APEGS
Association of Professional Engineers & Geoscientists of Saskatchewan

THE PROFESSIONAL EDGE

ISSUE 173 MARCH/APRIL 2018

THE PROFESSIONS OUTDOORS

EXCLUSIVE

FINANCIAL SECURITY PROGRAM

for engineers, geoscientists and their families

Turn savings into more money in retirement with a RRIF, LIF or annuity

Get group pricing

Lower fees

More income in retirement

How much more?

Program participants get free investment guidance

Start today – contact Angela Harvey at 1-866-788-1293 ext. 5786 or angela.harvey@gwl.ca or visit www.infosite.grs.grsaccess.com/engineers-canada

Sponsored by:

engineerscanada
ingénieurscanada

THE Great-West Life ASSURANCE COMPANY

Assumptions: The individual MER (management expense ratio) was calculated using the average Canadian equity mutual fund of 2.34 per cent obtained from Morningstar January, 2010. The group IMFE (investment management fee and expense) was calculated using the Jarislowsky Fraser Canadian Equity fund of 1.19 per cent plus GST. We've assumed a rate of return of five per cent on an investment of $500,000. $25,000 was withdrawn at the end of each year for 12 years. The accumulated assets in the chart have been rounded to the nearest dollar.

Achieving a Safe and Prosperous Future through Engineering and Geoscience

Editorial provided by:

Martin Charlton Communications
#300 - 1914 Hamilton Street, Regina, Saskatchewan S4P 3N6
T: 306.584-1000, F: 306. 584-5111, E: marylynn@martincharlton.ca

Editor:

Lyle Hewitt, Managing Director, Martin Charlton Communications
E: lyle@martincharlton.ca

Design and Layout:

Jo Anne Lauder Publishing & Design, T: 306.522-8461, E :joanne.lauder@sasktel.net

Submissions to:

The Professional Edge Editorial Committee
300 - 4581 Parliament Avenue, Regina SK S4W 0G3
T: 306.525.9547 F: 306.525.0851 Toll Free: 800.500.9547
E: apegs@apegs.ca

POSTMASTER

Return undeliverable copies to: *The Professional Edge*,
APEGS, #300 - 4581 Parliament Avenue, Regina SK S4W 0G3

Advertising in *The Professional Edge*

It pays to advertise in *The Professional Edge*. You reach 5,000 P.Engs, P.Geos, Engineers-in-Training and Geoscientists-in-Training in Saskatchewan and 5,000 others outside Saskatchewan.

Advertising Rates and Mechanical Requirements

Advertising Rate, per dimensions (width x height) insertion. Colour as published. Film or electronic files. Electronic art must be at least 300 dpi in a JPEG, TIFF or EPS format.

COVERS		1x	3x	6x
Outside Back:	$1,500	$1,500	$1,250	$1,100
Inside Front/Back:	$1,200	$1,200	$1,000	$900

PAGES		1x	3x	6x
Full page	8 x 10 1/2	$1,000	$900	$825
2/3 page	5 1/4 x 10 1/2	$800	$700	$625
2/3 page	8 x 7	$800	$700	$625
1/2 page	8 x 5	$700	$600	$525
1/3 page	2 1/2 x 10 1/2	$600	$525	$450
1/3 page	5 x 5	$600	$525	$450
1/3 page	8 x 3 1/2	$600	$525	$450
1/6 page	2 1/2 x 5	$300	$275	$250
Bus. Card	3 1/2 x 2	$150	$125	$100

** Applicable GST/HST will be added to advertising rates.*

Submission Deadlines

MAY/JUNE 2018: May 1, 2018 **JULY/AUGUST2018:** July 1, 2018

Subscription Rates*

Members and Licensees - Free. Others in Saskatchewan - $12/year. Elsewhere - $20/year.

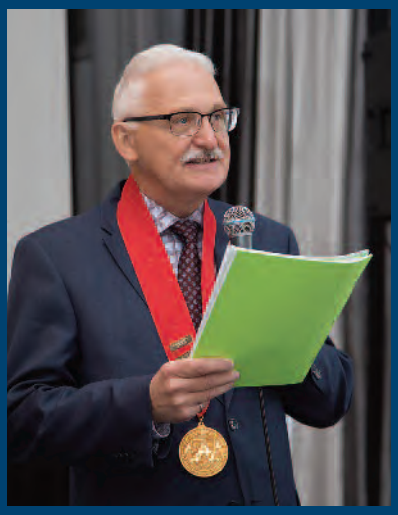
Table of Contents

ISSUE 173
MARCH/APRL 2018

The Professions Outdoors

BY MARTIN CHARLTON COMMUNICATIONS

President's Message



Ernie Barber, P.Ag., P.Eng., APEGS President

APEGS is an organization with a focused and critically important mandate - to regulate professional engineering and geoscience in Saskatchewan for the protection of the public and the environment and for the benefit of society. This legislated mandate is distinctive to APEGS and is not shared with any other organization. The APEGS vision is "a safe and prosperous future through engineering and geoscience". This vision is very much shared with its members and with many provincial and national organizations, working from their unique mandates and all working collaboratively to achieve what none can do alone.

Professional engineers and geoscientists design solutions that make this province and this planet, a better place for all to live. This edition of *The Professional Edge* features stories about the kinds of work that take professional geoscientists and engineers outdoors and into the field. I invite you to read these stories in the context of the collaboratively held vision for a safe and prosperous future through engineering and geoscience.

Primary and secondary school teachers help young persons to believe they can be engineers and geoscientists. Universities recruit a diverse group of students into professional programs, offer them the best possible learning environment and prepare graduates for citizenship and satisfying careers. Engineers Canada, acting on behalf of the provincial and territorial engineering regulators, maintains the system for accreditation of engineering degree programs. Engineering and geoscience consulting firms and a network of employers of professional engineers and geoscientists create opportunities for satisfying careers and continuous workplace learning.

Industry consortiums, R&D organizations, universities and polytechnics, along with many other public and private institutions and individual businesses, engage in discovery and applied research and development, to generate knowledge and improve upon engineering and geoscience solutions. Geoscientists and engineers have personal scopes of practice, which may evolve over their careers. They use discoveries along with their training and experience to create new processes and products for employers and clients.

Engineers Canada and Geoscientists Canada advocate to the federal government, foster recognition of the value and contribution of the professions to society and promote diversity and inclusion in the professions. ACEC – SK works to create an understanding within governments, infrastructure owners and the public about the value that is created through professional engineering. The Engineering Institute of Canada exists to "develop and promote continuing education, initiate and facilitate interdisciplinary activities and services, lead member societies in defining and building the future of engineering and advocate the values and benefits of engineering."

APEGS members accept personal responsibility to maintain their technical competencies through reflective professional practice, lifelong education and learning. They act always and only in ways that are consistent with the Code of Ethics, section 20 in the Regulatory Bylaws of APEGS. They are mentors. They affect attitudes toward and within the professions by how they act. They can be powerful advocates for their professions.

It is essential that APEGS, engineering and geoscience organizations and the businesses that employ engineers and geoscientists perform within their own distinctive mandates, recognize the

mandates of others and collaborate to achieve a safe and prosperous future through engineering and geoscience. Because APEGS is the only organization that directly includes, as its members, all those engineers and geoscientists who practise their professions in Saskatchewan, APEGS is going to be called upon in many ways and by many constituencies to collaborate and sometimes to lead in initiatives and programs intended to achieve our collective vision. Nothing that APEGS does can get in the way of its principal mandate for regulation of the professions. To do otherwise could threaten the confidence that the public and government have in APEGS for self-regulation of the professions. That is why collaboration with other engineering and geoscience organizations is so important to achieve the APEGS vision.

The Professions
Outdoors

A common misconception about engineering and geoscience among the general public is that members of the professions are desk-bound office dwellers who toil away hunched over tables staring at blueprints or core samples.

The reality is that, among all of Canada's professions, engineering and geoscience offer perhaps the most exciting array of opportunities for its members to get away from office life and explore the wilderness or the world while practising their skills.

In this issue, we'll look at a few engineers and geoscientists who have broken the stereotype by spending much of their working lives exploring the wilderness and travelling the world.

In Search of the House Special Burger

BY MARTIN CHARLTON COMMUNICATIONS

You can't stump former APEGS President Steve Halabura, P.Geo. on the names or geography of Saskatchewan small towns. He's been to most of them – and eaten in most of their diners.

"People sometimes have this glamorous image of geologists paddling canoes and living in the wilderness. My career has been more like a bad travelling salesman. I always say that the way to spot a geoscientist in a greasy spoon is to look for the scruffy, bleary-eyed person choking down runny eggs and bad coffee while poring over the menu to try to decipher the two-for-one burger deal," Halabura says.

Even so, it was the more glamorous aspects of geoscience that landed Halabura in the profession – by default.

"I was originally trying to get into medical school. In a high school summer job in La Ronge, I saw geological bush crews heading out into the wilderness for the summer and thought that would be a cool way to pay my way through college. But then chemistry proved me too stupid for doctoring so I switched over to geology."

A Farm Boy's Dream

In his fourth year of university and after two summers of bush work exploring for uranium, Halabura found his true calling when he got a summer job with Pacific Petroleums.

"I'm from a farm background. These days, you would call our family's farm a sustainable, non-GMO, chemical-free, pesticide-free operation. In those days, we just called it being poor."

> "With Pacific Petroleum, they gave me a truck – that worked! And that you didn't have to put oil into twice a day. And they gave me a credit card! As a farm boy, I thought I'd died and gone to heaven. I decided then and there that I was done with bush work and would stick to petroleum from then on."

Although he was out of the bush, Halabura preferred to remain in the field.

"I went into consulting work mainly because I didn't like the idea of being tied to a desk job with regular hours, a suit and all that. I also diversified into potash to help even out the ups and downs of the oil industry."

Halabura's potash work started off consulting on mining and tailings projects for PCS. Then in 2005, he branched out further into potash exploration.

"Anglo Potash contacted me because they realized there were a bunch of expired potash licenses that had to be refiled. This lit off a new era in potash exploration in the province–and it introduced me to a whole new set of roach motels and diners."

Steerage-Class World Traveller

Halabura's exploration expertise also opened new doors for him for international consulting work. His travels took him around the globe, to Russia, China and Europe. It did not, however, make his lifestyle any more glamorous, and very often, this was by choice.

"Geologists tend to be back-of-the-bus people on these expeditions. You've got the executives and managers out front in the limos. Then you've got the engineers at the front of the bus. Then you've got the translators, geologists and other support staff at the back of the bus – but that's the fun place to be."

Likewise, Halabura has not been able to do much tourism in his extensive travels.

> "People always ask me 'Oh, you've been to that country. Did you get to see that famous museum?' And, of course, I didn't. I saw my hotel, the bus and the mine. The companies are watching their dollars so they don't want to keep you there any longer than is absolutely necessary."

From the Ground Level

While Halabura has had little time for sightseeing, he met many ordinary folk in the countries he visited.

"The one advantage that geoscientists have over engineers on these trips is that the companies want us to take some time to study the resource. Geoscience is a grassroots game. You can't just take a core sample and take it back to the lab. You have to get right in there, study the natural environment and talk to the miners and other people in the area."

This has given Halabura many opportunities to learn about local culture in ways that no tourist would ever see.

"I remember once talking to Russian miners out in the Urals, out where the gulags used to be. The place was 1,000 miles from Moscow but it was also like going 30 or 40 years back in time. I was sitting around with these old miners who were smoking their Red Star cigarettes and listening to Soviet-era military music."

> "When the conversation turned to politics, the old miners didn't think much of the government and said 'One day we'll get back to basics.' I asked them, 'Oh, you mean back to communism?' They said, 'No, no, no. Back to the Czar!'"

In China, likewise, Halabura noted vast differences between the city and the country.

"Even after seven trips, China still amazes me on many levels. Beijing is an astounding city - it just takes your breath away. It's so dynamic and fast-growing. But out in the country things are more rudimentary. I've always been amazed at how inventive Chinese farmers are. In Canada, farmers feel hard done by if they don't have the latest and best farm equipment. In China, they're happy to have an old lawnmower engine, a couple of bike wheels and some two-by-fours to create a makeshift rototiller. Farmers are inventors and creators the world over!"

Culture and Politics

Halabura's experiences in Jerusalem helped him understand, at a gut level, the complexities of Middle Eastern politics.

"The stark fact is that you have a lot of people and not much remaining unclaimed real estate so people have been fighting for thousands of years over those last bits of unclaimed land. They all have their own story to justify why they deserve that land more than others. It was an eye-opener about how culture shapes one's perception of reality."

Halabura also encountered such cultural distortions, in a more humorous way, in his travels to Germany (a country that he regards as "der heimat" – the homeland – of potash).

> "I had learned a bit of German to be able to read technical reports. I tried to use it conversationally, but the Germans implored me to stop. 'Please, please, stop butchering our beautiful German language.'"

Traveller's Life Hacks

During his time on the road, Halabura has compiled a lengthy list of travel tips and tricks.

- "You can disarm a nasty drunk faster with humour than by confronting him."
- "You will never get food poisoning by ordering the house special burger."
- "Always watch the local news wherever you are staying, even if you don't understand the language. It will give you a better sense of your hosts' culture and values."
- "If presented with weird foreign food, take a big bite, chew it with gusto and say, 'That's delicious!'"

Halabura also learned some tricks peculiar to his lifestyle.

> "I don't drink or smoke, which can be a handicap in countries that have strong drinking or smoking cultures. To avoid offending my hosts, I've had to learn to be an expert non-drinking, non-smoking drinker and smoker."

His main trick was to discreetly ask the server to bring him something non-alcoholic that resembled what the hosts were drinking.

"I can't count the number of times I've drunk my hosts under the table this way. The next day, they'd be, 'Oh, I have such a hangover. But look at that weird geologist guy! He had more to drink than me. I don't know how he can even stand – now there's a man!"

Journey's End

As satisfying as his days on the road were, they also took their toll on him.

> "When I was working full-time, I was spending up to 75 per cent of my time somewhere else – from New York to Moscow to Vegreville to P.A. I've been to Three Hills. I've been to Two Hills. I haven't been to One Hill but I'm sure it exists somewhere. I've tried to write a geologist version of 'I've been everywhere' but the list is too long."

Halabura still consults ("Can I put in a plug for Prairie Hunter Exploration Ltd.?") but his travelling days are behind him.

> "I don't miss the travel. I missed home more than I craved the road. Today I spend my time sitting on my porch and tending my Ukrainian-style garden. If and when I get consulting requests, I'm pretty good at coming up with reasons not to leave home to do them – such as my cabbages need hoeing."

Good "CLEANS" Living

BY MARTIN CHARLTON COMMUNICATIONS

When Kelsey Hewitt, Engineer-in-Training looks out over Lake Athabasca from her workplace, she often finds herself thinking back to childhood fishing trips.

"My family used to go fishing up north with my grandpa every summer so I grew up with a love of the outdoors and the northern woods. When I found there was a way to make a career working in northern Saskatchewan, it was like a dream come true," Hewitt says.

Based out of Saskatoon, Hewitt is a geological engineer working for O'Kane Consultants, a subcontractor on the Saskatchewan Research Council's Project CLEANS (Cleanup of abandoned Northern sites), the massive effort to clean up the abandoned uranium mines and tailings areas in the Uranium City area.

"I always knew that I wanted to work outside and initially I had looked at environmental engineering. After taking some geology classes in college, I was attracted to the broader considerations in geological engineering – with the structure of the rocks, the water and the other aspects of the natural environment. It isn't like other types of engineering where you can make things do what you want them to do. You have to listen to what nature is telling you and then design a solution that fits that structure."

Home Away From Home

Project CLEANS isn't Hewitt's first experience with field work. Her longest stretch was as an intern on a drilling project in Esterhazy in 2012.

"In those southern projects, it was always great the way the community stepped up to welcome us. There isn't always a lot to do in small towns but in Esterhazy in particular the town would bring in entertainment and give us special booking times at the local bowling alley."

At Project CLEANS, Hewitt works specifically on the area's tailings facilities, taking samples and ensuring that contractors are meeting the specifications of the project. She works two weeks in, two weeks out at the site from May to October.

"It's great to be back home but after a while, especially about halfway through the winter, I start to miss being at camp. There such a wonderful atmosphere of familiarity at camp. At home, things are always changing. But at camp, it's always the same people having the same conversations and telling the same jokes. There's something very comforting about that."

Social Life in a Tin Can

The Project CLEANS workers live in converted shipping containers.

"That doesn't sound too glamorous but it's better than some camps I've been in. They're roomy enough that everyone gets their own room and some storage space. There's a satellite feed for the shared TV, phone and Internet area."

"There's only a few TVs and they are usually tuned to hockey or UFC pay-per-view fights, which is what the guys like to watch. I'm not into that so much but I don't mind because it's more the social aspect of it."

Although city dwellers might think that life in camp would quickly get boring with limited access to media, Hewitt finds that human nature quickly fills that void with ordinary socializing.

"The single biggest thing we do to pass the time up here is talk. We talk and joke with each other for hours on end, about everything and nothing."

Surviving Camp Life

There are many things about life at camp that Hewitt enjoys, like the stark beauty of the North, the view of Lake Athabasca and encounters with wildlife. But life in a remote camp has many challenges so Hewitt has picked up a number of tricks over the years.

"First thing, you need to have a good base layer on all the time to deal with the cold."

"Before you leave, you have to make sure to load up on months' worth of entertainment – books, podcasts, videos on your computer. Noise cancelling headphones are also important when you're living around a lot of other people."

"Dry shampoos and conditioners are great – they save you from worrying about liquids exploding in your baggage."

"And, last but not least, packing cubes are amazing. They not only help you maximize your luggage but, on site, they help you keep your stuff organized and make efficient use of your small storage area."

Can't Get Enough

You might think Hewitt would get enough of the northern woods at work, but even in her free time she continues to answer the call of the wild. Even though camp life may seem quite rugged to the average city dweller, Hewitt and her friends like to get even further back to basics.

"Every summer for the past three or four years, some friends and I have canoed up the Churchill River. We camp out in the wilderness and cook our own food. As a kid, I spent every summer at our family cabin so as soon as summer hits, I want to be outdoors as much as possible. Even in winter, I spend a lot of time snowboarding. Basically, every opportunity to be outdoors, I take it."

Shaped By Water

BY MARTIN CHARLTON COMMUNICATIONS

Melissa Pitz has always been a tough person to track down. You're one of the lucky ones if you've been fortunate enough to find her at home or in her office at Clifton Associates in Saskatoon.

But if the long-time hydrogeologist can't be found at one of those two locations, it's anyone's guess where she might be.

When she was a young child on her farm just outside Shellmouth, Manitoba, Pitz's mother and father learned their daughter was the adventurous type.

"Our farm has a beautiful creek running through it, a natural spring," Pitz recalled. "My parents would always say that if they couldn't find me that I would probably be down playing by the creek. I always loved the outdoors.

"My parents were both very outdoorsy. My mom was a farm wife and my dad was a farmer and miner, so this meant that I grew up outside. We had a big yard in town or out on the farm with the horses and the cattle."

Playing by the creek or playing in the creek, it didn't matter to Pitz. She just loved to explore. Whether it was her childhood days or her adult years, she often found a souvenir of her time spent at memorable locales.

"Mom always joked how she washed a ton of rocks that I had in my pockets from when I was a younger kid," she said. "She wasn't surprised that I got into this field – I was either falling in the water or I had a pocket full of rocks."

Pitz proudly displays a rock collection in her office. A couple of the more talked-about stones are ones she picked up while visiting the ancient city of Pompei, a wonderland for any curious geologist. Another of her favourite rocks is from a memorable site visit a little closer to home in Uranium City.

She even has a drill bit from a job during a first-of-its-kind drill through mountain rock in Nevada.

Pitz loves the outdoors and her personal travels through South America and Europe prove it. She has explored jungles, ancient ruins and off-the-trail farmland.

Born in Manitoba, Pitz grew up in rural Saskatchewan in the village of Gerald where she attended grade school. Later she moved to Saskatoon to attend the University of Saskatchewan, where she obtained her bachelor's degree, her master's and completed her post-grad schooling.

Why Hydrogeology?

"After my bachelor's, I wasn't sure what I wanted to do," Pitz explained. "I was employed by Jim Hendry (a specialist in hydrogeology) at the U of S and became his research assistant and I kind of fell in love with it. (Hendry), along with a few other supervisors, got me really interested in it and I haven't looked back."

Her fondness of everything outdoors lends itself nicely to her chosen career path. Pitz says she splits her time "about 50-50" between the office and remote job sites for clients.

Her environmental training allows her to dedicate more time to working outdoors. The winter months see more drilling, while the summer is more the building of water wells and environmental work.

Does she have a preference for which season she would like to be outdoors? Surprisingly, she doesn't balk at early mornings on a frosty January day.

"It really doesn't matter to me," she said. "With some clients, we'll drill in January no matter how cold it is. We're out there and we know it's going to be cold, but we prepare for it and make the most of it. I know it sounds quirky, but I love the quietness on a really cold morning and you're out there at six in the morning and you're watching the sunrise and the drilling. It's weird and beautiful all at once. I just love being outside, whether it's cold or hot.

" I'm a morning person, so I like to get up early and get going right away. I also like being disconnected from my phone and everything else. I'd rather just be in the moment with my team doing what I need to do for my client. It's peaceful and relaxing and I get to focus on one thing."

Pitz doesn't mind being away from her office, either. No phones ringing, no paperwork, no distractions on the Internet. She does take her phone and a laptop with her when she travels, but they are used sparingly.

"It's therapeutic (to unplug)," she said. "You're working a long day, sometimes 12 or 16 hours for days and weeks at a time. You're busy doing your job but it's also calming and quieting at the same time just being outdoors, and off the grid and away from everything."

The longest she has been away from her office while working for Clifton has been three or four weeks. But she admitted she has been away for three to four months at a time when working elsewhere. Either way, she doesn't bat an eye at working in the field.

Pitz stopped short of saying she's landed her dream job. However, she didn't hesitate to say she loves what she does and takes great pride in her work and is dedicated to serving her clients' needs without the slightest bit of doubt.

"I accidentally stumbled into hydrogeology after my bachelor's degree, but I do know this is my passion," Pitz said. "Seeing a water well go into the ground, seeing water come out of it, knowing you had something to do with it and that you're providing water for the client – it's very rewarding. It's very exciting".

"And doing this kind of work and spending all of the time outdoors, it just feels right to me. I know this is something that I love doing."

Member Profile

This month *The Professional Edge* chats with John Jonasson, P.Eng., founder and president of Greentree Engineering, an agricultural processing consulting firm in Tisdale.

Tell us about your personal and professional background.

I grew up on a farm just outside of Star City and went to Star City high school. My current office is 15 minutes drive from there.

Why did you choose to go into engineering?

I was always mechanically inclined as a kid, and enjoyed tinkering with mechanical and electrical things, so engineering seemed like a natural fit.

What was your biggest challenge in college?

My college career took an unusually long time – nine years in fact. I got married and we had a baby while I was in college, which made college life very hectic. On alternate years I took some time off to earn money for college and to start a family. Plus, at one point I switched from chemical to civil engineering, which meant my course program reverted to the beginning of second year.

What was your first job after college?

The same job as I had during summers in college. I worked for a feed processing firm in Zenon Park. The area around Tisdale was something a hub for alfalfa processing at the time. My post-college employer moved the plant location at one point, an intense project which required a lot of engineering and hands-on technical work early in my career.

What do you feel was your single greatest accomplishment as an engineer?

The creation of Greentree Engineering. It's unusual to find an engineering firm in small town Saskatchewan and there are many challenges associated with that. For instance, it's difficult to attract technical personnel to small town. However, there are also many advantages to operating in a small-town environment. We owe a lot to the support we've received from our customers across Western Canada in keeping us constantly busy through the years

What are your interests outside of work?

In high school and college, I played guitar with various local rock and country bands to help pay my way through school. We played at least a couple of weekends per month.

I still enjoy doing gigs from time to time. These days, we play three or four times a year for fun.

Do you do any volunteering in the community?

I am on the board of directors for a local organization called Plus Industries that provides employment for mentally challenged adults. The clients are trained to do work in recycling, yard care, snow removal and so forth to help keep them actively involved in community. We are proud to have helped create Greentree Home in Melfort in cooperation with Plus Industries.

Have you ever met anyone famous?

I bumped into Joni Mitchell at the Sheraton Hotel during a music festival in Saskatoon. She was very gracious and friendly. Greentree Engineering is involved in the protein fractionation project owned by Hollywood director James Cameron of Avatar fame. I met him briefly during the plant opening, and we talked about his deep-sea exploration.

What is your favourite vacation spot?

My family and I went on a dream vacation in Sicily. It was a wonderful experience. Every aspect – the food, the history, the scenery, the people – was just amazing. It's the most appealing place in the world. We will return as soon as we can.

Who has had the greatest influence on your life and career?

My dad had a major influence on my career direction. He was smart and read a great deal on a wide range of subjects. He encouraged his children to pursue technical careers.

Professionally, I would have to acknowledge Dexter Beach who was a pioneer in the design of oilseed processes. Many of the process techniques we use today, most notably in the canola oil business, derive from the engineering work he did. He was my P.Eng. mentor after I graduated from college.

TOUGH QUESTIONS. AN AFFORDABLE ANSWER.

What if you became disabled due to a serious illness or injury and were unable to work? Treatment and recovery should be your number one focus. But treatment and recovery can have a significant price tag, which could be especially difficult to manage when you're not working.

BUT WHAT ARE THE ODDS?

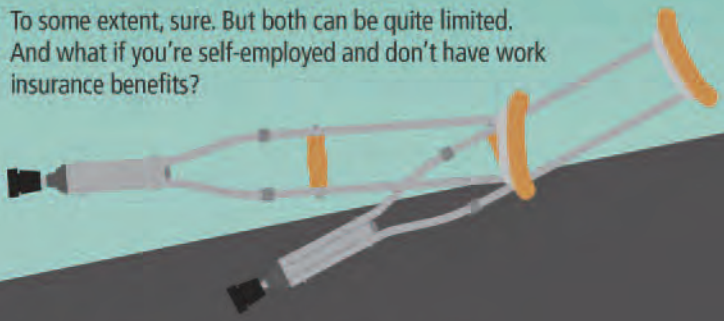
The odds of suffering from a disability before age 65 are higher than you might think: **1 in 3.**[1]

OKAY, BUT WHAT ARE THE FINANCIAL IMPLICATIONS?

Sadly, nearly 50% of mortgage foreclosures are due to disability.[2] And if you're self-employed, imagine the implications for your business if you're unable to work.

WHAT ABOUT DISABILITY COMPENSATION FROM WORK OR PUBLIC PLANS? THAT'S GOT TO HELP, RIGHT?

To some extent, sure. But both can be quite limited. And what if you're self-employed and don't have work insurance benefits?



SO, WHAT ARE YOUR OPTIONS?

Engineers Canada-sponsored Disability Income Replacement Insurance was created exclusively for professional engineering, geoscience and technology association members like you. With your membership, you have access to a unique combination of great benefits and low rates not available to the general public:

- **Pay no premiums** if you're totally disabled for three consecutive months. Or, if your chosen elimination period is longer,* you pay no premiums during that period.
- **Monthly disability benefit payments of up to $15,000.**[3]
- **Six types of disabilities** are covered under this plan.
- **Extra features at no extra cost:** Compassionate Care Benefit, Cost of Living Adjustments, Future Increase Option Benefit, Guaranteed Re-entry Benefit & Reinstatement, Waiver of Premium, Coverage Between Jobs and Cost of Living Buy-Back Option.

Learn more and apply for:

Engineers Canada-sponsored Disability Income Replacement Insurance

www.manulife.com/apegs/DI

Manulife Customer Service: 1-877-598-2273 (Monday to Friday, 8 a.m. to 8 p.m. ET)

Manulife | engineerscanada ingénieurscanada | APEGS Association of Professional Engineers & Geoscientists of Saskatchewan

Underwritten by
The Manufacturers Life Insurance Company

1 Canada Life and Health Insurance Association, A guide to disability insurance, January 2016.
2 www.disabled-world.com, "Disability Insurance: Benefits, News and claims," 2017.
3 Based on a percentage of your monthly earnings, while you are disabled and unable to perform your occupation.
* The elimination period is the number of days following your injury, after which your benefit payments will begin (7 to 365 days). The longer the elimination period, the lower your premiums.

Saskatchewan's 2017 Total Workplace Injury Rate Declines Again

The Saskatchewan Workers' Compensation Board (WCB) recently released its 2017 injury rates. The total workplace injury rate for 2017 was 5.25 per cent, a 5.4 per cent drop from 2016. Since 2008, this represents an overall drop of 48.6 per cent (2008 total injury rate 10.21). The total number of reported claims in 2017 was 28,952, a decrease of 1,001 from 2016 or 3.34 per cent.

In 2017, for the second year in a row, 88 per cent of Saskatchewan employers had zero injuries.

"Because of injury prevention from our Saskatchewan workers, employers and safety partners, our provincial injury rates have been considerably reduced," said WCB CEO Peter Federko. "We launched Mission: Zero in 2008. Since then, our province's workers, employers and members of the public have answered by making Saskatchewan workplaces safer."

Despite the total injury rate drop, the time loss injury rate remained the same at 1.86 per cent in 2017. Time loss claims increased from 7,813 in 2016 to 7,888 in 2017.

> "Since the 2017 time loss injury rate did not keep decreasing like it has for the past 14 years, this may be a sign that we must keep working together to be effective in recognizing and preventing every workplace hazard. We cannot become satisfied with where we are now," said Federko.

WorkSafe Saskatchewan, which is the WCB's partnership with the Ministry of Labour Relations and Workplace Safety (LRWS), focuses on an integrated provincial injury prevention strategy.

Sask. WCB hosts rate model industry information sessions

The WCB recently hosted seven rate model industry education sessions for employers in 14 industry rate codes to learn more about how the WCB's enhanced rate model impacts the industry.

The premiums employers pay fund a no-fault system that protects workers and employers from financial loss due to workplace injuries. The WCB sets industry premium rates annually to ensure today's employers pay the costs of today's claims. The WCB uses a rate model to determine the rates all employers pay. In 2017, the WCB enhanced its rate model based on recommendations from an external actuary's (Eckler) review in 2016. The enhanced rate model was implemented January 1, 2018.

To mitigate the impact for the 14 industries seeing increases as a result of the transition to the enhanced rate model in 2018, the WCB drew from the Injury Fund to cover the costs associated with the transition. Starting in 2019, all industry premium rates will be as determined using the enhanced model. These changes will impact the premiums employers pay.

The sessions provided an opportunity for employers in these 14 rate codes to become educated on how the transition to the enhanced rate model will impact the premiums they pay in the future. Webinars were available for all sessions. Recordings for each session are posted on the WCB's website at www.wcbsask.com and on the WCB's YouTube channel at **https://www.youtube.com/channel/UCkf1lQhS90NnJxx4AFFuKyQ.**

For more information, please visit: **http://www.wcbsask.com/wcbs-2016-rate-model-review-recommendations/**

Notes From APEGS Council

The APEGS Council met February 1 and 2 in Saskatoon. 15 of 19 Councillors were present. Council will meet next on April 5 and 6, 2018 in Regina.

Council received the following presentations and information items:

- Activity updates were provided from the constituent society liaisons, the ACEC-SK liaison, the Sponsorship Task Group liaison, the 30 by 30 Task Group Liaison.
- The Director of Professional Standards and the Director of Education provided Council with a presentation on the investigation and discipline processes. The presentation led to discussion on how to better inform society regarding investigation and discipline, and protection of title and scope of practice.
- The APEGS Directors to Engineers Canada and Geoscientists Canada reported on activities at the two national organizations.
- The Director of Special Projects reported that the member database upgrade project is 75 per cent complete and the scheduled live date remains June 2018.
- The Communications Manager submitted a report noting that the association is moving into stage 2 of the strategic communications planning process.

Council passed motions as follows:

Approving Life Membership for the following members:

Abernethy, Robert J., P.Eng.
Adkins, Philip E., P.Eng.
Ahmed, Ejaz, P.Eng.
Allen, Dianne E., P.Eng.
Andrews, Curtis J., P.Eng., P.Geo.
Ball, Maxwell E., P.Eng.
Beaudry, Denis A., P.Eng.
Beug, Norman B., P.Eng.
Bhaumik, Champak K., P.Eng.
Boyd, James A., P.Eng.
Brown, Stewart T., P.Eng.
Campbell, Brian D., P.Eng.
Carey, L. Wayne, P.Eng.
Clark, David J., P.Eng.
Cooke, William E., P.Eng.
Coquet, Marcel D., P.Eng.
Coquet, Richard P., P.Eng.
Dawson, James E., P.Eng.
Detharet, Michel R., P.Eng., FEC
Eugenio, Luis M., P.Eng.
Fabius, Michael, P.Eng.
Faye, Zenneth K., P.Eng.
Fleming, Donald C., P.Eng.
Frederiksen, Lars P., P.Eng.
Fung, Lawrence H.C., P.Eng.
Gaudet, Marcien A., P.Eng.
Gendall, Leonard G., P.Eng.
Goettler, Paul N., P.Eng.
Haidl, Francis M., P.Geo., FEC (Hon.), FGC
Hain, Norman K., P.Eng.
Hann, Simon A., P.Eng.
Hecht, Christopher D., P.Eng.
Henderson, Don, P.Eng.
Hiscock, Randy C., P.Eng.
Jain, Jitendra K., P.Eng.
Karvonen, Douglas A., P.Eng.
Kaschmitter, Gerald R., P.Eng.
Kerr, William C., P.Geo.
Khan, Shahidul I., P.Eng.
Kishchuk, Boris W., P.Eng.
Langille, Gerald B., P.Geo.
Lateef, Mazhar, P.Eng.
Lee, David W., P.Eng.
Macaulay, Gilbert W., P.Eng.
Margolis, Harry J., P.Eng.
Mark, Callum D., P.Geo.
Martin, Barry D., P.Eng.
McLeod, N. Lyle, P.Eng.
Montgomery, C. James, P.Eng.
Nahirney, Peter M., P.Eng.
Palmer, Ronald J.F., P.Eng.
Phillips, Gordon D., P.Eng.
Pointon, Kent W., P.Eng.
Prowse, Terry D., P.Geo.
Prezelj, Mario, P.Eng.
Rasmussen, Keith L., P.Eng.
Rempel, N. Philip, P.Eng.
Salvian, Paul D., P.Eng.
Schuetz, Reinhard F., P.Eng.
Schultz, Lawrence, P.Eng.
Shewan, Kenneth A., P.Eng.
Shih, Charles H.H., P.Eng.
Sippola, Alvin, P.Eng.
Smith, Brian M., P.Eng.
Smith, Lester Harvey, P.Eng.
Sprentz, James P., P.Eng.
Stevens, Timothy, P.Eng.
Studer, R. Daniel, P.Geo.
Tang, Kitson K., P.Eng.
Thomas, Howard, P.Eng.
Tranquilla, Graydon L., P.Eng.
Turner, David, P.Eng.
Ulker, Ahmet A., P.Eng.
van Rooy, Martin, P.Eng.
Vickers, Donald G., P.Eng.
Wachmann, Anthony R., P.Eng.
White, Lance D., P.Eng.
Willmer, Terrance D., P.Eng.
Wyatt, Jon J., P.Eng.
Yi, Sang, P.Eng.

- Appointing Bob Cooper, P.Eng. as Chair of the Professional Development Committee and Ian Loughran, P.Eng. as interim Chair of the Environment and Sustainability Committee for a 6-month term.
- Approving the proposed additions to Appendix 3 of the Regulatory Bylaws, Components of Acceptable Engineering Work Experience.
- Approving the addition of section 23.2 and Appendix 5 to the Regulatory Bylaws. These bylaw additions, addressing Continuing Professional Development, are now ready for presentation to the members for voting at the Annual Meeting on May 5, 2018 in Saskatoon.

Council noted and received the following reports:

- Registrar's reports for November and December 2017.
- The report on compliance activities and the Continuing Professional Development reporting statistics for 2017.
- The unaudited financial statements for November 2017.
- Executive Committee minutes, 30 by 30 Task Group minutes, Sponsorship Task Group minutes, board minutes, and reports from the committees.

Saskatchewan Universities Win Big at

Western Engineering Competition

The University of Regina and University of Saskatchewan brought home the hardware from the 2018 Western Engineering Competition. In total, the two teams combined achieved two first place finishes, three second place finishes and four third place finishes.

FIRST:
UofR Consulting Team
UofS Debate Team

SECOND:
UofR Communications Team
UofS Innovative Design Team
UofS Junior Design Team

THIRD:
UofR Innovative Design Team
UofR Programming Team
UofS Communications Team
UofS Consulting Team

All told, one third of the awards at the competition went to Saskatchewan teams. The provincial teams will now move on to be represented in five out of eight of the Canadian Engineering Competition categories.

Our Newest Members

Signed, Sealed, Safe

Saskatchewan's Professional Engineers and Geoscientists enhance our quality of life, meet the challenges of environmental sustainability and protect public safety. Because of their impact on society, the practice of professional engineers and geoscientists is strictly regulated by the Association of Professional Engineers and Geoscientists of Saskatchewan.

Join over 12,500 APEGS members in congratulating our newest members – dedicated professionals who have completed a minimum of 8 years of university study and work experience to earn the designation of Professional Engineer (P.Eng.), Professional Geoscientist (P.Geo.), Engineering License or Geoscience License.


Amira Abdelrasoul, P.Eng.


Nicole M. Adams, P.Eng.


Zeena S. Alwan, P.Eng.


Kelechi K. Amadi, P.Eng


Segun M. Arokoyo, P. Eng.


Danae N. Bradshaw, P.Eng.
Clifton Associates Ltd.


Valerie F. Brown, P.Eng.


Danielle S. Campbell, P. Eng.


Jose Z. Cheruvallath, P. Eng.
Saskatoon Light & Power


Renee M. Cugnet, P.Eng.


Cole L. Dube, P.Eng


C. Marc Ell, P.Eng.
SaskTel International


Sepehr Esmaeilikhatir, P.Eng.
Environmental Instrument Canada Inc.


Steven T. Fahey,
Engineering Licensee


Mariniel Flores, P.Eng.


Colin V. Forest,
Engineering Licensee


Bradley F. Frehlich, P.Eng.


Brian W. Grosskleg, P.Eng.


Nicholas A. Hladky, P.Eng.


Ryan M. Husband, P.Eng


Victor C. Ike, P.Eng.

SPONSORED BY: City of Regina, Clifton Associates Ltd., Co-op Refinery Complex, Environmental Instrument Canada Inc., KGS Group.

Asrar H. Janjua, P.Eng.

Nicholas C. Kaminski, P.Eng.
KGS Group

Amanda Kostiuk, P.Eng.
K+S Potash Canada

Katherine M.G. Lockhart, P.Eng.

Kirsten M. Lott, P.Eng.

Elora D.M. McLeod, P.Eng.

Alison M. Molaro, P.Eng.

Huyen T. Nguyen, P.Eng

Kathryn E. Palmer, P.Eng.

Kaylee Puchala, P.Eng.

Giovanni F. Ramos, P.Eng.

Ann C. Reinhart, P.Eng.

Alex Repski, P.Eng.
Strong Refrigeration Consultants Inc.

Steven M. Sands, P.Eng.

Kelsey M. Sawatsky, P.Eng.

Peter E. Schalm, P.Eng.

Jaret L. Siermacheski, P.Eng.
Saskatoon Light & Power

Brittany Smith, P. Eng.
City of Regina

Ameena S. Steininger, P.Eng.
Co-op Refinery Complex

Sean D.C. Trithardt, P.Eng.

Nicholas J. Wachniak, P.Eng.
Prairie Machine & Parts

Keaton A. Wheeler, P.Eng.

Amy L. Yule, P.Eng.

ensuring public safety

A P E G S

Association of Professional Engineers & Geoscientists of Saskatchewan

K+S Potash Canada, Prairie Machine & Parts, Saskatoon Light & Power, SaskTel International and Strong Refrigeration Consultants Inc.

Continuing Professional Development Profile

Name: Cheryl Robertson, P.Eng.

About Me:

I am married with two kids and live in Regina. I am passionate about my family, my profession and my community. If I find something in any of those areas that has a deficiency I typically end up volunteering to organize or participate in such a way to fill the gap or generate change.

Job Responsibilities:

I am currently the director of automated metering infrastructure at SaskPower. My team is responsible for the planning and implementation of SaskPower's AMI Meters.

How has CPD helped me in my job:

Every category for professional development has one item woven through: networking! I have met people within and outside of the profession that have provided mentorship and/or provide introductions to folks they know in their industry that relates to my needs. My participation directly related to my career has led to a network that I can rely on for information and support in helping make decisions.

What I do for Continuing Professional Development:

It is easy to achieve all the credits for Professional Practice as part of my role at SaskPower. I try very hard to get points in all the rest of the categories and max out a category if possible.

For formal activity, each year I have a goal to take at least one technical or leadership course to ensure I am keeping up with technology and advancing my career.

In every position I have had at SaskPower I have ensured that I participate on committees related to my field of work. This has been at the local (SaskPower) level, the national level and international level. This has made the Informal Activity credits easy to attain as the conferences and published materials that are relevant and interesting are at my fingertips. It also has become a source for capturing credits in the Presentation category.

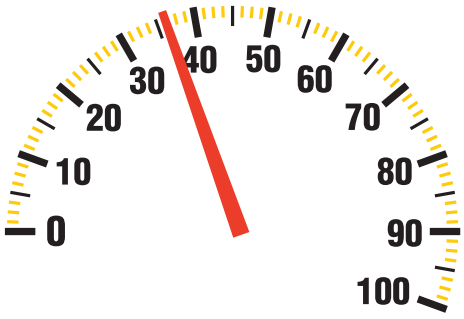
Contribution to Knowledge has been the hardest category to obtain credits (and most rewarding!) and these same committees have enabled me to capture points in this area. I participated on an international committee that funded projects and required members to peer review publications. I have represented SaskPower on several Standards in both Canada and the United States. I take pride in knowing I am making a difference in public safety in addition to my industry. I recently had the opportunity to chair a subcommittee for a new Meter Safety Standard that is under development.

Finally—I mentioned my passions above—this makes participation easy and I also am proud to tell others about APEGS' commitment to ensuring the membership gives back!

I have spent almost 20 years volunteering in the engineering community. Sports are an easy credit as I have participated on boards and managed and coached different teams. In the community, I have been involved with programs and events to promote women, especially those in STEM fields. This includes mentoring other engineers, both internal and external to SaskPower.

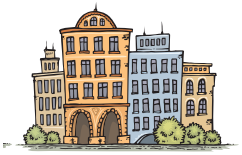
Speeding Up
Our Reporting!

Thirty-six per cent of APEGS members reported their 2017 continuing professional development credits as of February 28, 2018.



Have you reported yet?

If not, do your part to demonstrate your accountability to remaining competent as a professional. Report your 2017 credits now and let's see if we can move the needle from 36 to 100! To report, log into your online profile at **apegs.ca** and go to the "**My Details**" tab.



Town Hall Meetings

Report from the Road

In January and February, APEGS staff and volunteers from the Experience Review Committee and Professional Development Committee hit the road in all corners of the province to meet with members and present proposed changes to experience reporting for Engineers-in-Training and to the Continuing Professional Development Program. Five Town Hall meetings were held, attended by over 300 members, and nine are planned for March.

Amendments to the Regulatory Bylaws were unanimously passed by Council on February 2, 2018 and now must be "confirmed, varied or revoked" by membership attending the May 5, 2018 Annual Meeting in Saskatoon. Details on the bylaw revisions will be included in the Notice of Annual Meeting being mailed to all members in early April.

Competency Based Assessment (CBA)

Highlights of proposed changes:

- What constitutes acceptable engineering experience is not changing; we are simply better defining it.
- A more quantitative, precise, objective, transparent, consistent measuring system:
  - Competencies are observable and measurable skills, knowledge, abilities, motivations or traits required for professional registration that are demonstrated through the actions and behaviours of the applicant.

Why the changes to experience reporting are important:

- The changes increase the confidence of all who participate in the process: applicants, validators, employers and assessors on the Experience Review Committee.
- Applicants will know better what is expected of them:
  - Prior to being granted a licence, an engineering applicant must demonstrate their ability to practice engineering.
  - The onus is on the applicant to provide evidence that they possess, through experience, a satisfactory capability to practise engineering at a professional level.

We heard an overwhelmingly positive response:

- Attendees acknowledged that experience reporting requirements are better explained.
- Attendees appreciated the research and background materials provided in support of the changes.
- At the Town Halls we have received great questions for clarification and they have been posted to the APEGS website as shown below.

Continuing Professional Development Program

Highlights of proposed changes:

- Requirement to report continuing professional development with an annual review for compliance.
- Requirement for annual ethics training.
- Simplification of credit reporting and banking of excess credits.
- Opportunity to apply for a variation in program requirements.

Why required reporting is important:

- *The Engineering and Geoscience Professions Act* and *The Engineering and Geoscience Regulatory Bylaws* require that members remain competent to safeguard public interest.
- In administering the Act and Bylaws, APEGS has an obligation to ensure the professional competence of members.
- Requiring members to report their professional development and reviewing reporting for compliance demonstrates accountability by APEGS as a regulator as well as accountability of members to remain competent.
- With increased public scrutiny of self-regulating professions, requiring members to report helps to increase public trust in APEGS and its members.

We heard an overwhelmingly positive response:

- Attendees acknowledged that required reporting is needed to protect the integrity of the professions.
- Attendees appreciated the research and background materials provided in support of the changes.
- Attendees appreciated the flexibility of the program to meet their personal needs.

To view the FAQs coming from the Town Halls, please visit the apegs.ca homage and click on **"Town Hall Meetings"**.

30 BY 30 UPDATE:

The Future is Bright!

BY JESSICA WILSON, ENGINEER-IN-TRAINING AND JOYTI SINGH, ENGINEER-IN-TRAINING

Over the past few months we had the opportunity to work with three groups of Girl Guides as part of the 30 by 30 initiative. These groups consisted of Sparks (ages 5-6), Brownies (ages 7-8) and Girl Guides (ages 9-11). The goal of each session was to introduce the girls to the fields of engineering and science through activities and experimentation.

The first activity was an experiment that we conducted using the following seven common household ingredients: ketchup, lemon juice, apple juice, vinegar, glass cleaner, soy sauce and cola. We tested the ability of each ingredient to clean dirty pennies by soaking a penny in each solution and observing and comparing the results. Before we began the experiment, the girls voted on which ingredient they thought would work the best. We ended the experiment with a group discussion on which solutions worked best and encouraged them to think about why certain ingredients worked better than others.

Our second activity was an engineering challenge. The girls were assigned the task of building an egg protector. Each group was given a plain cardboard box and had their choice of a variety of materials including elastics, felt, sponges, bubble wrap, tissue, tissue paper, yarn and cotton balls, as well as some decorating supplies including foam stickers, markers and gems. We tested each of the egg protectors to see if the eggs could survive two small drops (1-metre and 2-metre heights) and finished the activity by discussing which materials they thought worked best. Each girl who participated received a bag of goodies, a small information package and a special Engineers Canada badge for their efforts.

Our experience working with Girl Guides Canada and APEGS was especially rewarding. It was exciting to share our appreciation and passion for science and engineering and to see the girls learn and discover. It was a joy for us to see their faces light up when they realized that ketchup could be used to clean a penny or that their design prevented their egg from breaking. We were also very impressed by how well the girls worked together and helped one another, displaying at a young age the importance of teamwork and a meaningful understanding of the Brownie motto, "Lend a Hand." We are grateful to have had the opportunity to contribute to the 30 by 30 initiative and look forward to being involved in upcoming projects and events in the future.

Top: One of the Girl Guides' egg protectors. Bottom: Jessica Wilson, Engineer-in-Training and Joyti Singh, Engineer-in-Training show off the Engineers Canada badge

88th

Annual Meeting and Professional Development Conference

May 3-5, 2018

Delta Bessborough
Saskatoon SK

Thursday, May 3

Welcome Event (Remai Modern) . . . . . 6:00 10:00 pm

Friday, May 4

Buffet Breakfast . . . . . 7:30 8:30 am
Plenary – Lightning Talks . . . . . 9:00 10:00 am
Professional Development Streams . . . 10:20 12:00 noon
Professional Development Luncheon . . . . . 12:00 2:15 pm
Professional Development Streams . . . . . 2:30 4:10 pm
Afternoon Tour . . . . . 2:30 4:30 pm
Past Presidents / Council Meeting . . . . . 3:00 4:00 pm
Past Presidents' Dinner . . . . . 5:00 8:00 pm
President's Reception . . . . . 8:00 pm

Saturday, May 5

Buffet Breakfast . . . . . 7:30 9:00 am
Annual Meeting . . . . . 8:30 9:00 am (Registration)
Annual Meeting . . . . . 9:00 am (Business Meeting)
Kids Camp ages 4-6 . . . . . 8:30 am 4:30 pm
Youth Science Day ages 7-14 . . . . . 8:30 am 4:30 pm
Partners Program . . . . . 12:00 3:00 pm
Recognition Luncheon . . . . . 12:30 2:30 pm
Committee Meetings . . . . . 2:30 4:30 pm
Awards Banquet . . . . . 6:00 7:00 pm (Reception)
Awards Banquet . . . . . 7:00 pm (Banquet)

Registration and Additional Information

apegs.ca

KEYNOTE SPEAKER

Sarah Hanson

Professional Development Luncheon
Friday May 4, 2018, 12:00 2:15 pm
Delta Bessborough, Adam Ballroom

Sarah Hanson, Engineer-in-Training. is a young transportation planning professional with AECOM Canada and is the AECOM HYPERCAN team lead. Sarah is a registered engineer-in-training with Professional Engineers Ontario and works on a wide variety of transportation planning, preliminary design and details design studies throughout the province of Ontario.

Toronto - Ottawa - Montreal Hyperloop

Hyperloop is a new mode of transportation that moves freight and people quickly, safely, on demand and direct from origin to destination.

Passengers or cargo are loaded into a Hyperloop pod which accelerates gradually by electric propulsion through a low-pressure tube. The vehicle floats above the track using magnetic levitation and glides at airline speeds for long distances as a result of ultra-low aerodynamic drag. It is the intention of Hyperloop One, a leader in Hyperloop technologies, to build the system on columns or tunneled below ground to avoid hazardous grade crossings and wildlife. It is fully autonomous and enclosed, eliminating pilot error and weather hazards. It is safe and clean, with no direct carbon emissions.

The AECOM HYPERCAN Team proposed a Canadian Hyperloop route that would connect three of Canada's largest cities. The Toronto-Ottawa-Montreal Canadian proposed corridor is the most heavily travelled inter-regional corridor in Canada. The metropolitan areas combined contain over 25 per cent of the population of Canada. This corridor has the population base, existing travel demand, and geography to support an operational Hyperloop. Historically, there has been interest and public support for improved connections through the corridor, including provincial and federal feasibility studies.

The additional connectivity provided by Hyperloop would increase the standard of living for people who live and work in the area, creating productivity gains for businesses while developing a new level of shipping infrastructure.

Professional Development Tracks

Friday May 4, 2018 | 9:00 am 4:10 pm
Mezzanine and Convention Floors
Dress Business Casual

9:00 - 10:00 am	• Continuing Professional Development • Competency Based Assessment • • Ethics and Social Media Strategic Communications Planning • • Digital Signatures, Electronic Authentication • Plenary Session • Lightning Talks •			
10:00 - 10:20am	**ENERGY BREAK**			
	Track 1 COMPETENCY Salon Batoche	**Track 2 PROFICIENCY** Kelsey & Saskatchewan	**Track 3 REVITALIZATION** Terrace Lounge	**Track 4 APEGS** William Pascoe
10:20 - 11:05 am	**Solving Wicked Problems** Margot Hurlbert	**Instability Along the South Saskatchewan River in Saskatoon** Phil Bruch	**Fort McMurray Wildfire Emergency Response and Water System Recovery** Jason Vanderzwaag	**Continuing Professional Development Panel Dialogue** Professional Development Committee
11:15 - 12:00 pm	**Advanced Metering Infrastructure** Nathan Ziegler Jose Cheruvallath	**Comprehensive Climate Change Strategy Ministry of Environment** Sharla Hordenchuk	**The Future of Saskatoon's Landfill** Michelle Jelinski	**Competency Based Assessment Proposed New Experience Reporting System** Professional Development Committee
12:00 - 2:15pm	**PROFESSIONAL DEVELOPMENT LUNCHEON • Adam Ballroom. KEYNOTE - Sarah Hanson**			
2:30 - 3:15 pm	**70th Anniversary of the Saskatchewan Geological Survey** Gary Delaney	**Conflicts of Intersest in Your Professional Work** Trish Harper	**The North Commuter Parkway Bridge Project An Urban P3 Delivery** Patrick Lalach	**Women in Engineering and Geoscience 30 by 30 Updates** 30 by 30 Task Group
3:25 - 4:10 pm	**Emerging Substances of Concern in Saskatchewan Waters** Arasu Thirunavukkarasu	**Delivering Software in Today's Healthcare Environment** Armand Sewell Laurienne Thesen	**The Future of Saskatoon's Landfill** Michelle Jelinski	**University Libraries Member Access** Charles Phelps Li Zhang

PLENARY SESSION

Lightning Talks

FRIDAY, MAY 4, 2018

9:00 – 10:00 am
Adam Ballroom
Dress - Business Casual

A series of short informal presentations:

Welcome and Opening Remarks

Ernie Barber, P.Ag., P.Eng., APEGS President

Continuing Professional Development - CPD

Shawna Argue, P.Eng., MBA, FEC, FCSSE, FGC (Hon.)

Competency Based Assessment - CBA

Tina Maki, P.Eng., FEC, FGC (Hon.)

Ethics and Social Media

Bob McDonald, P.Eng., MBA, LL.B., FEC, FGC (Hon.), FCSSE

Strategic Communications Planning

Sheena August

Digital Signatures, Electronic Authentication

Marc St-Jacques

Business Meeting

SATURDAY MAY 5, 2018

Registration 8:30 - 9:00 am / Business Meeting 9:00 am
Battleford Room
Dress - Business

The Engineering and Geoscience Professions Act and Bylaws require that the annual meeting of the Association be held in the first six months of the year at a place in Saskatchewan determined by Council.

The 88th Annual Meeting of the Association will be called to order at 9:00 am Saturday May 5, 2018 at the Delta Bessborough, Saskatoon SK. Members must register between 8:30 and 9:00 am to obtain a voting card. The agenda for the meeting includes, but is not limited to:

- Minutes from the 2017 Annual Meeting
- Business arising out of the minutes
- Reports from committees
- Audited financial reports
- New business
- Bylaw amendments
- Report of the scrutineers

Celebrating Our Own

John W. Desjarlais, P.Eng.

Each year, in partnership with Manulife and TD Insurance Meloche Monnex, Engineers Canada awards six prizes totalling $60,000 to Professional Engineers returning to university. These awards reflect a long-term investment in the betterment of the engineering profession and the belief that engineering research can help tackle the most complex problems of our time. APEGS member John W. Desjarlais is a 2017 recipient.

CIM Women of Innovation

Margaret A. Kuzyk, P.Eng., FEC, FGC (Hon.)

Margaret A. Kuzyk, P.Eng., FEC, FGC (Hon.), APEGS Past President whose inspiring story is documented in the *Women of Innovation* book.

The *Women of Innovation* book is the culmination of a year-long project to recognize, document and disseminate the experiences and accomplishments of women in engineering. The women profiled in this book are extraordinary. They have contributed to our world not only in the fields of environmental engineering and biomedical engineering but also in robotics for space applications and across a broad range of other engineering disciplines.

Engineers named to Order of Canada

Saskatoon StarPhoenix - Harold Orr, P.Eng. and Karim Nasser, P.Eng., both from Saskatoon, were appointed as members of the Order of Canada, which "recognizes outstanding contributions at the local or regional level or in a special field of activity."

Orr, a pioneer of passive design, helped design the Saskatchewan Conservation House in Regina in 1977, the home which sparked the R2000 building program in Canada and passive house program in Europe and the US.

He has an engineering degree and Master of Science degree and worked for the National Research Council until he retired and began working as a private consultant. Now in his 80s, he continues to work on retrofitting homes for energy conservation.

Nasser, a Lebanon-raised engineering professor and philanthropist, was one of the driving forces behind the development of Parcel Y at River Landing in Saskatoon.

His son John Nasser, now the president of Victory Majors Development, said his father "stuck his neck out to really get this thing going" after work started progressing on the mega project, which will consist of two office towers, a hotel and a condo tower.

A FIELD GEOLOGIST'S VIEW OF

Improved Sustainability in Mineral Exploration

BY DARCY HIRSEKORN, P.GEO. ON BEHALF OF THE ENVIRONMENT AND SUSTAINABILITY COMMITTEE

Darcy is a professional geologist who has worked in the uranium industry in Saskatchewan for over 20 years and is currently a consultant with Frostfire Exploration.

In 20 years of mineral exploration in northern Saskatchewan, I've seen firsthand the innovation and adoption of improved social and environmental sustainability practices in mineral exploration. One of the things not recognized is that field geologists work intimately with their environment. I have spent over 30 per cent of my life in the forests of northern Saskatchewan. You come to appreciate and love the environment, something that is important for the public and communities to understand.

Innovation requires a driver, and the recent public focus on sustainability, especially as it relates to mining, has forced explorers to not only meet new regulations but often exceed them. Improvements range from decreasing tree clearing, better control of drilling cuttings and reduction of rutting from heavy equipment. Technical training in project management, risk assessment and ice engineering methods have allowed companies to drill more safely on lake ice, with recirculation of drill cuttings and a better understanding of how ice platforms are constructed and maintained. In my opinion, lake ice drilling is less impactful on the environment, as it avoids clearing of forest and when done correctly has virtually no impact on the watershed.

One of the more striking changes for those in the exploration business is improving how we site, construct and remove exploration camps. Companies are building camps with better insulation, more efficient heating and better living conditions. This allows reduced fuel consumption and a reduced carbon footprint. Camps are more comfortable, safer and produce less waste. Unlike in the 1970s, when camps were sometimes decommissioned by burning them in place, today they are removed completely, with closure reports submitted to provincial regulators including photographic evidence of their removal.

Our relationship with local communities has also changed through the years. In the past, consultation was primarily done to inform local stakeholders of exploration activity. Today it's more involved. Conversations include topics like drilling impacts, the availability of jobs and how we can encourage youth to get into the sciences. There is significant value in sitting down with local trappers to benefit from their knowledge gained through 50 years of life in the North. The vital role that northern residents often play in exploration is sometimes under-recognized. Over the years, I've been lucky to get to know the people of the North a bit better. I've been involved in their community celebrations and saddened by the news of lives cut short. Getting to know a community allows better understanding of their viewpoints and makes it easier for them to bring forward concerns. I hope one day to see an Indigenous youth from the Athabasca region become a professional geologist and work in the North they call home.

Professional Geoscientists who work in the field today can be rightfully proud of these improvements. Their approach is evidence of how they and the companies they represent are committed to sustainability. A winter spent in northern Saskatchewan isn't easy to forget, and we need to continue to ensure that future generations can experience the beauty of northern Saskatchewan.

News From The Field

Swift Current Online

New home building and major projects help sustain Saskatchewan's economy

GlobeNewswire - BuildForce Canada's latest labour market forecast indicated Saskatchewan construction activity is expected to slow down over the next two years. But by 2021, a rise in home renovation, new home construction and new mining and utility construction projects are expected to sustain the province's skilled and professional workforce above historical levels.

BuildForce Canada's 2018–2027 Construction and Maintenance Looking Forward forecast shows that commodity price uncertainty may result in engineering construction job losses through to 2021. New planned mining and utility projects, however, are expected to create additional opportunities and demand for many skilled workers between 2022 and 2024. A modest rise in institutional and commercial building construction expected after 2021 should contribute to steady employment growth in industrial, commercial and institutional (ICI) building construction over the second half of the scenario period. Rising residential renovation work and a recovery in new housing by 2023 is expected to increase residential construction employment by 26 per cent, or nearly 3,600 jobs across the remainder of the forecast period. Overall construction employment demands are expected to surpass current levels by 2023.

BuildForce Canada's forecast also shows that up to 9,300 workers – roughly 19 per cent of the industry workforce – are expected to retire within the next 10 years.

UNIVERSITIES AND RESEARCH

Western Canadian crop protein supercluster gets investment from federal government

PIC press release - Protein Industries Canada (PIC), a Western Canadian crop research supercluster with Saskatchewan roots, was named one of the five finalists in the federal government's Innovation Superclusters Program.

PIC, along with the four other finalists, will share in the program's $950 million funding pool.

PIC is an industry-led alliance of over 120 private-sector companies, academic institutions and other stakeholders across Western Canada aimed at fully developing the potential of plant-based proteins from crops such as canola, pulses, grains, hemp and flax. PIC's work will focus on improvements and opportunities in four areas: crop breeding, crop production, value-added processing and export development.

By 2050, the global population is expected to be 30 per cent larger. At the same time, people are becoming more affluent, demanding more protein, and turning to crop proteins to supply a healthier diet. These trends add up to a projected need for 59 to 98 per cent more crop protein by 2050.

The federal funding supplements roughly $400 million of cash, in-kind commitments and venture capital support that PIC has already secured from its members.

"This has huge implications for the Western Canadian economy. Farmers, service companies, value-added processors, academic institutions, consumers and through spinoff benefits, everyone on the prairies and, throughout Canada will stand to benefit," said PIC board chair Frank Hart.

Chalk River reactor closure threatens research

University Affairs - The impending shutdown of a nuclear reactor in Chalk River, Ontario is posing some serious challenges for Canadian researchers who depend on this facility's unique capabilities. A coalition led by the University of Saskatchewan and McMaster University has been lobbying the federal government to provide a decade's worth of funding that would ensure these scientists and engineers gain an alternative access to a scarce commodity: beams of the subatomic particles known as neutrons, which emerge from the heart of a reactor.

Some of the support requested would contribute to the maintenance and development of foreign facilities that

generate neutron beams for research, so that Canadians would have ready access to these sites. Some of the money would also go to operations within Canada, particularly the upgrading of a reactor at McMaster's campus in Hamilton.

The proposal, dubbed the Canadian Neutron Initiative (CNI), has been recommended for funding by the House of Commons Standing Committee on Finance in the next federal budget. That recommendation capped one of the CNI's busiest years since it was formed in 2015, following news that the Chalk River reactor – known officially as the National Research Universal (NRU) – would close in 2018.

The NRU has been in service since 1957, making it the world's oldest large facility still in operation. And while it has experienced mishaps and breakdowns during its 61 years, it remains safe and serviceable. It also costs Atomic Energy of Canada upward of $100 million a year to maintain, which prompted the decision to shut it down in March of this year.

By comparison, the CNI is asking the federal government for $24 million over the next three years, and $19 million annually from 2021 to 2029. According to the CNI's pre-budget submission, those funds would shore up the activities of more than 800 investigators across the country whose work depends on particles emitted by powerful nuclear reactions.

Neutron scattering research has a variety of practical applications including verifying the quality of crucial metal components in such products as turbine jet engine fan blades. The technique has also helped to confirm the cause of structural failure after major accidents.

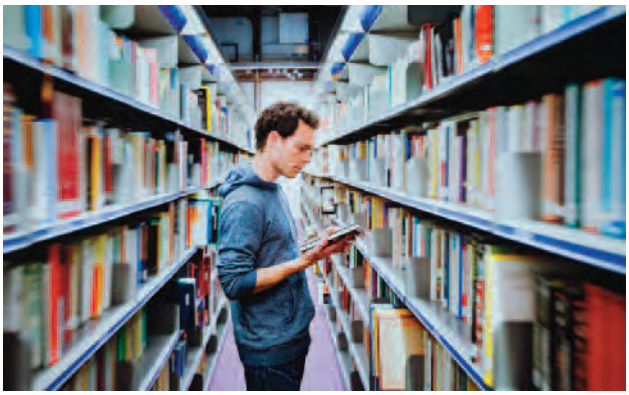
University of Saskatchewan expands engineering spaces

U of S press release - The College of Engineering at the University of Saskatchewan (U of S) announced that it has added 150 seats for undergraduate students for the upcoming 2018-2019 academic year.

These seats are available for entering first-year students and transfer students.

"The next generation of engineers will play a central role in finding solutions to global challenges ranging from climate change, water and food security, managing the increasing energy demand of the world's population and more," said Bruce Sparling, professor of civil and geological engineering and associate dean academic in the College of Engineering.

"Engineering's impact is also felt on an individual, personal level, such as by amputees who benefit from life-changing prosthetics created by engineers. Come to the University of Saskatchewan and learn how to build the world you want to live in," said Sparling.



The College of Engineering is also offering the Engineering Professional Internship Program (EPIP). The EPIP is a full-time paid internship opportunity which includes a minimum of eight months of professionally supervised work experience in industry. Students earn real-world job experience to build their resumé and expand their professional network.

"My EPIP experience gave me valuable insight into my personal skill set and gave me enough industry experience to make a confident decision regarding my preferred career path," said David Ferris, a Master of Engineering student at the U of S. Ferris participated in EPIP as an undergraduate engineering student.

OIL AND GAS

Sixty rigs kicked off right at the start of the year

Pipeline News - With oil over US$60 in the first week of the New Year, drilling in Saskatchewan took off. By January 4, *Rig Locator* (riglocator.ca) listed 60 rigs working in the province. That's the highest level since the first week of March 2017.

The highest number of active drilling rigs in Saskatchewan over the past three years was March 1, 2017, with 76 rigs for a brief period. The first 75 days of the year are traditionally Saskatchewan's busiest when it comes to drilling, even more so ever since the flood year of 2011, when wetter surface conditions hampered summer drilling for several years afterwards.

The current spike is higher than any opening week since the downturn hit in late 2014.

The biggest impact has been Crescent Point Energy Corp. With 26 rigs on January 4, it doubled the 2 operator, Encana Corp, which had 13. Crescent Point had more than the no. 2 and no. 3 operators combined, as Cenovus Energy, in third spot, fielded 12 rigs.

It's been a tumultuous few months for those drilling for Crescent Point, as the company drew down most of its drilling program in November for several weeks. It put a number back to work in mid-December, getting a hole or two done with each Christmas.

Rig Locator's map showed a bit of a change in strategy, as the company had four rigs working in the Viewfield Bakken area in something of a halo pattern, all about 11 to 15 kilometres from Stoughton. There has been a particular change of emphasis in the Torquay area. The company has nine drilling rigs working in an area southwest of Torquay, from Highway 350 to 13 kilometres west, and from the US border to 10 kilometres north.

Crescent Point had indicated a $100 million addition to its capital program to, in part, target the Lodgepole formation in this general region.

In southwest Saskatchewan, there are nearly double as many active rigs as usual.

MINING

Sask ranks second most attractive for mining

Mining.com - Canada is the world's most attractive region for mining investment, based on the combined rankings of all its provinces and territories, the latest annual global survey of mining executives released Thursday by the Fraser Institute shows.

While the country overtook Australia as regional destination number one, many of its provinces and territories did not fare well this year in the policy think-tank's annual survey.

Saskatchewan, which together with Manitoba topped last year's ranking, fell down to second place in the ranking, leaving old-time favourite Finland leading the list of most attractive jurisdictions, with Nevada in third place.

Manitoba simply disappeared from the top 10, while British Columbia and Alberta continue to receive low marks from investors for regulatory uncertainty and concerns about disputed land claims.

"Capital is fluid and one province's loss can be another province's gain because mining investors will flock to jurisdictions that have attractive policies," says Kenneth Green, senior director of the Fraser Institute's energy and natural resource studies.

"Sound regulatory regimes are an absolute must for policymakers who want to attract increasingly precious commodity investments," he notes.

Mineral exploration continues decline

CBC Saskatchewan - Saskatchewan may be viewed as the most attractive place in the world for mineral exploration companies to spend their money, but you wouldn't know it by just looking at the latest estimates on spending in the province.

Spending on mineral exploration and deposit appraisal declined for the second year in a row, according to new statistics from Natural Resources Canada.

In 2017, companies spent $181 million looking for Saskatchewan's next uranium mine or other commodity.

That's down 21 per cent from last year and represents the second-biggest year-over-year drop — behind only Nunavut — among provinces or territories where the dollar value of activity took a dive last year.

Mineral exploration spending in Saskatchewan was $257 million in 2015, $229 million in 2016 and $181 million in 2017.

The decline is partly the result of Saskatchewan and the rest of Canada losing business to other continents such as South America, Africa, Australia and even some Scandinavian countries, says Pam Schwann, P.Geo., the president of the Regina-based Saskatchewan Mining Association.

"You cannot get a mine developed in Canada in under 10 years with the current regulatory system," said Schwann.

"For the high-risk activity that exploration is, and for sinking hundreds of millions of dollars before you really get any production and any return out of it, companies are really looking hard at other jurisdictions that are more competitive and will offer a better return and a quicker return on the dollar."

Schwann says one thing that would help the province's numbers trend upward again — besides a lift in uranium and potash prices — is if companies diversified their spending beyond those staple commodities. Gold and rare earth deposits in the western part of the province bear digging up too, said Schwann.

One worrying change is the fact that mineral exploration companies were not exempt from the Saskatchewan government's PST expansion last spring.

They did not have to pay PST on drilling costs before, said Schwann.

"That will make up anywhere between 30 and 50 per cent of your typical exploration program," she said.

Flin Flon finds funds

The Reminder - Mine exploration around Flin Flon is about to get a boost, courtesy of the federal and Saskatchewan governments.

A joint venture between the two sides will provide a total of $2 million in funding for aerial exploration and incentives for junior mining companies.

Under the program, Saskatchewan's provincial government will spend $1 million on a geophysical survey of the area around Flin Flon, Creighton and Denare Beach. A budget proposal for other parts of the project is in the planning stages.

The surveying will be done jointly by the Geological Survey of Manitoba and the Geological Survey of Canada and Natural Resources Canada. Work on the project was expected to begin before early March.

Along with the aerial survey, both the provincial and federal governments will begin an incentive program for junior mining companies carrying out exploration in northern Saskatchewan.

"The strategy will include both a geoscience component and an incentive program targeted at junior companies who are exploring for base metals, precious metals and diamonds in a specified region of high mineral potential," read a statement from a spokesperson from the Saskatchewan Ministry of Economy.

More geoscience-based work in the area is scheduled to take place this summer. Multiple mining companies currently operating in northern Saskatchewan, including Rockcliff Metals and Foran Mining, could stand to benefit from the program.

The point of the funding is to help promote the mineral-rich North to junior mining companies in hopes that a large-scale deposit could be found.

According to a provincial government media statement, "The focus of the strategy is to help realize Saskatchewan's full potential for base metals, precious metals and diamonds, while maintaining existing strengths in other mineral commodities."

ENERGY

Coal still king in Saskatchewan

CBC Saskatchewan - Saskatchewan's power generation by coal is decreasing — but it still remains the largest source, according to the National Energy Board's Renewable Power Landscape report.

In 2005, coal accounted for 67 per cent of energy production in the province. It's now down to 49 per cent. In one year alone, from 2015 to 2016, Saskatchewan's coal power generation decreased by 6.5 per cent.

Saskatchewan also generates five times more greenhouse gases than the average in Canada, due in part to the high use of non-renewable sources such as coal and natural gas.

While coal use dropped, natural gas use rose. It's not a renewable source, but natural gas produces 50 per cent less greenhouse gases than coal.

This decrease in the use of coal is on par with overall trends in the country — which continues to see coal decline — but Saskatchewan is lagging behind most other provinces when it comes to renewable energy.

Renewable energy, such as wind and hydroelectricity, accounts for only about 17 per cent of the energy generated in Saskatchewan.

SaskPower is working toward improving these numbers, though. Their Renewables Roadmap says they aim to generate 50 per cent of their energy from renewables by 2030, with a goal of adding 60 megawatts of large-scale solar generation in the next three to four years.

ENVIRONMENT

gimmeges.files.wordpress.com

Half of Sask water unfit for animal consumption

Western Producer - Water testing through the summer of 2017 found about half of Saskatchewan water sources sampled were unacceptable for livestock to drink.

Hot temperatures and dry conditions resulted in high levels of pollutants in many locations. One extreme case of poor quality led to the deaths of more than 200 cattle in a community pasture near Shamrock.

Murray Feist, ruminant nutrition specialist at the provincial Agriculture ministry, said 555 water bodies were sampled, including dugouts, wells, water lines, sloughs and other surface water sources. Sulphate levels were high enough that officials couldn't recommend using about half of the water sources.

Given the dry conditions last year, and lack of snow in much of the South, producers should test water sources again this year before using them for cattle.

Willows No.1 solution for No.2

Regina Leader-Post – The Village of Val Marie, whose sewage lagoon is overcapacity, has been searching for innovative means to deal with the excess waste. They previously examined and dismissed using it to fertilize hay (consumers balked at cattle feeding even indirectly on waste) or Christmas trees (don't absorb water well).

At the Saskatchewan Urban Municipalities Association convention in February, the village discovered a solution: willows.

Bionera, an Alberta company that wants to break into the small-town Saskatchewan sewage market, made a presentation at the convention about the sewage treatment qualities of the trees.

For the past four years, Bionera has grown willows using Alberta wastewater. A company spokesman said the trees are "like a big sponge," absorbing water and nutrients to ease the pressure on overburdened infrastructure.

The company claims to be able to plant 110,000 trees a day. They're a hybrid variety that quickly soak up the wastewater through their fast-growing root systems. Then they pump it through their trunks until they release it out their leaves and into the atmosphere.

Bionera has only reached one Saskatchewan community so far: Coppersands. A utility company that services the mobile home park there uses willows as part of a sophisticated sewage treatment system that, it claims, could eliminate the need for a lagoon altogether.

Bionera doesn't aim to replace lagoons, only to increase their capacity. Municipalities have to comply with government standards to ensure water quality downstream. If their lagoons can't handle the load, they're forced to invest in expensive projects such as evaporation ponds or treatment plants. The willows can buy them time.

Once grown, the trees can be processed into garden mulch or burned as firewood.

Potash mining raises water concerns

CBC Saskatchewan - Water usage will increasingly become an issue as Saskatchewan expands its potash mining industry, according to a University of Regina researcher.

Several mines are in the works in the province. Since 2010, six have been approved through an environmental assessment, according to the provincial government. There are another six in the works or currently under environmental review.

Yuliya Andreichuk researched water usage of the mines as her master's thesis project for environmental engineering at the University of Regina.

Andreichuk's estimate is that the amount of water required for the projects, if they move ahead, will be seven times what it was in 2010.

The estimated water usage for nine of the projects is nearly 90 million cubic metres of water per year, according to the Ministry of Economy.

The Water Security Agency said there is an adequate water supply from Lake Diefenbaker, which is the source of much of the water, for future and current use.

The agency said one proposed mine by Yancoal would use just 0.15 per cent of the water volume available from it annually.

"That is a drop in the bucket, and not even, of what capacity is there from Lake Diefenbaker," said Patrick Boyle with the WSA.

While the required amount of water is available now, Andreichuk said the challenging factor for government will be the more extreme variations in precipitation expected due to global warming.

"Potash was established 60 years ago and it was not really prolonged droughts in that time, but there can be in the future," Andreichuk said.

"This is something they have to keep in mind, especially when they're trying to manage water for the municipalities and industries to keep everyone happy."

The high water usage is mainly because all but one of the proposed mines would use the solution mining technique, which means they extract potash using a large amount of hot water.

The main source of Lake Diefenbaker is Alberta's waterways and the Rocky Mountains.

"Alberta shares with us only 50 per cent of that water, so water management has to be really high priority," Andreichuk said.

News Beyond Our Borders

sincedutch.wordpress.com

About those fracking earthquakes

CBC News - Why does fracking cause earthquakes in some places and not others? Alberta scientists say they've figured out some factors that make certain wells prone to triggering earthquakes. That could help make it possible to forecast the risk of fracking-induced earthquakes in the future.

Fracking or hydraulic fracturing is a way of extracting natural gas that involves injecting fluid into a well under high pressure to fracture the gas-bearing rock and release the gas inside.

The practice has been linked to most large earthquakes in Alberta and B.C.'s oil and gas patches in recent decades. But generally across North America, fracking-induced earthquakes are rare, prompting questions about why they arise in some places and not others.

A study led by Ryan Schultz, a seismologist with the Alberta Energy Regulator and a geophysical research scientist at the University of Alberta, shows that the underlying geology determines whether earthquakes can be induced at all by a particular well.

So what makes a well earthquake prone? While geological factors are too complex to make precise predictions, Schultz and his collaborators managed to pinpoint some signs. One is the edge of a fossil coral reef below the well. The edges of modern coral reefs tend to form at faults, so ancient reefs likely did, too. When ancient reefs are buried and fossilized, they produce a distinctive type of rock called carbonate that geologists often detect and map, pointing to the location of faults, Schultz said.

Nuke dump moving forward

World Nuclear News - Canada's Nuclear Waste Management Organization (NWMO) has completed drilling the first borehole near Ignace, Ontario to a depth of about 1 kilometre. It is one of five sites in Ontario to be investigated for the siting of a deep repository for the long-term management of the country's used nuclear fuel.

Drilling began on November 6 in a rock formation known as the Revell Batholith about 35 kilometres west of Ignace, Ontario. NWMO announced that drilling of the first borehole was completed on January16.

NWMO anticipates drilling three initial boreholes, one after the other. Eventually, more extensive borehole drilling may be undertaken.

Mahrez Ben Belfadhel, vice president of site selection at NWMO, said: "Completing the drilling of our first borehole to obtain initial core samples and provide access to the geological conditions at depth marks another significant milestone in Canada's plan for the safe, long-term management of used nuclear fuel."

NWMO is searching for a suitable site for storing nuclear waste. The preferred site must have a suitable rock formation in an area with an informed and willing host, and the project will only move forward in partnership with First Nation and Métis peoples and surrounding communities.

Twenty-one communities, all in Ontario or Saskatchewan, initially requested preliminary assessments. Of the 11 areas selected for phase 2 studies, five in Ontario now remain.

TBNewsWatch.com

Tech Corner

theglobeandmail.com

Sunny ways coming to Alberta

The PEG - Southern Alberta is well-known for its windfarms but now solar farms are popping up across the area, too. A 30-hectare farm outside of Brooks is the largest solar facility in Western Canada.

This winter, Vancouver's Elemental Energy launched the $30-million farm, which includes 50,000 panels with the capacity to power 3,000 homes. Several larger projects are also being developed in the region, and so are a growing number of smaller entries into the market.

In the nearby Taber and Vauxhall districts, for instance, local governments recently greenlit three solar facilities proposed by Solar Krafte and two projects proposed by Canadian Solar/BowMount. Also under consideration is a project by Aura Power.

Robot spiders invade Indian sewers

Quartz Media - An Indian startup has found a way to get rid of a centuries-old social problem in India that has only turned deadly in recent times, killing more people in a year than even terrorism does in Kashmir.

Genrobotics, a firm based in Thiruvananthapuram in the southern state of Kerala, has created a robot that cleans sewers—a degrading and dangerous task otherwise performed by thousands of manual scavengers across the country.

http://www.genrobotics.org

On February 26, Genrobotics in partnership with Kerala state government deployed the first robot named Bandicoot, in Thiruvananthapuram. Bandicoot is a The spider-like machine with an arm that drops into the manhole, unclogs it, and pulls out the sludge. Bandicoot does in 45 minutes what three workers take two hours to do, one of Genrobotics' founders said.

The company is now in talks with the Indian government's Swachh Bharat Mission (Clean India Mission) to take the four-legged Bandicoot countrywide, said Arun George, a co-founder of the firm.

http://www.jhuapl.edu/newscenter

Inflation boosts $6 Million Man to $120 million

Quartz Media - Johnny Matheny is the first person to live with an advanced mind-controlled robotic arm. Last December, researchers from Johns Hopkins Applied Physics Lab delivered the arm to Matheny at his home in Port Richey, Florida. Aside from the occasional demo, this is the first time the Modular Prosthetic Limb (MPL) has spent significant time out of the lab.

Johns Hopkins has received more than $120 million from the US Defense Department to help pay for the arm's development over the past 10 years.

Matheny, who lost his arm to cancer in 2005, is the first person to live with the MPL, but there are plans to have others try it out this year. There are a few things Matheny is not allowed to do with the arm, like getting it wet or drive while wearing it. But beyond that, the goal is to push the robotic prosthetic to its limits.

The two major components of the current prosthetic test will be to determine how technically capable the arm is and how well it's controlled by Matheny's brain. If these robotic limbs controlled solely by thought can be designed and successfully used, it would revolutionize prosthetics. Artificial limbs could then become much more organic, working with an individual patient's movements, intentions, and body.

Put Your Business **in the Green**

Save up to

4%

annually on your energy costs

Naturally helping the environment.

SaskEnergy Commercial HVAC and Boiler Programs

Installing high efficiency natural gas equipment provides you with long-term savings, lower maintenance costs, and increased overall building comfort.

Whether you are a **greenhouse or mechanic shop**, incentives and leasing options are available to help you purchase qualifying energy efficient equipment for your commercial building.

Visit **saskenergy.com** for more information or to find a local participating **SaskEnergy Network Member**.

SaskEnergy Network Member

SaskEnergy

Calendar Of Events

APEGA AGM & Conference 2018
April 19 – 20, 2018
Edmonton, AB
www.apega.ca

Saskatoon Construction Association Members Gala
April 20, 2018
Saskatoon, SK
www.saskatoonconstruction.ca/education-events

2018 ConsultingEngineering and Geoscience Industry Forum with Water Security Agency
May 1, 2018, Ramada Plaza
Regina, SK
www.acec-sk.ca

88th APEGS Annual Meeting
May 3 – 5, 2018
Saskatoon, SK
www.apegs.ca

CIM 2018 Convention
May 6 – 9, 2018
Vancouver, BC
convention.cim.org

2018 Williston Basin Petroleum Conference
May 22, 2018
Bismarck, ND
www.wbpcnd.org

Engineers Canada Board and Annual Meeting of Members
May 23 – 26, 2018
Saskatoon, SK
engineerscanada.ca

ICME 2018 : 20th International Conference on Mechanical Engineering
May 24 - 25, 2018
Montreal, QB

Saskatchewan Mining Week
May 27 - June 2, 2018
saskmining.ca

2018 CCWESTT Biennial Conference
May 31, 2018
Edmonton, AB
ccwestt2018.com

Interior Designers Association of SK - 50th Anniversary
June 2, 2018
Saskatoon, SK

RFG 2018 Conference
Energy, Minerals, Water, Earth
June 16, 2018
Vancouver, BC
rfg2018.org

PUBLICATION MAIL REGISTRATION NUMBER: 40034203