc(Spec), '91 MD, as he relaxes in his room at the Palestine Red Crescent Society's guest house in the

Palestinian city of Ramallah after a long day in the operating room. Someone else might be infuriated under present circumstances, but Dushinski is calmly munching Cheezies he has brought from home as he Skypes with his wife, Brenda, who is back in Calgary with the couple's two teenage children. Husband and wife exchange thoughts on what might be done to expedite the release of a half-dozen suitcases full of medical supplies destined for a Palestinian hospital, which were confiscated by Israeli customs officers when Dushinski arrived at the Tel Aviv airport. "I told them they were donations, not goods for sale, but they took them



anyway," he says with a shrug. He bids Brenda goodnight and ends their Skype call.

It is June 2015. This is the urologist's fifth medical mission to the West Bank in 10 years, and it's the first time he has ever had his medical equipment seized. The confiscated suitcases contain supplies central to the purpose of his visit: to train doctors at Ramallah Public Hospital in urological surgery to treat conditions of the urinary tract and male reproductive organs. Since his last visit here, Dushinski has collected an assortment of instruments and supplies, including a number of laparoscopic cameras and digital imaging processors, that have been recycled or deemed obsolete in Canada but are much coveted here in the West Bank, where the Palestinian medical system is chronically strapped for resources. Air Canada even waived its usual excess baggage charges to facilitate the donation. Frustrating as it was to lose this material, worth between \$100,000 and \$150,000 purchased new, Dushinski's time is limited and he can't wait for the suitcases.

Dushinski is actually "John" to me. Our wives are sisters, and this is our second trip together to Ramallah, the de facto capital of the West Bank, 10 kilometres north of Jerusalem. We both feel pulled to this part of the world, though our interests developed in different ways and at different times. In my case, I have returned whenever possible since finding my way here as a backpacking 18-year-old during a gap year after high school. On this visit, I've come to Ramallah to learn more about the work of my brother-in-law. Like John, I am fond of Arab food, the Palestinian people and their culture, and even the arid landscape

of the West Bank with its stony fruit orchards and olive groves.

Nothing symbolizes the Palestinians' connection to their land more powerfully than the olive tree. Short and squat, yet beautiful with its silvery green leaves and twisted and pitted trunk, the tree provides a staple of the local diet and, for many Palestinians, an important source of cash-crop income. But it's more than that. Olive trees live for a long time—from 400 years to as long as 800 or 1,000 years—and can take more than a decade to mature. As a result, Palestinian tradition holds that olive farmers of today owe gratitude to the generations that came before. And the trees they plant now

Top left: Dushinski stands by an eight-metre-high wall near the Qalandiya checkpoint. The wall is part of a 700-kilometre-long separation barrier the Israelis began building in 2002.

Top right: After a day in the operating room in Ramallah, the de facto capital of the West Bank, Dushinski relaxes and catches up on emails in his room at the Palestine Red Crescent Society guest house.

Bottom: Dushinski prepares for surgery on a 10-year-old Palestinian girl at Ramallah Public Hospital to remove a stone from her right kidney.

are a passing on of that gratitude to future generations.

Early in the morning, we jump in the car with Qais Hamaideh. Dr. Qais, as he's known to Dr. John (physicians here refer to each other in this formalized first-name basis), is a friendly young urologist who swings by the guest house each day to drive the visiting Canadian up through narrow, winding roads to the Palestine Medical Complex in the heart of Ramallah, which sits atop one of the city's many sun-baked hills. The compound is bustling with medical staff, patients and their families this morning. As we walk across the parking lot, people overhear Dushinski reviewing the day's schedule with Hamaideh and smile. This feels like a hopeful, healing place.

Dushinski is doing what he can to make it so. Using two weeks of vacation time, he has come to Ramallah to teach a handful of urologists and residents how to perform percutaneous nephrolithotomy, a minimally invasive surgical approach to removing large or irregularly shaped kidney stones that, until surgeons remove them, can result in severe pain, infection and blocked urinary flow. It might be a mouthful to pronounce, but the procedure is small and delicate. It involves making a one-centimetre incision in the patient's back and then running a channel from that incision down into the kidney with a hollow needle to allow for the breakup and removal of kidney stones. A patient's only alternative is open surgery, which brings a higher risk and much longer recovery time, or transfer to hospital in Israel or Jordan for an endoscopic procedure at the cost of roughly C\$5,000 per case—money the Palestinian Authority, which pays for the outside treatment, can ill afford. Hamaideh and his colleagues have lined up a long list of patients for Dushinski to see during his stay. "I don't mind," he says. "I like to be busy when I'm here."

Dushinski is accustomed to being busy. Back in Calgary, he is known around the medical community as "the stone guy." Specializing in endourology, the minimally invasive treatment of

kidney stones and other urinary problems, he operates out of Rockyview General Hospital and maintains one of the largest practices in the city. From 2002 to 2010, he also served as chief of urology surgery for the Calgary Health Region, and from 2007 to 2010, as chief of surgery at Rockyview Hospital. Fellow Calgary urologist and surgeon **Bryan Donnelly**, '82 MSc, describes him as "as good as anyone on the planet when it comes to removing stones."

Not too shabby for a guy who was almost finished an undergraduate degree in genetics before the idea of studying medicine occurred to him. "I didn't have very good marks," he admits. "But I had a weird schedule in my fourth year—a three-hour



The main difference between John and others who come here is he allows us to work with our own hands. It sometimes seems like the others just want to show us their skills."

break every Monday, Wednesday and Friday in the middle of the day. And I thought, 'What the hell am I going to do for three hours three times a week?' So I decided to study, which I had never done other than the night before an exam. All of a sudden my marks took off, and I thought, 'What do I really want to do?' " He concluded it was medical school.

It might seem surprising that he hadn't considered medicine sooner, given that his father, **Les Dushinski**, '60 MD, was a urologist. The elder Dushinski ran a general urology practice at Edmonton's Baker Clinic and worked out of the Royal Alexandra Hospital for many years, including 11 years as its chief of surgery. Even so, it was never presumed, or even suggested, that the son would follow in the father's footsteps. Les, who died of cancer in 2003, and Myrna Dushinski felt it was important that their four children explore their own paths. "He didn't try to talk me into urology," John Dushinski says. "It really wasn't until I did my surgery rotation that I thought, 'I want to do this.'"

It wouldn't be the last time he would look up to find that he was following a path laid out by his parents.

In 1993, Les and Myrna Dushinski, who was a nurse, took part in a Canadian medical mission to Ukraine. This was a couple of years after the fall of the Soviet Union, and the state hospitals they visited in cities like Kyiv and Lviv were by then pretty neglected. Myrna recalls seeing equipment that nobody knew how to use stored in the rat-infested basement of a hospital in Kyiv. Family lore has it that Les was handed a scalpel so dull it couldn't cut cheese, never mind a patient's skin. During the mission, Les instructed staff and also treated patients, one of them an eight-year-old girl named Elena, who had to wear diapers because she was born without a bladder or urethra. When the medical team returned home, Les worked with the Rotary Club to bring Elena to Edmonton for three successful reconstructive surgeries performed by a pediatric urologist colleague. "Les was always doing something like that—lots of volunteer work," says Myrna. She continues to be a dedicated volunteer. She has volunteered for more than 30 years at the Royal Alexandra gift shops, which raise funds for the hospital, and has managed the hospital's Robbins Pavilion gift shop since 2011.



Top: Dushinski (right) and Palestinian surgeon Murad Barakat don surgical gowns in preparation for their first surgery of the day.

Bottom: Dushinski places a dilator over a guide wire.

The younger Dushinski came to volunteering much later and without a conscious connection, though he recalls being interested in his father's stories about the medical mission to Ukraine. "It was very interesting to hear his stories about the way medicine works in that part of the world," he says. "But if it did have an influence on me it was subconscious because I didn't come away from it saying I want to do that kind of work. It just sort of happened."

It occurs to me this is much like the olive tree: the way a new tree can stand for years, growing and reaching for the sky, before it begins to yield its fruit. The younger generation benefiting from the foresight of the previous generation.

D Dushinski inherited a dry wit from his dad and a particular penchant for well-timed dirty jokes (no examples of which will be repeated here). His fearless sense of humour is disarming and helps explain his popularity with colleagues in the operating room, be it at the Palestine Medical Complex or back home at the Rockyview. This morning, Hamaideh and chief of urology Murad Barakat enjoy a one-line zinger delivered at the expense of a tardy anesthesiologist as they wait to start surgery on the day's first patient, a middle-aged man with a several sizable stones in his right kidney.

I've been invited to don a gown, a disposable cap and booties and a lead apron to protect me from the X-rays used to image the kidney, and enter the operating room to watch. One of the first things I notice are the gardening shoes Dushinski is wearing under his cloth booties. He brought them from home, he tells me, explaining that he started to wear them because he got tired of having good leather shoes ruined by irrigation fluid and other spillage from the operating table. Sure enough, we are barely into the morning's first operation when a plastic bag full of runoff irrigation liquid and blood bursts open beneath the table, splashing over the floor at Dushinski's feet. It prompts him to turn away from the patient for a moment and give me a crooked smile.

As soon as the patient is sedated and the procedure begins, I see one of the reasons for the respect Dushinski gets



The surgical team, (centre L-R) Dushinski, Murad Barakat and Qais Hamaideh, speaks to the mother of a young girl who underwent surgery at the Ramallah Public Hospital.

The happy patient, surrounded by relatives, smiles up at him from her bed and says something in Arabic. Hamaideh translates for Dushinski. "She says we are all one family now."

in the OR. He's good at his job. His qualities as a surgeon are on display: dexterous hands, an even temperament and instant recall of the precise anatomical and physiological knowledge required at any moment. First, he deftly demonstrates how to start a channel to the kidney through a tiny incision below the 12th rib, then moves aside and encourages Hamaideh to take over. When Hamaideh struggles to direct a long needle into the collecting system in the middle of the kidney, even I can sense his anxiety building. But instead of stepping in, Dushinski stares at the X-ray image of the errant needle on the monitor above the bed and coolly tells the Palestinian to pull back and try again. "Remember, push and release, just like you're throwing a dart," he says. Finally, Hamaideh hits what he's aiming at, and the task of breaking up and removing the patient's stones can begin. The Palestinian surgeon's confidence grows visibly. Later, Hamaideh tells me: "The main difference between John and others who come here is he allows us to work with our own hands. It sometimes seems like the others just want to show us their skills."

But Dushinski will flash a sharp edge when it's needed. At one point during the procedure, he scolds a distracted doctor in the OR for answering his cellphone instead of concentrating on running the C-arm, which provides the surgical team an X-ray image of the patient's kidney. Later, Dushinski tells me about feedback he gave a day earlier to a surgeon who insisted on continuing to pulverize a partially broken stone with a lithoclast (think of a tiny jackhammer inserted into the kidney) instead of extracting it when Dushinski advised. The misstep inadvertently pushed some larger pieces of the stone too far into the kidney to be reached along the channel. "You've done this procedure, what, four times now?" Dushinski reminded the urologist when the two of them were alone. "I've done it 4,000 times. So the next time I tell you this is the way we should do it—this is the way we do it."

D Dushinski's first trip to Ramallah was in 2006. It came about through the convergence of casual discussions with some urology colleagues in Calgary about someday doing overseas work. And he learned that my wife, **Karen Hamdon**, '79 BA, a longtime volunteer in humanitarian work, was hoping to take some Canadian doctors to Palestine. "At some point the conversations merged, and we began to plan our first trip," Dushinski says. His wife, Brenda Dushinski, joined him on that trip and has been on every mission except for this one.

He describes his initial mission to Ramallah as exploratory. "They didn't have any endoscopic equipment, but I looked through a cardboard box of stuff that had been left behind and eventually found enough pieces to build a resectoscope," used to remove diseased or damaged tissue from the uterus, prostate, bladder or urethra. Dushinski used it to do two transurethral resections, one to remove a bladder

tumour and one to relieve the urinary problems caused by an enlarged prostate. On his second mission (made with colleague Bryan Donnelly and his wife, Evelyn, who is also a physician) Dushinski taught the Palestinian surgeons how to perform the procedure properly—meaning with something other than a jerry-rigged scope. His lessons evidently stuck. Ramallah Public Hospital is now the referral centre for the entire West Bank. When he visited in 2013, he introduced them to percutaneous nephrolithotomies. "That trip they mostly just wanted to watch," he says. "This time they wanted to learn how to do it themselves."

There are serious challenges to developing local capacity to undertake complex surgery in a place like the West Bank. Limited opportunities for advanced training, a dearth of supplies and equipment (twice on this mission a malfunctioning C-arm forced Dushinski's team to move to an OR in another hospital in the medical complex), plus the volatile political situation—all hinder the learning process. Still, Dushinski's assessment of the Palestinian doctors' progress is positive. "I've seen an improvement in their surgical technique. I think they're at the point where they can try doing it on their own," he says. "It was like this two trips ago when we were trying to teach them transurethral resection. We were a little nervous about leaving and not knowing how things would turn out. Now they're the referral centre for the procedure. Hopefully, the same will go for percutaneous nephrolithotomy."

And the Palestinian doctors praise Dushinski. "We love him. In spite of a lot of difficulties, he is trying to train our colleagues here in Palestine. Otherwise, we would have to send them to Canada or to other places," says Rashid Bakeer, the recently retired chief of urology at Ramallah Public Hospital who oversaw all of Dushinski's previous trips. "Two weeks with him is the equivalent of one year with someone else," Hamaideh tells me. "He gives us many fine details and

tips from his experience that you can't get from medical books. From the first time John came, he is like a model for me. Since then I've been doing things his way, even giving orders the same way."

As the end of Dushinski's stay approaches, he and his Palestinian colleagues have tallied close to two dozen stone procedures, and likely could have done more if they had had the supplies he brought. In Canada, the procedure he's teaching typically involves placing a surgical balloon over the hollow needle inserted into the channel, and then inflating the balloon to widen the channel enough to remove the stone. The urologists at Ramallah Public Hospital had exactly one balloon when Dushinski arrived (and he believes it was an undersized demo model, at that), which the team carefully used, sterilized and reused until it finally broke during a procedure halfway through his visit. From that point on, the team had to employ sequential dilators—inserting increasingly large pieces of rigid tubing manually—to dilate the channel, which is more time-consuming and damaging to the tissue. Meanwhile, in one of the confiscated suitcases, there are 173 dilating balloons.

The last patient on Dushinski's caseload is an elderly woman who arrives at the hospital with a painful kidney stone larger than a golf ball. The Palestinian urologists have to park their skepticism in the face of his insistence that even a stone this size can be safely broken up and taken out through a nephrolithotomy; the patient had been told that, even in Jordan or Israel, it would require open surgery. Sure enough, the procedure goes smoothly. That night, the woman's grateful son insists on taking Dushinski and Hamaideh out to a friend's restaurant for *musakhan*, a traditional Palestinian meal of roast chicken, caramelized onions and sumac, to express his thanks. It is the Arab way.

The following morning, Dushinski's last in Ramallah, I accompany him and Hamaideh on post-surgical rounds. They stop in to see the woman with the giant stone, a few chunks of which now sit inside a specimen bottle on her night stand like a strange yet satisfying



"The personal satisfaction you get from going somewhere and doing something that people there wouldn't have access to is huge. You can't quantify it in terms of the money that you make or the income you lose."

souvenir. Dushinski picks up the specimen bottle and rattles it loudly for everyone's amusement. The happy patient, surrounded by relatives, smiles up at him from her bed and says something in Arabic. Hamaideh translates for Dushinski. "She says we are all one family now."

That evening over a couple of bottles of Taybeh, a very good Palestinian beer, we sit on the breezy balcony of a friend's apartment halfway down the main road between Ramallah and Jerusalem, and Dushinski reflects on this latest mission. The melodic and always stirring *azaan*, the Muslim call to prayer, drifts across from a nearby mosque. Suitcase problems notwithstanding, Dushinski deems the trip a success. He and the Palestinian urologists are already talking about his next visit. They want to learn how to perform laparoscopy, sometimes called belly-button surgery, on the kidney. "It has been an evolution, and it's hard to stop once you get started," Dushinski says. "Our first trip here was basically just getting to know them,



Top left: The view of the Al Amari refugee camp in the West Bank from Dushinski's guest house.

Top right: A Palestinian boy arranges watermelons for sale in Ramallah, West Bank.

Bottom: Dushinski stops to speak to a shop owner in Al-Manara Square in Ramallah.

knowing what their capabilities were and planning for the next trip. Now you build on that with every trip."

Overseas volunteer medical work in a conflict zone is not easy. Donnelly says he found the political situation on the West Bank unfair and maddening, though he and Evelyn still hope to return on a future mission. For Dushinski, the seeds sown by his parents' example, even if imperceptible at the time, have grown into something

strong and solidly rooted. Donnelly believes his colleague's underlying drive in making these trips is the best one possible: "He wants to make a difference." After watching him work, it is clear to me that Dushinski does make a difference: as a healer and as a teacher and mentor. "The personal satisfaction you get from going somewhere and doing something that people there wouldn't have access to is huge. You can't quantify it in terms of the money that you make or the income you lose. It's just a good feeling," Dushinski says. As for the politics, he has his own views but makes it clear he's here only for humanitarian reasons.

When they gather for a little party to say goodbye to Dushinski at the end of the visit, the staff at the

hospital present him with a young olive tree, carefully planted in a pot. There is no way he can take it home with him, and it wouldn't survive in Calgary even if he could. So he leaves it in the care of a Palestinian friend who works for the Red Crescent Society. She is going to plant it in the garden of her family's home, where it will be waiting for him to check out its progress on his next trip, and the trips after that. Given the significance of the olive tree to the Palestinians, the gift is a touching sign that Dushinski's hosts feel the Canadian doctor truly belongs here now. ■

Postscript: One month plus a day after Dushinski returned to Calgary, his suitcases were released by the Israelis. Their contents are now being put to good use by the urology department at Ramallah Public Hospital until Dushinski comes back to the West Bank, undoubtedly bringing more suitcases.



by MICHAEL HINGSTON

Christine Dow, '09 MSc

The NASA post-doctoral fellow and glaciologist talks about her affinity for all things ice: hockey, penguins and living her research dream in Antarctica

When NASA tweeted that it was sending two of its scientists on a month-long trip to study ice-shelf motion in Antarctica, the accompanying photo had a recognizable detail: an Oilers shirt. Its proud owner, former U of A grad student and hockey fan Christine Dow, is a post-doctoral fellow in NASA's Cryospheric Sciences Laboratory in Maryland. Dow spoke to New Trail from the Jang Bogo research station in Terra Nova Bay, Antarctica – about 1,650 kilometres from the South Pole – where she was researching the movement of glacial ice shelves in response to ocean tides. After her stint in penguin country analyzing data and blogging from the field, Dow, a native Scot, plans to return to Canada this spring to teach at the University of Waterloo, where she's excited to get back into hockey – and vows to remain a fan of the Copper and Blue.

What's the most surprising thing about working in Antarctica? I think mostly the scale. I've seen glaciated areas before, but everything is just so much larger here. The mountains are huge. The ice is huge. You look across this expanse of ice and you think, "Oh, it'll take 10 minutes to fly there." An hour later, you're still not there.

We think of the Antarctic as a desolate place, but there's a whole community of scientists there. What's that like? [On our base] there are seven westerners and 60 Koreans. So, culture-wise, it's been interesting. It was a bit like being dropped in the deep end, to begin with, because we had no idea what was going on. Most of the information was in Korean. But everyone gets on really well, and the Koreans are incredibly helpful and polite, so that has made it much easier.

So what do your working days in Antarctica look like? Surprisingly similar to being in the office, actually – even though it's a bizarre place to have an office! You get up at 7 for breakfast, go into the lab and analyze data for most of the day. When we got here, we spent several days in the field setting up global positioning system units and tilt sensors that measure ice uplift and motion: how much the ice moves up and down with the tides, and how far back on the glacier this has an effect.

What do you do when you're not working? When I told my friends I was coming to the Antarctic, most of them said, "Bring me back a penguin."

So I am knitting penguins, at the moment, for my friends and family.

Other than getting you used to winter, how did the U of A prepare you for this experience? The master's I did in earth and atmospheric sciences (glaciology) was instrumental in the rest of the choices in my career. It really pushed me in the direction of numerical modelling, which uses a computer to crunch equations to simulate physical processes. Also the fieldwork – I'd never been on a glacier before. At the U of A, I was lucky enough to visit very different glacial landscapes. It's much easier to imagine the scales and interactions of the physical processes if you can visit the site in person.

How does blogging help bring science to the general public? NASA likes to use blogs to distribute information, such as how field science is performed. Because [living in Antarctica] is something that not many people get to do, I'm hoping people are reading the blog and enjoying the experience along with me. ■

Check out Dow's blog at earthobservatory.nasa.gov and search for Nansen Ice Shelf.

PHOTO BY JOHN ULAN



by Greg Zeschuk



The First Taste of Spring

ALBERTA BREWERS SHOWCASE FLORAL FLAVOURS IN THESE THREE BEERS SURE TO LEAVE YOU WITH AN APPRECIATION FOR THE ART OF HOPS

YOU KNOW THAT MOMENT WHEN IT ACTUALLY FEELS LIKE SPRING? That moment when the snow is gone, the wind is warm and the flowers are starting to bloom? (If it hasn't arrived yet, let's all take a minute to dream.) Spring is the season for artfully hoppy beers—beers with fresh, grassy and floral flavours and aromas. Hops cones have been used in beer making since the 1300s to replace herbal mixtures and to balance beer's natural sweetness. Later, people noticed that hopped beers stayed fresh longer. We now know that hops are bacteriostatic (against *Lactobacillus*, in particular). And thanks to the ingenuity of modern brewers, we know that hops taste great when liberally applied. Here are three Alberta-made beers that are seriously hoppy.

BLINDMAN RIVER SESSION ALE

by Blindman Brewing, Lacombe, Alta.

First up among our hoppy spring offerings comes from the relatively new Blindman Brewing, which was started by three U of A alumni (see page 61). This one is a session ale—which means it has a lower-than-usual alcohol percentage (4.4 per cent ABV) but still

delivers a shocking amount of flavour. It pours a straw-golden, lightly cloudy colour with a voluminous foamy head. Haze and head are common in hoppy beers, so don't be alarmed. The aroma is an intermingling of resinous, sweet pine and light floral notes. The first sip shows off the juicy resinous hops backed by a tantalizing bitter edge through the finish.

It's straightforward and nicely balanced. I guarantee I'll be enjoying this beer on patios every chance I get.

BELGIAN DIP

by Tool Shed Brewing, Calgary

How does one make a Belgian-style beer in Calgary, you ask? Easy—use Belgian yeast! This magical ingredient imparts the most complex flavours in beer. It can create fruity or peppery characteristics without the addition of fruit or spice, and even give beer funky notes reminiscent of complex wines. The Belgian Dip pours a golden colour and is moderately cloudy with a fluffy head. Things get really interesting with the aroma, where tropical fruit hop flavours like mango intermingle with pine resins and banana-like esters from the Belgian yeast. The flavour has a delightful fruity juiciness that's enhanced, again, by the yeast. The malt has a spicy quality that adds to the tantalizing and elusive character of this beer.

LONE BISON IPA

by Ribstone Creek Brewery, Edgerton, Alta.

This is a straight-up balanced and delicious India Pale Ale. It pours a slightly darker golden amber than the others and has a sweet resinous aroma with floral notes and just a twist of lemon rind. Lemon and resinous flavours drive the juiciness of this beer. One thing that really stuck out to me was the Lone Bison's slightly sweet caramel finish—a flavour that perfectly balances its bitterness. Its finish was the classic IPA: bitter with barely enough malty sweetness to hold it together. Beer writers overuse the word drinkable, but in the case of a Lone Bison IPA in the springtime, a truer word was never written. ■

Greg Zeschuk, '90 BMedSc, '92 MD, is executive director of the Alberta Small Brewers Association and a beer judge recognized by the Beer Judge Certification Program. He is a beer writer for AskMen.com and runs a beer media channel called The Beer Diaries.

LEFT PHOTO BY RICHARD SIEMENS, TOP PHOTO BY JOHN ULAN

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REGIONAL ACTIVITIES

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.

NANAIMO | APRIL 10

Alumni Brunch: How Contemporary Artists Address and Represent Illness and Health, with visual artist and art historian Kristen Hutchinson

EDMONTON | APRIL 13

Educated Luncheon: Risk Engineering in the Canadian Railway Industry, with civil engineer Renato Macciotta Pulisci

GRANDE PRAIRIE | APRIL 14

Alumni Reception: How Contemporary Artists Address and Represent Illness and Health, with visual artist and art historian Kristen Hutchinson

VICTORIA | APRIL 23

Alumni Brunch: Lifeboats for the Rising Tide – Help for Family Caregivers of Persons with Alzheimer’s Disease, with nursing researcher **Wendy Duggleby**, '90 MN

VANCOUVER | APRIL 24

Alumni Brunch: Lifeboats for the Rising Tide – Help for Family Caregivers of Persons with Alzheimer’s Disease, with nursing researcher **Wendy Duggleby**, '90 MN

CALGARY | APRIL 28

Educated Palate: Craft Cocktails at Anju

EDMONTON | MAY 3

Educated Career: Optimizing your Professional Appearance, with style consultant **Lazina McKenzie**, '08 MBA

CALGARY | MAY 12

Cooking Class: A Mediterranean Diet for the Prairies at Sunterra Market, with nutrition researcher Rhonda Bell

CALGARY | MAY 25

Lecture Series: Research Key to Better Support for Troops and Veterans, with blast trauma researcher Ibolja Cernak

JASPER | MAY 26

Dental Alumni Association Reunion Reception at the Jasper Dental Congress

VANCOUVER | MAY 27

Faculty of Science Spring Lunch, with biologist David Hik

NANAIMO | MAY 28

Faculty of Science Spring Lunch, with biologist David Hik

VICTORIA | MAY 29

Faculty of Science Spring Lunch, with biologist David Hik

EDMONTON | MAY 29

Alumni and Student Memorial Service

KELOWNA | MAY 30

Alumni Reception, featuring biologist David Hik

EDMONTON | MAY 26

Spring Reception: Faculty of Law Alumni and Friends

CALGARY | JUNE 9

21st Annual Alumni Reception and Dinner at Spruce Meadows

EDMONTON | JUNE 10

Dental Hygiene Alumni Chapter Grad Luncheon

EDMONTON | JUNE 10

Dental Alumni Association Grad Luncheon

CHEMAINUS | JUNE 11

Vancouver Island Golf and Dinner



SEPTEMBER 22 - 25, 2016

Alumni Weekend is the time to 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 on campus, come and join the fun.

alumni.ualberta.ca/weekend

VOLUNTEER OPPORTUNITIES

UNWIND YOUR MIND: HEALTHY SNACK HANDOUTS

EDMONTON | APRIL 5-21

Help students stay energized during long study sessions by delivering free healthy snacks at campus libraries.

EXAM GREETERS

EDMONTON | APRIL 13-25

Student Accessibility Services is looking for friendly volunteers to greet and assist students with accessibility needs.

PRAIRIE URBAN FARM: SPRING PLANTING

EDMONTON | MAY 18

Tour the Prairie Urban Farm at the U of A’s South Campus, learn about sustainable urban gardening and help plant the alumni flower garden.

CAMPUS SPRUCE UP

EDMONTON | JUNE 11

Spend some time outdoors and improve the campus by helping to repaint, repair, plant flowers or work on other projects as needed.

PRAIRIE URBAN FARM: SUMMER HARVESTING

EDMONTON | JULY TBA

Tour the Prairie Urban Farm at the U of A’s South Campus, learn about sustainable urban gardening and help harvest fruit and vegetables.

THINKSTOCK



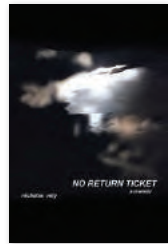
- Dental hygiene grads (from left) **Anna Vu**, '15 Dip(DentHyg), **Aurelia Pantalone**, '15 Dip(DentHyg), and **Stephanie Chan**, '15 Dip(DentHyg), embrace the theme of the night at the dental hygiene alumni chapter’s Black and White Affair. *Photo by Helen Massini*, '99 BSc(Spec), '03 Dip(DentHyg)
- Alumni take in the ingenuity of U of A grads at Great Things: A Celebration of Alumni Art & Innovation at the U of A Museums Galleries in December. *Photo by SUB Photo*
- Alumni and friends flaunt their U of A colours during a mixer before the Oilers versus Rangers game in New York City in December. (From left) **Terence Filewych**, '96 BEd, **Robert Jekielek**, '03 BCom, **Ryan Preclaw**, '00 BA(Hons), **Stuart Van Leenen**, '97 BA(Hons), **Meiqi Zeng**, '11 BCom
- Blair Kibbler, daughter of **Keith Kibbler**, '00 BCom, is thrilled to participate in a Let’s Talk Science demonstration at Kids Create, a family-friendly event featuring a scavenger hunt, printmaking and more. *Photo by Laughing Dog Photography*
- Deon Druteika**, '95 BSc(Spec), '99 BSc(Pharm), offers advice to pharmacy student **Amanda Leong**, '11 BSc, '13 BSc(Nutr/Food), at a pharmacy mentorship event in February. *Photo by Epic Photography/Ian Jackson*

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

ualberta.ca/alumni/events

U of A alumni share their new books, including a steamy romance, a literary perspective on energy production in Canada and an edition of illustrated travel memoirs by pioneering cyclists.

Compiled by **STEPHANIE BAILEY**, '10 BA(Hons)



MEMOIR
No Return Ticket: A Memoir
by **Nicholas Rety**, '64 MSc, self-published, authorhouse.com

After surviving the Second World War siege of Budapest and the trials of its aftermath, a young Rety enrolls in an English private school with dreams of one day becoming a doctor. Now a retired urologist, Rety looks back at a life well lived, detailing his many travel adventures and the thrill of taking up flying at age 56.



FICTION
Ransom's Voice
by **Gary Dvorkin**, '73 BA, '79 MD, Brown Books Publishing Group, brownbooks.com

Dominique Stein hears many voices in her life. But which can she trust? When she's found not guilty of horrific crimes due to temporary insanity, Dominique is sent to a psychiatric prison for women. The doctor in charge offers her early release if she participates

in a secret research project, and Dominique must navigate her way out of a maze of institutional insanity.



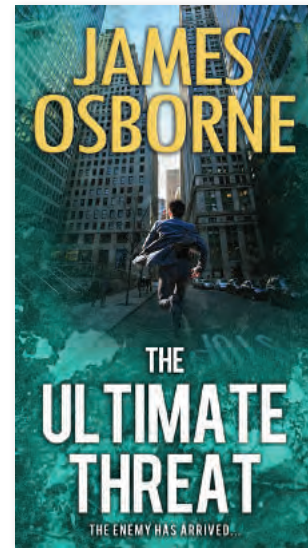
FICTION
Thirst
by **Katherine Prairie**, '83 BSc(Spec), Stonedrift Press, stonedriftpress.com

Explosive violence rocks Canada's Slokan Valley after a bombing attempt at the Keenleyside dam. With the area in military lockdown, geologist Alex Graham sneaks into a restricted zone to locate a silver mine. But a fire derails her plans and almost takes her life. It wasn't accidental — someone wants Alex out of the valley.



TEXTBOOK
Integrated IT Performance Management
by **Kenneth Bainey**, '72 BSc, Taylor & Francis/CRC Press, crcpress.com

Drawing on the author's 35 years as an information technology (continued on page 53)



by **James Osborne**, '72 BA

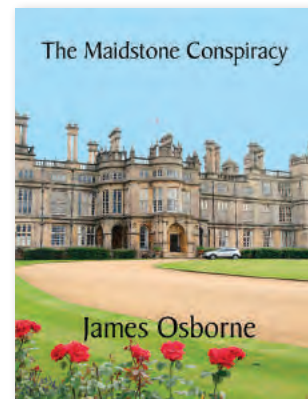
FICTION
The Ultimate Threat
Endeavour Press, endeavourpress.com

When Mark returns from duty in Afghanistan to embark on his new life with Paige, something isn't quite right. Hooded men dressed in camouflage and carrying assault rifles approach and attack. Mark manages to get Paige to safety but by the time they emerge, his stepchildren and the babysitter are gone. With enemies everywhere, including ISIS sleeper cells within the Mafi, can Mark save not only his family but the future of the country as well?



SHORT FICTION
Encounters With Life: Tales of Living, Loving & Laughter
Solstice Publishing, solsticepublishing.com

This collection of 34 short stories spans the spectrum of human emotion: from two city-raised men caught in an Arctic snowstorm to a widower finding new love to a practical joke gone awry.



FICTION
The Maidstone Conspiracy
Solstice Publishing, solsticepublishing.com

Paul and Anne Winston are caught up in a storybook romance—that is, until they face death at the hands of an unknown assassin and fight to preserve the massive business empire they have created. *The Maidstone Conspiracy* is a murder mystery and love story complete with unexpected betrayals, international intrigue and a surprise ending.

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.

PHOTO BY RICHARD SIEMENS

FICTION
Cowards
by **Trent Portigal**, '12 MA, Top Hat Books, tophat-books.com

In a society split between formal European and Saskatchewan-style pragmatic socialism, Lora and Léon Chaulieu — a respected judge and a blacklisted writer, respectively — struggle to keep their family on the right side of the law. When Lora moves away from the family for work, turmoil ensues, leading the whole family down a path of increasing lawlessness.

FICTION
Son of France: A Christopher Kruse Novel
by **Todd Babiak**, '95 BA(Hons), HarperCollins, harpercollins.ca

After investigating the deaths of his wife and daughter in *Come Barbarians*, security agent Kruse again finds himself in a maelstrom of organized crime and dirty politics. When a politician is murdered by a grenade attack in the Jewish quarter in Paris, Kruse is hired to assassinate the killer. The mission leads him not to redemption but down a rabbit hole of deception, violence and unlikely romance.

FICTION
Rita Just Wants to be Thin
by **Mary Walters**, '70 BEd, self-published, createspace.com

At 29 years old, Rita finds herself dissatisfied with her lot in life: she's overweight and married to a narcissistic widower whose kids don't listen and whose dead wife makes Rita feel inadequate. She has tried every diet in the book, but it's not until a family crisis forces her out the door that Rita discovers the easiest way to lose weight is to get rid of the baggage on the inside.

ROMANCE
Breaking Hearts
by **MJ Summers** (Melanie MacGillivray), '97 BSc, HarperCollins, harpercollins.ca

In the last book of the *Full Hearts* series, handsome, devil-may-care cowboy Trey Johnson is shocked to discover that he's about to become a full-time father to a son he barely knows. Travelling to Brazil, Trey embarks on the final act of his life in order to bring his little boy home, while sparks fly with Alessandra, his son's nanny.

LITERARY CRITICISM
Unsustainable Oil: Facts, Counterfactuals and Fictions
by **Jon Gordon**, '01 BA(Hons), '07 PhD, University of Alberta Press, uap.ualberta.ca

Unsustainable Oil asks us to consider the ways that literature can shed light on the culture and ethics of energy production in Canada. Focusing on Alberta's bituminous sands, Gordon argues that literature can help re-evaluate the current cultural-ecological crisis and open space for creative alternatives for the future.

TRAVEL MEMOIR
A Canterbury Pilgrimage/ An Italian Pilgrimage
by Elizabeth Robins Pennell and Joseph Pennell; edited by **Dave Buchanan**, '92 MA, '98 PhD, University of Alberta Press, uap.ualberta.ca

The illustrated travel memoirs of cycling pioneers Elizabeth and Joseph Pennell are still as entertaining today as they were in the 1880s. In this new edition, Buchanan provides cultural contexts surrounding the Pennells' first two cycling adventures to England and Italy that will interest avid cyclists as well as scholars of travel literature, cycling history, women's writing, Victorian literature and illustration.

FICTION
Rumi and the Red Handbag
by **Shawna Lemay**, '95 BA(Hons), '05 MA, Palimpsest Press, palimpsestpress.ca

Theodora's Fine Consignment Clothing shop becomes a small world where Shaya, an academic who abandoned studying the secrets of female writers, finds in Ingrid-Simone a reason to begin writing again, on scraps of paper and Post-its. *Rumi and the Red Handbag* is a journey to the Museum of Bags and Purses in Amsterdam, and a journey to find Rumi, the soul and the secret hidden in a red handbag.

LITERARY CRITICISM
Carol Shields and the Writer-Critic
by **Brenda Beckman-Long**, '09 PhD, University of Toronto Press, www.utpress.utoronto.ca

How do the novels of Canadian writer Carol Shields fit within her critical feminist project? Beckman-Long tackles this question through a reappraisal of Shields' innovative books, including the award-winning *The Stone Diaries*. Beckman-Long reveals Shields' critique of dominant masculine discourses and her deep engagement with women's autobiographical writing.



You Have a Manuscript, Now What?

One grad tells us how she did it

by STEPHANIE BAILEY, '10 BA(Hons)

After beating cancer not once, but twice, **Alison Clarke**, '95 BA, went on to self-publish two children's books. Her third, *The Sisterhood*, was recently published by Little Bird Books. The young adult fantasy trilogy follows a young black heroine and her best friend, a dragon, in their quest to save the universe. We talked to Clarke about her journey from independent publishing, which is self-financed, to mainstream, which is financed by a publishing house. She learned a lot along the way.

■ **Wear many hats.** "You have a lot of agency with self-publishing, but at the same time, you're doing everything yourself: marketing, distribution, getting your stuff out there. There's still a stigma around it, but self-publishing is a good place to start."

■ **Find your own voice.** "Diversity in young adult fantasy literature is lacking — there's some but not enough. It's important for people of colour to tell our stories in our own voices. Growing up, I felt invisible. I wasn't seeing myself in books and I wasn't seeing myself on TV or in movies, and that's really traumatic and damaging to a kid's self-esteem. You feel like you're not part of society. Positive representation in books and movies changes how young people see themselves; it makes them want to achieve different things. And that's very, very important."



■ **Build your network.** "If you want to transition from indie publishing to mainstream, make connections in any way you can. For me, the Writers' Guild of Alberta has been beneficial by helping to connect me to other authors. In my community creative writing workshops I tell students, 'Join the writers' guild!' And the portfolio I built as a result of self-publishing helped me gain early acceptance to a master's program at Hollins University in Virginia, which has led to other networking and publishing opportunities."

■ **Start small.** "I first got published in a fantasy anthology through Little Bird Books — a small press. Because of that, they knew my work, so when I approached them with a manuscript [for *The Sisterhood*], I got published. Since smaller presses are less governed by marketing trends, there's more room for diversity and, in my case, for black authors to tell their stories. Little Bird invited me to England to be on a panel about diversity in young adult literature, where I'll get to meet fantasy authors from around the world — an opportunity that wouldn't have happened outside my involvement with mainstream publishing."

■ **Don't quit your day job.** "To be honest, I don't know any writers who just write. All the writers I know have a job: a full-time job or a part-time job. And that's the reality."

■ **Keep calm and carry on.** "My battle with cancer was a lesson in endurance and perseverance that I applied to publishing. Even though your manuscript may be rejected many times, just keep submitting it! It's never an easy process because you put your heart and soul into it. But when you have the product, the manuscript, don't give up on it. Find a way, talk to people, do what you have to do to get it out there." ■

professional, this textbook demonstrates the value of integrating performance, strategic and operational management by creating a practical, results-driven measurement and accountability framework.

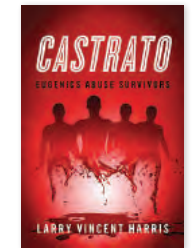


HISTORY/POLITICS
Apartheid in Palestine: Hard Laws and Harder Experiences

by Ghada Ageel (editor); Samar El-Bekai, '07 BSc(Spec) (contributor), University of Alberta Press, uap.ualberta.ca

There are more than two sides to the conflict between Palestine and Israel: there

are millions. This volume gathers stories that humanize the historic processes of occupation, displacement, colonization and, most controversially, apartheid.



FICTION

Castrato: Eugenics Abuse Survivors

by Larry V. Harris, '66 BEd, '68 BA, self-published, eBook

Like thousands of other poor, Aboriginal and immigrant children who were sent to the residential Provincial Training School in Red Deer, Alta., Jordan Larue was sterilized as a child and scarred for life. This novel is based on interviews with survivors of the school.

by Adrian O'Sullivan, '69 MA



HISTORY/POLITICS

Nazi Secret Warfare in Occupied Persia (Iran): The Failure of the German Intelligence Services, 1939-45

Basingstoke: Palgrave Macmillan, palgrave.com

This investigation into the secret world of wartime Persia (now Iran) tells a tale of catastrophic intelligence failure. O'Sullivan's historical narrative exposes the problems, pressures and personalities among the competing German intelligence services that targeted Persia and describes the highly effective methods employed by the Allied security forces that resisted them.



HISTORY/POLITICS

Espionage and Counterintelligence in Occupied Persia (Iran): The Success of the Allied Secret Services, 1941-45

Basingstoke: Palgrave Macmillan, palgrave.com

A companion to *Nazi Secret Warfare in Occupied Persia (Iran)*, this volume tells the other side of the same fascinating story, introducing us to spies, spy catchers and spymasters and examining how regional security forces successfully staved off Nazi attack. The book analyzes Anglo-American and Anglo-Soviet intelligence relations as the three Allies moved toward postwar realignment and the Cold War.

1960s



Gov. Gen. David Johnston (centre) awarded alumna Bonnie Buxton and her husband, Brian Philcox, the Meritorious Service Medal for raising awareness about fetal alcohol spectrum disorders.

'60 Bonnie Buxton, BA, and her husband, Brian Philcox, were presented with the Governor General's Meritorious Service Medal at Rideau Hall in Ottawa in December.



David McNeil

The award recognizes their efforts to build awareness of the dangers of prenatal alcohol exposure. Bonnie and Brian began their advocacy work when their adopted daughter, Colette, was diagnosed with alcohol-related neurodevelopmental disorder. Colette, now 36, is able to lead a relatively normal life despite her learning disabilities, says Bonnie. In 2004 Bonnie wrote a book, *Damaged Angels*, recounting hers and other families' experiences with fetal alcohol spectrum disorders and exploring options for treatment and intervention.

After Colette's diagnosis in 1999, Bonnie and Brian founded FASworld Canada and FASworld Toronto, a monthly support group for families. Through FASworld Canada they also launched FASDay, the international day for FASD awareness. Bonnie and Brian live in Toronto and continue to run both organizations, regularly holding interactive workshops, presentations and consultations.

'67 David McNeil, BSc(ChemEng), retired in January after 28 years as clerk of Alberta's legislative assembly. David served as de facto



'67 Darwin Park, BPE, received the Award of Excellence from the City of Spruce Grove, Alta., in July. The award is given to people who have provided exemplary leadership and volunteer service to the city and regional community.

Darwin's community service began soon after he arrived in Spruce Grove in 1969, when he was hired as the town's first parks and recreation director. A volunteer for decades, he served on both the Heritage Agricultural Society and the Multicultural Heritage Board. His interest in history also led him to work with the Spruce Grove Legion, chairing the Cenotaph Replacement Program to commemorate area residents who died in war. He has volunteered for sporting events, founded the Parkland Pavement Pounders Running Club and was a member of the 2012 Winter Games Bid Committee.

Darwin, now retired, enjoys spending time with Betty, his wife of 40 years, their two children and five grandchildren.

deputy minister of the assembly office, managing daily operations, calling out orders of business in the house and overseeing the production of assembly documents and records.

David attributes his skills in part to his undergraduate training in chemical engineering at the University of Alberta. "Part of being an engineer is being a problem solver," he told *U of A Engineer* magazine in 2011. "There's always a problem here to be solved."

FOREVER GREEN & GOLD

We all have a campus memory—whether it's a personal moment or a shared experience that connects us all. Share your memory at alumni.ualberta.ca/connect/class-notes.

SAVING PEMBINA HALL

Making good friends and fighting the good fight to save the historic student residence from destruction

IT WAS AUGUST 1973

and I had arrived in Edmonton from Great Britain to work as a teaching assistant at the University of Alberta. The drive from the airport to campus was dreary and unwelcoming, but something changed when I stepped out of the taxi at Pembina Hall.

At 44 years old, I was relieved to find that all of the women living in Pembina were mature students who had come to the U of A from abroad, like me. They came from Czechoslovakia, Uganda and Hungary, among many places. There was Josephine from Boston, and Sheila from Newcastle, England, who was used to Canadian living and had a car. By my second day at Pembina, I was already booked to have an early-morning game of tennis with some students from Quebec. Before long, the red brick building felt like home.

Pembina Hall was a gentle transition to the different style of life in North America, especially the Siberian winters about which we had been forewarned. There was a wonderful feeling of camaraderie in the building. I remember Mrs. Klapstein, the telephone operator, would bring us Thermoses of coffee in the evening, and we would sit with her, drink her coffee and watch the news on the building's only television.

But our halcyon days were numbered. In December, at the end of my first term, we all received eviction notes under our doors—within two months Pembina, built in 1914 and one of the original U of A buildings, was to be demolished. We heard rumours it was because the Agriculture Building was to be expanded, but the university said it was due to fire safety concerns. The fire escapes were outside, the many layers of



paint and varnish on the walls were highly flammable and the wiring throughout the building was outdated—if something sparked a fire, we would be doomed.

We were shocked. Many of us had come from Europe, where old buildings were treasured and preserved for their history. How could we let Pembina be demolished without a fight? We decided to do something. Eileen from Nova Scotia put a sign on her door inviting all students who wanted to save Pembina to meet at her room after supper. She gave us a list of jobs: collect signatures, contact the newspaper and make

an appointment with university president Max Wyman. Eileen requested that we all report back to her in a week. The meeting went well with the president, who was impressed that we were organized and not rabble-rousers.

The biggest obstacle we faced was the fire marshal, who called Pembina a fire hazard. But we were determined. We spoke with architects who insisted that Pembina was expertly built with a sturdy concrete frame. This convinced the university to rethink the demolition. Instead of being gutted or destroyed, Pembina got extensive upgrades including new wiring, plumbing, fire doors, concrete fire-escape stairwells and an automatic ionization fire alarm system.

That year at U of A was one of the happiest in my life—our collective efforts saved Pembina Hall. In 1974, Pembina became co-ed. And years later we heard that the graduate students were being evicted once again so the building could be turned into offices. Though they may look different on the inside today, the three oldest buildings on campus—Pembina, Athabasca and Assiniboia Hall—remain icons of the

University of Alberta, prominently displayed on brochures for prospective students.

It would fulfil the Pembina Hall story if students of that era could all get together. I wonder if Eileen could once again wave her magic wand and organize a reunion?



Wendy M. Davis, '75 BS(OT), is a retired occupational therapist who lives in Edmonton with a houseful of exotic birds, a passion inherited from her father. Her book, *Dal & Rice* (2008), recounts the five years she spent in India as a child.

1970s

'70 Selwyn Jacob, BEd, celebrated the release of the documentary he produced, *Ninth Floor*, which had its world première at the 2015 Toronto International Film Festival. *Ninth Floor* deals with the 1969 Sir George Williams Riot — a watershed moment in Canadian race relations — when Sir George Williams University students protested the school's handling of complaints of racism. *Ninth Floor* toured Canadian cities with the TIFF Top Ten Film Festival.

At the U of A, Selwyn was mentored by film producer, author and broadcaster Fil Fraser, '08 DLitt (Honorary), who also served on the U of A senate. [Alumni might recognize Fil as co-anchor of CBC Edmonton's supper news in the early 1970s and producer of the 1977 film *Why Shoot the Teacher?*]

Selwyn later completed a master's degree in film studies at the University of Southern California. His films explore the experiences of African-Canadians and Asian-Canadians as well as other multicultural communities. Since 1997, Selwyn has worked as a producer with the National Film Board of Canada.



'70 Mary W. Walters, BEd, recently celebrated the achievements of her two sons: Dan Riskin, '97 BSc, received a University of Alberta Distinguished Alumni Award and (the following day!) Matthew Riskin, '02 BCom, '14 JD, was admitted to the Law Society of Alberta. Dan is the co-host of *Daily Planet* on Discovery

'77 Sirish Shah, PhD, recently won the Institute of Electrical and Electronics Engineers Transition to Practice Award, recognizing distinguished contributions to the transition of control and systems theory to practical, industrial or commercial systems. The award was presented to Sirish at the 2015 IEEE Multi-Systems Conference after his plenary talk titled, "Surfing the Digital Tsunami With Data Analytic Tools." Sirish has been a professor in the Faculty of Engineering at the University of Alberta since 1978.



Canada, and Matthew is an associate with Bennett Jones LLP.

Mary just published her sixth novel, *Rita Just Wants to Be Thin* (see page 51), and has established an online community, Success After 60 (*successafter60.net*), to support fellow boomers who are still passionate about fulfilling their dreams.

'72 James Osborne, BA, won four awards in the 18th annual Preditors & Editors website readers poll. James's collection of short stories, *Encounters With Life: Tales of Living, Loving & Laughter*, was awarded Best Short Story in the open category. His novel *The Ultimate Threat* placed second in Best Thriller Novel. His most recent novel, *The Maidstone Conspiracy*, placed third for Best Mystery Novel (see page 50). James also placed third for Best Author among more than two dozen finalists from across the English-speaking world.

James was raised on a farm in Drayton Valley, about 130 km west of Edmonton. Asked whether his early years on a remote farm had any influence on his writing career, James said he remembers one long winter: "I was perhaps eight years old and had little to read. Our resources were limited. My choices were

one of my mother's romance novels, not at all enticing to a boy my age, or two illustrated medical manuals my parents deemed their pre-pubescent son much too young to read. A third choice was the complete 1,900-page Columbia Encyclopedia, which I went through page by page. I assume my parents determined I was a committed reader because the next Christmas I received my first novel, *Roping Lions in the Grand Canyon*, by Zane Grey."

James was a senior editor for The Canadian Press in Edmonton and founded programs in journalism and communications at the University of Regina and MacEwan University. He has also worked as an investigative journalist, teacher, army officer, business owner and vice-president of a Fortune 500 company.

'75 Allan Mah, BCom, is now an appeals commissioner at the Workers' Compensation Board with the government of Alberta and is a member of the board of governors at the Northern Alberta Institute of Technology in Edmonton. He is also president of Mah & Associates Consulting, specializing in commercial and industrial real estate, financial and management.

TOP PHOTO BY RICHARD SIEMENS

A Cinderella Moment

FILM PRODUCER AND ALUMNUS JOSH MILLER WALKS THE RED CARPET AT THE TORONTO INTERNATIONAL FILM FESTIVAL



Fans cheer as actor Donald Sutherland makes his way into the TIFF screening of *Forsaken*, co-produced by alumnus Josh Miller.

My tuxedo was telling me that I'd put on a few pounds since our last formal soiree. Nothing to be done now, so I refocused. I was in a limo with my wife, Michele, headed for a red carpet ceremony at the 2015 Toronto International Film Festival.

TIFF, as it's known by industry insiders, is one of the annual Big Three international film festivals, the other two being the Cannes in France and the Berlinale in Germany. I've produced many films in my career, but with titles like *Intern Academy* and *Freezer Burn: The Invasion of Laxdale*, none had been chosen to screen at the Big Three.

Tonight would change all that. A western I co-produced called *Forsaken* had been selected to première at a TIFF gala screening, a prestigious event. The film, which was shot in Alberta, features Kiefer and Donald Sutherland and Demi Moore. It's the first time the Sutherlands have played father and

son onscreen, and they were riding in the limo just ahead of us.

As we pulled up to Roy Thomson Hall, the scene outside was everything one could imagine: paparazzi snapped flash photos while fans, packed together behind velvet ropes, cheered madly. The Sutherlands graciously greeted their throngs of admirers on the red carpet and posed with them for selfies.

The celebrity rush I felt was intoxicating. I'm a guy who pulls on his tuxedo trousers one leg at a time, yet here we were, being feted like stars. Michele is a former Broadway actress who has signed autographs at stage doors. Her advice to me was to "soak it in."

As we strutted down the red carpet, a woman beckoned me over. Her preteen daughter wanted to take a selfie with me. My feeble response was, "I'm just the producer," but her mom said it didn't matter. Even proximate celebrity is a desirable commodity.

We gathered in the green room prior to

the screening of *Forsaken*. Michele chatted with Donald about the lengthy monologue he had delivered in the 1991 film *JFK*. Oh, and she got a selfie with him, too. At the appointed hour, our group stepped onstage and, as I surveyed the crowd, I realized there wasn't an empty seat in the 2,600-person theatre.

We sat down and the film began. The audience laughed, wept and cheered in all the right places. We went to the after-party to await the reviews from the critics, who had pre-screened the film several days earlier. *Daily Variety* raved about it. *The Hollywood Reporter* gave it a thumbs-up. We had hit the daily double.

The rest of the evening was like a dream, almost too good to be true. I wondered if I had been parachuted into some sort of fairy tale. I would have pinched myself if

my tuxedo wasn't doing so already.

Afterward, we returned to our hotel in our rental car, which now felt like a pumpkin. Our Cinderella moment was over. The next day Michele and I travelled to New York to visit my in-laws. Surely they'd be impressed with my new celebrity. I regaled them with our tale of the red carpet. They smiled politely and asked how our kids were doing. I quelled a sudden urge to scrub the floor. Fame, they say, is fleeting. It hurt, but then, as noted, so did my cummerbund.



Josh Miller, '77 BA, is president of Panacea Entertainment, an independent film production company based in Edmonton. *Forsaken* was released in

Canada March 1 through Video on Demand and iTunes. It was released in select U.S. theatres and U.S. Video on Demand on Feb. 19.

THINKSTOCK/MICHELE DESGROSELLIERS

1980s



Ryerson's new Student Learning Centre

'84 Peter Vankessel, MBA, was senior project manager for Ryerson University's newly constructed Student Learning Centre in the heart of downtown Toronto. The building was selected by architectural *Azure Magazine* as one of "The 10 Best Buildings for 2015." Over his 34-year career, Peter has managed many high-profile projects across North America.

ORDER OF CANADA HONOURS ALUMNI

Three alumni were recently honoured by the Order of Canada: **Cathy Roozen**, '77 BCom, '09 LLD (Honorary), business leader and philanthropist; **Donald J. Taylor**, '58 BSc(CivEng), '60 MSc, entrepreneur (promoted to officer); and **Arthur B. McDonald**, '11 DSc (Honorary), physicist (promoted to companion). McDonald was co-winner of the 2015 Nobel Prize for Physics, for the discovery of neutrino oscillations.



Garth Kirkham

Peter is president of Nexus PM Inc., a firm providing strategic capital project planning and management services in the Greater Toronto Area.

'83 Garth Kirkham, BSc, was recently presented with the Association of Engineers and Geoscientists of British Columbia's C.J. Westerman Memorial Award, the province's highest honour for a geoscientist. The award recognized Garth's technical achievements in geoscience and his service to his profession and his community.

As president of Kirkham Geosystems in Burnaby, B.C., Garth specializes in supplying high-technology services and related products to the mining, oil and gas, geotechnical and environmental industries. In 2010 he was awarded the CIM J.C. Sproule Memorial Plaque in recognition of a long-standing dedication to the development and practical

use of 3D geological and geostatistical modelling for northern mining projects. Garth currently serves as president of the Canadian Institute of Mining and lectures at universities and venues across the country.

'89 Brenda Keutzer (Keay), BEd, '13 MEd, recently travelled to rural Ethiopia to teach at three-week-long English-language boot camps sponsored by ANSO Collectives & Educational Support Society. The goal of the camp is to help students, ages 11-25, become more fluent in English, as their national high school exams are in English.

Brenda writes: "It was an amazing experience—the students were so wonderful!



Brenda Keutzer (Keay) and Ethiopian students

"They were eager to learn, caring, happy and appreciative. I honestly feel I learned as much from the students as they did from me. It was truly a life-enriching experience! I recommend it to anyone who has an adventurous spirit and a thirst for helping others and learning about other cultures."

'89 Steven Tötösy de Zepetnek, PhD, was elected as a member of the European Academy of Sciences and Arts in September 2015. The academy connects more than 1,700 scholars worldwide and aims to discuss current issues across different academic fields and cultures. Steven has taught at the University of Alberta, the University of Halle-Wittenberg, Northeastern University, and in Europe and Asia as a distinguished visiting professor. Now retired, Steven is a visiting scholar in comparative literature at Purdue University, where he is also editor of the quarterly *CLCWeb: Comparative Literature and Culture* and editor of a book series in comparative cultural studies for Purdue University Press. He lives in Boston.



'87 Bonnie Shapiro, PhD, was selected as the recipient of the 2015 Alberta Emerald Foundation Individual Commitment Award. A specialist in science and environmental education in the Faculty of Education at the University of Calgary, Bonnie has worked with student teachers, practising educators, graduate students and members of the environmental education community. Recently, she led the design and creation of a new graduate certificate program in education for the environment.

TOP PHOTO BY RICHARD SIEMENS



Stepping Off the Stage

AFTER FOUR YEARS, THE OUTGOING U OF A CHANCELLOR LOOKS BACK

As chancellor of the University of Alberta since 2012, **Ralph Young**, '73 MBA, has presided over dozens of convocation ceremonies and has shaken hands with thousands of students as they crossed the stage at the Jubilee Auditorium. Each ceremony is special.

"There's a certain amount of routine to convocation, but it's also a very moving event," Ralph says. He reflects on the song *Je Te Retrouve* performed by the university's Chorale Saint-Jean at every convocation alongside a sentimental photo slide show:

"I get shivers up my spine every time I hear it—and I hear it 13 times a year," he says with a laugh.

This year's spring convocation will be Ralph's last, with his four-year volunteer term as chancellor ending in June.

In addition to his role at convocation, the chancellor represents the university at ceremonial events and chairs the U of A senate—the provincially mandated body that represents community interest at the university.

In 2013, Ralph retired from a 42-year career at Melcor Developments Ltd., which included 16 years as CEO. But community involvement alongside his day job has

always been a priority for Ralph. In addition to his service on boards for MacEwan University and Alberta College, he is past president of the U of A Alumni Council and previously served as the alumni council representative for the university's senate and board of governors. Ralph and his wife, Gay, have donated generously to several U of A programs.

Given his interests, accepting a nomination to become chancellor in 2012 was "natural," Ralph says.

It wasn't until he joined the senate that he realized the enormous impact the U of A has not only on Edmonton but on Alberta and Canada, as well.

The university's next chancellor, who has yet to be named, will be installed June 15. Ralph may continue to be involved with the U of A Properties Trust Inc., which oversees developing real estate owned by the U of A to grow the university's endowment.

For Ralph, witnessing the impact of a university education makes his commitment to the U of A—and all of those convocation ceremonies—worth every minute.

"Education is one of the most important things in life. [It] gives people an opportunity regardless of their background." —KATE BLACK

2000s

'02 Lisa Workman, BPE, '04 MA, has been named one of Life Fitness' Global 2015 Top Ten Personal Trainers to Watch. Lisa has been involved in the fitness profession for more than 15 years as a certified exercise physiologist, fitness centre manager, fitness writer, lecturer and group exercise instructor. She is the creator of the website *WhyIMove.com*, which explores what inspires people to be physically active.

'04 Matt Jeneroux, BA, was elected as a Conservative member of Parliament in the October federal election for the riding of Edmonton Riverbend. A previous member of the Alberta legislative assembly, Matt is one of the youngest candidates to be elected to both orders of government. He was also recently appointed official Opposition critic for Western Economic Diversification Canada.



Personal trainer Lisa Workman with Chris Clawson, president of Life Fitness

WE'D LOVE TO HEAR WHAT YOU'RE DOING.

Tell us about your new baby or your new job. Celebrate a personal accomplishment or a volunteer activity or share your favourite campus memories. Submit a class note at alumni.ualberta.ca/connect/class-notes or email alumni@ualberta.ca. Notes will be edited for length, clarity and style.

'09 Shane C. Groendahl, BSc(ElecEng), Dave Vander Plaat, '13 MBA, and Matt Willerton, '10 BA, came together to start Blindman Brewing in 2015. They write: "Dave and his business partner decided to move forward with their dream of starting a brewing company when the Alberta Gaming and Liquor Commission lifted long-standing minimum production quotas in 2013. They then recruited Matt for his past experience running operations at Alley Kat Brewing Co. in Edmonton and Shane for his extensive skills as a home brewer. Shane is also the founder of Edmonton Beer Geeks Anonymous, a club for craft beer enthusiasts. Like our namesake river, we meander—in our case, through beer styles and brewing techniques. We brew out of Lacombe, Alta., on a 15-barrel, tricked-out, two-vessel brewhouse that we installed last August. Recently, we blew the engine on our '79 van, "The Dream Machine," on a beer run so now, unfortunately, we are forced to drive around in soulless, shiny vehicles." (See page 46 for a review of Blindman's River Session Ale.)



Blindman Brewing founders (L to R): Matt Willerton, Dave Vander Plaat and Shane C. Groendahl

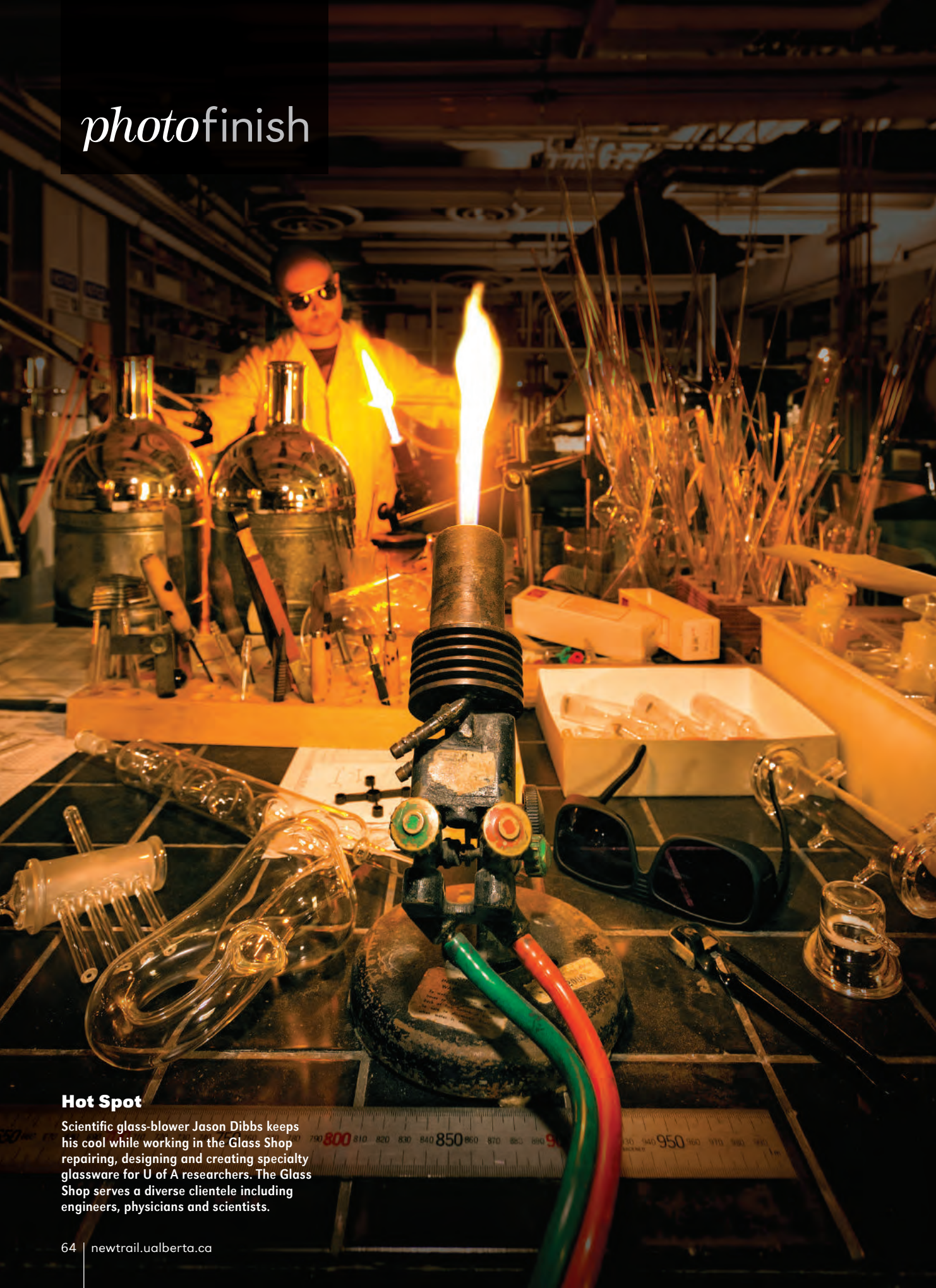
'14 Salim Azzam, MDes, is a Lebanese designer and illustrator who recently moved back to his home country to open a studio in Beirut. He is currently working on community-based projects and developing his own design practice oriented around need rather than consumption.

Salim uses his design and illustration skills to document traditional oral stories, combining storytelling with collaborative research and design. His U of A thesis research project explored how engaging low-literacy elders in creating visual narratives can help retain cultural heritage. Salim worked on community-based projects in South Africa that aimed at empowering local women with HIV through creativity.



Salim Azzam with his aunt, El Slayman, a traditional bread maker

*photo*finish



Hot Spot

Scientific glass-blower Jason Dibbs keeps his cool while working in the Glass Shop repairing, designing and creating specialty glassware for U of A researchers. The Glass Shop serves a diverse clientele including engineers, physicians and scientists.

PHOTO BY RICHARD SIEMENS

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