



A P E G S

*Association of Professional Engineers
& Geoscientists of Saskatchewan*

THE PROFESSIONAL

EDGE

ISSUE 183 • NOVEMBER/DECEMBER 2019



Women in Mining



Just the *facts*

about Engineers Canada-sponsored
Critical Illness Insurance

Maybe you can relate to Jen,* P.Eng., 2007. She's an established civil engineer, loves her job, loves her two children, and she and her partner are grateful for their health.

Or **maybe you can relate to Matthew,*** P.Eng., 1996. He's an established chemical engineer, loves his job, loves his daughter, and he's grateful for his recovery from a stroke. Unfortunately, his wife was recently diagnosed with breast cancer.

Matthew and his family have had a tough time, while Jen and her family have been lucky. But that doesn't mean Jen's family is immune to critical illness – which is why **it's important to be prepared.**

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1 Canadian Cancer Society, "Nearly 1 in 2 Canadians expected to get cancer: report," June 20, 2017.
 2 Heart & Stroke, "Stroke Report 2016 just released!," June 9, 2016.
 3 ctvnews.ca, "The Health of Canadians: Looking back at 60 years of heart health," February 3, 2015.
 4 Net 5-year survival rate.
 5 Survival rate for those who have a heart attack and get to a hospital. Heart & Stroke, "Getting to the Heart of the Matter," 2015. 6 Heart & Stroke, "The Heart & Stroke 2017 Stroke Report," July 19, 2017.
 7 TheRecord.com, "Cancer patients face high out of pocket expenses," April 15, 2017.

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✓ Critical Illness is all too common.

The statistics relating to critical conditions are eye-opening:



1 in 2

Canadians will develop cancer.¹



1 in 3

Canadians will develop stroke, dementia, or both.²



1 in 2

Canadians will be impacted by heart disease.³

✓ More people are surviving critical illness

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	Cancer	Heart attack	Stroke
Survival rate	60% ⁴	95% ⁵	80% ⁶

✓ But what about the financial cost?

Survival is priceless. However, **many cancer patients spend over \$20,000** on various costs during their treatment.⁷ And consider the lost wages suffered by the more than 400,000 Canadians who live with long-term disability due to stroke.⁶

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Correction:

The September/October issue of *The Professional Edge* contained an error with regards to the Call for Council Nominations. Corrections have been made and can be found in this issue on Page 20. *The Professional Edge* apologizes for any confusion.

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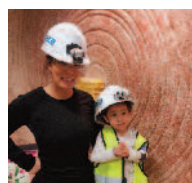
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On the Cover:

Mosaic's Natasha Dreaver, Engineer-In-Training, with her daughter Asten at Nutrien Wonderhub in Saskatoon

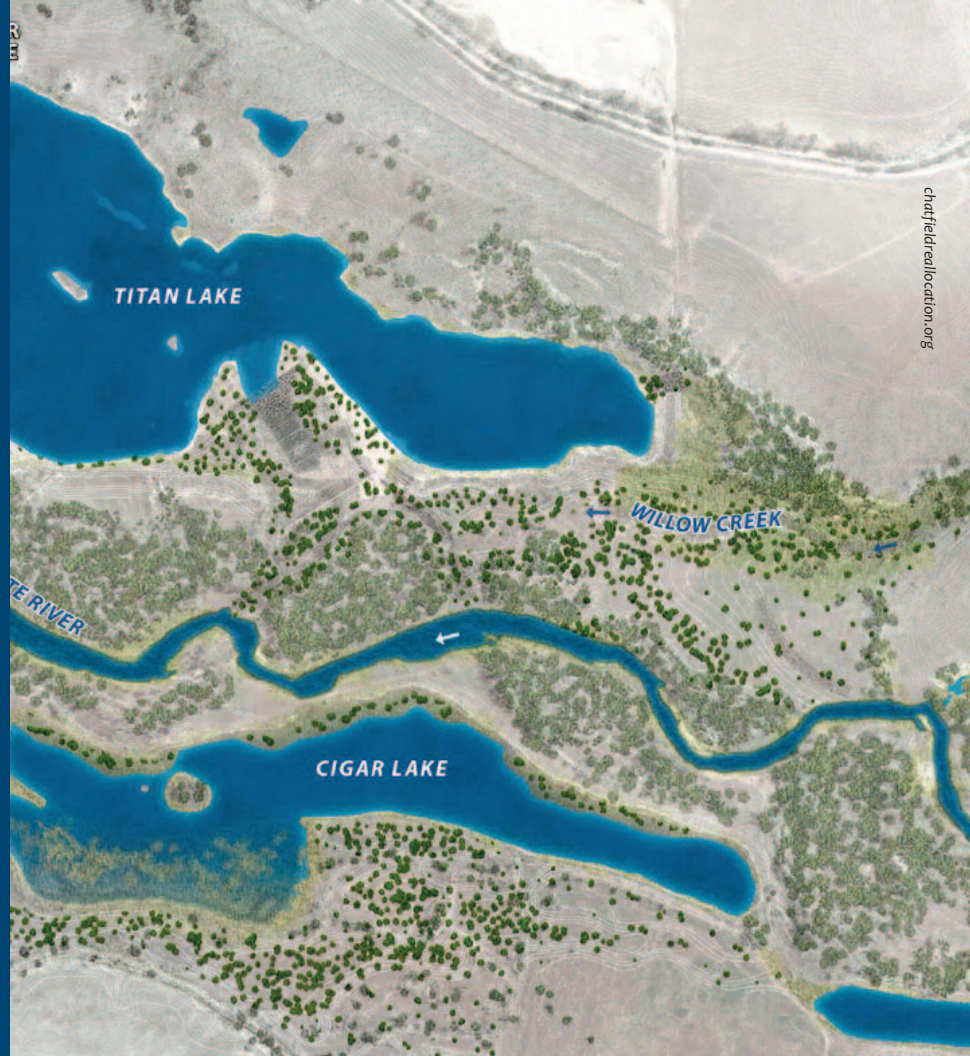
President's Message



Terry Fonstad, Ph.D., P.Eng., P.Ag., FEC

Saskatchewan's economic drivers are often identified as agriculture, mining and energy.

A quick check of the Government of Saskatchewan website indicates the value of Saskatchewan's mineral sales in 2018 were \$7 billion. With half of the world's known potash reserves and the world's largest high-grade uranium deposits, Saskatchewan will continue to be important to not only Canada, but world food and energy security.



Our Cigar Lake mine boasts the largest high-grade uranium deposit in the world, located in the uranium rich Athabasca Basin.

Without question, mining is big business. In 2017, Canada's mineral imports and exports recorded a balance of trade of more than \$19.9 billion. Canada's domestic mineral exports, valued at \$97.5 billion in 2017, accounted for 19.4 per cent of its total merchandise exports.

Today, our mining sector is a leader in environmental protection. We export that expertise all over the world. This has not always been the case.

Reclamation of old northern uranium mines continues, and millions have been invested into containment projects at older mine sites. APEGS, as the regulator of the engineering and geoscience professions in Saskatchewan, added safeguarding the environment to our obligation of safeguarding human life in the code of ethics we all live by.

Currently, the mining sector is moving to autonomous technology to increase mine safety and efficiency. This brings new engineering and geoscience opportunities in areas traditionally not associated with the mining industry. It also opens opportunities to export our expertise and experience in this area.

This month we are honoured to highlight the world class leadership several of our colleagues are delivering in the mining sector.

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Thriving on new challenges

BY MARTIN CHARLTON COMMUNICATIONS

Jessica Theriault, P.Eng. was the first female chair of the SMA board

Young, bright and driven - Jessica Theriault knew she belonged. She wasn't deterred despite being amongst the minority.

While studying at the University of Regina, where she obtained an environmental engineering degree, Theriault was one of few females in the engineering classroom, easily outnumbered by her male classmates.

Little did she know at the time, however, that by continuing along her path she would make history in the Saskatchewan mining industry.

Heading Up SMA

In March 2019, Theriault concluded her two-year term as chair of the board of directors for the Saskatchewan Mining Association (SMA). It was the first time in its 50-plus-year history the association that represents this province's mining sector has seen a female chair.

"It definitely exposed me to the broader side of the business, which was more in alignment with my recent MBA," Theriault explained. "I've always needed to be technical and regulatory-focused in my role, so this gave me the opportunity to have a deeper look into the business side of mining and its impact on the province and the provincial economics and on the role that mining plays in Saskatchewan."

It is a position, she says, she would love to take on again should the opportunity arise. Theriault remains on the board of directors, along with three females (Alice Wong from Cameco Corp., Crystal Steciuk with Mosaic and Nicole Powlowski with K+S Potash). Tammy Van Lambalgen (Orano Group) is now serving as chair of SMA board.

Theriault is the director of regulatory affairs with The Mosaic Company. With more than 20 years of

environmental experience in the potash mining industry in Saskatchewan, she oversees the coordination and management of environmental regulatory relations for Mosaic's potash business unit, as well as leadership in the development of the Mosaic Potash Business Unit Sustainability Program.

An impressive resume, indeed. So why did it take 50-plus years for a woman to sit as chair at SMA?

"There have been women who have played leadership roles in mining for several years ... I don't think there is any one particular reason why (it took 50-plus years for a woman to serve as chair) because there are several examples in Saskatchewan of women in very senior leadership roles within the mining industry," Theriault said.

She immediately pointed to Pam Schwann, P.Geo., president of SMA, as one example. Theriault was proud of her appointment to chair of the board at SMA and grateful to the other women like Schwann who helped pave the path to leadership within the industry.

"There are many more (female leaders) in the mining industry," she said. "I had a lot of support from Mosaic, from Pam and from the board of directors. They helped to provide guidance and advice along the way. A great team to be a part of."

Sign of Change

Certainly, her appointment to chair garnered headlines. The mining sector, and engineering in general, has largely been a male-dominated industry for decades, although



Carneco

The mining sector has been largely a male-dominated industry. Engineers Canada is working to increase the representation of women within engineering.

Therault has seen gender diversity greatly improve over the past 20 years.

Engineers Canada has made recruitment, retention and development a top priority. It has been working to increase the representation of women within engineering through its 30 by 30 initiative – with a goal of raising the percentage of newly licensed engineers who are women to 30 per cent by the year 2030. Thirty per cent is viewed as a tipping point for sustainable change.

As a university student, Therault said the majority of her work terms were with pulp and paper. She completed two terms at a mill in Thunder Bay, ON. After university, her first year of employment was in the oil and gas sector as a wireline field engineer, prior to moving over to mining.

“In university, I was used to being one of the few females in the classroom,” she said. “But now, the times and the number of women working in the field have definitely changed. There are a lot more females working in the mining industry and in engineering overall.”

“When I first got involved in engineering, females were the minority. Working in the pulp and paper sector, females in engineering and females in general within the mill were a minority as well. The same statement can be made for my experience as a wireline engineer in the oil and gas sector. I was used to being a minority in the workforce coming into IM Potash (at the time) in 1998, but that is definitely not the norm now.”

Rewarding Career

Following her brief tenure in the oil and gas sector, Therault found herself at the potash mine in Esterhazy. Her first year at Mosaic’s IM Potash she worked in strategic alliance as a technical analyst on the procurement side before she eventually moved into environmental work, which is her background.

She will celebrate 22 years with Mosaic in May 2020.

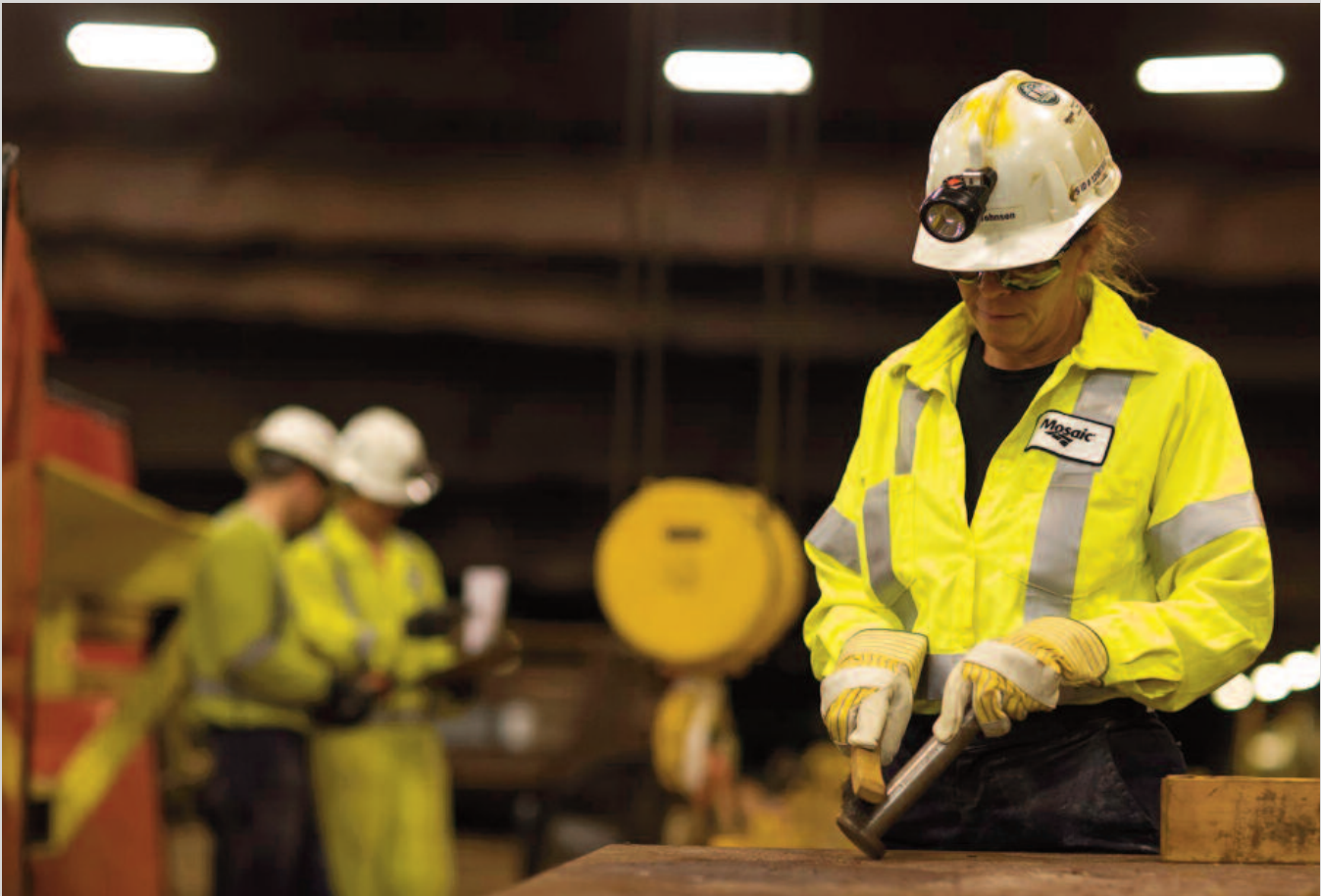
Looking Ahead

Thanks to an ever-evolving business, Therault says her exact future career in mining is somewhat of an unknown. Although her heart would love to stay immersed in the environmental and regulatory aspects of the industry, she’s always looking for new challenges and thrives on being challenged.

She noted the role she’s in today didn’t exist a handful of years ago and she’s almost certain the role she retires in might not exist today.

Therault is, however, convinced of one issue she’d like to address in the immediate future.

“I want to make sure our younger entrants into this field are set up for success and that they are mentored and supported as much as I was early in my career,” she said. “I want to pass along that same level of effort to the next generation to make sure they’re successful in their roles.”



Camraco

At Mosaic, 29 per cent of its potash employees are female.



Mosaic gender diversity by the numbers

Karen Swager -

potash business unit senior vice-president, is the first female in this role.

13% potash employees are female
(mining industry average is 17 per cent);

29% potash engineers are female



Potash Leadership Team

15% potash people leaders are female

5 of **8** are FEMALE

21% potash leaders in engineering are female

Mosaic formed a Gender Diversity Working Group in 2018 to identify big goals and quick wins. It developed a strategy that will continue to support efforts in this area.



Karen Swager

Women making inroads in mining sector

Karen is registered as a professional engineer in the U.S., and as a newcomer to Saskatchewan, she is in the process of becoming registered with APEGS.

When Mosaic's Senior Vice-President Karen Swager was in college, only one in five students in her engineering program were female. That number dropped even more precipitously when she was in graduate school.

"I didn't think that much about it at the time. I went into engineering with my eyes open knowing that it was a male-dominated profession. I knew what I was getting into. In any case, even with that imbalance, universities tend to be more modern and inclusive in their thinking, so I didn't really find it a barrier at that time," Swager said.

Changing Attitudes

She found it harder when she entered the workforce.

"My first full-time job was at a mine. No one there had ever worked for a woman before. Even today, that's still very often the case."

This wasn't always a negative. Swager says that, in some situations, she had lots of support from peers and employees making special effort to be modern and inclusive. Other situations, not so much.

"On one of my first projects, I was supervising contractors. I gave instructions to a foreman who said, 'sorry I need to get that from a boss man'. As an inexperienced 24-year-old professional, I found it difficult to figure out how to tackle that problem. Ultimately, I had to take the matter to a higher-level manager who had the foreman removed from the job."

Over the decades, Swager has seen significant change for the better.

"There are more females at high levels in the mining industry. Their paths haven't been easy, but they've made it and their success has encouraged others."

She notes that the potash industry, while still nowhere near gender parity, has done better than in some other engineering fields.

"In potash, about 13 per cent of employees, 15 per cent of leaders and 29 per cent of engineers are female. We've made a concerted effort to reach that number but obviously we still have a long way to go."

Swager notes that Mosaic actively recruits female engineers through its student programs and makes special efforts to ensure the company offers opportunities to females. The company has an internal working group on gender diversity to make the numbers better.

As for where to go in the future, Swager believes the issue needs to be addressed in schools."

"I would like to see more exposure and encouragement in schools about engineering as a career option for girls. To change the game, we'll have to do something different. Instead of just promoting in high school, perhaps we need to start earlier at middle school.

"Women engineers also need to tell our story better. We need more positive stories about women who have succeeded. That's one place I'm always happy to contribute. I've loved the profession."





Bonnie Dobchuk - O’Kane Consultants

BY MARTIN CHARLTON COMMUNICATIONS

Bonnie Dobchuk, P.Eng., is proud of the work her company has accomplished over the years and excited for the opportunities that will come in the future.

Even more so, she’s proud of the people who take on these projects.

M.A. O’Kane Consultants, a holistic mine waste management service, boasts a uniquely diverse roster, highlighted by an all-female core management team. Dobchuk is the CEO.

The company, with offices in Canada, the U.S., Australia and New Zealand, is managed on a consolidated basis. Working with Dobchuk are business unit leaders and an operations team split into an Americas seat and an Oceania seat. All business unit managers are women.

Dobchuk said the formation of the female leadership team happened somewhat organically and that O’Kane has always employed a high percentage of women.

O’Kane opened for business in 1996 in Saskatoon. Seven years later, Dobchuk was hired and became the first female engineer on staff. The company blossomed that

year with an office opening in Brisbane, Australia and in Calgary. Additional offices then opened in Fort McMurray, Cranbrook, Fredericton and stateside in Anaconda, Montana. Brisbane, Perth and Christchurch, New Zealand comprise the international sites.

One aspect that binds all offices is diversity and inclusion.

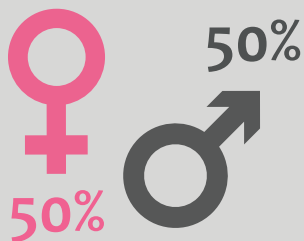
“We are very proud of it, but we also aren’t saying that we’re here because we intended it,” Dobchuk explained of her company’s diversity. “We didn’t set out years ago saying we wanted to be 50-50 male-female. But on the other hand, I don’t think it was entirely by accident.”

“When there aren’t broken rungs or glass ceilings - when those things don’t exist - you do get a much higher percentage of women naturally. We have always thought we were picking the right person for the job. It was never a decision based on gender. But... were there some barriers that just weren’t here? I think that is probably quite likely.”

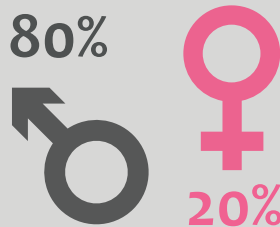
Dobchuk’s transition to CEO began in 2017; she has been employed by O’Kane for nearly 17 years.

O’Kane by the Numbers:

Male & Female Employees



Board of Directors



Core Management Team



67 per cent of staff are millennials (ages 23-38 as of 2019), **28 per cent** generation X (ages 40-54 as of 2019) and **5 per cent** baby boomer.



O’Kane uses the Failure Modes and Effects Analysis approach to engage stakeholders in the process of developing the best outcome for the closure of mine sites.

“It has been a bigger, grander and new problem to solve,” she said of her role as CEO. “It’s a different kind of engineering. It’s running a business, it’s a machine of moving parts that you want to make more efficient. In a way, it sparks all the same love of problem solving as I had with my engineering experiences.”

Holding a senior management position was never in her foremost thinking, however. Though engineering does run in her family. Her father and her uncles were engineers and she was encouraged by them at a young age to follow in their footsteps.

A whiz in all things mathematics and science, naturally, Dobchuk in Grade 8 elected to take industrial arts (IA) classes in place of a home economics course.

In an example of how times have changed, Dobchuk said her decision to take IA was met with raised eyebrows and plenty of questions from male classmates and teachers.

“They would say things and ask, ‘Why is a girl doing IA classes?’”

Undeterred, Dobchuk proceeded to earn a Bachelor of Science degree in agriculture and bioresource engineering from the University of Saskatchewan. She also holds a Masters degree in environmental engineering from the U of S.

Her “lightbulb moment” occurred during her fourth year at U of S in a class on soil cover systems. Not only was she thrilled to be applying the science she was learning, but also fascinated by the technology they were looking at designing the cover systems for mine waste.

Furthermore, an unsaturated soils group formed at the school in the 1990s and introduced leading-edge research on unsaturated soil mechanics. Dobchuk was hooked.

Mike O’Kane, founder of O’Kane Consultants, was a grad student at the U of S at the time and a member of the unsaturated soils group. He founded his company based on this niche service.

“I just happened to be at the right place at the right time,” said Dobchuk, who was hired by O’Kane shortly after her graduate studies concluded.

“If you really have an itch to help the environment in a big way, like I do, doing anything in the mining sphere is a great way to do it.”

Canada is one of the largest and most productive mining nations in the world, thanks in large part to the projects hosted in Saskatchewan. According to the Mining Association of Canada, mining contributed \$97 billion to Canada’s GDP in 2017.



It's a profitable and sustainable industry and one that is constantly evolving.

What does the future hold for O'Kane?

"There is huge space for O'Kane in the future," Dobchuk said. "We're not going to quit mining our minerals any time soon, but we are going to become much more efficient at it. We're going to find ways to do it that doesn't impact the environment nearly as much. And that's where we're going to come in.

"We're always going to have room for smart, clever engineers to come in and help make it a more efficient process and potentially find ways that are even cheaper. There are huge opportunities for improvement in the way mining is done."



TOP: O'Kane provides an innovative and integrated geotechnical engineering service to the mining industry internationally. **ABOVE:** O'Kane Consultants understands the importance of a holistic approach to mine site rehabilitation. The team at O'Kane has the capabilities to quantify all aspects of the soil-plant-atmosphere continuum, including plant ecohydrology on disturbed and natural sites.

Mike O’Kane - O’Kane Consultants

BY MARTIN CHARLTON COMMUNICATIONS

Fourteen women were murdered and 10 more injured when Marc Lepine went on a shooting rampage at École Polytechnique, an engineering school in Montreal, on Dec. 6, 1989.

It is the deadliest mass shooting in Canadian history and a moment that deeply affected Mike O’Kane, P.Eng.

O’Kane, an engineering student at the University of Saskatchewan at the time, was nowhere near Montreal that day. However, through emotional conversations with one of his closest female friends, a reporter who covered the massacre, it became clear to him that things needed to change with regards to attitudes toward women.

Confronting Evil

Lepine’s motive was difficult to accept. It was reported that after he stormed into a mechanical engineering classroom, he separated nine women from the approximate 50 men and ordered the men to leave the room.

Lepine then addressed the women in the room. “You’re women, you’re going to be engineers. You’re all a bunch of feminists. I hate feminists.”

He said he was fighting feminism and then opened fire on the students, killing six and wounding three others. Twelve of the 14 women killed that day were engineering students.

“It struck me very hard. How could this happen? How can we say, ‘Is she the right woman? Is she allowed to be an engineer?’” asked O’Kane, founder of O’Kane Consultants and a senior technical advisor. “Are we actually asking women to be the right women or the right person, rather than actually saying it should be us as men who need to better educate ourselves and advance ourselves?”

Nude is Rude

The shooting in Montreal sparked public debate and conversations across the country and O’Kane admitted he was confused by some of the dialogue. Even more so, he questioned society’s attitude toward women.

As his primary example, he pointed to the Lady Godiva ride, a longstanding tradition at many university faculties, including at the University of Saskatchewan, where a near-naked woman would ride on horseback across campus during Engineering Week.

“I didn’t understand how others didn’t see there was no connection between continuing that ride and not appreciating or realizing we needed to change and be better,” O’Kane said.

Facing Resistance

O’Kane wanted his voice to be heard. He ran for and was elected president of the Engineering Students’ Society. He wanted the tradition of Lady Godiva to ride into the sunset and come to an end.

His opinion was of the minority.

“It was tumultuous,” O’Kane said of the reactions from classmates, adding he “got into trouble” with the college administration over his push to end the popular tradition.

“You’re getting pushback, but you don’t understand why. I was reacting rather than responding. My reaction was, ‘How can you people not get this? Come on.’”

“I was trying to be right and when you’re always trying to be right your mind isn’t open. At that time, I was doing something because I needed to be right. In reality, if I actually had a more open mind, I could have handled that a lot better. And people pushed back because it was change and it was different. Change brings fear even if that change is good.”

The Lady Godiva ride at the U of S eventually ended.

Changing the Environment

“In most instances, it’s not the person that needs to change. Rather, it’s the environment around these things that needs to evolve. I think that is happening and continues to happen,” O’Kane said.

The staff demographics at O’Kane Consultants is a prime example. The company is led by a female CEO (Bonnie Dobchuk) and boasts an all-female management team. In fact, the staff is an even split of 50 per cent men and 50 per cent women.

“That’s just who we are. It just happened this way through no special effort,” O’Kane said. “And I think the statistics elsewhere show that things have changed.”

“I get the most joy in working with people who I can learn from and keep myself coachable and open and being involved with people who are of a similar mindset. For our company, that’s who we are.”



Natasha Dreaver, Engineer-in-Training with her daughter Asten at the Nutrien Wonderhub in Saskatoon.

Natasha Dreaver – Mosaic

BY MARTIN CHARLTON COMMUNICATIONS

Natasha Dreaver’s story is one of perseverance. She didn’t have a lot as a young child growing up in Prince Albert. Life gave her all she could handle.

Not only did she overcome each challenge, but she carved a life and a career that could serve as a prime example to youth that hard work does pay off.

First in Her Family

Dreaver, Engineer-in-Training, originally is from Mistawasis First Nation. She is the first of 24 grandchildren in her family to attend and graduate from post-secondary school. She put an exclamation point on the achievement by earning two degrees — a B.Sc. in biological sciences from the University of Alberta and later earned a B.Sc. in chemical engineering from the University of Saskatchewan.



Natasha Dreaver represents Mosaic Company for a presentation at a career fair at the Mistawasis First Nation.

Her parents weren't there to see her graduate – they both passed away early in her educational pursuits. Dreaver discontinued her education at the U of A after her mother passed away to move home to Prince Albert to raise her younger brother, who was in high school at the time.

“That really motivated me. I knew I had to get a good education in order to get a good job,” said Dreaver, who is now a process engineer, surface mill operations at the Mosaic Colonsay mine.

“Even if it was something like catching a cab to get to the grocery store or receiving a Christmas hamper ... it's a lot different than the stories I hear from my colleagues. Their parents might have been geologists or engineers. My background is quite a bit different.”

Dreaver assumed more of a parental role after her parents passed. The loss deeply affected her brother, and while she was there for emotional stability and support, Dreaver's other responsibilities included paying the bills and putting food on the table.

She put her biological sciences degree to good use and found work at the Saskatchewan Forestry Centre and later at the First Nations Agriculture Council of Saskatchewan in Saskatoon, where she orchestrated youth programs around First Nations and agriculture.

She worked there for almost two years, which put her in a better financial state before she eventually enrolled at the U of S and earned her second degree, this one in chemical engineering.

Her first job in the industry was at Cameco's Cigar Lake uranium mine, before she started work with Mosaic.

Mosaic has put significant attention on Indigenous inclusion in its workforce in the last several years, including Indigenous Cultural Awareness training for every Saskatchewan employee and increasing the percentage of its Indigenous employees to at least 15 per cent by 2025.

Dreaver has maintained her passion in working and mentoring youth.

Dreaver participates in outreach programs every year, including the APEGS Dream Big: Engineering Our World presentation during Engineering and Geoscience Week. She has visited several Indigenous career fairs, as well as her own First Nation for presentations to the entire school student body.

Her message to the youth is simple.

“As much as my background isn't the greatest background, it is a living reality for a lot of the kids I meet with,” she said.

“If they can see someone who has an interest in math and doesn't get involved in gangs or drugs or alcohol, that kind of thing, you can definitely succeed.”

“Because one out of 100 might get out and not be a statistic you might see on the news.”

“There are so many more opportunities out there now through inclusion and diversity. There are more available spots targeted specifically for First Nations students at universities.”

The opportunity to constantly learn is a big reason why Dreaver loves her career.

“There are people that I work with who have been here for almost 40 years and they're still learning new things, especially when we work on new research and development projects,” she said. “I really enjoy that aspect because I'm learning something new. There is so much to know about working in a mine in general – optimizing the process, operating new equipment, effective operational strategies, best practices for safety and environmental aspects and the economics and cost benefits analysis of new business opportunities.”

“Our group has its hands in a lot of different departments and we get to have input or be involved in so many projects. If I was doing the same thing every day it would be tiresome.”

Dreaver and her husband live in Saskatoon where they raise their two children – a six-year-old son and three-year-old daughter.

Farewell to Lyle Hewitt



The Professional Edge is produced by Martin Charlton Communications. Lyle Hewitt has been the editor of *The Professional Edge* for the past 12 years and throughout his 19 years with the company has been contributing content to *The Edge*. Lyle is moving on in his career and Martin Charlton's Craig Slater, who has been a contributing writer/editor on the magazine for the past two years, takes over this issue as editor.

Q. How long have you been working on *The Edge*?

A: I started writing for the magazine in 2000 and took over as managing editor in 2006.

Q. As editor of *The Professional Edge* over the past 13 years, what did you enjoy most about serving in that role?

A: I always enjoyed the opportunity to meet and interact with engineers and geoscientists personally in any context. My favourite part of the magazine was Member Profile. So many engineers and geoscientists have such interesting lives and careers yet they are typically so humble about it. On countless occasions, the interview subject would say "oh, I don't know why you'd want to interview me. My life is pretty dull". But then I'd ask him what he does in his spare time and he'd say something like "my wife and I like to spend our summers building orphanages in India". That was an actual answer one time.

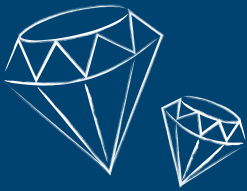
Q. During that time, do you have a favourite article that you wrote?

A: I have a general and specific answer to that. In general, I always enjoyed learning and writing about the Canadian Light Source Synchrotron. Too few people in Saskatchewan are aware that we have this world-class research facility that is helping to make discoveries in innumerable fields.

Specifically, my favourite was the time I interviewed Steve Halabura, P.Ge., about his travel experiences. The guy is such a hoot it was hard to complete the interview because he had me in stitches the whole time.

Q. You've attended many APEGS conventions and met dozens of APEGS members over the years. Is there a memorable moment/interaction that stands out?

A: All the social events were a ton of fun. The most memorable was the casino night we had at one of the annual meetings. The weird thing about casino nights is that people are insanely luckier when they're playing with fake money. I have this vivid image of former APEGS president Leon Botham, P.Eng. at the roulette table. He seemingly couldn't lose. He had this mountain of chips in front of him and just kept letting it ride.



Gems of Geoscience

Anyone who spends a minute talking to a geoscientist learns that almost all of them have a beloved rock collection. In this new regular section of *The Professional Edge*, we learn about geoscientists and their profession through their favourite rocks.



The Geoscientist: Debra Shewfelt, P.Ge., is a co-president and senior geologist at Respec Consulting in Saskatoon.

The rock: The Scrubber Granite of the Australian Outback.



Why its important

Ask a geoscientist to choose their favourite rock or mineral and you'll see that this is more difficult than asking them to choose their favourite childhood memory, their favourite beer or wine. So many choices, all good, all with their own amazing characteristics.

There's an emotional attachment - a deep appreciation that borders on infatuation with our collections that only a true rockhound can appreciate. Choosing only one rock feels wrong.

At first, it seemed a difficult task, but then it dawned on me - is there really any choice other than the rock that I went halfway around the world to study? The perplexing texture that I examined at kilometre-scale field mapping down to the minutia of fluid inclusion bubbles and isotopic ratios?

The Scrubber Granite of the Australian Outback. This is not just any granite - no offense, common granite, but this is not the run-of-the-mill pink, black and white. This is an extraordinary granite, 1,800 million years in the making that shall never be rivalled in any rock collection.

The Scrubber Granite has an amazing texture that has been observed in select granitic outcrops worldwide: tourmaline nodules. These are nodules of various shapes, sizes and distribution; some perfectly spherical, some elongated, others doughnut shaped.

A characteristic halo occurs around the dense, nodule centre, contains black crystals that are long, bladed and fantastic.

While observed on many continents, a singular hypothesis for how these nodules formed has eluded geoscientists since their first documented encounter in the 1950s. Why do these granites have them, while most others do not? What conditions are necessary for their development and preservation? What does their formation tell us about magmatic processes in the earth? What can it tell us about the partitioning of rare, incompatible elements of interest, which are highly sought after for their use in modern electronics, clean energy, aerospace, and more?

Amazing samples of the Scrubber Granite tourmaline nodules, a marvel of the geoscience world, are displayed prominently in my home, outside in the rock garden and at work as polished slabs and as rough-edged outcrop samples (I highly recommend the experience of exploding an outcrop in the Outback).

This rock will always have a special place in my scientific brain and in my heart. It was my whole world for two-plus years as I completed a Master of Science in Geology at the University of Saskatchewan, a joint project with the Geological Survey of Western Australia. These tourmaline nodules will remain near and dear to me forever.

Notes from APEGS Council

The APEGS Council met September 27, 2019 in Saskatoon. The meeting was attended by 18 of 19 councillors and the directors to Engineers Canada and Geoscientists Canada. Mike Griffin, LLB – APEGS External Legal Counsel attended a portion of the meeting as a guest. Council will meet next December 5 and 6, 2019 in Regina.

Council received the following presentations and information items:

- Activity updates from the constituent society liaisons, the ACEC-SK liaison, and the 30 by 30 Champion's Group liaison.
- The Manager of Communications updated council on the radio and video ads in development.
- The Executive Director and Registrar provided council with an update on staffing and the co-op students hired to provide support in an IT capacity.
- The Director of Special Projects briefed council on the progress with the implementation of the member database.
- The APEGS Directors to Engineers Canada and Geoscientists Canada reported on the activities at the national organizations.
- The Director of Registration reported on the PNWER Summit held in Saskatoon in July, 2019, noting that over 500 delegates were in attendance.

Council passed motions as follows:

- Instructing the Experience Review Committee to look at other alternatives to interim assessments, noting that competency-based assessment applicants are no longer able to receive an interim assessment.
- Requiring all Engineers-in-Training being assessed in the competency-based assessment system to demonstrate competencies in a Canadian or Equivalent-to-Canadian work environment, to take effective January 1, 2020.
- Approving an updated process for reviewing reports submitted under the competency-based assessment system.
- Approving the updated policy PPE3.0 – PPE Candidate Conduct.
- Approving the updated policy CPD6.0 – CPD Review and CPD6.1 – CPD Registrar's Action.
- Approving Life Membership for the following members: Baran, Bob B., P.Eng., Chernaiwsky, Don W., P.Eng., Cousin, Gerard R., P.Eng., Dance, John T., P.Eng.,

Ganong, Blaine W., P.Eng., Greif, Peter, P.Eng., Guerrette, Jacques, P., P.Eng., Jennings, James A., P.Eng., Kristoff, Brian J., P.Eng., Richards, Jack G., P.Eng., Zimmerman, Henry P., P.Eng.

- Approving the revised Terms of Reference for the Governance Board.
- Appointing Russel Johnson, P.Eng. as Vice Chair of the Investigation Committee for a two year term.
- Appointing Stormy Holmes, P.Eng., FEC, FGC (Hon.) (Chair), Ernie Barber, P.Eng., FEC, FGC(Hon.) (past Executive Committee), Sherri Doidge, P.Eng. (Group VI – Chemical, Ceramic, Metallurgical), Ryan Johnson, P.Eng. (Southwest District), John Masich, P.Eng. (North District) and Dave Rezansoff, P.Geo., FGC (Geoscience North) to the Nominating Committee for the 2020 Council Elections.
- Fixing April 20, 2020 as polling day for the 2020 Council Elections.

Council noted and received the following reports:

- Registrar's reports for June through August 2019.
- The report on compliance activities from June 1 to August 31, 2019.
- The updated report on the Continuing Professional Development Implementation Plan, variation requests and the ethics presentations, including the online module use.
- The unaudited financial statements for May, June and July 2019.
- Executive committee minutes, board minutes and the reports from the committees and task groups, abridged investigation committee minutes, and the discipline committee minutes.
- The association's 2020 draft budget.

APEGS Governance Review

On September 26, 2019, also in Saskatoon, APEGS council, past presidents and APEGS staff were presented with the first draft of the governance review recommendations. The draft recommendations of T. Bakkeli Consultants Inc. were discussed in an open forum.

Call for Council Nominations

Nominating Committee

The Nominating Committee is soliciting names for the council positions described below. You may contact staff support to the Nominating Committee, Shawna Argue, at sargue@apegs.ca to propose names of potential candidates. Shawna may also be reached through the APEGS office in Regina by phone at 306-525-9547 (toll free 1-800-500-9547 North America), or facsimile 306-525-0851.

The Bylaws require the Nominating Committee to nominate, whenever possible, the person holding the office of President-Elect for President, and one person for the position of President-Elect (typically the person holding the office of Vice President). Andrew Lockwood, P.Eng., FEC is the current President-Elect and Kristen Darr, P.Geo. is the current Vice President. The Nominating Committee is also required to nominate, whenever possible, at least two persons for Vice President and at least two persons for each vacancy on the Council.

Submissions of Nominations

Any five members may nominate over their signatures an eligible nominee for any elective office, except that of President. Such nominations shall be in the hands of the Registrar at least forty-five days before the election is to take place. To meet this requirement, the nominations must be in the APEGS office no later than 5 p.m., Thursday, March 5, 2020, as the election will take place when ballots are counted on Monday April 20, 2020, the “polling day”.

2020 Vacancies & Terms of Office

Officers

- President-Elect – one-year term
- Vice President – one-year term

Group and Electoral District Councillors

To serve a three-year term.

- Group VI (Chemical, Ceramic and Metallurgical)
- South-West District
- North District
- Geoscience North District

Terms of Office

Only members in good standing are eligible for nomination.

A person elected to Council may only hold office while a resident of Saskatchewan.

A person nominated for President-Elect must have served at least one full year (i.e. from the close of business at one annual meeting to the close of business at the next annual meeting) as a member of APEGS Council prior to the date on which they would assume office as President-Elect.

A person nominated as a representative of an electoral group must be classified with the association in that electoral group. The Councillor representing Members-in-Training can complete the term of office after obtaining his or her P.Eng., or P.Geo. status.

<http://www.apegs.ca/Portal/Pages/council-elections>



APEGS Fees Notice



Fees for 2020 are due on or before December 31, 2019

What happens if I don't renew?

You would no longer have the privilege of practicing within Saskatchewan or on properties or facilities located in Saskatchewan. Use of title in Saskatchewan is also a privilege of membership.

Members who do not retain their membership in APEGS and/or in another Canadian association/ordre will lose coverage under the National Secondary Professional Liability Insurance Program. Also, failure to maintain your membership will result in ineligibility for benefits under the group life insurance program offered through Manulife and Engineers Canada if you have subscribed to this insurance.

Renewal notices have been mailed

Renewal notices were sent in November. It is the responsibility of members and the official representative for a Certificate of Authorization to make sure contact information is up to date, including your email address.

If you haven't received your fees notice, contact APEGS. Fees are due on or before December 31, 2019 regardless of problems with delivery.

Check your contact information in APEGS Central

To check your contact information, log into APEGS Central (your online profile) by clicking "Login" in the top right corner on any page of the APEGS website. If you have never used the system before, click on "Forgot your password" and follow the instructions.

You can also use APEGS Central to make all other fee payments, enter Continuing Professional Development (CPD) credits, renew Permission to Consult, manage your email/mail subscriptions and volunteer for APEGS.

Members who are retired or not working (at anything) in Saskatchewan can retain membership and may be eligible for a waiver of the annual licence fee. More information can be obtained from the documentation accompanying your fees notice or from the APEGS website under Members, "Annual Fees, Licence Waiver".

What if my membership ceases and I need to reinstate?

Memberships that have ceased are subject to a 15 per cent fee to reinstate in the same calendar year. Members who notify the APEGS office in writing of their intent to resign their membership on or before January 31, 2020 may reinstate their membership and licence during the calendar year without the payment of a reinstatement or application fee. The late payment penalty for the holder of a Certificate of Authorization is 15 per cent of the annual fee.

For reinstatement procedures for subsequent calendar years, see the APEGS website under Apply, Reinstatement.

Eligibility for Life Membership

Members who are 65 years of age and retired are eligible to apply for Life Membership. An application comes with your renewal notice in November.



A P E G S

Association of Professional Engineers
& Geoscientists of Saskatchewan

2020 Annual Meeting and Professional Development Conference

April 30 – May 2, 2020

Delta Bessborough and Sheraton Cavalier
Saskatoon SK

Thursday, April 31

Evening Welcome Event
Nutrien Wonderhub

Friday, May 1

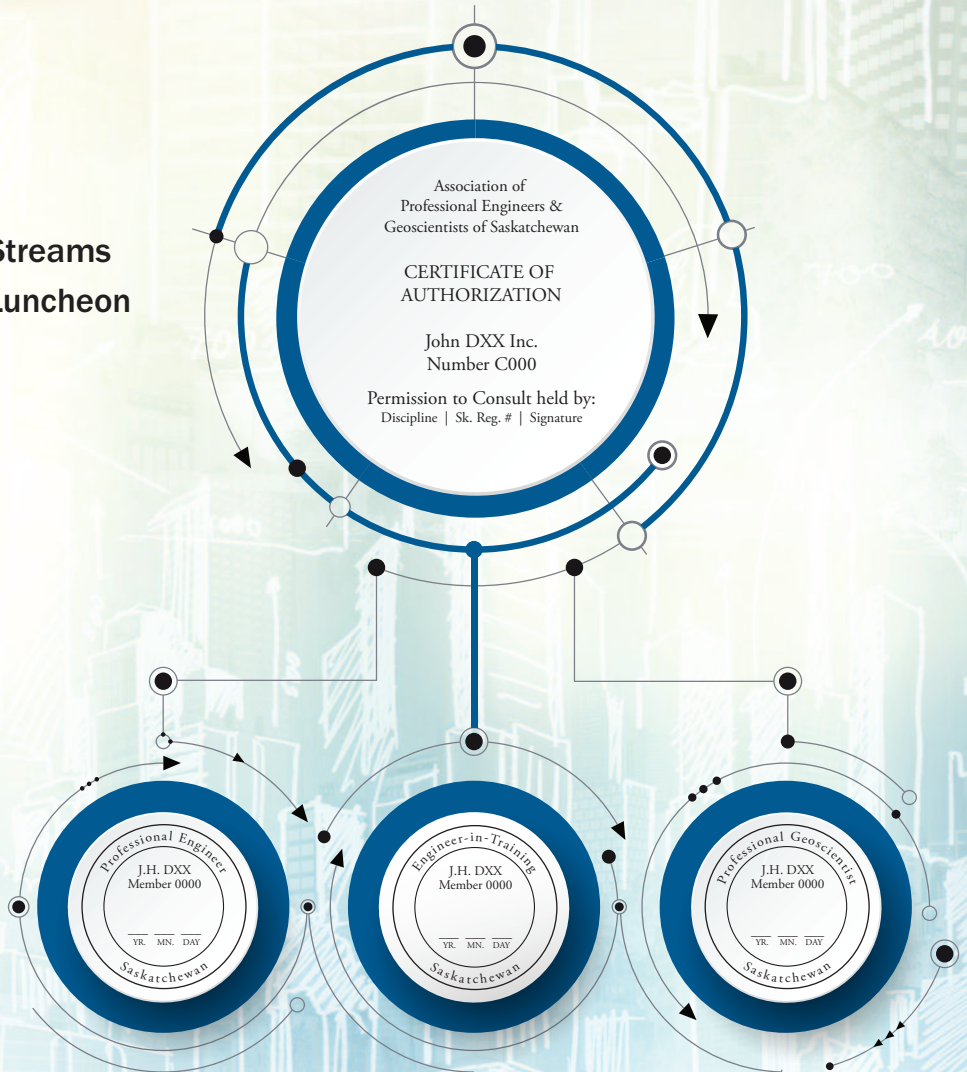
Breakfast Plenary
Professional Development Streams
Professional Development Luncheon
Luncheon Keynote
President's Reception

Saturday, May 2

Business Meeting
Volunteer Luncheon
Awards Banquet

Registration will open
February 2020

www.apegs.ca



Regulating the professions. Protecting the public.

Continuing Professional Development

Q. Who is required to report under the new CPD program?

A: All APEGS members, except Life Members must report. This includes members-in-training, professional members, licensees, temporary licensees and those members on a license waiver.

Q. What must members report?

A: Members are required to report:

- the total number of credits that they obtained in each of the six CPD activity categories;
- that they completed the verifiable ethics training for the year (check box);
- their scope of practice.

Q. Where do members report?

A: Members must report their CPD activities online through APEGS Central. Please refer to the screen shot map in *The Professional Edge*. Do not send any documents to APEGS unless requested to do so.

Q. When must members report?

A: Reporting is based on the calendar year. Members can enter data online throughout the year as credits are obtained, if they wish. The deadline for reporting is Jan.31 of the year immediately following the reporting year.

Q. Why must members report?

A: It is important for members to report their CPD activities to APEGS so that APEGS can track compliance with the CPD Program.

APEGS may require this information to assure stakeholders (i.e.: the public or the government) that, as a self-regulated profession, the association is doing what it can to ensure members remain competent.

This aligns with Objects (a) and (c) of Section 5 of *The Engineering and Geoscience Professions Act*. In addition, personally as a professional, tracking and reporting your CPD activities aids you in your personal growth and in identifying, and planning for, your professional development needs.

Maintaining one's competence as a professional is part of our Code of Ethics (refer to Regulatory Bylaws, Sections 20(2)(b) and (d)).

For more information on what qualifies as CPD credits in each of the categories and as verifiable ethics, members should refer to the CPD Program Document posted on the APEGS website Professional Development page.

Ethics

- APEGS Online Ethics Module;
- This module is free for all APEGS members;
- For more information and to access the module, please visit www.apegs.ca;
- In-person ethics presentation;
- If your organization is interested in hosting an ethics training session for your employees or members, book through Jolene Arthur at jarthur@apegs.ca.

Spring Professional Development Days

- March 5 - 6, 2020 in Yorkton;
- Two tracks will be offered each day;
- Track 1 courses are offered by the Centre for Technical and Engineering Leadership;
- Leading the Way;
- Communicating in Business;
- Managing Change;
- Thinking Ethically ;
- Details on Track 2 will be available at www.apegs.ca.

Get to the Point!

A Practical Writing Course for Business and Technical Professionals

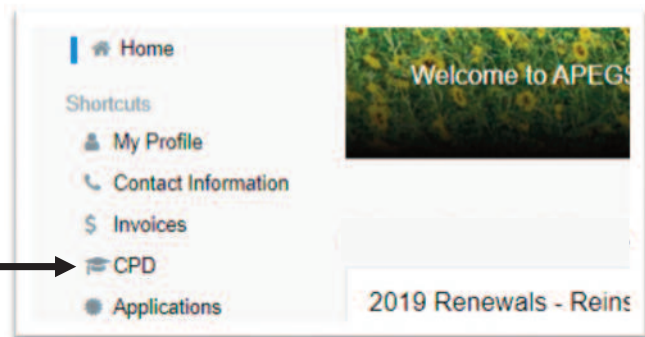
- April 29 - 30, 2020 in Saskatoon;
- Details will be available at www.apegs.ca.

Instructions for Reporting CPD in APEGS Central

Follow the steps below to report your continuing professional development (CPD) in your online profile with APEGS Central. Please be aware that:

- **All members (expect Life Members) are required to report their CPD activity to APEGS annually.**
- The submissions deadline is January 31, 2020 for your 2019 data.
- Members must retain their CPD documentation for at least three years as proof of activity.
- For more information, visit the “Continuing Professional Development” page at www.apregs.ca under the “Members” menu.

STEP 1: Navigate to the CPD page of APEGS Central.



STEP 2: Enter your Scope of Practice in the gray box.

STEP 3: Click “Add New” to create a record for 2019.

STEP 4: Enter your CPD data and click ‘Save’

Do not send in your CPD documentation to APEGS, unless asked to do so.

Saskatchewan Geological Society

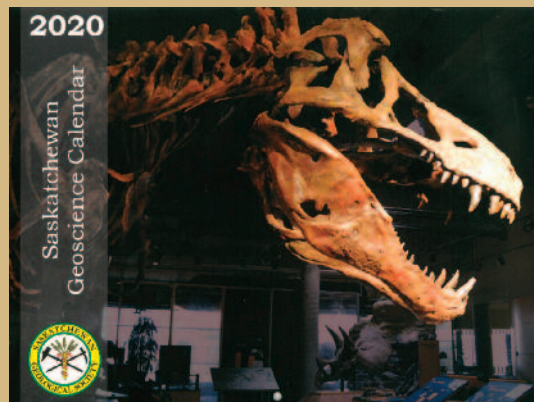


Front row, from left: Dong Chen, Ralf Maxeiner, P.Geo., Ben Rostron, P.Eng., P.Geo., Charlie Carlisle, Jason Howden, Colin Card, P.Eng., P.Geo., Michelle Nicolas (Leader), and Sam Van De Kerckhove, Geoscientist-in-Training. Back row: Murray Rogers, P.Geo., Brian Brunskill, P.Geo., Alec Polard, Mandy Williams, Jeff Coolican, P.Geo., Dan Barchyn, John Lake, P.Geo., Kim Kreis, P.Geo., Jeff Bader, Tim Nesheim, Dave Thomas, P.Geo., Kathryn Lapenskie (Leader), and Mike Thomas, P.Eng., P.Geo. Missing, Scott Anderson (Rice Lake Greenstones Leader)

Saskatchewan Geological Society Manitoba field trip

August 22 to 26, 2019

Nineteen intrepid society members descended upon our neighboring province to the east to transect their surprisingly well exposed bedrock geology, from the Archean Rice Lake greenstone belt in the east, to the Paleozoic carbonates in the centre, to the Upper Cretaceous clastics of the Manitoba Escarpment to the west. The group included APEGS members from Edmonton, Calgary, Saskatoon and Regina. Scott Anderson of Havilah Mining showed the group the recently burnt and beautifully exposed greenstones at Rice Lake and Michelle Nicolas, and Kathryn Lapenskie of the Manitoba Geological Survey guided the group up and down Manitoba's Phanerozoic exposures.



2020 Saskatchewan Geoscience Calendar is available!

This is the Saskatchewan Geological Society's fifth calendar. As in previous editions, the society strives for balance, showing the geoscientific diversity of Saskatchewan. Although the calendar is created with the general public in mind, it should equally appeal to professional geoscientists. Proceeds from calendar sales help the society do outreach projects, provide an incentive for another edition, and facilitate an additional luncheon talk.

The calendar is available for purchase in Regina at the MacKenzie Art Gallery, the Royal Saskatchewan Museum, and the University of Regina bookstore and in Saskatoon at the U of S bookstore, the U of S Geology Department, and McNally Robinson bookstore. It retails for \$10 (1-4 copies), \$8 (5-9 copies) and \$6 (>10 copies). Check the Society's website at www.sgs.ca for further details.

Working jointly towards improving Exploration Sustainability

BY SASKATCHEWAN MINERAL EXPLORATION AND GOVERNMENT ADVISORY COMMITTEE



The Saskatchewan Mineral Exploration and Government Advisory Committee (SMEGAC) was established in 2001 to provide a consolidated process for consultation and information exchange between the Saskatchewan mineral exploration industry and the Government of Saskatchewan on environmental and natural resource management and concerns facing the mineral exploration industry.

SMEGAC consists of representatives from provincial regulatory bodies and mineral exploration companies belonging to the Saskatchewan Mining Association (SMA) that are active in the province.

Provincial regulatory bodies include the ministries of Environment, Economy, Government Relations and Health and potentially other agencies such as the Water Security Agency and Fisheries and Oceans Canada.

Industry representatives consist of a diverse set of companies such as Cameco, Rio Tinto, Orano, Denison Mines, SSR Mining, K+S Potash, Nutrien and Mosaic.

In May 2008, SMEGAC was awarded the APEGS Award for Environmental Excellence for their development of the mineral exploration guidelines for Saskatchewan. The guidelines provide information to assist in the planning, initiation and completion of a mineral exploration program in a fashion that will help minimize environmental impacts and meet relevant legislative requirements.

The guidelines comprise a set of best management practices (BMP) that outline what is considered the

industry's best techniques and processes broken down by exploration activity. The BMP's are living documents that reflect both evolving government regulations and the ongoing, hard-earned experiences of the exploration companies in the field.

In addition to development of the BMP guidelines, the committee works along with the SMA to streamline the mineral exploration permitting process, advocate for efficient staffing levels in the regulating bodies, improve stakeholder consultation and provide input into government programs.

The committee is organized by two joint chairs, one from the Government of Saskatchewan and one representing industry. At present, those chairs are Tracey Charabin of the Ministry of Environment and Scott Frostad of Purepoint Uranium. Each provided their thoughts on the potential benefits of the committee's joint structure.

"SMEGAC meets regularly throughout the year and this provides opportunity for real time discussion regarding what is happening in the field and the expectations from a regulatory perspective. SMEGAC also provides an excellent opportunity for relationship building between regulatory staff and the companies. Discussions are robust and diverse in the issues dealt with and ultimately result in enhanced understanding and outcomes in the field," Charabin said.

"SMEGAC allows our company to discuss, as a group, the environmental challenges of fieldwork with government regulators and other SMA members. At our meetings, I've learned of potential environmental issues that our company has not yet faced, and I've also heard regulators describe environmental incidents they've attended and how best to avoid their occurrence. I consider our resulting BMPs an essential resource for exploration companies working in the province," Frostad added.

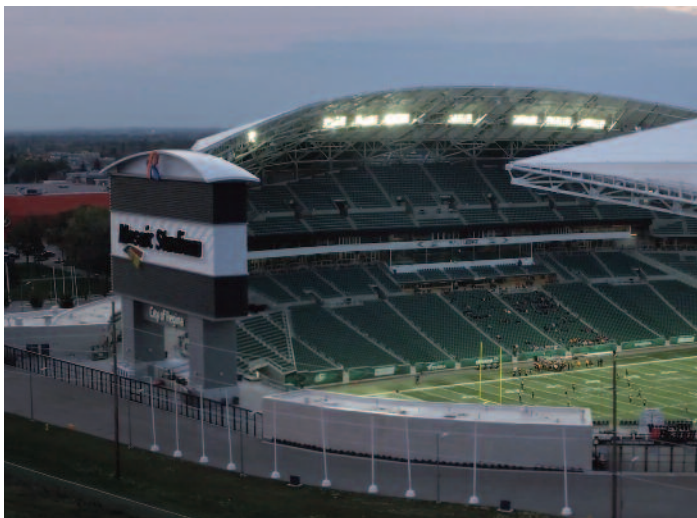
Next year will mark the 20th year of SMEGAC's activities, providing a good example of what can be accomplished by both companies and regulators working together to improve environmental and sustainability practices in the province.

Competency-based Assessment Engineering Meeting



APEGS is contributing to the success of implementing the online competency-based assessment (CBA) system for reporting engineering experience through significant national cooperation. Pictured is Tina Maki, P.Eng, Director of Special Projects at APEGS with regulatory representatives from BC, Alberta, Manitoba, Newfoundland and Labrador, New Brunswick, PEI and Engineers Canada at the CBA pan-Canadian User Steering Team meeting in St. John's in September.

APEGS' new advertising campaign and slogan



APEGS introduced a new advertising campaign and slogan to replace We See More in October. The purpose of the campaign is to focus more on APEGS as a regulatory body while providing the people of Saskatchewan with some insight into the professions through a recognizable structure. The campaign includes radio, cinema and online ads that feature APEGS' role to regulate the professions as well as a look at the professions through the design and components of Mosaic Stadium.



A P E G S
*Association of Professional Engineers
& Geoscientists of Saskatchewan*

Regulating the professions. Protecting the public.

Change in Reporting

Canadian Environment Competencies

APEGS has a policy that one year of the experience reported by engineers-in-training needs to be from a Canadian environment or an environment equivalent to a Canadian one to ensure that the applicant has sufficient knowledge required to practice engineering in Canada.

Effective January 1, 2020, the way engineers-in-training report this experience is changing. APEGS will require engineers-in-training to demonstrate eight Canadian Environment Competencies (CEC) to report engineering experience, as shown in the table below. Each of the competencies must be passed with a rating of the applicable category average.

This change affects engineers-in-training and engineer-in-training applicants. Any competency assessment

submitted for validation on or after January 1, 2020 is required to meet the new Canadian Environment Competencies. In addition, competency assessments that are being resubmitted for validation on or after January 1, 2020 must comply with the new requirements.

The Competency-Based Assessment Guide with full details is posted on the APEGS website under Apply, Work Experience Reporting, Work Experience Reporting – Engineering at the bottom of the page under the heading Related Documents and Links.

<https://www.apegs.ca/Portal/Pages/work-experience-reporting-engineering>

PAN-CANADIAN CBA COMPETENCY	INDICATOR	PROPOSED MIN. LEVEL PER CANADIAN COMPETENCY
1. Technical Competencies (Minimum Category Level Required = 3)		
Competency 1.1	Demonstrate knowledge of regulations, codes, standards, and safety - this includes local engineering procedures and practices as applicable	3
Competency 1.6	Safety awareness: be aware of safety risks inherent in the design; demonstrate safety awareness – on-site and possible safety authorization/certificate as appropriate	3
Competency 1.9	Understand the concept of quality control during design and construction including independent design check and independent reviews of design, field checks and reviews	3
2. Communication Competencies (Minimum Category Level Required = 3)		
Competency 2.1	Oral communication (in English/French)	3
Competency 2.2	Writing (in English/French)	3
Competency 2.3	Reading and comprehension (in English/French)	3
5. Professional Accountability (Minimum Category Level Required = 3)		
Competency 5.1	Work with integrity, ethically and within professional standards	3
6. Social, Economic, Environmental and Sustainability (Minimum Category Level Required = 2)		
Competency 6.2	Demonstrate an understanding of the relationship between the engineering activity and the public	2

Celebrating Our Own



Dr. Ken Ashton, Ph.D., P.Geo.

First Saskatchewan recipient of the Provincial/Territorial Geologist's Medal

This year's winner of the Provincial/Territorial Geologist's Medal is Dr. Ken Ashton, Project Geologist with the Saskatchewan Geological

Survey and adjunct professor at the University of Regina.

The medal is awarded yearly by the National Geological Surveys Committee to recognize major contributions in the area of geoscientific research and related developments or applications that serve to meet the mandate of Canada's provincial and territorial geological surveys.

Ashton has been with the Saskatchewan Geological Survey since 1990, where he is responsible for mapping the Precambrian Shield of Saskatchewan. Ashton also worked as a contract geologist with Manitoba Energy and Mines and the Geological Survey of Canada.

He is a Fellow of the Geological Association of Canada and a member of the Saskatchewan Geological Society. In 2014, the society recognized Ashton as a member of its Geoscience Honour Roll for his numerous contributions to the understanding of the province's PreCambrian rocks.



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

SES' 2019 Engineer of the Year Award

In September, the Saskatoon Engineering Society presented Margaret Kuzyk Engineer of the Year Award.

A civil engineer by training, Kuzyk was a leading expert in building codes. Her career included working on projects for Estevan and Saskatoon, working as Saskatchewan's Chief Building Official, a consultant and working in the federal government and industry.

Kuzyk has participated in many volunteer activities advancing the engineering profession. Notably, she was the first female president of APEGS in 1997-98. Her volunteer efforts in supporting the College of Engineering and the University of Saskatchewan have been numerous.

Nationally, she is an Alternate Warden of the Corporation of the Seven Wardens, and locally, she is an Honorary Warden of Camp 4 administering iron rings.

Kuzyk is featured in *The Women of Innovation* book to recognize, document and disseminate the experiences and accomplishments of women in engineering.



Nicholas Kaminski, M.Eng., P.Eng.

ACEC-Canada's 2020 Allen D. Williams Scholarship

At the Canadian Consulting Engineering Awards gala in Ottawa in October, Nicholas C. Kaminski, M.Eng., P.Eng., PMP received the 2020 Allen D. Williams Scholarship from the Association of

Consulting Engineering Companies-Canada (ACEC). The sponsorship recognizes a young professional's commitment to consulting engineering.

Kaminski is a structural engineer with KGS Group Consulting Engineers based in Saskatoon. He serves as an elected member of the University of Saskatchewan Senate, as a Trustee with the Saskatoon Public Library Board, and with APEGS. Kaminski has certificates in public governance and not-for-profit governance. Kaminski has received an SGI Anniversary Scholarship, an APEGS Member Scholarship, the 2018 ACEC-SK Young Professional Award, an RBC Foundation Scholarship, and most recently, APEGS' 2019 Promising Member Award.

Clifton recognized for ABEX Award

Yorkton This Week – Wayne Clifton, P.Eng., FEC., founder and CEO of Clifton and Associates, has been named the 2019 ABEX Business Leader of the Year, as announced by the Saskatchewan Chamber of Commerce.

Clifton and Associates is one of western Canada's leading consulting civil and geotechnical engineering firms.

Wayne Clifton has an extensive career in the engineering industry, with his company having worked on more than 10,000 projects world-wide. Clifton has received numerous awards, has been a member of the Science Advisory Council to the Prime Minister and is a firm believer in supporting post-secondary education.

He has been an adjunct professor at the University of Regina and the University of Saskatchewan and has written hundreds of technical reports and journals.

News Beyond Our Borders

Five engineers elected in federal election

Engineers Canada - Engineers Canada recently recognized the 25 professional engineers who ran in the 2019 federal election.

The five following professional engineers were elected to Parliament:

Sukh Dhaliwal, Surrey-Newton, Liberal Party;

Omar Alghabra, Mississauga Centre, Liberal Party;

Marilyn Gladu, Sarnia-Lambton, Conservative Party;

Steven Blaney, Bellechasse-Les Etchemins-Lévis, Conservative Party;

Marc Garneau, Notre-Dame-de-Grâce-Westmount, Liberal Party.

Engineers Canada looks forward to working with these members of Parliament and their colleagues to continue to advocate on behalf of the engineering profession and to bring an engineering perspective to public policy decision-making.

The representation of the engineering profession during the election spanned from coast to coast to coast and included candidates from five parties.

John Deere president blazed trail for women

Real Agriculture - A lot has changed for Debra Harrison in the past 39 years.

Almost four decades ago she was the first female engineer ever hired by John Deere.

Today she is president of John Deere Canada.

Harrison recently shared that journey with 450 people attending the Advancing Women in Agriculture Conference at Niagara Falls, ON.

Back then, women were just starting to enter non-traditional roles and it was tough, says Harrison, who recalls being the only woman among 650 engineers at an engineering conference early in her career. She was the only woman amongst her graduating McGill



Debra Harrison, president of John Deere Canada

University engineering class; she also recalls that there were no washrooms for women on the shop floor when she started her first job.

It was a time when women weren't believed to be mechanically inclined, she says matter-of-factly.

"You just had to work that much harder because the first impression was that you don't know anything about machinery and agriculture," recalls Harrison. "Once you started that dialogue and people understood who you were and what you knew, then you started having a really fruitful conversation."

But until she earned that respect, every time she met someone in the industry she had to prove herself.

In her 39-year career with John Deere, Harrison has worked in a variety of areas, including product engineering, enterprise strategic quality and production systems, and in factory-based operations.

In 2017, she was named president of Deere's Canadian operations where she works closely with the Canadian board of directors and key management teams and functional area leads to establish long-range goals, strategic plans and policies.

Harrison noted how the landscape for women in agriculture has changed since she entered the workforce in 1980.

"Today, when I look around, I see husbands and wives working together as equal partners; I see women out in operations; I see women out in agronomy. Women have a presence today where they didn't have a presence 39 years ago."

Harrison believes young women entering the workforce will likely experience negativity and exclusion at some point in their career. However, she believes young women can and should prepare for these conflicts and tackle them with confidence when they arise.

Engineer receives Alberta's highest honour

University of Alberta - Robert Burrell was touring burn units at Australian hospitals in October 2002 when victims of the Bali terrorist bombings began to arrive in emergency rooms.

Harried medical personnel invited Burrell into operating theatres at the Royal Brisbane Hospital to provide technical advice on the use of Acticoat, a silver-based wound dressing he invented. The dressing was used on the worst-injured patients, those with burns almost covering their entire bodies.

The revolutionary dressing saved lives.

It was the first commercial therapeutic application of nanotechnology in the world. Now used around the world, Acticoat has antimicrobial properties and speeds healing and is considered one of the most radical advances in wound-care history.

Acticoat uses nanocrystalline silver technology, speeding healing remarkably and fighting off infections. By his own estimate, Burrell says the dressing has saved millions of lives.

A chemical and materials engineering professor, Canada Research Chair in Nanostructured Biomaterials, and chair of the Department of Biomedical Engineering at the University of Alberta, Burrell is one of the recipients of the 2019 Alberta Order of Excellence—the highest honour the province of Alberta bestows upon its citizens.

Burrell is advancing biomedical engineering in new ways, developing a hand-held diagnostic tool to identify the type of infection in patients immediately, eliminating unnecessary antibiotic use.

Project designed to map Canada's geology



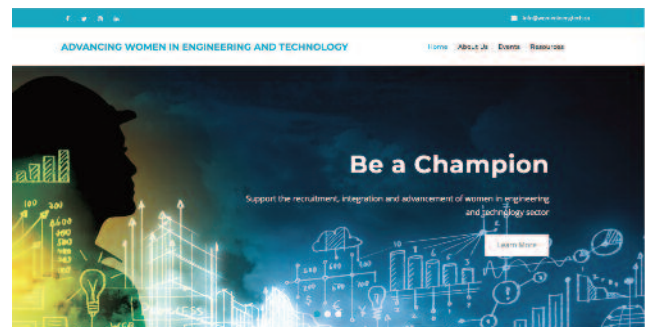
Nature.com - Geophysicist David Eaton will head into the forests around Fort St. John, B.C. to nestle an array of 15 seismometers onto the ground.

They will spend their days listening for small earthquakes caused by oil and gas exploration in this part of British Columbia. If Eaton has his way, the seismometers will soon be joined by hundreds more, blanketing Canada as part of an unprecedented quest to probe the nation's geology.

Eaton, of the University of Calgary, is leading a hugely ambitious effort to establish a network of geophysical observatories across Canada. The project aims to study everything from the inner Earth to the upper atmosphere — and to answer questions such as how much Canadians should worry about earthquakes and landslides, and where researchers should explore for lucrative mineral deposits or renewable energy resources.

It's not clear how to fund the roughly \$100 million that's needed to turn these ambitions into reality. But a wide-ranging group of scientists have come together to advocate for the project, which is known as EON-ROSE (Earth-system Observing Network-Réseau d'Observation du Système Terrestre).

Website connects women with career resources



EGBC - A new website to connect women with information and resources about career development opportunities in the engineering and technology sectors is now live.

The womeninengtech.ca website is one of the first outcomes of the Sector Labour Market Partnership Project — a joint initiative of Engineers and Geoscientists BC, the Applied Science Technologists and Technicians of BC and the Association of Consulting Engineering Companies of BC.

The website features events and resources, as well as information about the project's Champion network — an opportunity for individuals, employers, secondary schools, and post-secondary institutions to collaborate to break down barriers to women and girls accessing engineering and technology career paths in B.C.

The Sector Labour Market Partnership Project is a two-year pilot of the Ministry of Advanced Education, Skills and Training, designed to develop recruitment opportunities and enhance retention for women in engineering and technology sectors. The \$993,000 contract for the project was announced by the Ministry in May 2019.

This funding will address priority areas such as outreach to secondary schools and post-secondary schools, and will help the participating associations develop tools to incorporate diversity and inclusive practices in the workplace, hold lunch-and-learns for employers and host

virtual career fairs for Indigenous women, internationally trained individuals and persons with diverse abilities.

The funding will also help Engineers and Geoscientists BC further advance the 30 by 30 initiative, spearheaded by Engineers Canada, to increase newly registered female engineers to 30 per cent by 2030.

Program addresses gap in STEM



engineerscanada.ca

Engineers Canada - “One time a kid simulated a horse and wrote a code to make it gallop,” says Priyanka Tuteja. “This student did not have any robotics/coding experience. The joy of seeing a child coming to the classroom knowing nothing and going out knowing more than the instructor is mind blowing.”

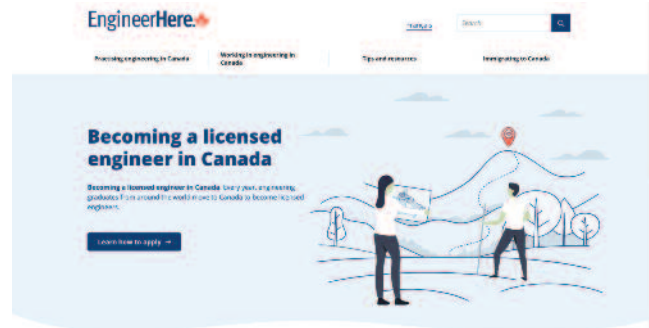
This is just one of the many memorable stories from two pilot programs that the Learning Disabilities Association of Manitoba (LDAM) has been running this fall. One of these, the Lego Club, teaches students how to work as a team to solve a problem. The other, a robotics program, taps into the Virtual Robotics Lab run by Cogmation Robotics and First Nation Robotics. It’s designed to introduce kids to concepts in robotics and then give them hands-on coding experience.

“We saw a gap in our programming when it came to STEM,” says Karen Velthuys, who is the executive director for LDAM. “STEM programming seems to take a back seat for people with learning disabilities,” she notes, “as there is a stronger focus on literacy.”

Velthuys and her team set out to address this gap. They saw an opportunity in students’ natural gifts with technology.

“We wanted to create programming that teaches math, science, engineering and technology in an engaging and fun way,” she says. “We wanted to create programming that integrates these core subjects into a visual and tactile learning curriculum.”

New resource for international engineering grads



Engineers Canada – October saw the launch of EngineerHere.ca, a web resource designed to help international engineering graduates understand and take the first steps towards becoming engineers in Canada.

The site aims to provide key information about the journey to licensure in a clear and welcoming way and was developed in consultation with engineering regulators, subject matter experts and a group of international engineering graduates at various stages on the path to licensure in Canada.

This resource is not the first of its kind developed by Engineers Canada. In 2013, the organization launched The Roadmap to Engineering in Canada, which was developed in partnership with Citizenship and Immigration Canada. Overall, this year’s work involved a refinement and modernization of the existing Roadmap site, rather than the creation of a brand-new resource.

After consulting with both the National Admissions Officials Group and an external validation group made up of volunteers, the project team agreed that a simpler, more direct name would better meet the goal of providing information in the clearest way possible. The team settled on EngineerHere.ca because it was direct, it was memorable, and it worked well from both the perspectives of mobile-friendliness and translatability across both of Canada’s official languages.



News From The Field

MINING

Drill program planned for Athabasca Project



Streetwise Reports - Skyharbour Resources Ltd., is planning a diamond drill program to commence in late 2019 or early 2020 at its Moore uranium project in Saskatchewan.

This comes on the heels of Pioneer Aerial Surveys Ltd., completing an unmanned aerial vehicle magnetometer survey at Moore. Specifically, the survey was conducted over the Maverick structural corridor there, which hosts several high-grade uranium zones in the underlying basement rock.

The 2,500-metre campaign will test unconformity and basement targets along the Maverick structural corridor along with selected prospective regional targets. Drilling also will be done, conditions allowing, on portions of the recently discovered Otter zone.

New Orano CEO returning to home province

Orano Canada - Vincent Martin, President and Chief Executive Officer of Orano Canada Inc., recently announced the appointment of Jim Corman, P.Eng., as his replacement as of Sept. 1, 2019.

With this appointment, Corman, currently the director projects and industrial support at Orano Mining in Paris and previously vice-president operations, engineering and projects at Orano Canada in Saskatoon, is returning to his home province.

Corman, a graduate of the University of Saskatchewan's Geological Engineering program, joined Orano's predecessor company, COGEMA, as a geological engineer in 1993 and held a number of operational management positions in Saskatchewan before moving to Paris in 2016.

Corman was involved in the discovery, development and operation of the McClean Lake project, which today boasts the only uranium mill capable of processing uranium ore grades 100 times the world average without dilution.

Potash mine gets conditional approval

Global News - CanPacific Potash Inc. is one step closer in developing a new 3.25-million tonne-per-year solution mine in southern Saskatchewan.

The company was given conditional approval for its Albany Potash Project based on the findings of an environmental assessment.

CanPacific must meet the following conditions:

For native grassland and wetland habitat that cannot be avoided by the project, CanPacific must develop a compensation plan for approval by the Ministry of Environment.

The plan will identify affected native grassland and wetlands, identify the methods to restore/enhance existing areas or create new native prairie/wetlands and provide a timeline for completing the work and monitoring the areas.

CanPacific must submit a signed development plan agreement to the RM of Francis prior to construction proceeding. The company must also obtain further ministerial approval for future development of the 20-year well-field areas.

The Albany potash mine would be located 50 kilometres southeast of Regina, near Francis and Sedley.

Nutrien aims for mine of the future

Saskatoon StarPhoenix - Nutrien wants to build the "mine of the future" to better compete against companies like EuroChem and Uralkali, which it says can extract potash much more cheaply from shallower deposits in Russia.

The company is working to lower its roughly US\$60-per-tonne cash cost of production by ramping up its newly expanded Rocanville mine while relying on its diversification into agriculture retail to shelter it from the worst of the commodity cycle.



thestarphoenix.com

It also aims to make its older operations like Cory, which was commissioned in 1969, more efficient and cheaper to run. That includes everything from finding ways to reduce power consumption in the mill to further automating the boring machines and other equipment working underground, a project expected to take the next 10 to 20 years.

Susan Jones, the company new head of potash, hopes the work will have the corollary effect of allowing Nutrien to make its underground workforce more diverse — a challenge every company in the province is facing and attempting to address.

Nutrien says about 28 per cent of its potash employees in the technical and safety areas are women. That is broadly comparable with other companies extracting potash in the province, which have previously reported ratios in the 20 per cent range.

Long and Jones both acknowledged that shifting long-standing perceptions about the industry beyond any one company is vital to address what one Nutrien employee said is the problem of women not applying for potash jobs.

That work is underway through organizations like the Saskatchewan Mining Association. Jones said she is optimistic about a more diverse future at a mine with reserves that could theoretically allow it to continue operating for another 100 years.

Mining plans include drilling incentive, lithium extraction and rare earths processing

ResourceClips.com - It's interesting enough now but the manifesto might make even more compelling reading 10 years from now.

That's the due date for no less than 30 lofty economic and social goals announced in Saskatchewan's Growth Plan on November 14. Not surprising for a province where mining plays such an important role, the government intends to further encourage the industry. But the agenda goes well beyond Saskatchewan's standbys of potash and uranium to call for the development of nuclear energy, lithium extraction technologies and "the first North American REE processing plant to deliver individual high-purity REEs."

Among the objectives already achieved is the renewed PST exemption on drilling. In a news release from the

Saskatchewan Mining Association, Purepoint Uranium TSXV:PTU VP of exploration Scott Frostad describing drilling as "the lifeblood of a sustainable mining sector". "All discoveries are made through drilling and the life of a mine is extended through drilling off additional reserves. Monies recovered through reinstatement of the PST exemption on drilling will be invested in more holes being drilled, which will increase the prospects of finding the next Saskatchewan mineral deposit or extending the life of an existing mine."

Exploration spending in the province's north will surpass \$200 million this year, the SMA stated. "Drilling costs represent almost half of a typical exploration budget. For every \$1 spent on drilling, another \$1.30 is spent on support activities such as geophysics, groceries, camp and air support, and professional services, with the majority of this spend with companies operating out of northern Saskatchewan."

If the growth plan goes to plan, Saskatchewan will find another customer for its uranium. That would be Saskatchewan itself, which will work with New Brunswick and Ontario to generate electricity with small modular nuclear reactors. Combined with wind and solar, the province hopes to make up to 80 per cent of its energy mix emissions-free. Saskatchewan currently generates most of its electricity from coal and natural gas.

The province also sees potential in strategic and critical metals, touting "world-class resources of both lithium and rare earth elements, which are extracted as part of oil and uranium production".

The Saskatchewan Party government plans to consider partnerships with industry, universities and research institutes to develop lithium extraction, to work with miners to develop rare earths, "including production of high-value REE concentrate in Saskatchewan within the next two years," and to host the continent's first plant to process individual high-purity REEs.

[A rare earths processing plant] would be a first in Canada that would create jobs, increase exports and provide a significant opportunity for value-added manufacturing.— Government of Saskatchewan

"This would be a first in Canada that would create jobs, increase exports and provide a significant opportunity for value-added manufacturing," the government stated.

The province also pledged to increase its natural resource competitiveness by streamlining permitting and creating a Geoscience Data Management System "to increase exploration efficiency, improve drilling and development outcomes, and make new discoveries."

Among the plan's 30 goals are increasing annual uranium sales to \$2 billion and potash to \$9 billion.

Ambitious infrastructure plans entail highway expansion and upgrades, a north-south rail line and support for

pipeline expansion and a national infrastructure corridor to enhance connections with the port of Vancouver and establish a link with the port of Churchill, Manitoba.

Last year, mining contributed over \$7 billion to Saskatchewan's GDP, which reached an all-time high of \$82.5 billion with the country's third-highest growth rate. According to the SMA, the industry employs 30,000 people directly and indirectly, with a payroll of over \$1.4 billion to direct employees, and is proportionally Saskatchewan's largest private sector employer of indigenous workers.

Helium drilling on tap in southwest



pipeline news.ca

Prairie Post - One of the largest helium leaseholders in Canada has identified seven drill targets for primary helium production at its Climax property in southwest Saskatchewan.

Royal Helium Ltd. has more than 300,000 acres of prospective helium land in southwest and south-central Saskatchewan.

The company's leaseholds in the Climax area represent about a quarter of its total land holdings and it has been the initial focus of exploration.

The company completed geotechnical studies in early 2019 that focused on known fields and formations in Saskatchewan where primary helium is currently produced or was previously produced. This assessment used existing helium well data along with seismic information, government and geological data.

Further assessment identified deeper basement structures underneath the Climax land with approximately 3,094 hectares of four-way structural closure, which is the ideal structural formations to trap helium formed in the Precambrian basement.

These findings are promising, but the company emphasized that Royal Helium will only have a clear idea of the volume of helium after wells have been drilled.

The company has no firm timeline for starting a drilling program because it wants to continue with the same exploration program at its other land holdings in southwest Saskatchewan.

It is hoping to have a roll-out date for drilling in all these project areas in 2020. The company's initial geological and seismic data review of its land holdings in the Swift Current, Cadillac, Val Marie and Shaunavon areas and other land around Climax already indicated similar basement formations and structural traps for helium.

Royal Helium's goal is to become a leading North American helium producer and it wants to focus on primary helium found in Saskatchewan.

The company decided to focus its exploration activities on Saskatchewan for several reasons. There has been small-scale helium production in the province since the 1960s, although larger scale exploration efforts have only started in recent years.

There are favourable conditions for finding primary helium in the province, because Saskatchewan has some of the world's largest concentrations of uranium, and helium is created through the natural decay of radioactive elements such as uranium and thorium. In southern Saskatchewan the geological conditions created four-way structural closures that might trap helium.

UNIVERSITIES

U of S partners with STC, mining companies



news.usask.ca

Albert Scott from the Saskatoon Tribal Council speaks about a new mentorship program for Indigenous women.

Yorkton This Week - With a \$133,000 investment from Saskatchewan mining companies through the International Minerals Innovation Institute, the University of Saskatchewan is partnering with the Saskatoon Tribal Council (STC) on a new mentorship program for Indigenous women.

Launched in October at the U of S, MentorSTEP supports Indigenous women to pursue STEM and related business, health and environmental disciplines related to mining. Saskatchewan's mining industry aims to build bridges for Indigenous women to step into technical, production and professional roles.

MentorSTEP brings together roughly 20 members of Saskatchewan's mining community, matched as mentors

to young Indigenous women at U of S who are pursuing a variety of STEM and related degrees. As well, Indigenous high school girls from Saskatoon and participating First Nation partner schools will engage with U of S student mentors in STEM disciplines.

The two-year pilot program supports mentorship and research internships, including professional engagement events such as virtual mine tours, Indigenous cultural ceremonies, learning labs, site visits, networking and career development.

MentorSTEP is founded on Indigenous mentorship practice of shared activities, experiences, stories and cross-cultural learning. Mentors and mentees meet monthly and learn from each other through group events. Research internship applications for summer 2020 will open in February.

Canada's mining industry is the leading private sector employer of Indigenous people in Canada, at six to seven per cent of its workforce. Many mines are right next door to Indigenous communities, where local talent and local careers are key to success. Women currently occupy about 17 per cent of minerals industry positions across Canada, though the majority hold administrative and support roles.

Student invention a winter game changer?

CKOM - The days of seeing Saskatoon streets covered in snake-like cords in the winter could be coming to an end thanks to a local engineer.

It has been a long, seven-year journey, but soon William Topping will see the VoltSafe magnetic block heater cord on store shelves.

It's a cord with a magnetic end that you plug into the block heater on your vehicle, then use another magnetic cord to plug into an electrical outlet. The ability to magnetically disconnect, prevents the cord from being torn from the vehicle's block heater.

It won't only keep people from driving off with their cords still plugged in — it will also be a huge help for people with disabilities or mobility issues.

Topping's friend had a stroke and he said she was actually having to use her teeth as a "second hand" to plug her cord in.

Topping said a big part of the waiting game has been the certification process because of the nature of the product.

VoltSafe magnetic block heater cords should be in Co-op stores by the middle of December.

VR technology challenges students

CBC Saskatchewan - When it comes to engineering, there's no room for error. If a major structure such as a bridge fails, the results can be catastrophic, even deadly.



But the engineering college at the University of Saskatchewan has found a way to let students try and fail.

The college is using virtual reality technology that allows students to enter a computer-generated 3D bridge-building exercise, put the trusses together and then test their strength.

Previously, engineering students would have to test their theories about truss strength through detailed mathematical calculations, leaving little room for play. The new technology changes that.

The computer takes care of the math and then the students get a feel for how a bridge behaves in certain situations. Students can focus on manipulating the forces they are applying to the bridge and see what it does visually. That's a much better, more effective learning experience.

The success they've seen in engineering has attracted interest from other academic disciplines at the university, including kinesiology, medicine and geography. The university is also working to begin sharing the Truss VR system with other engineering schools in Canada. sustainable, healthy and equitable way.

RESEARCH

Nuclear reactor core transported to US

Saskatoon StarPhoenix - The operation was conducted in near-total secrecy.

Only those who absolutely needed to know were aware of the truck's load when it pulled away from the University of Saskatchewan and headed for the American border.

While the Saskatchewan Research Council, which oversaw the journey, won't say much about other security precautions, its chief executive officer acknowledged that secrecy was of paramount importance for obvious reasons.

That's because the truck was carrying the core of a nuclear reactor, a paint can-sized assembly of uranium fuel rods and beryllium control structures immersed in water and sealed in an 8,000-pound lead-lined transport container.

Once the truck reached the border, it was handed over to U.S. Department of Energy officials and transported to the Savannah River Site, a nuclear facility in South Carolina where the core will be repurposed.

De-fuelling the reactor was the first step toward its eventual decommissioning, a lengthy process that is expected to take between six and nine months and cost SRC up to \$7.5 million. This time next year, the reactor will be entirely gone.

Built into the floor of a nondescript Innovation Place building and shielded by more than a foot of concrete, the Safe LOW Power Kritical Experiment (SLOWPOKE) reactor was one of seven commissioned across the country.

While the reactor uses the same nuclear fission process as a utility-scale reactor like the one Bruce Power proposed for Saskatchewan a decade ago, it is tiny — roughly 1/10,000 the size, producing around 20 kilowatts of power.

During its 37-year operational life, it performed more than a quarter-million tests. The reactor was used primarily for neutron activation analysis, a process aimed at determining the concentration of various elements in various samples.

Over the last few years, new, non-radiological methods of performing many of the same tests have been developed, which some say that in terms of its “overall raison d’être, it was no longer operationally viable, commercially or technically”.

New swine transport disinfection reaches trial



Thepigsite.com - Scientists with the University of Saskatchewan, the Vaccine and Infectious Disease Organization, the Prairie Swine Centre and the Prairie Agricultural Machinery Institute are working on behalf of Swine Innovation Porc (Swine Innovation Porc is a non-profit corporation committed to facilitating research in the Canadian swine sector) to improve the efficiency of washing swine transport trailers and the inactivation of disease causing pathogens.

Speaking to Farmscape, Dr Terry Fonstad, Ph.D., P.Eng., P.Ag., FEC, a professor in the College of Engineering at the University of Saskatchewan, says phase-3 will hopefully move the project toward commercialisation.

"PAMI's work has now brought in partners from the robotics industry, a robotics company out of Ontario and a hydrovac system company out of Wisconsin, that are interested in combining their talents to actually perhaps commercialise the wash system," explains Dr. Fonstad.

"VIDO's work will go into the field. In the lab we know we can kill these pathogens with heat, but now we have to take pathogens that may have the same characteristics, but not be swine pathogens, and test them in actual bake ovens that bake trailers and make sure that we're actually getting the kill that we need."

"They may have to be proxy pathogens. We're working through that with them."

"The Prairie Swine Centre is working with the trailer manufacturers and we, at the College of Engineering are working with a private company called Transport Genie and Be Seen Be Safe out of Guelph that is actually already working on the humidity and temperature sensing for animal welfare and we're going to add onto their product the ability to trace the trailer, GPS, and be able to sense the heating of the actual trailer frame for pathogen destruction."

Dr. Fonstad says the hope is that, by the end of phase-3, all of these things can go onto commercialisation and that the academics can back off a bit and answer the few remaining lingering questions and that industry can take the lead.

OIL AND GAS

Gas power plant coming to Moose Jaw

CJME News - SaskPower will proceed with a 350-megawatt natural gas power plant in Moose Jaw after reviewing new federal regulations that put the plans in jeopardy over the summer.

The federal government unveiled new rules in June that required natural gas plants coming online after 2021 to be emissions-free by 2030 or pay the carbon tax.

At the time, SaskPower's CEO said the Crown corporation would have to examine the cost implications of the new rules and what technology it would be able to use.

The minister responsible for SaskPower, Dustin Duncan, said the corporation looked at alternatives before deciding to build the plant.

"Knowing that by 2024 we need that 350 megawatts of baseload power and really doing all the analysis, this was still the most cost-effective way to do so, despite the fact that the carbon tax would now be applied on the emissions," Duncan said.

The facility is expected to be complete in 2024 and will produce enough baseload power for a city the size of Saskatoon, according to SaskPower.



Moose Jaw was chosen as the site of the plant over other locations in the province because that city is in a corridor where the demand will be the highest. Duncan noted that other plants could follow in other areas.

“This is not the end of the demand for baseload power,” Duncan said. “Moose Jaw is the next plant, but we’re going to have to be looking in the next decade as well as anywhere from 350 (megawatts) to perhaps a 700-megawatt plant somewhere in the province too.”

Duncan said the plant will cost \$800 million to build and there will be \$350 million in carbon tax costs associated with the operations of the plant between 2024 and 2030.

ENERGY

Sask hopes to add wind power capacity

The Canadian Press - Saskatchewan is launching a new request for proposals to add up to 300 megawatts of wind power generation capacity.

Environment Minister Dustin Duncan, who is responsible for Crown-owned SaskPower, says the process will help the province quadruple its wind power when the successful project or projects come online in late 2023 or 2024.

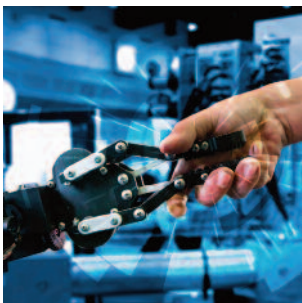
Speaking at the Canadian Wind Energy Association conference in Calgary, Duncan says the province is committed to growing its renewable energy sector despite its opposition to the federal government’s carbon tax.

SaskPower’s last power procurement process resulted in granting Potential Renewables Inc. a 25-year power purchase agreement last year for its 200-MW Golden South Wind Energy Facility.

The plant near Assiniboia in southern Saskatchewan is expected to come online in 2021.

“Up to about 16 per cent of our generation capacity will be wind and currently we’re at about four per cent,” said Duncan. “So, we’re in the process of quadrupling our capacity and our goal is that renewables will make up to 50 per cent of our generating capacity by 2030.”

Engineering and Geoscience Member Grants



APEGS offers six member grants to be awarded at the University of Saskatchewan and University of Regina.

These merit-based grants are aimed at encouraging existing APEGS members to further their education.

Up to six grants of \$7,500 each for current APEGS members returning for post-graduate studies (either university) in fields of engineering, geosciences or an MBA program.

For more information, refer to the APEGS website: <http://www.apegs.ca/Portal/Pages/Scholarships-Bursaries-Grants>

Calendar Of Events

Inclusivity in STEM Conference

January 22, 2020, Saskatoon SK
<https://www.acec-sk.ca>

Agricultural Water Management Program – WSA

January 22 – 23, 2020, Yorkton, SK
<https://www.wsask.ca>

SUMA Convention & Tradeshow

February 2 – 5, 2020, Regina, SK
<https://suma.org/conventions>

PDAC: The World's Premier Mineral Exploration & Mining Convention

March 1 – 4, 2020, Toronto, ON
<https://www.pdac.ca/convention>

Spring Professional Development Days

March 5 – 6, 2020, Yorkton, SK
<https://www.apegs.ca>

SustainTech 2020

March 19, 2020, Saskatoon, SK
<https://www.seima.sk.ca/>

Agricultural Water Management Program – WSA

March 25 – 26, 2020, Saskatoon, SK
<https://www.wsask.ca>

Law & Ethics Seminar

April 17 – 18, 2020, Saskatoon, SK
<https://www.apegs.ca/Portal/Pages/Professional-Practice-Exam>

90th Annual Meeting and Professional Development Conference

April 30 – May 2, 2020, Saskatoon, SK
<https://www.apegs.ca>

Uranium 2020

May 10 – 13, 2020, Saskatoon, SK
<https://u2020.metsoc.org/>

GeoConvention 2020

May 11 – 13, 2020, Calgary, AB
<https://www.geoconvention.com/>

2020 CCWESTT Biennial Conference

May 21 – 23, 2020, Winnipeg, MN
<http://www.ccwestt.org/conference>

Did You Know?



Reading *The Professional Edge* counts as credits for reporting continuing professional development under the Informal Activity category.

Attending conferences also counts as credits under the Informal Activity category.

For more information visit: [apegs.ca](https://www.apegs.ca)