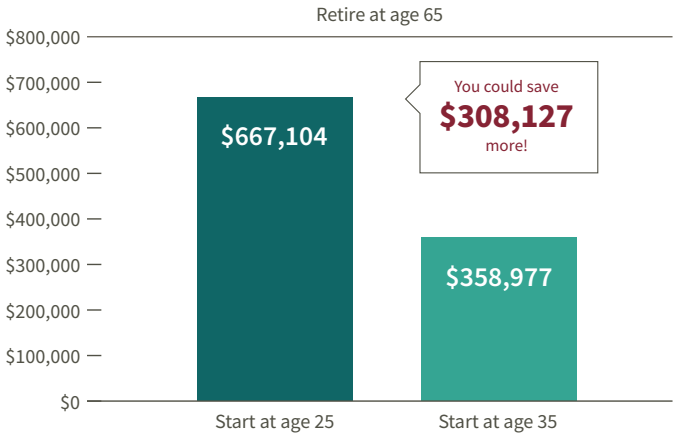
APEGS
Association of Professional Engineers & Geoscientists of Saskatchewan

THE PROFESSIONAL EDGE

ISSUE 203 • DECEMBER 2024

Grasslands National Park: *Geological Treasure Trove*

See the difference an extra 10 years can make



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Grasslands National Park

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Benjamin Hutton Photography, courtesy of Tourism Saskatchewan

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Deadlines:

Issue: June 2025
Submit to APEGS by: April 12, 2025
Publication distributed week of: June 10, 2025

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The next issue of *The Professional Edge* will be in June 2025.

APEGS has reduced the number of print issues of *The Professional Edge* from six per year to two and is supplementing them with monthly e-newsletters that are distributed on the 15th or next business day.

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P.Eng., P.Geo. FEC, FGC

A New Year Brings New Opportunities for APEGS Members

A new year brings new opportunities, and this is especially true for APEGS.

As President I am excited to give you a glimpse into some of our upcoming opportunities.

APEGS is making great progress on reviewing our act and bylaws. In 2024 we completed several engagement events with members, including a member survey, and conducted consultations with external stakeholders. In 2025 we will compile the feedback and begin work with government to update our legislation for the first time since 1997. This opportunity will serve the professions well for decades into the future.

Many of you participated in the 2024 member survey asking about your perceptions of APEGS. Thank you! Our results indicate that most members are satisfied with APEGS, its purpose and its direction. But we did get suggestions for improvement. We have the opportunity to incorporate that feedback into our 2025 work – more to come on this next year!

Our Continuing Professional Development (CPD) program changed in 2024. APEGS is continuing to develop content to support our members in meeting their CPD annual requirements, especially our free one-hour online modules that help you obtain your annual ethics credit. For more information visit the CPD menu at apegs.ca.

APEGS has formed a task group and is getting staff in place to advance the regulation of firms. In 2025, firms and APEGS will have the opportunity to work together to build a program that will support engineering and geoscience professionals to uphold their professional obligations. We will continue to keep you informed as this moves forward.

In 2025, I strongly encourage members to consider volunteer opportunities with APEGS. It's a great way to serve our professions and meet colleagues. Please check your email for a call for volunteers, with instructions on how to apply and the committee opportunities available. But don't wait too long – registrations close Jan. 10.

Join us at our 2025 annual meeting and PD conference in person in Regina or virtually on May 2-3, 2025. The professional development day will have the theme *Designing for the Future*. If you have ideas for presentations or sessions that fit this theme please reach out to APEGS staff.

To wrap up, I want to thank all APEGS members who volunteered in 2024. I recognize your service to APEGS and am grateful for the opportunities to work with you.

I also want to thank the general membership for participating in our 2024 events and I look forward to seeing you in 2025. I encourage you to explore all of the participation and engagement opportunities APEGS is offering in 2025.

Your support and involvement is one of the strengths of the APEGS organization.

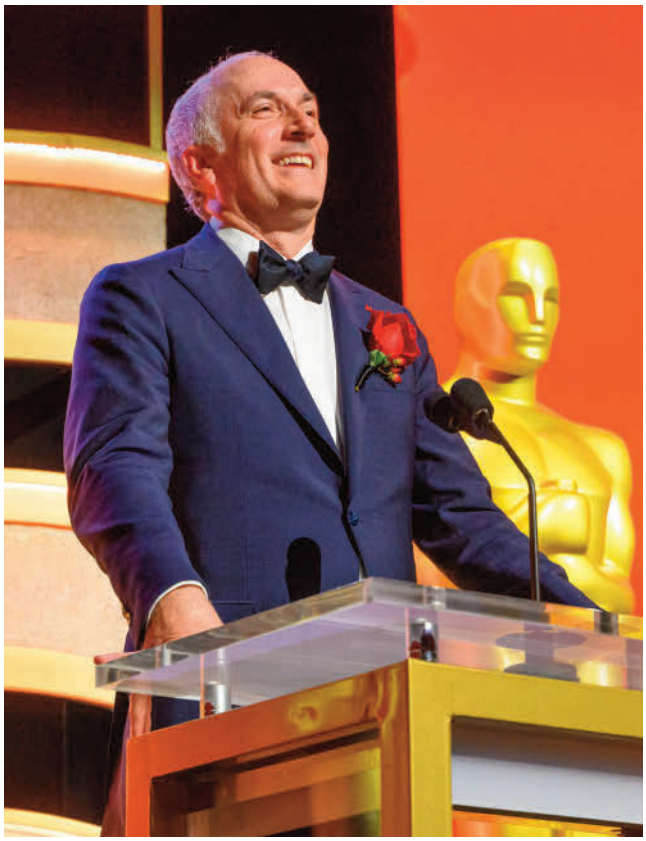


Photo Credit – A.M.P.A.S.

APEGS member wins **Academy Award**

When Gregory Niven, P.Eng., relocated from British Columbia to California in pursuit of a vision, his sights were set on the possibilities in Silicon Valley.

As Niven packed up his Vancouver residence in February 1999, he could not have imagined that, exactly 24 years later, his journey would take him a little farther south to a glitzy stage in Los Angeles – and an Academy award.

Yet on Feb. 23, 2024, Niven stood in the Los Angeles David Geffen Theatre, where Hollywood A-list director Michael Mann presented him with an Individual Technical Achievement Award for what the Academy of Motion Picture Arts and Sciences called "his pioneering work in using laser diodes for theatrical laser projection systems."

Niven was one of 16 laser innovators honoured in the Academy's scientific and technical categories this year and one of only two to receive the individual achievement award.

It was an incredible culmination of a lifelong fascination with lasers and a bold, dogged pursuit of their potential applications for the silver screen.

"Since I was five years old, I always wanted to work with lasers," Niven said as he reflected on the odyssey from his current home in Calgary, Alta.

That interest still burned bright upon Niven's graduation from high school.

"I wanted to take engineering physics because that's about the only path to working with lasers and optics," he said. "The closest place I could get to was the University of Alberta (in Edmonton)."

Although Niven recalled there being "a lot of good laser and optics people" at the university during his time there in the late 1980s, opportunities for a career in the field were limited in Canada, particularly in the Canadian Prairies.

Almost immediately after his graduation, Niven headed to Vancouver, where he found work with eventual Canadarm maker MacDonald Dettwiler and Associates and digital imaging company Creo – organizations whose business necessitated laser and optics applications.

"I was the laser guy in companies building other stuff that needed a laser in it," Niven said. "It was fun, but in the end, I had limited career options and I most enjoyed working with the laser vendors."

For Niven, then, it was a natural next step to work with the laser manufacturers themselves – many of whom were in the technology hotbed that was northern California, particularly the Silicon Valley region in the San Francisco Bay area.

So, in the winter of 1999, Niven departed mainland British Columbia and took up employment at Coherent Inc.'s Santa Clara location. Coherent and other companies were developing lasers for multiple applications and contexts, from telecommunications to medicine to national defence.

"The laser companies were full of scientists that would think of new lasers and then try to find an application for them," he said. After some time in Silicon Valley, though, he began to ask himself why the innovation was happening in that order.

"You could flip it around and say, 'Hey, here's a great application. Why don't we build a laser for it?'" he said.

As it happened, the dawn of the 2000s brought with it a rapidly growing interest in new technologies for home entertainment and cinema, demonstrated in a flood of new high-tech televisions marketed to the consumer, from large-screen projector TVs to flatscreen plasma TVs.

Projection televisions featured a small digital light processor (DLP) roughly a square inch in size which, when flooded with light, used tiny mirrors to achieve a scale and scope of projection not possible with the old cathode-ray tube televisions.

Developed and trademarked by Texas Instruments, digital light projection also began to take root in the world of cinema.

"At the time, they were switching over from film-and-lamp-based cinema to digital cinema and using these Texas Instruments DLP devices," Niven recalled.

"In 2002 I had this idea to use a set of red, green and blue lasers, instead of a white lamp, to image onto this DLP," he said. "So, I started to work with Texas Instruments and several TV makers on this type of application."

While the projection TVs continued to dominate the home entertainment markets, Niven and other engineers were working to develop miniaturized red, green and blue laser technology that could achieve the necessary wattage without need for impractically large, cumbersome hardware.

"This was a big deal," he said. "At this time, laser markets were niche. Besides CD and DVD and Blu-ray players, which use a little milliwatt laser, there weren't a lot of consumer products."

Beyond the home market, of course, were the giants of cinema.

Around the middle of the decade, Niven learned of a promising laser technology developed by a Silicon Valley startup backed by a handful of venture capitalists. Inspired enough by what he saw to approach the chief executive officer at Coherent about buying the company, he was stunned by the response.

"He looks at me and says, 'Greg, you are kidding yourself. There will never be lasers in a movie cinema,'" Niven recalled.

"That's a conversation I will never forget."

Undeterred, Niven soon moved on to work with that company called Novalux, which was developing a new type of laser ultimately branded as Necsel. It was his work with Novalux/Necsel and numerous other global projector manufacturers that would ultimately earn Niven his Academy accolades for "leading the industry's transition to laser cinema projection technology."

Niven's vision of replacing white lamps in projectors with red, green and blue lasers was inching ever closer to fruition. While red and blue lasers had since become commercially available, "we made the first green colours so that people could launch cinema projectors," he told Laser Focus World. "At the time, green was the limiting colour."

Combining edge-emitting diodes for blue and red projection with vertical-external-cavity surface-emitting lasers (VECSELS) for green, Necsel lasers could achieve twice the luminosity of the brightest lamps of the day while needing to be replaced at about 1/40th of the rate.

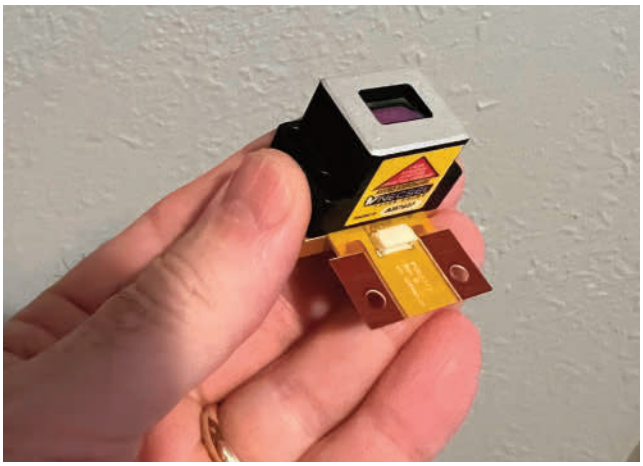


Photo Credit – A.M.P.A.S.

This high-powered Christie Dolby laser was key to laser-based cinema projection.

As it turned out, the breakthroughs couldn't have come at a better time: in the late 2000s, the market for projection TVs collapsed completely, done in by the growing size and lower expense of LCD and plasma panels.

"We (Novalux) had 60 or 70 employees humming away, design wins with Sony, Samsung, Texas Instruments, all this great stuff going on, and it literally just collapses overnight," Niven said. "There's three or four of us left sitting in the building, saying, 'OK, now what?'"

"But there was still the cinema side of things."

Photo Credit – A.M.P.A.S.

Novalux would eventually go bankrupt, re-emerging as Necsel and, with an injection of cash from a Japanese cinema lamp manufacturer, it would zero in on the cinema market.

"We bought all of the necessary equipment out of bankruptcy from the previous company and kept incubating the cinema application," Niven said. "By 2012, we finally got some products launching."

In 2014, Niven was contacted by a group whose existence was a surprise to him: the technical committee for the Academy of Motion Picture Arts and Sciences. The emergent laser-based projection technology had caught the committee's attention.

So had Niven, in his role as a key developer whose advice and knowledge was being used by all of the key players in the burgeoning industry. The committee was fishing for potential technical award candidates among the makers of laser-based projectors.

The technology was still new, though, and after a couple of preliminary interviews in which Niven answered detailed questions about laser-based projection and identified numerous other key players, Niven didn't hear from the committee again for several years.

"Typically, they wait six or seven years, if not 10 to 12 years, to see what technology actually has staying power and makes a difference," Niven said.

By 2014, though, laser-based projection's replacement of the legacy lamp technology was already gaining momentum. By 2018, there was no stopping it, and the global rollout was well on its way. Laser's advantages were obvious and overwhelming and involved more than just an enormous improvement in brightness.

"The lasers gave filmmakers a much more lifelike and realistic colour gamut," Niven explained.

"Lamp-based projection only displays about 60 per cent of the colours your eyes can perceive. A laser-based projector is able to display roughly 90 to 95 per cent.

"They finally get to display their lovely, beautiful motion pictures the way they really want them to be seen. The image is brighter, sharper, with better colour and better contrast."

It had been a journey of roughly two decades, but Niven's steadfast belief in laser-based cinema projection had been overwhelmingly vindicated – and had profoundly changed both the motion picture industry and the motion picture experience.

Ironically, right around the time lamp-based projection was going the way of the dodo, Niven got a phone call from his 76-year-old father, who had run his own oil production company for more than 30 years but was facing challenges in transitioning it to new management.

"He said, 'Maybe you want to come help me?'" Niven recalled.

"There's an oilfield near Carlyle, Saskatchewan, that they've operated since 1986," he said. "I ended up quitting my job and the laser business and I started flying up to Calgary and Saskatchewan to help him out."

Over the next few years, Niven immersed himself in the oil business. Although he kept an eye on the Academy's technical awards, neither laser-based projection nor any of its creators appeared on the rolls.

But in December 2023, he received an email he initially dismissed as spam.

"It said, 'Congratulations, you've been selected for a scientific and technical Academy Award for your contribution, blah, blah, blah," Niven recalled. "And don't tell anyone, because there will be a press release in January."

Even during the interviews with the technical committee that were now nine years past, Niven himself hadn't been considered for an award: the committee was focused on the designers and builders of the projectors, not the lasers that powered them.

That had changed, however, and now Niven, along with Bill Beck of Laser Light Engines, were to receive special individual achievement awards while 14 other engineers and scientists collected awards for their contributions to the technology.

A scant two months later, his best suit adorned with the Academy Award winner's rose pin, Niven accepted his Individual Technical Achievement Award. In the crowd at the David Geffen Theatre were his wife, parents and two of his four children.

"All these people I started working with in 2003 and 2004, they were all there," he said. It was like a mini reunion.

"The awards ceremony was amazing. I've never been part of an event that was so well organized, so much fun. I got a ton of congratulations. It was quite a career capstone for what I always saw was going to be a big deal, even when others didn't see it."

His only complaint? The Academy reserves the iconic Oscar statuettes for the performance categories. Technical and scientific honourees receive only a certificate.

"I mean, c'mon man. How much would it cost?" he says with a smile. "I'll pay for it."

Photo Credit – A.M.P.A.S.

Grasslands National Park: *Geological Treasure Trove*

courtesy of Tourism Saskatchewan

Courtesy of Royal Saskatchewan Museum

Kate MacLachlan's fossil find

It wasn't the first trip to Grasslands National Park for Kate MacLachlan, P.Geo., and her 16-year-old daughter Frances, and it likely won't be the last. But it may prove to be one of the most exciting.

On Aug. 17, 2024, McLachlan and Frances, joined by MacLachlan's husband, Ken, and a number of family friends, made the trek to the park's East Block, located near Wood Mountain, Sask.

There they were participating in the annual Fossil Fever event, an opportunity for dinosaur enthusiasts of all ages to join paleontologists from the Royal Saskatchewan Museum for a day of fossil digging.

"It's something Frances and I have been doing since she was quite young. She's always been interested in dinosaurs. It was the first time we'd been there since COVID, and we were quite a big group this time," said MacLachlan, who heads up the APEGS registration department and specialized in Precambrian geology.

This year, MacLachlan's crew joined Fossil Fever on the final day of the weeklong event. After nearly five hours of probing and prodding sedimentary rock, it was nearly time to put down the picks, trowels and brushes and vacate the site.

The paleontologists were beginning to "jacket" the day's finds, creating plaster supports to safely house the fossils. As MacLachlan got in a few last taps at the outcrop she'd been exploring, "I saw this little black thing poking out," she said.

"I thought it was the tip of a tooth or something. And then I flaked off another big hunk (of sediment) and I could see that it was a much bigger thing."

When the nearest paleontologist came over to take a look, the reaction was immediate and dramatic.

"They were like, 'Oooh,' and then they kind of shooed me out of the way, like 'We need to look at this,' " MacLachlan recalled.

"The dig team was really excited with Kate's find, because Tyrannosaurus teeth had been found earlier in the week, and we were not sure what animal her claw belonged to," said Ryan McKellar from the Royal Saskatchewan Museum.

As the Fossil Fever participants were guided away from the site, the extraction of MacLachlan's find was still ongoing.

APEGS staff member Kate MacLachlan and her daughter Frances

"They had to get it out that day because they weren't going to be coming back (to that site)," she said.

"I didn't even get to see them finish excavating it. But I had the sense that it was something kind of cool."

That evening, as the Fossil Fever diggers rejoined the paleontologists for the Fossil Talks portion of the event, MacLachlan was told she may have uncovered the hand claw of a Tyrannosaurus rex.

That would be exciting enough for any amateur fossil seeker. However, when MacLachlan reached out to the Royal Saskatchewan Museum several weeks later, the news was even better.

Closer examination of the fossilized claw had revealed it once belonged to a 500-pound feathered raptor classified scientifically as *Anzu wyliei* but known less formally in paleontology circles as the "Chicken from Hell."

With its toothless beak and crested head, the five-foot-tall, egg-laying Anzu roamed what were once jungles in North America roughly 66 million years ago.

Anzu's presence in North America is a relatively recent discovery, only confirmed in the late 1990s as fossil evidence accumulated. But the vast majority of fossil finds have occurred in the United States, throughout Montana, Wyoming and North Dakota.

"It's not something that's been found much in Saskatchewan," MacLachlan said.

In fact, her discovery prompted a weeks-long search among the fossil collections by one of the museum's paleontology grad students – a search that turned up only some Anzu foot bones and claw fragments.

MacLachlan's unearthing of a well-preserved handclaw was a significant addition to the museum's collection.

"Only a few bones have been published about from Saskatchewan, and most of these specimens are housed in collections in Ottawa and Texas, so this is a big find for the RSM collection," said McKellar.

It was a delightful bonus for MacLachlan, whose frequent visits to Grasslands National Park are primarily motivated by its distinctive geological formations. The park's East Block preserves a vivid geological picture of the Late Cretaceous period and has become a treasure trove for scientists studying biodiversity before and after the reign of the dinosaurs.

"It has a complete geological record of the millions of years leading up to the extinction of the dinosaurs and after," MacLachlan said. "The extinction of the dinosaurs is marked by a very distinctive clay layer.

"You can actually go and put your finger right on the extinction event."

courtesy of shutterstock

***Anzu Wyliei* – 'Chicken from Hell'**

Grasslands National Park

Photo credit: Benjamin Hutton Photography, courtesy of Tourism Saskatchewan

Cities of the Future

and the Municipal Marvels Student Challenge

APEGS attracts fresh minds to the engineering and geoscience professions by sponsoring STEM programming through:

- the Saskatchewan Science Centre;
- Nutrien Wonderhub;
- University of Regina's science camps and workshops (EYES); and
- University of Saskatchewan's science camps (SCI-FI).

This year, APEGS sponsored the IMAX film "Cities of the Future," which opened at the Kramer IMAX Theatre in Regina in February 2024.

This engaging film explores the innovative technologies and engineering marvels shaping tomorrow's urban environments, showcasing the critical role of engineers and geoscientists in building sustainable cities.

Inspired by the Future Cities Challenge featured in "Cities of the Future," APEGS and the Saskatchewan Science Centre have offered the Municipal Marvels Student Challenge, a competition for Saskatchewan students to provide innovative, sustainable solutions to a problem they see in their community.

Submissions closed in November.

The Science Centre is seeking engineers and geoscientists to help adjudicate them and inspire their creators.

Finalists will receive a bursary of $250 to complete a physical model of their solution and will present their model at the SUMA Convention in Saskatoon, SK on April 15, 2025.

The winning group will receive a cash prize to support their school's STEM/STEAM program.

Volunteers Needed!

APEGS and the Science Centre need your help as an adjudicator or mentor for the Municipal Marvels Student Challenge. Contact Tenielle Bogdan at tbogdan@sasksciencecentre.com or 306-791-7949. This counts as credits for reporting continuing professional development.

Scan the QR Code to Learn More!

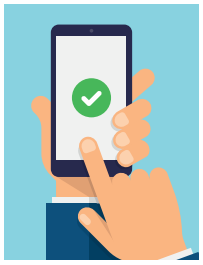
2025 Membership and Licence Fees Now Due

Fees notices were mailed in mid-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. **Due to the mail strike, fee notices may be delayed. It is a member's responsibility to pay renewal fees regardless of successful delivery of the renewal notice.**

Annual fees for 2025 are due by Dec. 31, 2024.

Payment must be received prior to Jan. 31, 2025 at 5 p.m. (CST) to avoid being ceased as a member.



How do I pay my fees?

Log into APEGS Central (member 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.

Even if you are mailing a cheque or your company is paying for you, please click on "Pay Now" in APEGS Central to be guided through updating your profile.

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

What happens if I do not renew?

You would no longer have the privilege of practising engineering or geoscience on projects or properties within 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 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.

What if I am not working in Saskatchewan?

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.

The Licence Waiver Application Form is available on the APEGS website under Members/Application 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 Jan. 31, 2025 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.

Eligibility for Life Membership

At the annual meeting in May 2024, a change to the regulatory bylaws was ratified by the members to remove the age requirement for Life Membership. The change has been approved by the provincial government.

For anyone applying for Life Membership, the only requirement is that they have retired from the practice of professional engineering and/or professional geoscience.

The Life Member Application Form is available on the APEGS website under Members/Life Membership.

Why do I need to be licensed with APEGS?

Professionals engaging in engineering or geoscience work in Saskatchewan must be licensed.

The government of Saskatchewan has granted engineering and geoscience professionals the privilege and the responsibility of self-regulation as APEGS under the authority of *The Engineering and Geoscience Professions Act*.

APEGS licenses and regulates approximately 16,000 engineering and geoscience registrants.

Being licensed allows the public to be confident that engineers and geoscientists have the qualifications, competence and ethics to protect the public interest and the environment.

It also means that engineers and geoscientists can be proud of belonging to professions with a reputation for excellence and a commitment to enhancing the quality of life, health, safety and well-being of all Canadians.

Continuing Professional Development:
Questions, Answers and Misconceptions

When members register with APEGS, they must stay current and maintain competence within their respective professions.

APEGS' Continuing Professional Development (CPD) Program formalizes this obligation and provides a means for members to demonstrate their knowledge, credibility and competence.

Of course, this means APEGS must also stay current by evaluating and updating the CPD Program as necessary. Significant changes were introduced to the program for the 2024 reporting cycle.

With the first year of the revised program nearly complete, we've provided answers to some frequently asked questions and addressed a few misconceptions about collecting and reporting your CPD credits.

APEGS allows me until Jan. 31, 2025, to report my 2024 CPD credits. May I collect more credits for this reporting cycle in January 2025?

No. The January grace period is only for reporting your 2024 information to APEGS online.

Credits earned after Dec. 31, 2024, will need to be applied to future reports.

I see that licensed APEGS members are required to earn 30 CPD credits in a year. I held a licence waiver in 2024. What are my requirements?

Beginning in 2024, **ALL** members are now held to the same CPD credit requirements.

Members need to earn at least 30 credits each calendar year, 12 of which must be verifiable.

Members must earn credits in at least two of the five CPD program categories and also complete at least one hour of verifiable ethics training.

I earned more than the required 30 credits in 2024. Must I report all of them?

We recommend you report just enough credits to meet your annual requirements and bank the rest, tracking it offline.

You can bank CPD credits for up to two years. Any excess credits you earned in 2024 can be banked and reported in 2025 or 2026.

The only exception is your ethics credit, which only counts for credit in the year you earned it.

Keep good records and those extra credits will come in handy.

Must all of my CPD activities be directly connected with my profession?

Not at all.

Continued professional development includes developing skills in leadership, conflict resolution, delegation and other so-called "soft skills" that contribute to your effectiveness and capacity as professionals.

As examples, coaching a local sports team or serving as a board member with a community organization qualifies as CPD credit.

Technical training in my profession is expensive. It's costing me a lot to earn my 12 formal activity credits every year. Any advice?

Formal activity only means you completed a structured learning opportunity and it can be formally verified that you completed it.

This does **NOT** need to be technical training, and it can be an activity that costs you nothing more than your time and effort.

For example, participating in a free-of-charge APEGS webinar counts as formal activity because it's a structured session and your attendance is verified with a certificate.

Can I obtain my required one hour of ethics training from a source other than APEGS?

Yes. Any verifiable ethics training of at least one hour qualifies as your annual CPD ethics credit.

My ethics training this year was an online course that took several hours to complete. I've exceeded my required one hour of ethics training. Is there any way I can get credit for the extra hours?

Yes! Many members aren't aware – or forget – that they can report ethics training as Formal Activity credits **in addition to** checking off their annual ethics requirement.

This is the only activity you can count in two different ways, so take advantage of it.

I completed an online ethics module offered by APEGS. Is my annual ethics requirement now met?

Yes, as long as you've watched that module for the first time. You still have one more step, though.

In order to get credit for the activity, you'll need to log into your APEGS account, check the "Ethics Training has been completed" checkbox and download a copy of your certificate.

APEGS ethics modules are delivered by external suppliers, so we won't know you've completed one unless you tell us. This is not automatically done for you.

I have 35 years of experience and am considered a leading expert in my field. Why am I still held to the same CPD requirements as less-experienced professionals?

As self-regulated professionals in fields that are continually evolving, it is essential that we stay current in standards, technologies and other aspects of the professions.

The public counts on us to safeguard their interests. While the focus of our learning may shift over the years, continued learning remains essential.

Many CPD requirements can also be met by adopting a teaching role – contributing to professional literature, delivering structured learning, etc. This is a natural way to collect CPD credits while sharing your expertise and knowledge with others in the professions.

I'm registered with APEGS, but I relocated last year to British Columbia. Do I still need to comply with APEGS' CPD Program?

Yes, as long as you remain a member of APEGS, you will need to report to Saskatchewan each year. However, the level of detail you are required to report may change.

Members whose preferred address is Saskatchewan must report their CPD credits to APEGS.

If your preferred address is in another Canadian province and you are reporting and compliant with that regulator's CPD program, you can simply check the "Reporting Elsewhere" box in your APEGS annual reporting.

I registered with APEGS in 2024 but completed several training courses in 2023. Can I apply these to my CPD requirements?

No. Only activities that took place while you were a registered APEGS member are eligible for APEGS' CPD program.

I participate in a lot of office meetings at which professional issues are discussed. Can the minutes for these meetings be used as verifiable formal activity credit?

Generally, no. Unless the meeting included a structured learning or development component, it will not typically qualify as Formal Activity credit.

However, if the agenda did include a learning or development session for those in attendance, that portion of the meeting could be claimed as Formal Activity.

I was recently asked to speak at a community event about the potential development of a new water park. Can I claim this as a "Contribution to Public Knowledge" credit?

Depending on your presentation, this may qualify as CPD activity, but not in the "contribution to public knowledge" category, which applies to specific activities usually related to academia, formal studies, code/standards development or registration of patents.

Most APEGS members will not make use of this category. We recommend you refer to the list of qualifying activities before reporting activity in this area.

If you don't see your activity on the list in the CPD Program Document but believe it should qualify as contribution to public knowledge, please contact APEGS so we can refer the activity to the CPD Compliance Committee for consideration.

How long should I keep my records of CPD activities?

You should keep your CPD records for at least three years.

If you claim banked credits, you may need to submit your records and verification from those years if you are selected for an audit.

And here's an important tip! Keep copies of your CPD records somewhere other than your office or work location. This can be digital records stored in the cloud or duplicate records at home. This will ensure you can access your records when you need them.

Where can I learn about the CPD Program changes that took effect in 2024?

Visit **apegs.ca/cpd** for more information, along with CPD tips, tools and training videos.

APEGS began notifying members about the impending changes in the CPD Program with an article in the December 2023 issue of *The Professional Edge*.

Since then, we have included notifications (with links to more information) in several issues of the monthly e-newsletter, the June 2024 issue of *The Professional Edge,* pre-event slides during APEGS webinars, CPD presentations and updates to the APEGS website.

We encourage all APEGS members to sign up for APEGS informational emails and newsletters to help you stay informed.

2024 APEGS ACT REVIEW

APEGS is reviewing *The Engineering and Geoscience Professions Act* and associated bylaws. The Act has not undergone a comprehensive review since 1997.

The Act and Bylaw Review Task Group was formed in June 2023 and has been working towards proposed amendments to modernize the Act. The timing is right for government to consider changes to our legislative framework, given other government priorities such as the *Labour Mobility and Fair Registration Practices Act*.

Other self-regulators in Saskatchewan, along with engineering and geoscience regulators throughout Canada, have gone or are going through similar changes.

APEGS' current plan is to prepare and submit the proposed changes to the Office of the Minister of Highways for consideration during the call for legislation in early 2025. If approved, APEGS hopes the changes will come into effect in early 2026.

The foundations of the Act remain unchanged, including the privilege of self-regulation via independent legislation, the responsibility to uphold public interest and safety, and an independent council elected by peers who are APEGS members.

Following are the proposed amendments prepared by the Task Group. Each amendment is grouped under one of seven "themes of change" and is followed by a brief description of the expected impact – if any – of professional practices in Saskatchewan.

PROPOSED CHANGES

1. Simplify: Move specifics from the Act to bylaws and policies.

Move the detailed information that must be contained in the register of engineers and geoscientists, and available to the public, previously found in Section 19 of the Act into the Regulatory Bylaws but still require the Registrar to keep a register. This update empowers the regulator to share essential information that may become critical to public protection and is in alignment with *The Engineering and Geoscientific Professions Act* in Manitoba.

Impact to Members
No change day to day.

Overall Impact
Adaptability for increased transparency in **member details that are shared publicly.**

PROPOSED: Relocate specifics regarding academic requirements, previously defined in Section 20 of the Act, to the Regulatory Bylaws and policy. This allows for nimble adaptability in defining academic requirements with evolving university programs, emerging disciplines, international agreements, and harmonization efforts with engineering and geoscience regulators across Canada.

Impact to Members
No change day to day.

Overall Impact
Adapt and efficiently respond to university program changes, emerging disciplines, international agreements, and harmonization across Canada in a timely manner.

PROPOSED: Move the maximum fine value for the disciplinary process, previously defined in Section 35 of the Act, to the Regulatory Bylaws. This enables the regulator to efficiently respond to external influences such as inflation, ensuring the fine values align with current costs, salaries, and economic conditions. The fines should be set at a level that is a deterrent or considered a consequence for contravening the Act, which is significantly different than in 1997 when the maximum $15,000 fine was last reviewed.

Within the Regulatory Bylaws, APEGS is proposing to **raise the maximum fine value to align with current economic conditions and assign separate fines for individual members and firms**. To help ensure appropriate proportionality and effectiveness in penalties, the maximum fine for a firm would be larger than the maximum fine for an individual member.

Impact to Members
No change day to day, except if an individual member or firm is found guilty under the discipline process.

Overall Impact
Act nimbly and deter individual members and firms from engaging in unethical behaviour by aligning the fine structure with modernized values.

2. Modernize terminology: Use terminology that is inclusive and easily understood by the public and reflects our role as a regulator.

PROPOSED: Update the definition of practice of professional geoscience previously defined in Section 2, to better encompass today's areas of practice and include safeguarding life, health, property, economic interest, the public interest, or the environment. A clear definition of the practice is essential for transparency and public accountability. The proposed definition, outlined below, aligns with the definition of Geoscience Canada, Engineers and Geoscientists Manitoba, Geoscience Nova Scotia, and Professional Geoscientists Ontario.

Impact to Members
No change day to day but covers a broader range of practice.

Overall Impact
Modernize to encompass the practice of the profession and highlight safeguards.

PROPOSED: The "practice of professional geoscience" means any act of documenting, analyzing, evaluating, interpreting, or reporting on the earth's materials or on resources, forms or processes, or managing any of the foregoing, that requires the application of the principles of geology, geophysics or geochemistry and that concerns the safeguarding of life, health, property, economic interests, the public interest or the environment.

In alignment with public expectations of inclusivity in the professions, **replace gendered terminology (he/him and she/her) throughout the Act** with terms such as "registrant", "individual registrant", "firm", or "they/them". This revision reinforces inclusion and reflects the diverse membership of the professions.

Impact to Members
No change day to day.

Overall Impact
Support inclusivity in the professions.

PROPOSED: Move from the current four objects, previously defined in Section 5 of the Act, to two duties and two objects. There is a misunderstanding of the meaning and expected actions regarding the term "fostering" in the current object 5(d), and how it is primarily in the public interest, not that of APEGS members. The proposed changes use simpler language to enhance the public's understanding but maintain the core themes of our current objects. This aligns with other provincial legislation, such as *The Accounting Profession Act* in Saskatchewan. The proposed two duties and two objects are outlined below:

It is the duty of the association at all times:

(a) to serve and protect the public; and

(b) to exercise its powers and discharge its responsibilities in the public interest.

The objects of the association are:

- to regulate the practice of the professions and to govern the registrants in accordance with this Act and the bylaws; and
- to assure the public of the knowledge, skill, proficiency, and competency of registrants in the practice of professional engineering and the practice of professional geoscience.

Impact to Members
No change day to day.

Overall Impact
Simpler language to describe and understand APEGS' role as a regulator.

PROPOSED: Modernize the terminology used throughout the Act to reference governing people and groups, including Council to Board, President to Chair, and Executive Director to CEO – changing to commonly understood governance and business terminology. This proposed change aims to clarify the organizational structure and governance of APEGS and is aligned with other regulators across Canada.

Impact to Members
No change day to day.

Overall Impact
Alignment with terminology used within professional business organizations and regulators across Canada.

PROPOSED: Change the operating name outlined in Section 3 of the Act, from *Association of Professional Engineers and Geoscientists of Saskatchewan* to *Engineers Geoscientists Saskatchewan*. Association is a collegial term that suggests the organization exists primarily for the benefit of its members rather than the public interest. APEGS also regulates more than just professionals, they regulate members-in-training (interns) as well. This proposed update in operating name more effectively communicates APEGS' role as a regulator and is in alignment with industry trends observed by other engineering and geoscience regulators across Canada. Currently, Alberta, Northwest Territories and Nunavut, New Brunswick and Saskatchewan are the Canadian engineering and geoscience regulators that use "Association" in their operating name.

Impact to Members
No change day to day.

Overall Impact
Removes collegial references and reflect APEGS' role as a regulator.

PROPOSED: Use the title intern instead of in-training, throughout the Act, to proactively align with terminology that is becoming more frequently used in the professions across Canada. This term is commonly used for individuals who are not yet professionals but have met the necessary academic requirements to be registered and practice under the supervision of a professional. In Canada, Engineers Geoscientists Manitoba (EGM) and Professional Engineers Ontario (PEO) use the term intern.

As universities commonly use this term for students in a work term, proper use of terminology and titles will be communicated to both students and their employers.

Impact to Members
Use of standard titles and abbreviations to titles.

Overall Impact
Alignment with terminology emerging across the professions.

3. Expand entity (corporate) regulation: Give APEGS scope to audit and enforce standards of practice and investigate and discipline business entities, in addition to individual members.

PROPOSED: APEGS is proposing to **expand corporate regulation** to be proactive in regulating the professions and display an inclusive regulatory approach. This action is supported by the final recommendations from APEGS' Corporate Registrant Task Group in June 2023. The improved corporate regulation includes expanding the types of firms that require a certificate of authorization (licence) and must be registered, enabling APEGS to review professional practice of firms and investigate and discipline business entities.

APEGS is proposing that firms include any of the following that provides professional engineering or professional geoscience services:

- a sole proprietorship;
- two or more individuals holding themselves out as practising in association;
- a partnership;
- a corporation, including Crown corporations;
- Government agencies or ministries;
- educational institutions;
- any other business entity.

It is important that all entities practising professional engineering or professional geoscience in Saskatchewan are regulated consistently across all industries. Expanding the types of firms that must be registered allows all entities to be more aware of how we regulate and how this relates to and affects the business of their organization.

APEGS will require firms to have documented professional practice standards, and APEGS will be able to review the professional practice of firms through mechanisms such as audits and practice reviews. This will help them create practices that support good professional practice.

Impact to Members
No change day to day for individual members, but there will be additional requirements for corporate members.

Overall Impact
Expands the regulatory framework to support all firms undertaking engineering and geoscience work in upholding professional standards.

With the proposed changes, APEGS will be able to investigate and discipline business entities that fit the definition of firms, as they will be considered 'registrants'. Currently, we are only able to investigate and discipline the individual responsible for the firm's Certificate of Authorization (licence).

4. Improve public accountability: Ensure appropriate public involvement in the governance of APEGS and enhance our protection of and accountability to the public.

PROPOSED: Require professional liability insurance for registrants, with the details outlined in the Regulatory Bylaw. This proposed change will help ensure that APEGS'

professionals are properly insured, protecting professionals and clients in claims for errors or omissions occurring in a project.

Impact to Members
Obtain insurance with respect to professional liability claims, if not provided by their firm of employment.

Overall Impact
Protect professionals and clients in claims for errors or omissions.

PROPOSED: Include recognition and protection of titles (and abbreviations) **for interns and licensees** to enable enforcement in these areas, which improves public safety.

Engineering Licensee (Eng.L.) and Geoscience Licensee (Geo.L.)

Engineering Intern and Geoscience Intern

Protection of titles aligns with Manitoba's Engineering and Geoscientific Professions Act.

Impact to Members
Use of standard titles and abbreviations to titles.

Overall Impact
Enforcement on the use of these titles without registration.

PROPOSED: Modernize exceptions to scope of practice, previously outlined in section 28 of the Act, to reflect current practices and the public's expectation of the professions, which includes:

Combining the original intent of subclauses (a), (b), and (c) into a single subclause: "*a person from performing engineering or geoscience work under the direct supervision and control of a professional engineer, professional geoscientist, engineering licensee or geoscience licensee*". Removing the comprehensive list of engineering or geoscience activities in subclauses (a) and (b) will enhance public protection by minimizing the unintended loopholes in exceptions to scope of practice.

Removing subclause (d) "*an individual from working on property or premises owned or occupied by that person, if the work is for the sole use of the domestic establishment of that person*". This issue has been seen in the investigation process. All engineering and geoscience work in Saskatchewan must be performed by or under the direct supervision of a professional engineer or professional geoscientist, engineering licensee or geoscience licensee registered with the association, regardless of whether it occurs on personal property. It is the members' duty to protect the public; this subclause contradicts that duty.

Removing subclause (l) "*a person from designing, constructing or installing appliances, works or plants of a total value not exceeding $30,000*". The value within this subclause has not been updated since 1997 and is no longer relevant as the exceptions to farm buildings in the building code have been removed. All engineering and geoscience work in Saskatchewan must be performed by or under the direct supervision of a professional engineer or professional geoscientist, engineering licensee or geoscience licensee registered with the association regardless of the scale or value of work.

Impact to Members
No changes day to day.

Overall Impact
Ensuring the exceptions reflect modernized practices and there is a clear understanding of exceptions to the scope of practice.

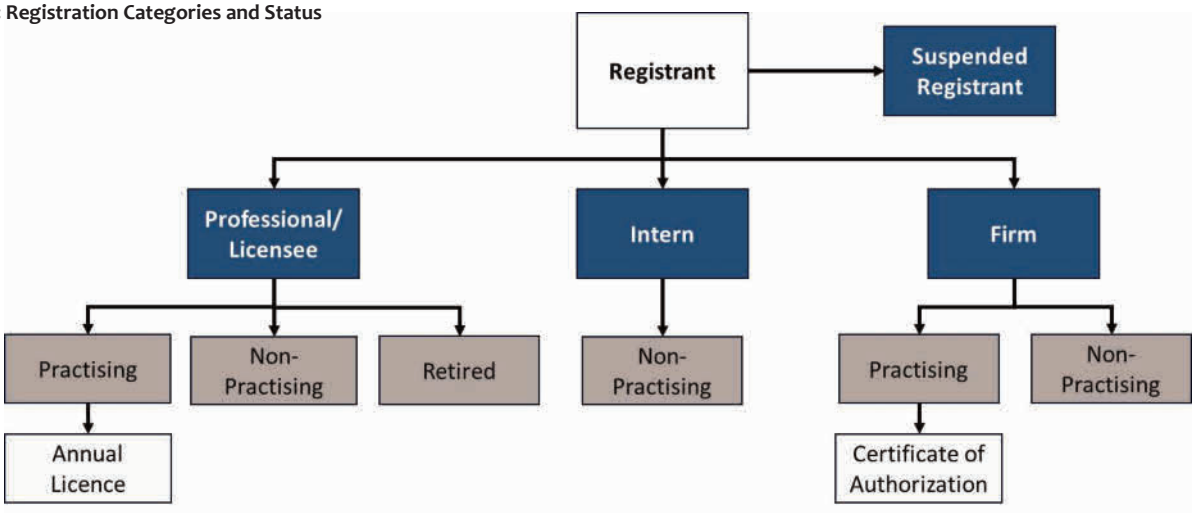
5. Modernize Registration Framework: Ensure registration categories and processes reflect current public expectations of inclusivity, fairness, transparency, and timelines.

PROPOSED: APEGS is proposing to **simplify the registration categories and provide clarity on who can practice. "Members" is a collegial term that will be replaced with "registrants" throughout the Act,** encompassing both individual registrants (professionals, licensees, interns) and firms. APEGS is also proposing to introduce practise status (practising, non-practising, and retired – a subcategory of non-practising) for registrants, to enhance clarity and transparency for the public regarding who holds a licence and is authorized to practise. These proposed updates establish clearer registration categories and procedures, while allowing flexibility for registrants to return to the profession by confirming competencies. A diagram of the proposed registration categories and associated practise statuses can be found in Figure 1 on next page.

Impact to Members
Clearer registration categories and procedures.

Overall Impact
Transparency to the public on who can practise, and flexibility, while confirming competencies for public protection.

Figure 1: Registration Categories and Status



PROPOSED: Permitting the Council (Board) to revoke a licence or registration in cases when the registration or licence was obtained fraudulently by submitting false academic and/or experience information. This empowers the Council to take immediate actions if there is sufficient evidence of the fraud, rather than going through the investigation and discipline process, ensuring efficiency and timeliness in removing individuals or firms that do not adhere to ethical standards.

6. Improve efficiency, effectiveness and transparency of governance processes: Improve the ability for the Council to represent member and maintain strategic oversight, while empowering the Executive Director and Registrar to manage operations through a cohesive bylaw and policy framework, ensuring that the public understands what APEGS is doing to regulate in their best interest.

PROPOSED: Bylaws will be approved and recommended by the Council (Board) to the Government of Saskatchewan and will not need to be confirmed at the Annual General Meeting (AGM); however, the AGM will still involve individual members voting on the audited financials, annual report, motions from the floor, etc. The intent is to enhance clarity regarding the roles and responsibilities of the Council as elected member representatives. The Council holds a fiduciary responsibility to act in the best interest of the public with decisions and actions aimed at upholding public trust in the profession. Empowering the Council to approve and recommend bylaws to the Government, as permitted or required by the Act, will help APEGS to respond nimbly, especially when there is a concern for public safety.

The Council may still consult on the bylaw changes, and transparent communication will be preserved. As before, Regulatory Bylaws will not take effect until approved by the minister and published in the Gazette, and the Administrative Bylaws will not take effect until the specified date, or they are filed with the Registrar of Corporations.

This structure does not remove self-regulation from our professions. APEGS members elect the councillors and authorize them to lead the organization. APEGS continues to retain authority to establish our bylaws and policies and govern our affairs without direct government intervention. Members will also be involved in self-regulation by having oversight on the standards and processes for registration of individuals through operational committees such as the Academic Review Committee and Experience Review Committees. Volunteer committees will make policy recommendations to the Council, outlining day-to-day regulation. This approach allows us to maintain self-regulation which focuses on serving and protecting the public.

This structure will not be unique to APEGS. It aligns with *The Accounting Profession Act* recently updated to support the self-regulation of Chartered Professional Accountants (CPAs) in Saskatchewan and was chosen by government to be included in the new NAPEG Act.

Impact to Members
Council, elected by APEGS' members, are empowered to make bylaw decisions.

Overall Impact
Maintaining in self-regulation which focuses on serving and protecting the public.

7. Investigation and discipline transparency: Improve transparency of processes and provide clarity on roles of APEGS, the Council, and the public.

PROPOSED: A new statutory committee, independent of the Council (Board), will review appeals related to decisions of the Registrar and decisions of the Investigation Committee that no further action be taken. The implementation of an Appeal Committee aligns with practices outlined in Manitoba's *Engineering and Geoscientific Professions Act*.

Currently, appeals of registration decisions and reviews of investigation decisions are conducted by the Council. The Council is also responsible for overseeing and approving registration practices and investigation procedures and can be a complainant for an investigation. To have the Council review challenges to these items can be an actual or perceived conflict of interest. To remove the conflict, a separate appeal committee will be formed with representation from APEGS members and the public and no representation from the Council. This structure will provide an independent appeals review process that allows for greater public representation, transparency, and accountability.

To increase public representation, APEGS will assign individuals from the public to the committee, rather than the public appointees.

Impact to Members
No changes day to day.

Overall Impact
Removes potential conflict of interest in the appeals process and provides greater public representation, transparency, and accountability.

The ability for a second level of appeal to the Court of King's Bench remains unchanged.

PROPOSED: Expand the current definition of professional incompetence, previously defined in Section 29 of the Act, to include "an incapacity or impairment that prevents the registrant from engaging in the practice of professional engineering or practice of professional geoscience with reasonable skill, competence, and safety to the public."

The proposed statement aligns with the definition of "incompetent" within *The Professional Governance Act* in British Columbia and the concept of fitness to practice. The topic of "fitness to practice" is becoming more known and accepted throughout the professions in Canada, with the Canadian Engineering Qualification's Board's (CEQB) Fitness to Practice Guideline expected to be finalized the summer of 2024. Expanding the definition is important because there may be physical or cognitive circumstances that could prevent an individual member or firm from practising the profession to reasonable standards, potentially affecting public safety.

Impact to Members
No changes day to day.

Overall Impact
Increased protection of the public by ensuring individual members and firms are fit to practice.

PROPOSED: Allow the Registrar to be a complainant within the investigation process, to efficiently deal with cases that come up during the registration processes. This proposed change will enhance public protection by ensuring that only qualified individuals or firms are practising and aligns with best practices outlined in Manitoba's *Engineering and Geoscientific Professions Act*.

Provide the Investigation Committee with the power to investigate other matters related to professional misconduct or incompetence that arise in an investigation. This is a best practice outlined in Manitoba's *The Engineering and Geoscientific Professions Act* to prevent multiple concurrent investigations occurring for the same individual member or firm.

Ensure transparency for the public and educate members that the Investigation Committee has the authority to investigate unlicensed practice when individuals or firms registered with the association are practicing outside of the boundaries of their licence (or lack of licence). This includes cases where a member or firm is practicing outside of their licence scope, a non-practising member or firm engages in practice, or a firm offers services in an area without a designated Responsible Registrant. Such actions may be considered professional misconduct or professional incompetence (depending on the circumstance) and investigated accordingly. Explicitly including unlicensed practice in the Act enhances transparency and accountability.

Impact to Members
No changes day to day.

Overall Impact
Efficiency in the investigation process to reduce the number of investigations and increased transparency in processes for public protection.

PROPOSED: Giving the Council (Board) authority to temporarily suspend the licence of an individual member or firm under investigation while applying for a court injunction. This would only be used in exceptional circumstances where there is imminent cause for concern for public health and safety and protection of the environment. The Act will specify the duration of the initial

suspension, with provisions allowing the Council to seek an extension from the court if necessary. This suspension is temporary while the court injunction process is undertaken.

Applying to the court for licence suspension can be time consuming. During this waiting period, the member under investigation may still be practising, posing risks to the public and environment. Empowering the Council to issue the initial temporary suspension enhances public protection.

Impact to Members
None, unless you are the individual member or firm under investigation.

Overall Impact
Take immediate action to protect the health and safety of the public and environment from unethical practice.

PROPOSED: Empowering the Investigation Committee to resolve matters summarily, where the Investigation Committee, if agreed to by the member, can impose terms or conditions that the member must adhere to for no further action to be taken for the investigation without having to go through the discipline process. This provides an alternative resolution process that would only be used for minor issues that do not pose risks to public protection or the environment. This proposed change within the original Section 32 of the Act still allows the complainant to appeal the decision of the Investigation Committee, if resolved summarily, through the Appeal Committee. This method will make the process for minor issues streamlined, more efficient, timely, and effective. This aligns with modern regulation practices and is similar to an avenue outlined in Saskatchewan's *The Accounting Profession Act* and Manitoba's *Engineering and Geoscientific Professions Act*.

Impact to Members
An avenue for complaint resolution, outside of a discipline hearing, for minor issues that do not pose risk to the protection of the public or environment.

Overall Impact
Provides an alternate method of resolution to avoid using discipline resources for matters that do not pose risk to the protection of the public or environment, while still upholding accountability.

Courtesy of DiscoverMooseJaw.com

Survey: Member Perceptions of APEGS

A recent survey of APEGS members indicates strong overall satisfaction with the organization's performance accompanied by an appetite for more interaction and a stronger relationship with its members.

Designed to help APEGS understand members' impressions and levels of satisfaction with their interactions with the organization, the survey was conducted between December 2023 and February 2024.

It was sent to 1,014 registrants through the opt-in APEGS Connect community and also made available to all members through OpenLink.

Among the roughly 260 respondents, **the vast majority agreed or strongly agreed that APEGS does a good job regulating the professions,** supporting professional growth, and helping professionals remain proficient in their practice:

Fair enforcement process 97%

Instils public trust 95%

Clear registration process.....93%

Regulating the professions to protect the public.....93%

Impartial/reliable/responsive 92%

Keeps me informed 91%

Transparent in CPD reviews 91%

While respondents gave APEGS a resounding thumbs-up in many of the categories included in the survey, their approval softened somewhat in others:

Progressive regulation 88%

Enforces professional and ethical standards 85%

Supports me as a professional 82%

Maintains standards for entry into the professions 81%

Helps me remain proficient 80%

Enforces CPD requirements 80%

Regulates firms 71%

The survey also asked respondents to indicate the types of interactions they'd had with APEGS in the previous year.

By a margin of roughly two-to-one, most respondents described "transactional" interactions such as fee payments or Continued Professional Development (CPD) reporting versus relational interactions such as attendance at APEGS events or voting in Council elections.

Meanwhile, 59 per cent of respondents agreed with the statement, "APEGS is just a means to be licensed so I can practise my profession."

At the same time, open-ended survey questions asking for suggestions from members revealed an appetite for more interaction and more engagement with and among registrants.

Multiple respondents suggested more face-to-face events and more communication, information and updates from APEGS.

Several respondents also expressed dissatisfaction with the APEGS Central members' portal, requesting a more intuitive, user-friendly interface.

Asked what priorities APEGS should focus on beyond its core functions as a regulator, respondents suggested a wide variety of priorities, with themes ranging from promotion of the professions to simpler registration and reporting processes to attracting new registrants.

By a wide margin, however, the most common suggestions involved enhanced member services and supports – helping registrants develop and advance in their careers, creating more networking and peer support opportunities, etc.

The coming year at APEGS will see significant efforts to update and enhance the members' portal.

Council and leadership will also consider opportunities for more fulsome registrant engagement that supports self-regulation through an involved and informed membership.

Enforcement and Investigation – Update on 2024 Activities

APEGS protects the public by prohibiting the use of protected titles and the practice of engineering or geoscience by those who are not properly registered and licensed.

In addition, APEGS acts in the public interest by requiring registrants to adhere to a standard of competence and conduct as provided in *The Engineering and Geoscience Professions Act* and bylaws.

APEGS' investigation and discipline committees, supported by staff in the Professional Standards department, receive and respond to allegations of professional incompetence or misconduct, initiating investigations and applying disciplinary orders where appropriate and necessary.

Thus far in 2024, 46 enforcement files were opened and 39 were subsequently closed.

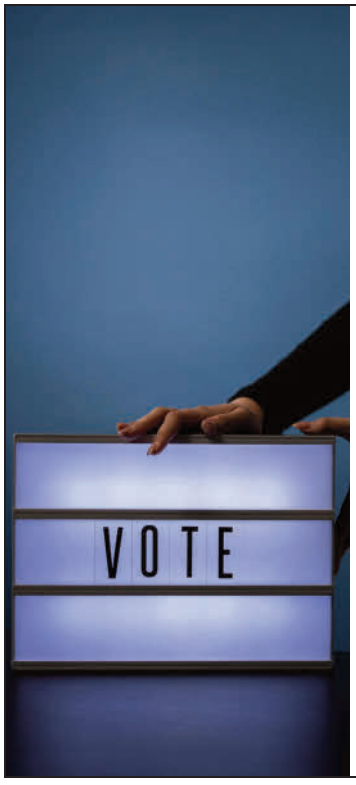
Twenty-two of the files involved misuse of protected titles, 15 involved misuse of the title "Software Engineer," and nine involved firms offering or providing professional services without a Certificate of Authorization. APEGS also issued one public protection notice.

In 2023 APEGS hired a new manager of investigations and enforcement, enhancing APEGS' capacity for a more proactive, strategic approach to enforcement.

Using open-source intelligence tools (e.g. social media monitoring, digital-evidence extraction software) increases APEGS' awareness of misuse of title and helps us uphold protection of title with quality documentation and evidence-gathering for use in court challenges, appeals and title protection proceedings.

Moving into 2025, APEGS will continue standardizing its investigation and enforcement procedures.

The professional standards and communications/public relations departments will collaborate on public awareness efforts, and APEGS will maintain a focus on protection of titles such as "Software Engineer" or "Computer Engineer" within an information technology context.



Council Election 2025 Important Dates

January 27, 2025
Nominating Committee confirms nominees.

February 18, 2025
Nominees announced.

March 10 – April 7, 2025
Vote!

May 3, 2025
New council is inducted at the annual meeting.

Important reminder Regarding Licensee Paper-Based Reports

Are you an engineering and geoscience licensee applicant working on paper-based work experience reports?

If yes, you need to complete and submit reports by Dec.31, 2024.

After Dec. 31, APEGS moves to a new, online competency-based assessment system and no longer accepts paper-based reports.

Learn more at www.apegs.ca/apply/how-to-apply/engineering-geoscience-licensee.

Designing for the Future

2025 Annual Meeting and Professional Development Conference

We're excited to announce the theme for APEGS' 2025 Annual Meeting and Professional Development Conference – **Designing for the Future**.

The events will be at Regina's Delta Hotel Friday, May 2 and Saturday, May 3.

Join your peers, colleagues, APEGS council and staff, and special guests for an enriching, inspiring event.

We're looking for presenters.

Are you involved in – or aware of – an innovative, forward-looking engineering or geoscience initiative that exemplifies our **Designing for the Future** theme?

Think it would interest your peers?

We'd love to hear about it.

Contact apegs@apegs.ca

Notes from APEGS Council

APEGS council meets four times a year to govern the organization's affairs and business.

Within two weeks of every meeting, a record of council decisions is available on our website under About/Governance.

Nationwide Multi-Year Public Awareness Campaign

APEGS continues to raise awareness about the role of engineers and geoscientists in protecting the public and APEGS' mandate to regulate the professions in the public interest.

In 2023, APEGS and the other engineering and geoscience regulators across the country worked with Engineers Canada to create a nationwide multi-year advertising campaign about how engineers are making a difference.

It's called Building Tomorrows and you can see it at https://buildingtomorrows.ca/.

This is the second year of the campaign and APEGS will be adapting it for various online platforms to target a Saskatchewan audience into 2025.

The campaign continues to highlight the important contributions of engineers and the many ways they help to make our world a better place, including:

- *Creating smarter cities to keep us safe;*
- *Designing novel treatments that cure disease; and*
- *Harnessing renewable energy to fight climate change.*

APEGS will complement this with a campaign to:

- Show how geoscientists impact people's daily lives; and
- Reinforce APEGS' role as the regulator.

APEGS will also create a program to reach key publics in Saskatchewan about the importance of hiring a professional and the ability to make a complaint.

Watch for more on this in 2025!

Member Profile

George Sharpe, Geoscience Licensee

APEGS George Sharpe, Geoscience Licensee has enjoyed a long career in geophysical and geochemical surveying.

His career has taken him around the world and into a remarkable array of challenging environments and climates.

A graduate of the geological engineering program at Sault College in Sault Ste. Marie, Ont., George was also APEGS' very first licensee member, joining APEGS in 2003 as a geoscience licensee.

His memoir *Love Across the Miles* has been published and is available on Amazon.

Tell us about your personal background.

I was born in Winnipeg, Man., into a family well known for politics, business and contributions to the arts. My grandfather and my uncle were mayors of Winnipeg.

But politics and business weren't my first love growing up; science and nature were.

What drew you to geology as a career?

I got most of my joy in childhood exploring nature. In Grade 3, one girl brought some rocks for the science fair. Her dad was a geologist. He had these beautiful specimens.

I looked at those rocks and said, "I gotta have something like that." I was fixated on them. "They were samples of massive sulphides from the Coppermine River area."

When I was about 13, there was a major iron ore discovery on Baffin Island (the Baffinland Iron Mine in current-day Nunavut). They showed it on the news. Sixty-six per cent iron right out of the rocks.

"I want to go there," I told my mother.

"Then you have to study hard," she said.

My dad went into engineering, but I was focused on the rocks and the love of making new discoveries. I decided then that I wanted to work on the exploration side. In 2010, I got to work there for one season as a senior geologist with a great bunch of professionals.

You've travelled all over the world doing exploration and survey work. Tell us some of your most memorable experiences.

In 1996, I took a job doing survey work in Mongolia. I had to survey the lines on a grid that was 18 kilometres by 10 kilometres – basically, the size of metropolitan Toronto laid out in the desert.

We were there for seven months.

The local diet was mutton: mutton fat, mutton soup, mutton everything. Sometimes we got lucky and might have goat. Goats are OK if they're barbecued, but it can be a little bit chewy if you wind up with some of the fur still on the meat.

One time when I was staying in a hotel in the Gobi Desert, I cut my leg open on a spring sticking out of the mattress. Somebody's got a picture of me getting patched up in a clinic in the middle of the Gobi Desert.

I've seen every possible climate you can imagine in every possible weather. And when you're in the field, the number one thing you have to do is be aware of what can hurt you and kill you.

Get your shots, take your malaria medication. I learned to listen to the locals. They're not telling stories; they're telling you the truth, what you have to watch out for.

Any mentors or role models you'd like to tell us about?

Jack Mollard, the founder of Regina-based engineering, geoscience and environmental consulting agency JD Mollard and Associates, was a big factor in my life.

Jack went out of his way to help me find work. When he didn't have anything for me, he bent over backwards to make sure I got work somewhere. He was marvelously generous. He was that way all of his life.

There was a fellow in Toronto named Laurie Curtis who encouraged me to start working overseas.

"Everybody wants to stay in Canada, close to mom and dad. But if you've got overseas work on your resume, you'll be remembered and recognized. It's challenging work, sometimes life changing," he said.

Member Grants

Through the University of Saskatchewan and the University of Regina, APEGS offers six merit-based grants of $7,500 each to encourage existing APEGS members to further their education in engineering or geoscience or attain an MBA.

Eligibility requirements

Members returning to post-graduation studies at either university in the field of engineering or geoscience or for an MBA program are eligible to apply.

Applicants are evaluated in the following areas:

- Accomplishments in the practice of professional engineering or professional geoscience which indicate exceptional potential.
- Demonstration of leadership, volunteerism and community involvement.
- Service to the professions in public education, understanding the role of professionals in society and/or active participation in engineering/geoscience associations, societies and institutes.
- Reasons for pursuing the post-graduate degree, goals, personal statement, how their studies will contribute to the professions.

How to Apply

Applications may be sent to APEGS any time throughout the year.

Applications received by Dec. 31 of each year are considered and awarded early the following year.

Go to www.apegs.ca and select Member Grants under the members menu for the application form and more information.

Stay up-to-date

Read *The Edge Monthly* e-Newsletter

APEGS introduced *The Edge Monthly* e-newsletter in 2022 for members to get timely and relevant information relating to licensing and regulating the engineering and geoscience professions.

Look for an email - **communications1@apegs.ca** - on the 15th or next business day of each month.

If you are not receiving the e-newsletter:

- Check your junk folder.
- Ensure you are subscribed.
  1. Log into APEGS Central.
  2. Go to My Profile / Summary / Communications.
  3. Check "APEGS informational emails."
- Contact the APEGS office for assistance.

Top Under 40: **Rahim Ahmad**

Canadian Consulting Engineer

Rahim Ahmad, P.Eng., is manager of construction services and part of the ownership team at Associated Engineering in Saskatchewan.

"As a kid of South Asian heritage, the career options from my parents were doctor, lawyer or engineer," he laughs. "I was good at math and science, so I gravitated toward engineering."

After moving from Surrey, B.C., to Warman, Sask., Ahmad earned his degree in civil engineering at the University of Saskatchewan. He was inspired by residential construction in Warman, Canada's fastest-growing municipality at the time.

"I was brought up in the Ahmadiyya Muslim community with the mindset of service to others," he says. "Civil engineering seemed to be the pathway to make a difference with my skill set."

After joining Associated as a summer student, Ahmad turned his focus to municipal infrastructure.

"I got a lot of hands-on and design experience with topographic surveys, construction layouts for roadwork and watermain inspections," he explains. "It made me realize the diverse nature of municipal infrastructure. Each day is not the same as the last!"

Sticking with Associated Engineering after graduation, he went on to participate in the design team for Central Saskatchewan's mega-scale Westside Irrigation Project (WIP), serve as civil engineer of record for the Buffalo Pound Water Treatment Plant Renewal, and manage a multi-firm team on the Husky Direct River Intake (DRI) project in Lloydminster.

"Rahim's communication skills and attention to detail help him lead large, multi-disciplinary teams to co-ordinate complicated projects," says Ryan Husband, P.Eng., irrigation engineer and councillor for the town of Outlook, Sask., for which Ahmad helped study the raw water supply. "His soft skills match beautifully with his professional skills."

Since last year, Ahmad has led a new construction services group in Associated's Saskatoon water division, with a vision of growing it into a training ground for young engineers-in-training (EITs).

"Rahim is committed to furthering the profession by helping future leaders grow in their careers," says Paul Pinder, P.Eng., the firm's vice-president (VP) and general manager (GM) for Saskatchewan. "He has already proven himself to be a leader."

Top Under 40: **Jonathan Palmer**

Canadian Consulting Engineer

Jonathan Palmer, 34, is president and CEO of Extropic Energy in Kelowna, B.C.

Over his career, he has consulted for such utilities as FortisBC, BC Hydro, Fortis Alberta, ENMAX, SaskPower and Manitoba Hydro, developing electrical master plans and modelling growth for campuses, communities and cities across Western Canada.

Palmer's path to the profession started at a young age. His father, who had studied engineering technology and worked as an electrician and millwright, fostered an interest in technology.

"He once bought seven computers for $10 from an auction and gave them to me," he says, "so I could take them apart and put half of them back together!"

By high school, not only was Palmer taking standard math and physics classes, but he also studied internet business technology at the college level. To develop both technical expertise and business acumen, he followed a degree in electrical engineering from the University of British Columbia (UBC) with an MBA from the University of Saskatchewan.

"Engineering gave me hard skills that could be applied in a business context," he explains.

Palmer worked for two consulting engineering firms: Primary Engineering and Construction, for whom he launched Saskatchewan operations, and CIMA+, which enabled a return to Kelowna. In 2021, he launched Extropic.

"I've always had a high entrepreneurial drive," he says. "I wanted more flexibility to pursue other opportunities and take a holistic approach to energy, from planning and conceptualization to engineering, implementation and asset management."

Palmer also identified opportunities to collaborate with Indigenous communities in a spirit of partnership and reconciliation. In 2023, he helped create Aurora Renewables, a construction company that partners with the Des Nedhe Group and English River First Nation to build solar, battery and microgrid projects in northern Saskatchewan.

Today, Palmer enjoys seeing Extropic's early energy roadmaps yielding real-world implementations.

"We're just getting started!" he says. "I hope to see more projects come to life and solve the challenges of the energy transition in a positive way."

News From the Field

Mining exploration on the rise

CJWW – More mining companies are exploring for minerals in Saskatchewan.

Compared to five projects last year, 28 exploration projects were approved earlier this year to receive a provincial government exploration incentive.

A government news release says this incentive, along with the Saskatchewan Mineral Exploration Tax Credit, attracted nearly 11 per cent of projected national exploration spending this year, up from eight per cent in 2022.

The goal is to attain 15 per cent of all Canadian mineral exploration spending by 2030.

SRC facility first to produce rare earth metals in North America at commercial scale

CJWW – It's a first for Saskatchewan and beyond.

The Saskatchewan Research Council (SRC) announced its Rare Earth Processing Facility produced rare earth metals at commercial scale this summer, the only jurisdiction in North America to do so.

SRC's President and CEO says the facility is a fully integrated, commercial, demonstration Rare Earth Processing Facility which takes ore and separates out the rare earth elements and then makes those elements into rare earth metals, used in electric vehicles, wind turbines and electronics like smart phones and tablets.

The vast majority of rare earth metals are produced in China. The SRC's goal has been to produce these metals in a more environmentally sustainable way, using state-of-the-art automated technology developed in-house.

SRC is on track to upscale production to 40 tonnes of rare earth metals per month by the end of December and ultimately will reach 400 tonnes of the specific rare earth metal which would power 500,000 vehicles.

Saskatchewan faces major obstacles competing with China in processing rare earth minerals

Globe and Mail – The Saskatchewan Research Council (SRC) is attempting to go head-to-head with China and prove the case for private investment in rare earth minerals by building North America's first rare earths processing plant.

The SRC has been working since 2020 to establish a plant in Saskatoon to process rare earths, such as neodymium, praseodymium and samarium. The facility there can currently produce 10 tonnes of rare earth metals a month. By year-end, it is expected to produce four times that much.

By that time, SRC will be in a position to produce a substantial proportion of the samarium used by the U.S. Department of Defence (DOD). The metal is used in missile guidance systems, stealth technology and F-35 fighter jets.

Discussions are underway between the SRC and the DOD around supplying its samarium, said the president of SRC.

"Even at this scale, this plant is strategically important," he said.

Currently, the rare earths market is dominated by China, the biggest global producer with 69 per cent market share worldwide, according to the U.S. Geological Survey.

China's position in refining is even stronger, with more than 95 per cent market share.

Now, Canada and the United States are trying to establish a footing in rare earths so they do not have to rely on a hostile actor for supply. But private investment has been rare in North America because of China's control of the market.

The Saskatchewan government has provided $71 million in funding for the plant, while Ottawa invested $30 million.

Currently, there are no rare earth miners in Canada. SRC has sourced rare earth ores from Brazil and, as it scales up production, it plans to procure ore from Australia, Southeast Asia, Latin America and South America.

Competing with China isn't easy in part because its capital costs are much lower owing to its loose environmental standards.

China dumps water used in the refining process, while the SRC recycles and reuses its water and chemicals. Building that recycling capacity is expensive making the cost of the Saskatchewan plant about twice what it would be in China.

Despite stricter environmental standards, the SRC has learned its customers are not willing to pay more for Canadian rare earths.

SRC's president said it was eye-opening to meet with Germany's automotive manufacturing association and learn the group wasn't willing to pay extra for Saskatchewan's product compared with China.

To better compete, the SRC concentrated on building a more efficient plant that incorporates artificial-intelligence technology.

SRC says the work of 80 people in China is accomplished by only four people at the SRC, in conjunction with AI.

Saskatchewan produces first kilogram of lithium

CTV News – Saskatchewan has produced its first kilogram of lithium, an essential mineral for battery production. The historic occasion was marked at a test facility in Emerald Park.

Prairie Lithium CEO Zach Maurer was on hand to show off the impressive accomplishment.

"We produce a lot of lithium concentrate and that concentrate was used to produce this battery-grade lithium carbonate," he explained.

The lithium was extracted from brine drilled from deep below the surface in the Estevan region.

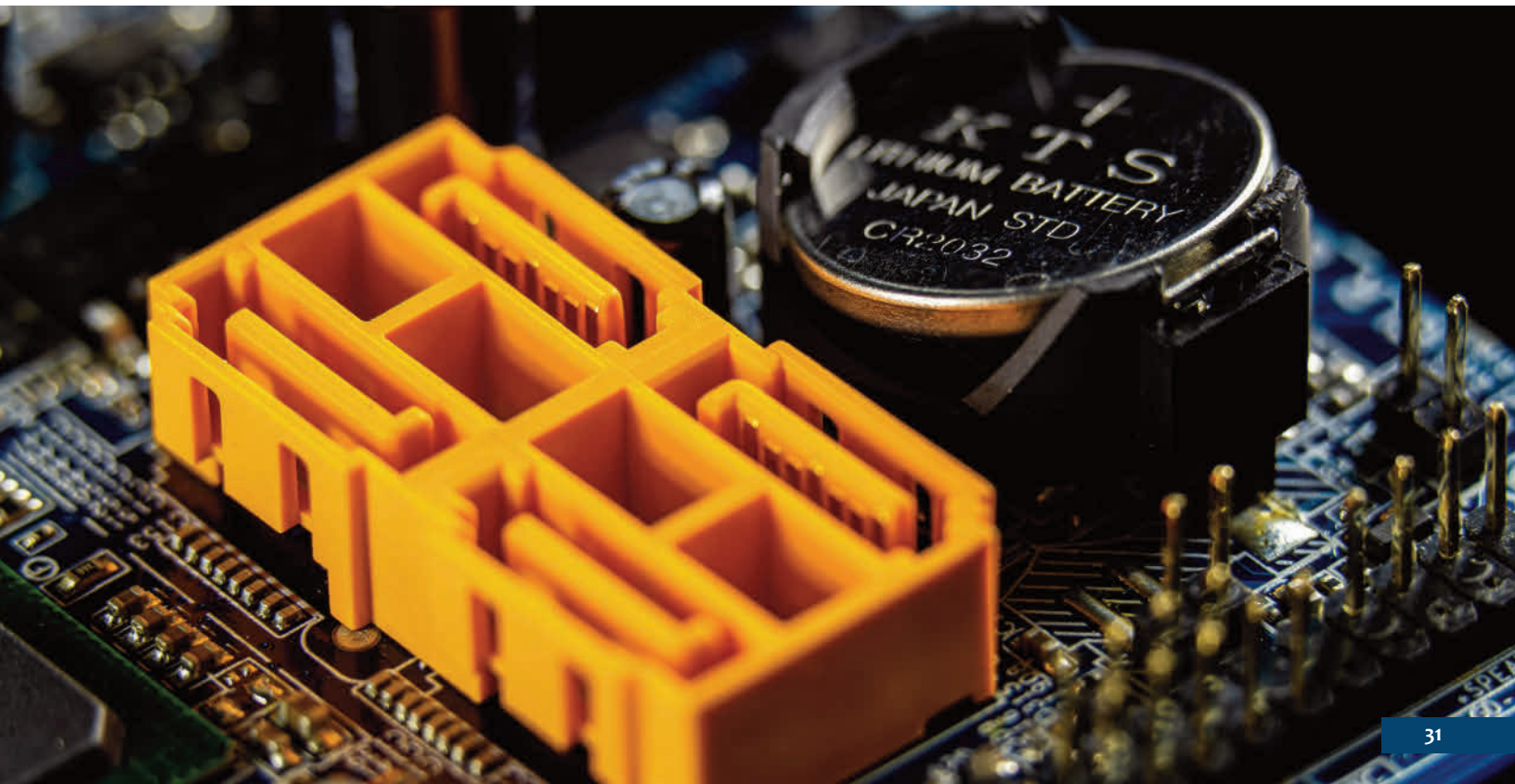
It was perhaps an event equal in significance to the production of Saskatchewan's first barrel of oil about 80 years ago.

Lithium will be a key component in batteries that power the transportation industry of the future.

"We are producing the lithium carbonate. I think you'll see battery cell plants popping up in most states of the U.S. and most provinces in Canada as the EV revolution rolls out," said Arizona Lithium Managing Director Paul Lloyd.

Currently, Nevada is the only place in North America producing lithium commercially.

Traditionally, it takes over a decade to bring a lithium facility into commercial production.



Prairie Lithium is moving at lightning speed with the government's industry support and expects to be in production by the end of next year.

Saskatchewan is home to 27 of the 34 critical minerals on the Government of Canada's list. Uranium, potash and helium are currently being produced, and of the remaining 24, lithium, copper and rare earth elements are the closest to reaching production.

The province's minerals strategy aims to double the number of critical minerals being produced in Saskatchewan from three to six by the end of the decade.

Is Canada the next El Dorado for natural hydrogen?

Hydrogen Today – Saskatchewan could harbour large quantities of natural hydrogen underground.

Max Power Mining, a Canadian-based company collaborating with various partners, has identified an area that could be the largest concentration of natural hydrogen.

It is located in southeast Saskatchewan, near the border with Montana and North Dakota, and known as the Rider Natural Hydrogen Project.

The research area covers 3,356 square kilometres. The highest hydrogen concentration points are between 75.6 per cent and 96.4 per cent.

"What we're finding in Saskatchewan is remarkable in terms of historical data and the broader geological context for this potential alternate energy source. This is… putting Saskatchewan in a very favourable position for the discovery of North America's first 'deposits' or accumulations of naturally occurring hydrogen gas," says Max Power Mining.

Building a hydrogen hub on the Prairies

Canadianminingjournal.com – The Saskatchewan Research Council (SRC) is supporting the province as it turns its attention towards hydrogen.

"There are a lot of great things about hydrogen, and we are excited about hydrogen as part of the energy transition," said Petro Nakutnyy, P.Eng., director of operations for SRC.

Hydrogen is a colourless, odourless gas that produces little to no emissions during its use. When used as a fuel, hydrogen combines with oxygen and gives off water or vapour as its byproduct making it an ideal candidate for a variety of energy needs.

Hydrogen can be combusted and used similarly to natural gas, diesel or gasoline.

Hydrogen can also be used in a fuel cell to produce electricity. Fuel cell applications are more efficient, but the ability to use hydrogen in internal combustion engines makes it a versatile transition fuel for heavy duty transportation.

In Saskatchewan, hydrogen is currently produced from natural gas, but it can also be made from electrolysis or water splitting, which produces hydrogen from water.

"The multiple production pathways for hydrogen make it a more versatile option for energy transition," said Nakutnyy.

"In some regions of the world, where gas supplies are prevalent, hydrogen can be produced from natural gas and combined with carbon capture, which allows us to reduce our greenhouse gas emissions significantly right away."

Alternative fuel research

After decades of developing technologies that use hydrogen, SRC has the knowledge and expertise to assist Saskatchewan with its energy expansion.

"I think the best contribution we made was the microprocessor that could adapt gasoline and diesel vehicles to hydrogen," said Mike Sulatisky, a research adviser with SRC's process development team.

In 2004, SRC produced the first "Dual-Fuel" diesel-hydrogen vehicle, followed by the first hydrogen-gasoline vehicle in 2005.

At its height, the project featured a fleet of hydrogen hybrid vehicles. In 2010, a hydrogen fuelling station was established to support these vehicles.

"We advanced the development of a new fuelling system, which allowed us to blend gaseous hydrogen into vehicles along with normal gasoline, and subsequently trademarked Dual-Fuel technology," said Anton Farber, E.I.T., project lead and supervisor at SRC.

"The control system development and vehicle conversion were completed in-house at SRC," added Farber.

These vehicle technologies reduced emissions anywhere from 40-60 per cent during routine driving conditions. The vehicles could idle on 100 per cent hydrogen, releasing only water vapour from the exhaust, which further reduced overall emissions.

SRC also developed leakage detection technology that used acoustics and ultrasonics to detect weaknesses within a high-pressure container before a leak could occur. Since hydrogen must be kept under very high pressure, this technology provided a valuable safety application.

The challenges in producing and storing hydrogen economically at scale were difficult to overcome, however. In recent years, the cost of producing, storing and working with hydrogen has come down and is expected to further decrease.

"Today, hydrogen use can be economic on its own merits, in addition to the environmental benefits of converting some applications to hydrogen," said Nakutnyy.

Building a hydrogen hub

Over the last two years, SRC worked closely with experts from the Transition Accelerator and the University of Regina, with support from the Ministry of Energy and Resources and industry partners, including Federated Co-operatives Limited and Whitecap Resources, to assess the feasibility of a hydrogen hub and synergies with carbon capture, utilization and storage (CCUS) infrastructure in the Regina-Moose Jaw industrial corridor.

A hydrogen/CCUS hub could help Saskatchewan establish an entire commercial-scale hydrogen supply-and-demand chain.

"Having stakeholders working together throughout the entire value chain to build demand and ensure that it is met with local production is important," said Dave Anthony, P.Geo., research scientist, Process Development.

The future of hydrogen in Saskatchewan

"We can use the industries that we have and retool some of it to produce hydrogen, therefore reducing emissions and creating an environment that would then allow further growth of hydrogen use," said Nakutnyy.

This strategy would provide a transition period where the people, skills and infrastructure in Saskatchewan can be used to continue supplying clean and inexpensive energy while maintaining economic growth and employment opportunities.

Saskatchewan's renewable energy sources, like solar and wind, fluctuate and cannot always provide a consistent amount of energy. This means that there are periods of time when electricity generation capacity exceeds the demand (off-peak hours).

Using this surplus energy to generate and store hydrogen could supplement renewable sources during generation lows.

"The whole world is now talking about the possibilities of hydrogen in the energy transition. And while there are challenges that would have to be addressed to establish a hydrogen hub in the region, Saskatchewan has unique qualities in favour of commercial-scale hydrogen hub development," said Anthony.

Talking hydrogen hub in Estevan

Sasktoday.ca – A proposed hydrogen hub project for Estevan was discussed this fall at a conference in Estevan.

The project envisions converting Estevan lignite coal into hydrogen, leveraging the area's rich coal resources.

Estevan's lignite, a mineral-rich biomass, will serve as the feedstock for biogenous hydrogen production. The process promises net-zero carbon emissions, power by renewable energy and advanced turbine power generation, highly profitable effluent liquid hydrogen and maximization of federal investment tax credits, according to early project details.

Greg Gosnell, CEO of GenH2, a leading U.S. company in the hydrogen infrastructure space, discussed the potential for hydrogen at the conference.

"Ultimately, hydrogen is the most prevalent molecule in the universe. It's never going to run out," Gosnell said.

However, he also emphasized the challenges, noting that "it's going to be expensive to start a new worldwide energy infrastructure."

Gosnell spoke about the global hydrogen opportunity, underlining that the Estevan project is a great opportunity.

"Estevan is in a position to take a leadership role in the global clean-energy initiative," Gosnell said.

"An opportunity to supply a significant amount of clean energy for industrial and mobility applications. An opportunity to make a material contribution to the achievement of net-zero carbon emissions targets. An opportunity for meaningful collaboration between public and private industry. An opportunity for effective repurposing of regional attributes: natural and human resources, infrastructure and capital."

There are two parts to the proposed Estevan Hydrogen Hub, which are gasification of coal to hydrogen, and the transportation and storage of the produced hydrogen.

The coal-to-hydrogen project, if realized, could inject over US $2.4 billion into the Estevan area and generate more than 200 direct and indirect high-paying jobs, according to the project description. Once operational, it is expected to produce and export around US $775 million worth of biogenous liquid hydrogen annually.

The hub would involve a partnership for hydrogen storage and transportation infrastructure. The partners in this venture are applying decades of experience gained through work with the U.S. Departments of Defense and Energy and NASA to mass-produce hydrogen technology solutions.

Though the project is still in its early stages, Gosnell is optimistic about its potential.

Helium production facility online

Business Wire – North American Helium (NAH) announced that its ninth helium purification facility is now operational at Antelope Lake, located approximately 50 kilometres west of Swift Current.

NAH brought its first helium production facility on-stream in the summer of 2020.

Four years later, it is producing approximately seven per cent of all helium production in North America, a significant step toward its medium-term goal of reaching 20 per cent of total supply in North America.

Saskatchewan needs 15,000 workers in the mining industry in the next decade

CJWW radio – Due to growth in the sector and an aging workforce, 15,000 workers will need to be hired by 2034 to fill vacancies in Saskatchewan's mining industry.

That's from Pam Schwann, President of the Saskatchewan Mining Association (SMA), who says according to the latest Mining Labour Market Report, the first priority is to get more people into the trades.

She says right now, 15 per cent of Saskatchewan's workforce resides out of province and comes into Saskatchewan to work.

"Unless there are some changes, and unless more people enter relevant occupations to mining, that could grow to 25 per cent of our labour workforce coming from out of province in the next decade."

Schwann says currently, less than 3.5 per cent of people choose to enter prevalent occupations in mining, such as technicians, mechanical and power engineers and geoscientists.

"The report identifies how many of these occupations we are going to require over the next 10 years. It really identifies the pressing occupations needed for training institutions (to implement and advertise)."

She also would like to see more newcomers and women entering into trade professions.

Indigenous people are fairly well represented in the trades; however, there is still opportunity for growth in the technical occupation sector.

Coming out of this report, the SMA will be working with kindergarten to Grade 12 students, career guidance counsellors and post-secondary institutions to create job awareness.

It isn't all bad.

Schwann says she's seeing more students in the Mining Engineering and Technology course at Saskatchewan Polytechnic, as well as more going through the Digital Potash Training Course for Indigenous students.

USask, Sask Polytech continue transfer agreement for mining engineering

University of Saskatchewan – Graduates of the Saskatchewan Polytechnic Mining Engineering Technology program can continue to transfer into the Bachelor of Science in Engineering – Geological Engineering program at the University of Saskatchewan (USask).

This means students can graduate with both a Sask Polytech diploma and a USask degree after five years of study.

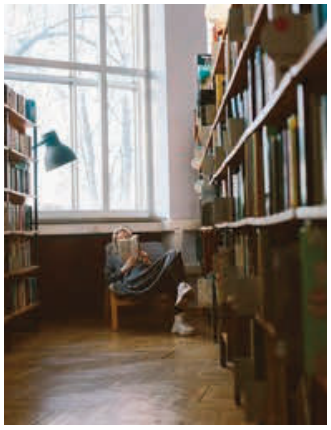
"This is a significant step toward fostering collaborative education and addressing industry's growing demands," said Dr. Michael Bradley, P.Eng., dean of the USask College of Engineering.

"USask Engineering is excited to continue developing additional pathways with Sask Polytech, ensuring we remain responsive to the needs of industry."

This partnership started as a one-year pilot program in 2019 to benefit students pursuing a mining career in Saskatchewan.

Sask Polytech students who successfully complete a Mining Engineering Technology diploma must meet USask admission requirements to transfer into the four-year Bachelor of Science in Engineering degree.

Research at USask explores amassing rare earth elements without mining



CJWW – Mining rare earth elements to be used in green technology may not be the only option.

It's something that University of Regina PhD student Brendan Bishop has been studying. He and his team have been studying the ash produced as waste from coal-fired power plants and how REEs could be extracted from it.

Bishop says it's a new field studied the past 10 years or so in the United States and China, but there has been little work on ash from Canadian coal.

They looked at coal from the three coal-fired power plants in Saskatchewan and one in Alberta.

Part of that research included using the X-ray beamlines at the Canadian Light Source. Bishop states the specific elements they were looking for were found in phosphate minerals in coal ash.

He adds that the minerals in the coal ash are the same minerals being targeted in ore deposits in mines suggesting this research could help develop an efficient and environmentally friendly process for recovering REEs from ash.

He expects it could be a good short-to-medium-term source of the metals used in green energy technology.

He notes that most coal ash just sits in landfills or tailings ponds near power plants, so this gives it another use, and it's already available, as opposed to mining, which would be more long-term.

REEs are used in electronics like cellphones, and in clean energy technology, like electric motors and turbines.

Major potash miner turning to AI and automation to improve operations

Regina Leader Post – Earlier in 2024, Saskatoon-based Nutrien Ltd., the world's largest potash producer, announced plans to spend $15-$20 million annually over the next 10 years to continue automating its mining operations.

At the time, the company was hoping that 40-50 per cent of ore will be cut by automation by 2026.

Trevor Berg, P.Eng., Nutrien's senior vice-president of Potash Operations, said along with increased efficiency, the company aims to make its mine sites safer for workers by automating mining equipment and taking them out of harm's way.

He said the company has developed technology that allows mining machines to be operated remotely.

"What that does is enable us to remove people from the active mining face, which reduces risk and risk profiles for our employees," he said.

The technology allows the machines to be operated by technicians who are at a mining site on the surface or even at the company's offices in Saskatoon.

Along with removing workers from harm's way, Berg said implementing this technology means the company can operate mining machinery while shift changes are underway, saving a large amount of machine downtime.

Mining benefits from Canadian Light Source research

CJWW – More than a thousand academic, government and industry scientists from around the world use the Canadian Light Source on the USask campus every year.

One recent project deals with removing selenium contamination in the water from mines.

Selenium is a nutrient that humans and animals need in small quantities but exposure to higher concentrations can cause neurological problems in humans and death and infertility in wildlife and cattle.

Until now, there has been no way to determine whether selenium permanently dissipates because of remediation efforts or whether it is being absorbed in nearby creeks or riverbanks.

A research team analyzed selenium isotopes using the CLS and found that adding sulfur prevents the contaminant from mixing with liquids, which means the removal from water can be permanent.

Now that the technique has proven effective in the lab, the next step is to test it at mine sites and then move to other environmental mining pollutants including mercury.

Cameco eyes expansions of uranium mines on rising nuclear demand

Bloomberg – Cameco Corp. is considering expanding some of its mining projects as global demand for nuclear power rises, according to its top executive.

"We've got some fantastic uranium ore bodies, and we're looking to extend and expand those where we can," chief executive Tim Gitzel said.

Gitzel didn't specify which projects the company might expand.

Cameco is one of the two biggest producers of uranium, alongside Kazakhstan's Kazatomprom.

U.S. firm's milestone 5MW nuclear microreactor ready for 2026 testing

interestingengineering.com – Westinghouse Electric Company has reached a significant milestone in developing the eVinci nuclear microreactor, according to the company's news release.

It has successfully completed the Front-End Engineering and Experimenting Design (FEEED) phase, paving the way for potential testing and experiments with a 5MW microreactor in two years.

Westinghouse plans to install the first eVinci microreactor in Saskatchewan, and is projected to be operational by 2029.

The Saskatchewan Research Council (SRC) has approved an $80 million project to construct the first such microreactor.

The FEEED process is a crucial step for speeding up advanced nuclear reactor technologies.

"We are targeting deployment of multiple eVinci microreactors across the world by the end of the decade," said the company's president.

eVinci nuclear microreactor

The eVinci microreactor is a cutting-edge micro-modular reactor designed for remote applications. Its compact size

enables rapid deployment on-site and ease of transportation.

The micro nuclear reactor has a 15MWth core design that can output 5MWe. The reactor's core is supposed to operate for at least eight years before needing to be refuelled.

It can operate on sites as small as two acres, making it an ideal energy option for remote mining operations, data centres, etc.

When the fuel runs out, the microreactor may be removed and disposed of, much like a battery, and replaced with a new one for continuous energy.

Foran advancing with mine & exploration

Flin Flon Reminder & Mining.com – Foran Mining is continuing work at its McIlvenna Bay mine site and property in east-central Saskatchewan, about 65 kilometres west of Flin Flon, Man. The property covers approximately 20.9 sq. km. near Hanson Lake.

The company is launching new surveys, putting up new buildings at the site and preparing to build a mine.

At the project site, work is moving ahead on several important pieces for mine operation – a processing plant is under construction, as is a truck shop and a contact water pond.

Foundations have been poured for mills, while a completed sewage treatment and water plant are waiting for permits to begin operating.

New electric mine vehicles from Sandvik, which the company ordered long ago as part of a plan to make McIlvenna Bay the world's first carbon-neutral zinc and copper mine, are now operating.

In the past, Foran representatives estimated the price tag to start a mine at McIlvenna Bay would be around $850 million.

The company said previously it will move ahead in phases, starting with phase one, an estimated $600 million, to begin partial production as early as late 2025. That will include a $126-million on-site process plant, spending $114 million on underground development and equipment, $105 million on infrastructure in the area and $112 million in indirect project spending.

Commercial production levels are estimated to start in early 2026.

Along with the construction, the company continues a regional exploration strategy.

The company is conducting surveys around what it calls its Denare West property, with the goal to expand its mineral holdings in the area and find more mineable deposits. The property, a new area of exploration, is located roughly between McIlvenna Bay and Amisk Lake, covering about 300 sq. km.

Foran continues drilling and surveying near McIlvenna Bay where its latest assays confirm the high-grade potential.

"Through targeted infill drilling, we are enhancing our confidence and demonstrating the zone's growing potential," said Foran VP Exploration Erin Carswell, Geoscientist-in-Training.

"As we advance McIlvenna Bay's construction alongside our ongoing exploration strategy, (we're) continuing to unlock the full potential of our growing district."

McIlvenna Bay has probable reserves of 25.7 million tonnes at 2.51 per cent copper equivalent containing 697 million pounds of copper and 1.4 billion lb. of zinc.

Saskatchewan to increase oil production, establishes energy innovation hub in Regina

CTV Regina – The Petroleum Technology Research Centre (PRTC) at the University of Regina is receiving $1.5 million in funding to create an Energy Innovation Hub.

Saskatchewan currently produces about 480,000 barrels of oil a day. The province is looking to increase that to 600,000 barrels.

The research at the new Hub will go beyond oil and gas.

"We are looking at all the other energy," PRTC CEO Ranjith Narayanasamy, P.Eng., explained.

"For example, we are working on the geothermal feasibility study for the City of Regina aquatic centre, the geothermal facility."

Other sectors interested in reducing emissions will also become involved – including fertilizer giant Mosaic.

"In the production of potash, a lot of energy is used and you know our goal is to eventually be carbon free. The PTRC is a fantastic partner to help us understand new technologies, especially in the areas of carbon capture,"

said Mosaic's Vice-President of Potash Lawrence Berthelet, P.Eng.

Fulbright Canada Research Chair tackles global environmental challenge

University of Regina – Water pollution, stemming from textile dyes to agricultural runoff, poses a severe threat to human and animal life.

One pioneering researcher, Dr. Yong X. Gan, the newest Fulbright Canada Research Chair at the University of Regina (U of R), is dedicating his expertise to this cause.

Fulbright Canada Research Chairs are esteemed American scholars selected to conduct specialized research at Canadian universities

Gan hails from the College of Engineering at California State University Pomona. During his tenure at U of R, Gan is collaborating with Dr. Hussameldin Ibrahim, P.Eng., an engineering professor and director of the University's Clean Energy Technologies Research Institute.

Gan's research focuses on using a material called porous carbon, derived from converting forest residues and agricultural waste, to purify polluted water. The porous carbon is also a solid fuel, a type of energy with economic significance.

While wood and biomass naturally decay when exposed to water and other biological factors, Gan explains that through a process called hydrothermal carbonization moisture is extracted, significantly enhancing burning and heating efficiency.

"It's similar to trying to light a fire with damp wood, which takes much longer to ignite. Once the moisture is removed, the porous carbon, like dry wood, ignites easily and has a higher energy density," Gan says.

By eliminating moisture, the materials become more compact, occupying less space, allowing for long-term storage and reducing transportation costs.

"This process converts farm waste into hydrochar, a substance potentially useful for energy production, solar thermal evaporation and water purification. Although hydrochar's energy applications are well-studied, its potential for cleaning water remains underexplored," he says.

Hydrochar could remove water pollutants and reduce agricultural waste and Gan's research at U of R will specifically investigate hydrochar's efficacy in eliminating organic dyes from water.

"Dyes from industries such as textiles, printing and paint are toxic and threaten global food chains," he says.

Gan's research program offers valuable learning opportunities for students. He plans to work closely with postdoctoral researchers and graduate students in the lab and deliver lectures at the University.

"Forests and farms generate significant waste, which can harm the environment, so transforming materials like forestry residues, old plants, fruits and animal waste into valuable resources is crucial," says Gan.

University of Saskatchewan research gets Canadian Space Agency funding

Saskatoon Star Phoenix – Two of 17 grants awarded by the Canadian Space Agency (CSA) will go to projects at the University of Saskatchewan (U of S).

The CSA committed just under $750,000 over three years to a pair of U of S research initiatives that rely on sophisticated satellite imagery.

One team will receive just under $440,000 over three years for a project using machine learning and satellite data to pinpoint "hot spots" where farm fields will be likely to emit nitrous oxide.

The information would enable farmers to reduce emissions of the greenhouse gas using "optimized nitrogen fertilizer strategies with products to reduce overall emissions," according to a U of S media release.

The CSA gave a further $300,000 over three years to support a project working to develop new ways to monitor the effect of encroachment by woody plants on Saskatchewan grasslands.

The province in June announced $600,000 over three years toward an ongoing project at the U of S department of physics and engineering physics that involves teams working to develop instruments that will be used as part of an upcoming NASA satellite mission.

News Beyond Our Borders

Calgary Herald

Alberta premier to review professional regulators, legislate limits

The Canadian Press – Alberta Premier Danielle Smith says her government will review professional regulatory bodies and introduce legislation next year to limit how they can police their own members.

Smith said it's not appropriate for the government or any professional association to compel Albertans to "some official version of truth."

Associations and colleges set standards for their members, including doctors, lawyers, psychologists and engineers, and can discipline those who don't meet those standards.

Smith said groups like the Law Society of Alberta and the College of Physicians and Surgeons have an important role in protecting the public interest.

However, she said some professional colleges in Canada have gone too far.

"What a doctor or lawyer believes or says about politics or religion is not a reflection of their competency to practise medicine or law," she said.

The premier said Albertans need to be confident regulated professionals are competent and practise ethically, but those professionals should also have freedom to express their personal views, especially outside their jobs.

"We will bring legislative changes next year to ensure that professional regulatory bodies are limited to regulating their members' professional competence and conduct, and not their speech," she said.

Smith has long railed against what she called "mission creep" by regulators and complaints she's suggested came from "woke" colleagues.

Alberta's Justice Minister said "many" professionals in Alberta have been investigated or disciplined for expressing political or policy opinions outside of their professional practice and also said the government's review will gather input from professionals and regulatory bodies.

APEGA's practice review of Calgary following water main failure

APEGA – Following the critical water main failure in Calgary this summer, the Association of Professional Engineers and Geoscientists of Alberta (APEGA) is conducting a practice review on the City of Calgary.

The practice review will inquire into the city's engineering processes and practices as per its obligations under the *Engineering and Geoscience Professions Act, General Regulation*, and APEGA's practice standards.

If the review indicates that unskilled practice or unprofessional conduct contributed to the water main failure, the matter will be referred for investigation.

"APEGA's role includes reviewing the practices of our permit holders at regular intervals and when incidents, such as this water main break, occur. This ensures all required standards are met to protect the public interest."

U.S. awards contracts for making higher enriched uranium for new reactors

Mining.com & Reuters – The United States awarded contracts to four companies hoping to produce a new, more highly enriched uranium fuel for an expected wave of high-tech reactors.

Russia is currently the only country that makes the fuel called high-assay low-enriched uranium fuel, or HALEU, in commercial volumes.

Funds to make the fuel domestically were included in a law to ban uranium shipments from Russia fully by 2028.

HALEU is uranium enriched to between five per cent and 20 per cent, which backers say has the potential to make new high-tech reactors more efficient.

HALEU's critics say it is a weapons risk if it gets into the wrong hands and recommend limiting its enrichment to between 10-12 per cent for safety. Uranium fuel used in today's reactors is enriched to about five per cent.

American Centrifuge Operating got a contract to produce HALEU, which is expected to be used in a variety of small modular reactors planned to be built starting around 2030.

The other companies are Urenco USA, which is a British, Dutch, German firm with operations in New Mexico; Orano USA, based in Maryland with global headquarters in France; and a company called General Matter.

Canada's nuclear waste needs a forever home

Globe and Mail – Canada's Candu nuclear reactors have been running for more than half a century. Ontario, home to all but one of the active reactors, gets about 60 per cent of its electrical power from nuclear, which has the benefit of producing next to no greenhouse gases.

To help meet climate targets while fulfilling the province's electricity needs, the provincial government has announced plans to spend billions refurbishing an aging nuclear plant at Pickering, east of Toronto. It is part of a worldwide trend.

But what do we do about the radioactive waste?

That problem troubles many Canadians. Canada's nuclear authorities believe they have the answer: They will isolate the used reactor fuel in a deep geological repository. In other words, they will bury the stuff, entombing it so far below the Earth's surface so no one will ever need to worry about it.

By the end of this year, Canada's Nuclear Waste Management Organization plans to choose a community that will play host to that unusual tomb. Ignace, in northwestern Ontario, has already put up its hand, announcing it was willing. A second municipality, South Bruce in southern Ontario, will hold a referendum.

Wherever it goes, creating the DGR will be a massive undertaking, costing an estimated $26 billion and taking years of preparation and construction.

India needs 1 million high-tech engineers as economy expands

Bloomberg – India's technology sector will need more than one million engineers with advanced skills in artificial intelligence and other capabilities over the next two to three years, an industry body estimates, a demand that won't be met unless the government significantly beefs up education and training in the country.

India's $250-billion tech sector plays an important role in the economy, employing about 5.4 million people. Tech services make up over seven per cent of the country's $3-trillion-plus gross domestic product.

Industry experts say the root of India's skill gap lies with the country's poor schooling system, from lower grades to high school. Colleges don't provide students with enough practical skills, which are essential for the job market.

Former central bank Governor Raghuram Rajan says India's poor schooling will hinder growth prospects in a country where more than half of the 1.4 billion population are below the age of 30.

A recent report from the International Labour Organization estimates that higher educated young people are more likely to be unemployed than those without any schooling.

Advance Women in Engineering summit

Canadian Consulting Engineer – *Canadian Consulting Engineer's* Advance Women in Engineering virtual summit held in 2024 focused on breaking down barriers.

Professional Engineers Ontario (PEO) CEO and registrar, Jennifer Quaglietta, P.Eng., the first woman to hold the dual role in the organization's 100-plus-year history, spoke about work her organization is doing "to help create a

more inclusive engineering profession."

"In engineering we use stress tests, subjecting bridges and buildings to an extra-heavy load beyond what they would normally face, to make sure they will stand up to all the demands we place on them," said Quaglietta. "When I started in engineering, I faced a series of personal stress tests, including comments about the clothes I wore, my ethnic background and questions about why I chose my career path. They're becoming less common, but they're still out there."

She reported that in Ontario only 20.5 per cent of newly licensed engineers identified as women, despite Engineers Canada's "30 by 30" goal – to have women comprise 30 per cent of all newly licensed engineers across Canada by 2030.

PEO conducted a gender audit of its licensing process which found women take longer than men to get licensed and report higher intentions to quit the process.

They find the experience requirement challenging, particularly if they have young children. They also cited a lack of support from educational institutions.

Enhancing educational opportunities

Erika Ryter, P.Eng., from Stantec, said "the number of women enrolled in post-secondary engineering programs has risen over historical numbers, but just 13 per cent of practising engineers are women. We're still a long way from parity."

Karen Callery, P.Eng., from Ontario utility Hydro One, spoke about her experience volunteering for Camp Engies, a not-for-profit that introduces girls to engineering.

"When Camp Engies was founded, there weren't many opportunities to encourage elementary-school girls in engineering before they start to develop self-doubt in high school," she explained.

"The camp shows girls in Grades 5-8 how engineering is fun and interesting. At that age, they're like sponges – they soak up ideas, embrace challenges and want to participate."

"The 'early and often' approach to introducing girls to science, technology, engineering and math (STEM) education is really powerful," agreed Marcia Friesen, P.Eng., professor and dean of the Price Faculty of Engineering at the University of Manitoba.

"On our campus, we have a K-12 outreach program that makes 50,000 youth contacts per year through school curriculum workshops and STEM camps. It's important to start early. It's a lot harder to change self-perceptions after Grade 6."

Once women are licensed as engineers, there can be new challenges in the workplace, as pointed out by Ilana Danzig, P.Eng., from Aspect Structural Engineers.

"Women leave the field if they don't have champions helping them get to the next level of their careers," she said.

"It's impossible to succeed without some kind of mentorship," Danzig said. "I've learned from a career coach, architects I've worked with and my peers. They've all helped me build confidence, make decisions and go for promotions. The network of support is really critical."

Beyond targets for licensing more women engineers, such as Engineers Canada's "30 by 30," another important goal is to increase the number of women in positions of leadership.

Montreal-based Caroline Codsi, who founded Women in Governance and developed North America's first parity certification in 2017, said "closing the gender gap is important in all industries, but there are some where we've heard more excuses."

"Today, I see a huge difference… everybody understands the value and positive impact of having more women at every level. It's a question of fixing the workplace culture."

Allyson Desgroseilliers, P.Eng., from WSP, only the second woman to chair ACEC-Canada, addressed the relationship between the governance gap and succession planning and how to make improvements.

"We can't expect to close the gap without being very deliberate with succession planning," she said. "It starts with our schools and making sure girls understand how engineering provides opportunities and benefits society. And we need to promote the fact that once they get into the engineering workforce, there are women leaders to learn from."

Universities in China overhauling engineering programs

South China Morning Post and Bangkok Post – More than a dozen Chinese universities are overhauling their engineering and technology majors in favour of hi-tech areas such as AI and big data to answer a government call for more talent.

Nineteen universities suspended or completely removed 99 majors.

For example, Sichuan University was considering removing 31 majors, including animation, acting and applied physics, and setting up a new major in biomass science and engineering, the report said.

The university said the major would replace "light chemical engineering" amid hopes it would not only support traditional industries such as tanning and papermaking, but would adapt to future needs of the emerging biomass industry.

This move follows requests from the Ministry of Education to "adjust structures of university majors and talent-training schemes to better serve China's modernization."

Last month, a ministry document said it supported efforts by universities to cultivate talent in key areas, including manufacturing of integrated circuits, artificial intelligence, quantum technology, life sciences and energy.

Biggest changes in engineering

According to a research paper, the biggest changes to academic courses in the past decade have been in engineering majors.

Official data shows that from 2013 to 2022, the number of engineering majors in universities across China increased by 7,566. There were also 96 new areas of study, including robotics, AI and big data.

The research paper said the majors removed were often in the traditional engineering industry, while new majors – such as blockchain, integrated circuit design and cybersecurity – reflected emerging technologies, government strategy and regional economic development.

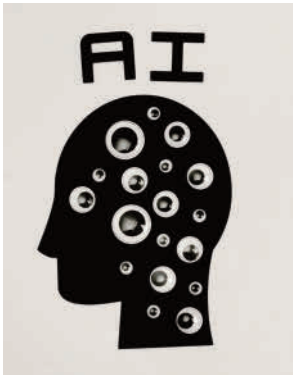
The Chinese government and ministries have repeatedly called for tech talent to be developed and nurtured.

The call is coming from the top down. In recent years, President Xi Jinping has been pushing an innovation-driven economy amid competition with the United States, and seeking self-reliance in the face of Western sanctions that curb access to semiconductors.

China has also launched programs to train digital engineers, technicians and workers in big data, AI, smart manufacturing, integrated circuits, data security and other areas, according to a recent three-year government plan.

As part of the plan, Chinese universities must introduce new majors related to the digital economy and improve interdisciplinary training.

Chinese AI stirs panic at European geoscience society



Science.org – Few things prompt as much anxiety in science and the wider world as the growing use of artificial intelligence (AI) and the rising influence of China.

These two factors created a rift at the European Geosciences Union (EGU) earlier this year, one of the world's largest geoscience societies.

The whole episode has been "a packaging up of fear of AI and fear of China," says Michael Stephenson, former chief geologist of the United Kingdom and one of the founders of Deep-time Digital Earth (DDE), a $70-million effort to connect digital geoscience databases.

In 2019, another geoscience society, the International Union of Geological Sciences (IUGS), kicked off DDE, which has been funded almost entirely by the government of China's Jiangsu province.

The dispute pivots on GeoGPT, an AI-powered chatbot that is one of DDE's main efforts being developed by e-commerce giant Alibaba. Built on Qwen, Alibaba's own chatbot, and fine-tuned on billions of words from open-source geology studies and data sets, GeoGPT is meant to provide expert answers to questions, summarize documents and create visualizations.

As awareness of GeoGPT spread, so did concern. Paul Cleverly, a visiting professor at Robert Gordon University, gained access to an early version and said in Geoscientist there were "serious issues around a lack of transparency, state censorship and potential copyright infringement."

A group of publishers, led by GeoScienceWorld, said DDE's database had been illegally built off unlicensed literature.

To address transparency concerns, DDE said it would not make GeoGPT widely available until it could cite sources for its answers.

China's support of DDE is filling a void left by other countries, adds Robert Hazen, a mineralogist at the Carnegie Institution for Science who is a DDE grantee.

And models like GeoGPT aren't going away: Just last week, NASA announced its own space and earth science AI language model, called INDUS, which uses studies from the American Geophysical Union, among others. Although

Hazen understands the wariness about China's involvement, "I keep my eyes open all the time," he says. "I sense no agenda whatsoever."

NSF Funds 25 projects seeking to deploy AI tech in geosciences

Executivegov.com – The National Science Foundation has invested over $20 million in 25 projects seeking to develop and implement advanced artificial intelligence technologies in geosciences.

The grants are meant to expand access to education and training opportunities for using AI capabilities in geosciences research.

The selected projects will provide cross-training for AI and geoscience knowledge and bolster the United States' capacity to study and analyze extreme weather, solar activity and earthquake hazards.

The program will enable the 25 research teams to unlock geoscience questions and promote collaborations between geoscientists and AI experts.

Under the initiative, researchers will employ AI techniques, such as generative AI and surrogate models, to better understand complex Earth systems.

The research teams will work to enhance the use of geoscience models, improve forecasting and mitigation of natural hazards, increase understanding of earthquake dynamics, and improve natural resource management and decision-making to address climate change, NSF noted.

The selected projects aim to achieve needed advancements in AI, cyberinfrastructure and advanced computing, which the CHIPS and Science Act of 2022 identifies as critical technology areas for the United States.

Decolonize civil engineering

UBC – Danilo (Giniw) Caron is advocating for decolonizing engineering design and project delivery by incorporating Indigenous ways of knowledge into Western engineering principles.

While applying to UBC in 2016, Caron didn't consider how his Anishinaabe background would impact his engineering education. It wasn't until his undergraduate studies began that he became aware of the knowledge gap about Indigenous cultures in academia.

"I started to see avenues that were less explored or less understood around Indigenous cultures," said Caron, now a second-year UBC PhD student in civil engineering.

The recipient of the Indigenous and Black Engineering and Technology Momentum Fellowship – which provides $25,000 support per year for four years for Black and Indigenous students to study and conduct research at UBC – Caron researches the architecture, engineering and construction industries.

Although civil engineering is often thought of as great feats of altering the natural landscape (think: the Empire State Building and the Golden Gate Bridge), Caron highlighted that it can also look like working with ecosystems holistically and developing infrastructure such as water systems.

"Things that get less attention but they really provide wellness to communities," said Caron. "That's why I think civil engineering is a really great place to start to decolonize."

Supporting intercultural ties

Part of Caron's research explores the impact of Indigenous law and governance on construction, as western engineering education doesn't typically provide students with insights into Indigenous legal orders or pre-colonial practices.

This involves examining project delivery methods, where designers, contractors and other stakeholders collaborate to develop a product.

In an environment where Indigenous elders and western-trained professionals work together, intercultural collaboration is crucial in ensuring smooth project delivery.

According to Caron, the process isn't always easy.

"It's not as simple as putting them in the room. There has to be a cultural competency built up over time really hinging on relationship based on trust," said Caron.

Toward a more inclusive environment

According to a 2022 Engineers Canada survey, just over one per cent of students in accredited undergraduate engineering programs identify as Indigenous, making Indigenous students vastly underrepresented in the engineering community.

To help address this, Caron works as an Indigenous student engagement co-ordinator at UBC, where he organizes community events and opportunities for Indigenous engineering students.

"Students who actively come out to events, they find some measure of comfort in knowing that they're not the only Indigenous students," said Caron.

Caron is also working on a Pathways program, which is based on similar programs from the University of Manitoba and the University of Saskatchewan, to help Indigenous students lacking first-year prerequisites improve their academic requirements for engineering.

He hopes to achieve an enrolment level on par with the percentage of Indigenous Peoples in the Canadian population within a few generations.

"We have a long way to go."

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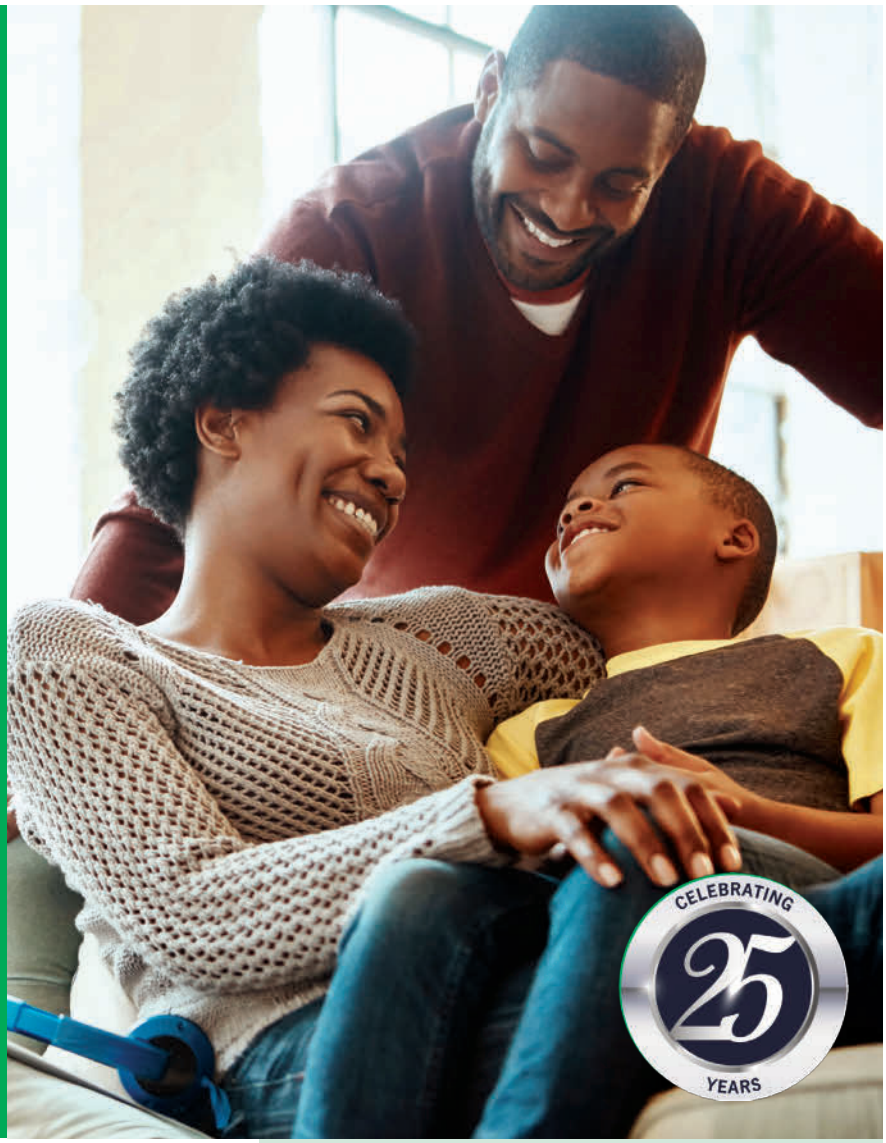

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For more events and current information, go to https://www.apegs.ca/events.

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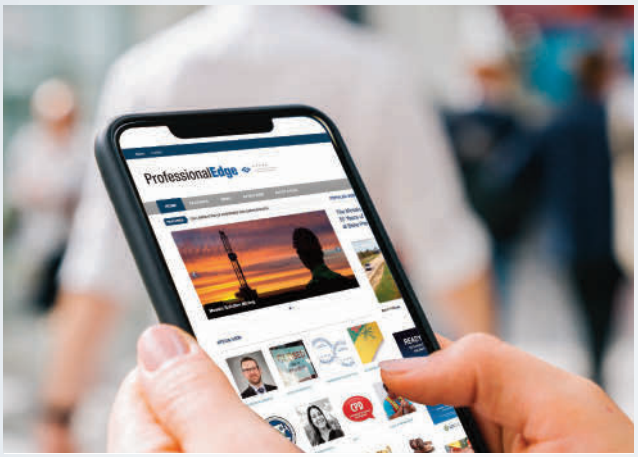

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PUBLICATION MAIL REGISTRATION NUMBER: 40034203