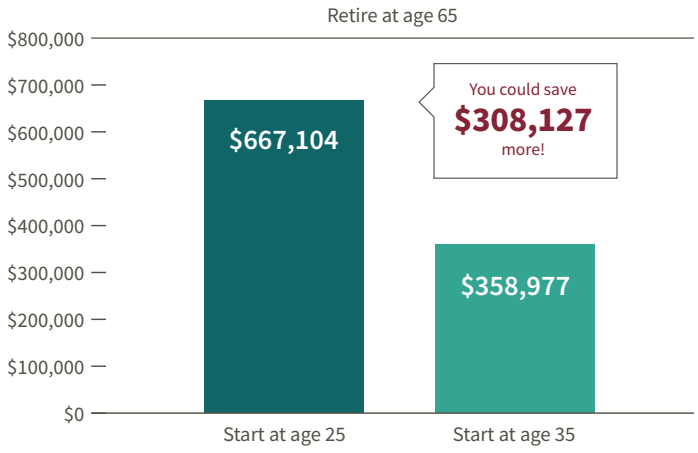
APEGS
Association of Professional Engineers & Geoscientists of Saskatchewan

THE PROFESSIONAL EDGE

ISSUE 205 • DECEMBER 2025

Profiles of Achievement

See the difference an extra 10 years can make



Assumptions: 6% annual gross growth rate and mid-year annual lump sum contributions of $5,000 are assumed. Ontario HST is applied. Investment Management Fee IMF (%) based on the JF Canadian Equity fund.

The above example is for illustrative purposes only. Situations will vary according to specific circumstances.

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APEGS

Association of Professional Engineers & Geoscientists of Saskatchewan

Regulating the professions. Protecting the public.

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On the cover:

Photo Credit: Pexels

Profiles of Achievement:
Saskatoon's Broadway Bridge

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https://www.apegs.ca/about/publications/the-professional-edge

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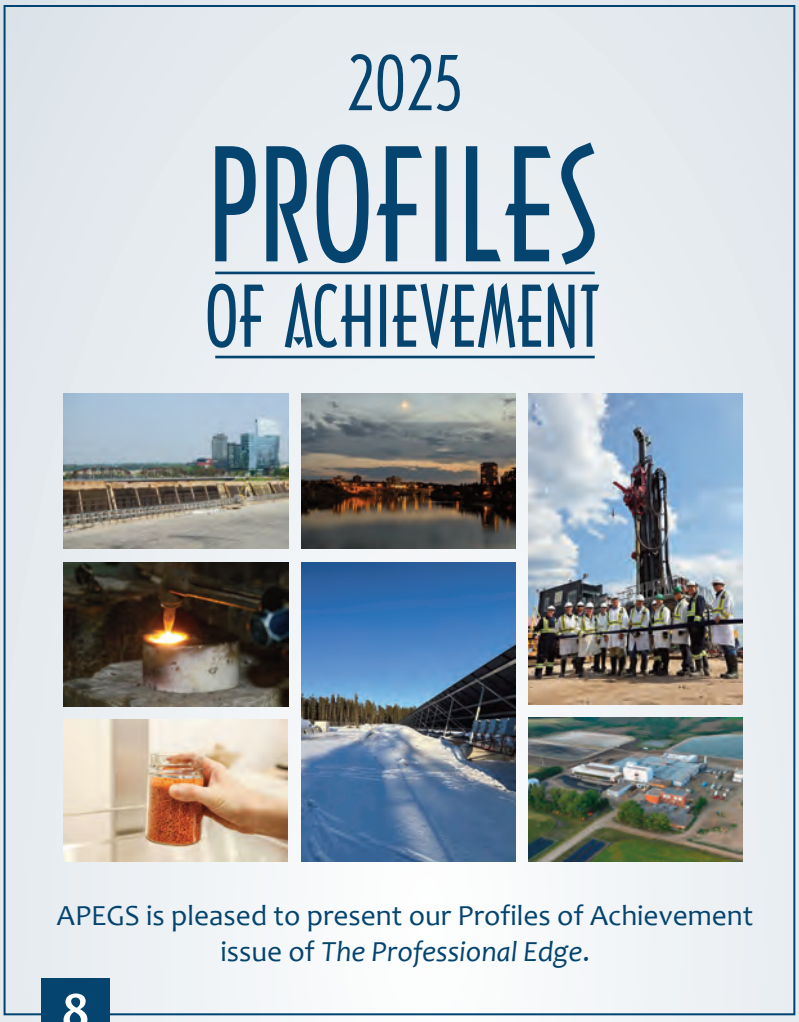

APEGS is pleased to present our Profiles of Achievement issue of *The Professional Edge*.

President's Message

Ian Farthing, P.Eng.

Engineering and Geoscience Professions Act

In the past three years, we have been reviewing *The Engineering and Geoscience Professions Act.*

We're getting to the end of this process.

It's exciting to have our legislation modernized and it has been an honour to be president as we close in on reaching this milestone.

It's also an honour to be president at the beginning of the process that moves us toward updating regulation of firms.

The protection and safety of the public that this effort brings will further increase the public's trust in our professions.

Visit pages 18-19 to get an update on this work.

Profiles of Achievement

In this issue of *The Professional Edge* we celebrate a few APEGS members' outstanding 2025 achievements.

The Buffalo Pound Water Treatment Plant (pages 9-10) is one of the best examples of engineering providing the necessities of life, and doing it in the background. We are shining a light on this work – it's a high-level engineering achievement that deserves to be celebrated.

While the work on Saskatoon's Broadway Bridge wasn't in the background, everyone could see it. Our APEGS members' expertise with this type of infrastructure should also be celebrated. See pages 10-11.

APEGS celebrates the 50th anniversary of the Prairie Agriculture Machinery Institute (PAMI) on page 12. When you ask people about Saskatchewan's contribution to the global agriculture industry you will find the work of APEGS members and PAMI have had a big impact.

The work profiled in our University of Saskatchewan story on page 13 is really interesting. In fact, this work could potentially impact food security across the world and deserves to be highlighted.

The Sabre mining method profiled on pages 14-15 reminds us of APEGS members who provide creative solutions to uranium mining. This innovation will pay dividends for years to come in building and maintaining our uranium industry and its contribution of our overall Saskatchewan economy.

The SRC Microgrid story on pages 16-17 highlights that innovation doesn't need to be tested and constructed in urban environments. Providing power in remote areas outside of conventional solutions is achievable in settings that are far from ideal.

This story and, in fact, this entire issue, is a testament to keep our minds open and have the mentality of how to find solutions and move forward with the constraints presented.

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.

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TOGETHER

SAVE THE DATE: May 1-2

APEGS ANNUAL MEETING AND PROFESSIONAL DEVELOPMENT CONFERENCE

MAY 1-2, 2026
TCU PLACE, SASKATOON

The 2026 Annual Meeting and Professional Development Conference will be held in person and virtually on May 1-2 in Saskatoon at TCU Place, with a professional development day and reception on May 1 and the annual meeting on May 2.

The Engineering and Geoscience Professions Regulatory Bylaws requires that the APEGS annual meeting be held in the first six months of each year.

It is held each year on the first Saturday in May, alternating between Regina and Saskatoon.

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

A podcast about engineering

Join host David deMontigny as he talks to engineers about their engineering careers!

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University of Regina

FACULTY OF ENGINEERING & APPLIED SCIENCE

2025 PROFILES OF ACHIEVEMENT







APEGS is pleased to present our Profiles of Achievement issue of *The Professional Edge*.

The work and contributions of our professions is all around us and the following pages are a testament to the power and promise of engineering and geoscience in Saskatchewan.

Here are a few examples of APEGS members' outstanding work in 2025.

Photo credit: Stantec Engineering

Buffalo Pound Water Treatment Plant Renewal

The Project

The $325-million Buffalo Pound Water Treatment Plant (BPWTP) renewal is a major project to ensure a reliable, long-term supply of drinking water for Regina, Moose Jaw and surrounding areas in Saskatchewan.

The BPWTP was originally designed and constructed in the 1950s to provide potable water to the cities of Regina and Moose Jaw.

The facility has been expanded several times since the initial construction to accommodate increased water demand and service a larger population, with the most recent overall upgrade occurring in the late 1980s, the addition of UV disinfection in 2017, backup power upgrades in 2019 and the lake pump station upgrade in 2021.

The Achievement

The BPWTP renewal project will modernize the facility with newer technologies and increase the total treatment firm capacity to 220 million litres per day and total capacity of 250 million litres per day while minimizing disruptions to the current operation during construction.

The project is the first water infrastructure project in Canada to be delivered using the Progressive Design Build model, which brings together construction, engineering and operations to work collaboratively to deliver the project.

Together with three team members – Graham, Aecon, and Associated Engineering – Stantec led the engineering design of the upgrade to the BPWTP.

The renewal design replaces the existing conventional clarification and filtration processes with high-rate dissolved air flotation, ozone for taste and odour reduction, and biological activated carbon filtration. The project also includes rehabilitation of existing structures, new and upgraded residual dewatering ponds for sludge handling, and a new administration building and maintenance shop. The project design began in June 2020 and will be complete by mid-2026.

The Team

Stantec led the engineering design with partners Graham Construction and Engineering, Aecon Group and Associated Engineering.

Saskatoon Broadway Bridge Rehabilitation Project

photo credit: Pexels

The Project

During the Great Depression, the City of Saskatoon, in partnership with the provincial and federal government, began a make-work project that to this day is a marvel in bridge building.

The Broadway Bridge was finished in just under 11 months allowing the first vehicles to cross in November 1932. Fast forward to 2025 and the Broadway Bridge still serves as a major corridor for Saskatoon commuters.

This year was the year for the City of Saskatoon to be proactive and upgrade the bridge to hopefully give it another long run for drivers.

The rehabilitation of the bridge is a major project for the city costing $15.5 million in total. The project included deck repairs, multi-use pathway improvements, new asphalt, new waterproofing, new traffic barriers, arch and railing improvements and the removal of old and abandoned utilities under the bridge.

It was a daunting task for all involved and project manager Luc Bittner, Bridge Manager for the City of Saskatoon, knows this all too well. Before the actual rehabilitation started there was a lot of planning that took place.

“The engineering consultants did detailed hands-on inspection of the entire structure, so they were out on barges doing non-constructive testing on the piers and on the arches,” said Bittner. “They did a full-load rating evaluation of the structure to see what the existing capacity of the structure was. They modelled the rehabilitation based off of their results, and with the load rating they staged the removals and repairs of the arches, accordingly, limiting the amount of arch that you can remove in a repair at the time.”

Bittner worked closely with WSP Canada, the engineering consultant chosen for the rehabilitation project.

"When we put out the RFP (request for proposal) for the rehabilitation of the Broadway Bridge it was for the inspection, the pre-design, detail design and construction administrative services," noted Bittner. "It was one comprehensive contract. If you start to piecemeal consultants together it can start to get a little messy mixing consultants."

The Achievement

While there were many aspects pulled together to create a successful rehabilitation project, Bittner said one part stood out to him that he felt was the most challenging. "From a technical standpoint it would be the modelling of the bridge. It's over 100 years old and the arches have varying cross sections throughout. The modelling was done by WSP Canada who did a great job. The work that they put into the preliminary engineering and detail design has translated well into successful construction."

The Broadway Bridge is an icon in Saskatoon, but it is also one of many that span the City of Bridges. Therefore, having so many bridges across Saskatoon would lead one to conclude that City of Saskatoon engineers would have a particular expertise in bridge repair and maintenance.

"My background is bridge construction so I think I work well with the consultants and contractors," said Bittner.

The Team

"It was a good team approach to this job. I had my technical experts work with the consultants and we managed that construction well for the city," says Bittner.

With the Broadway Bridge rehabilitation completed, the daily commute for 20,000 drivers just got a little bit easier to get where they are going thanks to the ingenuity used for the successful rehabilitation project.

photos courtesy City of Saskatoon

Prairie Agricultural Machinery Institute

50 years of Outstanding Saskatchewan Engineering

photos courtesy PAMI

For nearly five decades, the Prairie Agricultural Machinery Institute (PAMI) has remained a formidable driver of innovation and growth.

The nature of the organization is to adapt to the needs of its clients and provide research, engineering services and product development for a range of industries that rely on mechanical and physical processes.

PAMI studies, designs, builds and tests machines, machine components and processes across the agriculture, mining, defence and transportation industries.

With 50 years of research and industry experience, PAMI is a dedicated partner in engineered solutions and is passionate about creating efficiencies.

From process development to custom wiring solutions, equipment testing and more, PAMI helps start-ups and established equipment manufacturers alike get to market faster.

PAMI's bread and butter has been product testing and analysis of prototypes or existing products.

"We do a lot of engineering, problem solving and innovating for our clients. Some of that involves testing, or it could be an evaluation of a product to see how it performs," says Carl Havixbeck, PAMI Technical Sales Representative.

Headquartered in Canada, PAMI maintains satellite offices nationwide, providing their services not only within Canada and North America, but also extending to international projects.

Jim Wasserman,P.Eng., PAMI's Business Development Advisor estimates that over PAMI's 50-year history the organization has employed approximately 100 engineers and offered seasonal employment to about 100 engineering students. PAMI currently employs 20 permanent full-time engineers and five part-time contract engineers.

photo credit: Pexels

Better Heating Method Makes Legumes Easier To Digest

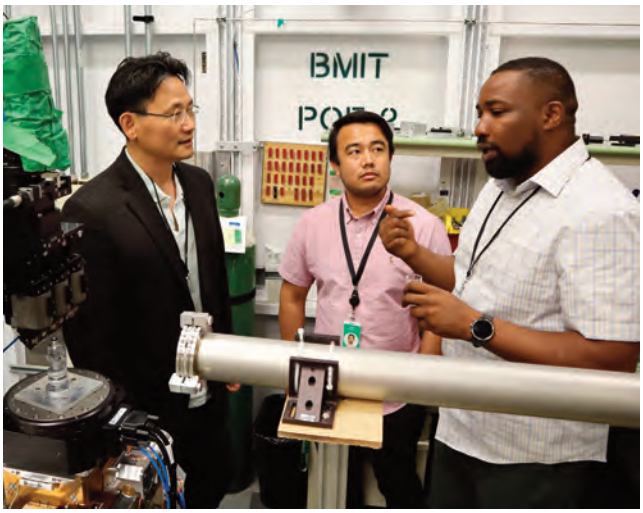

photo courtesy USask

The U of S research team includes Oon-Doo Baik, P.Eng, Tolen Moirangthem and Dayo Oke (from left to right in the photo)

The Challenge

To protect themselves from being eaten by animals and insects, legumes like peas and beans contain "antinutrients" that are hard for animals – and humans – to digest.

These antinutritional compounds – which include tannins, lectins, trypsin inhibitors and phytic acid – are broken down when beans and peas are heated.

However, the large ovens that food-processing companies currently use to heat beans and peas are inefficient. They can burn the outside before the inside has reached a temperature hot enough to deactivate the antinutrients.

Photo credit: Pexels

The Achievement

Researchers from the University of Saskatchewan (USask) Department of Chemical and Biological Engineering have identified a new heating method – using radio frequency (RF) waves – that appears to be both more effective and efficient than the approach currently used in the industry.

This work is led by Oon-Doo Baik, P.Eng. Baik is a professor and department head in the Department of Chemical and Biological Engineering at USask.

His research focuses on radio frequency heating, cold plasma applications and AI-enhanced technologies for sustainable food production.

Tolen Moirangthem, a PhD student from the group, compares RF waves to microwaves.

"When you put a cup of water in the microwave, the water heats up, but the cup doesn't. The same is true for the pea – the water inside heats up, but the rest of the pea doesn't."

Scientists call this process "selective heating," because it can heat some areas within a material but not others. It seems to help maintain the desirable nutritional properties in a pea or bean, which can break down with regular heating methods.

And unlike the long heating times of traditional processes, the RF heating method only takes a few minutes.

The U of S team hypothesized that during RF heat treatment, the water inside a legume expands and turns into steam, which would cause the pores inside to explode from the pressure.

In turn, this would create larger pores in the samples, as well as more pores in total, as the steam looked for ways to escape.

Using the Canadian Light Source at USask, the research group confirmed the beans treated with RF heat did in fact have more pores, and the heating method reduced the amount of an antinutrient (proteins called trypsin inhibitors) by 81 per cent.

The Potential

"This technology opens new opportunities for sustainable food processing," says Baik.

"By making legumes easier to digest and more nutritious, while also improving processing efficiency, radio frequency heating could play an important role in meeting the growing demand for plant-based proteins."

Photo credit: Pexels

Photo courtesy Orano

Orano Canada and Denison Announce SABRE 1st Production at McClean Lake

2025 PROFILES OF ACHIEVEMENT

The Achievement

In July, Orano Canada Inc. and Denison Mines Corp., as joint-venture partners in the McClean Lake Joint Venture (MLJV) announced the successful start of uranium mining operations using the joint venture's patented Surface Access Borehole Resource Extraction SABRE mining method.

Orano Canada owns a 77.5 per cent interest and is the operator of the MLJV and Denison owns a 22.5 per cent interest.

SABRE mining of the McClean North uranium deposit commenced in June with approximately 250 tonnes of high-grade ore estimated to have been recovered from the first mining cavity.

Orano Canada also reports that it has successfully backfilled the first cavity, advanced the SABRE rig to the planned second mining cavity, and commenced processing of the recovered ore at the McClean Lake mill.

About SABRE

SABRE is the culmination of a mining equipment invention and development initiative that began in 2004 and concluded in 2021 with the completion of multi-year mining test program that successfully excavated approximately 1,500 tonnes of high-value ore.

It is a non-entry, surface-based mining method that uses a high-pressure water jet placed at the bottom of a drill hole to excavate a mining cavity.

The cuttings from the excavation process are then airlifted to the surface, separated and stockpiled.

SABRE is viewed as an innovative mining method that has the potential to allow for access to relatively small high-grade orebodies in the Athabasca Basin that are either too small or too deep to be mined economically by conventional open-pit and/or underground mining methods.

SABRE is unique in that the mining method can be selective and scalable, which has the potential to provide superior flexibility when compared to conventional mining methods and is thus ideally suited to ever-changing uranium market conditions – with an expected production ramp up of months instead of years.

The SABRE method has environmental advantages when compared to conventional open-pit or underground mining methods due to its less-intrusive nature and smaller surface footprint.

Reduced water usage and power consumption also contribute to important reductions in greenhouse gas emissions and improved sustainability. Additionally, as a non-entry mining method, radiological exposure for mine workers is minimized.

The Team

Orano Canada names Louis-Pierre Gagnon, P. Eng., Director of Mining, Orano Canada Inc., as its Qualified Person regarding the project.

Headquartered in Saskatoon, Sask., Orano Canada Inc. is a leading producer of uranium, accounting for the processing of 16.9 million pounds of uranium concentrate in Canada in 2024.

Orano has been exploring for, mining and milling uranium in Canada for more than 60 years.

Orano Canada is the operator of the McClean Lake uranium mill and a major partner in the Cigar Lake, McArthur River and Key Lake operations.

The company employs over 450 people in Saskatchewan.

Denison names Chad Sorba, P.Geo., Denison's Vice-President Technical Services & Project Evaluation, as its Qualified Person.

Denison is a leading uranium mining, development and exploration company with interests focused in the Athabasca Basin region of northern Saskatchewan, Canada.

In 2024, Denison celebrated its 70th year in uranium mining, exploration and development, which began in 1954 with Denison's first acquisition of mining claims in the Elliot Lake region of northern Ontario.

In addition to McLean Lake Joint Venture, Denison has an effective 95 per cent interest in its flagship Wheeler River Uranium Project, which is the largest undeveloped uranium project in the infrastructure-rich eastern portion of the Athabasca Basin region of northern Saskatchewan, as well as other uranium projects.

photo courtesy Orano

SRC Assists in Designing and Commissioning a Renewable Microgrid Project

The Institution

The Saskatchewan Research Council (SRC) is Canada's second-largest research and technology organization and supports innovation and industrial commercialization across the globe.

With nearly 80 years of research, development and demonstration experience, more than 400 knowledgeable employees and $83 million in annual revenue, SRC provides products and services to 1,400 clients throughout 16 countries.

Working with SaskPower, Saskatchewan's main supplier of electricity, SRC recently designed, constructed and commissioned a renewable microgrid project for the community of Descharme Lake, Sask.

The Achievement

SRC's team designed a custom Hybrid Energy Container for a unique microgrid project led by SaskPower.

The container houses batteries, inverters and other technology used to provide dependable solar-based energy to the community.

The technology aims to provide efficient, consistent and reliable power to rural communities and other remote locations.

With a decade of knowledge and expertise in renewable energy and storage solutions, SRC designed, constructed and installed the necessary technology to establish a renewable-based microgrid solution for SaskPower's Descharme Lake operation.

Photo courtesy SRC

2025 PROFILES OF ACHIEVEMENT

This is the first community power system of its kind in the province and it replaces a 60-year-old power line that was at the end of its operational life.

SRC's Hybrid Energy Container is tailored to operate efficiently in harsh environments, with thick insulation and a multi-stage heating and cooling system that is designed to withstand the extreme temperature swings in northern Saskatchewan.

SaskPower's microgrid site includes three acres of solar panels, capable of producing 234 kilowatts of power. Existing distribution lines are used to send the power generated from the microgrid into the community.

The Descharme Lake Microgrid Project highlights the customizable nature of SRC's Hybrid Energy Container and the specialized expertise of the project team in integrated energy solutions.

Working closely with SaskPower, SRC designed the container to have minimal impact on the community – this includes noise mitigation strategies, site layout considerations, built-in redundancies, remote operation strategies and ease of electrical integration. This unique technology demonstration will broaden the application of SRC's future Hybrid Energy Containers, which have the ability to reliably power remote communities, worksites and more across Saskatchewan and beyond.

Photo courtesy SRC

The system within SRC's Hybrid Energy Container acts as the brain of the project and is fitted with the latest technology that has the potential to bring reliable, renewable-based electricity to homes and businesses.

This Hybrid Energy Container is fitted with lithium iron phosphate batteries to ensure longevity and reliability and was designed with new inverter technologies that allow for direct integration of solar panels and diesel generators.

This project serves as an initial utility-grade demonstration of microgrid capabilities and will illustrate the potential benefits for Saskatchewan communities.

The SRC Team

This project was led by a team of engineers and technologists within SRC's Energy and Process Solutions group consisting of Ryan Jansen, P.Eng., Jean-François Couillard, P.Eng., Graham Epp, P.Eng., Kyla Clarke, P.Eng., Ken Babich, Electrical Technologist, Lukas Borody, Electrical Technologist, Richard Kent, Mechanical Technologist, Erwin Dyck, Mechanical Technologist and Ian Betz-Wood, Chemical Technologist.

In the past three years, we have been reviewing *The Engineering and Geoscience Professions Act*.

We have been working with the government to achieve updated legislation that is clear and reflects contemporary realities and public expectations.

Our efforts to clarify corporate regulation in Saskatchewan have also advanced as part of the Act and bylaw review process.

The intent is to improve clarity, protect the public, sustain trust, and reduce risk in engineering and geoscience services.

The review and consultations will continue in 2026.

Timeline of the process:

- Began the process in March 2023 when we met with the government, followed by forming the task group.
- Since then APEGS has engaged with interest holders including government, members, business and industry through surveys, webinars, meetings and focus groups through to September 2025.
- APEGS expects to submit the proposed changes to government in May 2026 to draft into a bill.
- If government passes the bill, the new Act would be introduced in stages beginning in 2027.

Member survey:

- 85 per cent were in favour or neutral about changes.
- Areas with about half in favour or neutral were related to APEGS changing its name, how bylaws are created and changing the title of members in training to interns.

Clarity of mandate and who we regulate

- **Updating the objects of the association.**
  Using clearer language to enhance the public's understanding and maintaining the core themes of our current objects.
- **Changing the association's name.**
- **Changing in-training members to Intern Engineer and Intern Geoscientist from Engineer-in-Training and Geoscientist-in-Training.**
- **Recognizing and protecting two more titles.**
  Engineering Licensee (Eng.L.) and Geoscience Licensee (Geo.L.)
- **Introducing practising and non-practising status.**
  To enhance clarity and transparency for the public regarding who holds a licence and is authorized to practise.
- **Amending the definition of "practice of professional geoscience."**
  To ensure alignment with the practice of professional engineering and to better reflect the work of professional geoscientists.

Matters of public protection

- **Clarifying the types of firms that must be licensed.**
  Removes ambiguity and specifies which entities require a permit to practice and which fall under the exemptions.
- **Implementing a quality management system approach to regulate firms.**
- **Requiring registrants to obtain professional liability insurance.**
  Ensures that APEGS' professionals are properly insured, protecting professionals and clients in claims for errors or omissions occurring in a project.
- **Updating exceptions to scope of practice.**
  Referring to engineering and geoscience work rather than listing types of activities minimizes the unintended loopholes in exceptions to scope of practice. The list of professions remains the same.
- **Enabling council rather than the membership to approve bylaws.**
  Council, as elected representatives of members, hold a fiduciary responsibility to act in the best interest of the public.

Investigation and discipline processes

- **Expanding the definition of professional incompetence.**
  To include incapacity or impairment that may affect practising to a reasonable standard.
- **Enabling the Registrar to initiate a complaint.**
  To efficiently deal with cases that come up during the registration process.

- **Allowing the Investigation Committee to investigate matters arising during an investigation.**
  For example, investigate instances where there is evidence of unlicensed practices of an individual member or firms practising outside the boundaries of their licence.
- **Allowing the Registrar to temporarily suspend a licence.**
  Empowers the Registrar to take immediate action when there is a risk to public safety.
- **Creating a committee to review appeals rather than council.**
  Removes a real or perceived conflict of interest.

Regulation of firms

- **Regulation applies to all entities engaging in practice.**
  Clarifying firms requiring registration.
- **Introducing regulatory bylaws that establish a quality management approach.**
  Ethics, practice standards, PPMP, CPD.
- **Eliminating permission to consult and replacing it with a system to track area of practice for practising registrants.**

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 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.

Renew Your Membership and Licence

2026 annual fees are due by December 31, 2025.

You can renew online by logging into your member profile via APEGS Central, accessible from any page on the APEGS website.

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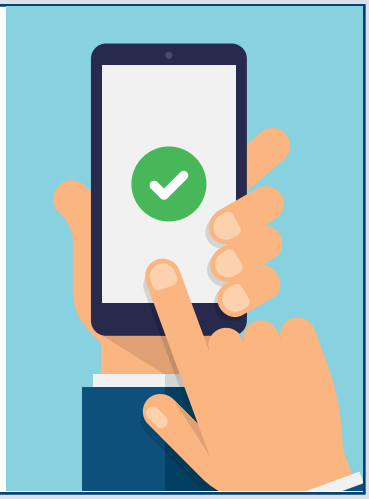
Association of Professional Engineers & Geoscientists of Saskatchewan



Continuing Professional Development

The Continuing Professional Development (CPD) Program requires APEGS members to complete ongoing continuing education activities to promote and improve their proficiency.

It encourages members to engage in lifelong learning to protect public health, safety and welfare.

The program framework provides tools for members to assess their current skills, knowledge and abilities, determine activities to maintain or enhance those skills and report completed activities online to APEGS as professional development credits.

For more information, navigate to the CPD menu at apegs.ca.

CPD Important Reminders

The 2025 CPD reporting cycle is ending soon. Here are a few important deadlines to remember:

Dec. 31, 2025 – Deadline to complete your 2025 ethics requirement.

Dec. 31, 2025 – Deadline to earn credits for the 2025 reporting cycle.

Jan. 31, 2026 – Deadline to report your 2025 CPD information online to APEGS.

Don't wait until the last moment and risk becoming non-compliant. If you're struggling to understand the CPD Program, contact us at cpd@apegs.ca.

Online Reporting Submissions: *Integrity in Action*

When submitting information online to a regulatory body, you are making a formal declaration that the details provided are true and accurate.

False or misleading entries, no matter how minor, can prompt a further review of your file and potential consequences. Ensure your submissions reflect the integrity of your professional practice.

Looking for more Professional Development Training?

Do you need help finding available professional development opportunities? APEGS continuously sources professional development options which may be of interest to members.

Links to these courses are organized by industry and are available on the APEGS website. Visit the Other PD Resources section under the CPD heading on the APEGS website for more details.

Featured Professional Development Opportunities

Online Ethics Modules

APEGS has free one-hour online ethics modules available to assist members in obtaining their ethics credit for the year. The modules are not mandatory and are offered as one option available to members.

Our current ethics module topics are:

Module 1 – Professionalism and Ethics

Module 2 – Conflict of Interest

Module 3 – Investigation and Discipline

Module 4 – The Ethics of Continuing Professional Development

Module 5 – The Foundation of Ethics

Module 6 – Limits of Truth Telling

An additional resource is The Law and Professional Practice in Engineering and Geoscience module. This module educates engineering and geoscience professionals about Canadian and Saskatchewan laws and can help them understand when to seek professional legal advice to protect the public and the environment. Completion of this module would satisfy the annal CPD ethics requirement and be eligible for three hours of Formal Activity credit.

For more information and to access the modules, please visit the CPD menu at apegs.ca.

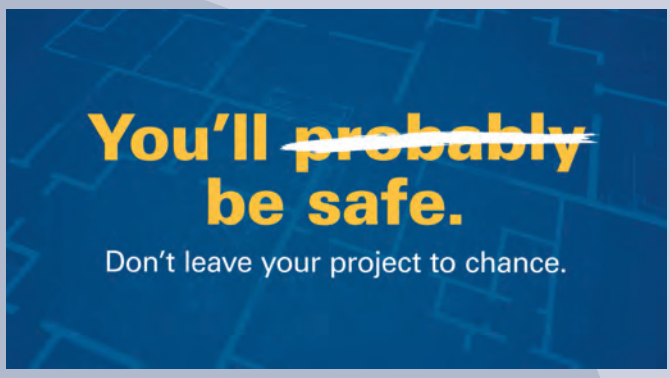
Volunteer Opportunity – Member-Led Webinars

Do you have valuable knowledge to share with fellow APEGS members? APEGS hosts monthly member-led webinars and we're seeking enthusiastic volunteer presenters. Members who present will earn verifiable Presentation CPD credit. For more information or to volunteer, please contact the CPD Department at cpd@apegs.ca.

Public Awareness Campaign

APEGS launched an online advertising campaign this fall to increase public awareness in Saskatchewan about the importance of hiring a professional to protect public interest. This new campaign builds on previous annual campaigns to raise awareness of what engineers and geoscientists do.

The target audience of this year's campaign is limited to residential builders and owners, business/corporate builders and owners, municipal authorities and members of the public who could potentially employ engineering services. The ads link to a new webpage about why, when and how to hire a professional.



APEGS also launched a subsequent online advertising campaign to help the public understand that it can make a complaint to APEGS about professional incompetence or professional misconduct. The campaign is limited to those who engaged with the hire a professional ads and webpage, since they may have hired a professional. The ads link to our existing webpage about why, when and how to make a complaint.

Survey: Member Perceptions of APEGS

APEGS conducts an annual survey of its members to help APEGS understand their impressions and levels of satisfaction with the organization.

This year's survey was conducted between February and March 2025.

The survey was sent to 1,033 members through APEGS Connect, the opt-in survey panel of members, as a representative sample of the entire membership.

Thank you to the 216 respondents who shared their thoughts.

What We Found

Members indicated high overall satisfaction with their impressions of APEGS, along with a clear call for APEGS to modernize our platforms, be more responsive to member requests and be more member focused.

The vast majority of respondents continue to agree or strongly agree that APEGS does a good job regulating the professions, supporting professional growth and helping professionals remain proficient in their practice with either a slight increase or decrease:

	2024	2025	
Fair enforcement process	97%	94%	↓
Instills public trust	95%	92%	↓
Clear registration process	93%	94%	↑
Regulating the professions to protect the public	93%	94%	↑
Impartial/reliable/responsive	92%	90%	↓
Keeps me informed	91%	84%	↓
Transparent in CPD reviews	91%	86%	↓
Progressive regulation	88%	88%	-
Enforces professional and ethical standards	85%	83%	↓
Supports me as a professional	82%	78%	↓
Maintains standards for entry into the professions	81%	85%	↑
Helps me remain proficient	80%	79%	↓
Enforces CPD requirements	80%	80%	-
Regulates firms	71%	73%	↑

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

More members are finding value in their relationship with APEGS

Compared to last year, reporting their interactions with APEGS are more relational (e.g. attendance at APEGS events or voting in the council elections) than transactional (e.g. fee payments or continuing professional development [CPD] reporting).

2024	2025
37% relational	43% relational
63% transactional	57% transactional

There was also a reduction in the number of members who think APEGS is just a means to be licensed.

"APEGS is just a means to be licensed so I can practise my profession"

2024	2025
59%	54%

Open-ended survey questions asking for suggestions from members revealed an appetite for more interaction and engagement with and among members.

Of 153 comments:

47 – Want communication that is less frequent but more engaging, appealing, clear and timely.

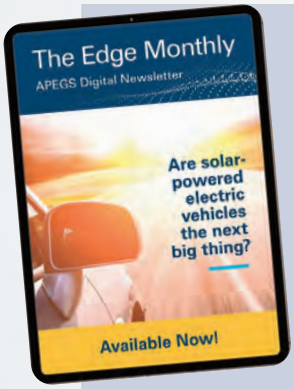
31 – Appreciate timely, respectful responses but express frustration with inconsistent service, long wait times and difficulty reaching staff.

21 – Stated that the current continuing professional development and licensing processes are overly complex, inconsistent or unfair, especially for international professionals, parents and those practising across provinces.

20 – Responses reflect a general sense of contentment or neutrality, with some expressing appreciation for the current direction.

19 – Expressed frustrations with the website, online forms and virtual platforms are common.

12 – Want to feel seen, supported and connected. They're asking for events, mentorship and support that reflect their diverse backgrounds and goals.



APEGS Member Engagement in Motion

This year we continued to offer the member information session in person and virtually in September.

We delivered 23 webinars alongside the annual professional development conference and APEGS Practicing the Professions Day.

We continue to send members emails about their statutory responsibilities (e.g. voting for council and notice of annual meeting) and the e-news on the 15th or next business day of each month, and social posts on LinkedIn and Facebook.

We will be reaching out to members in the coming year to better understand their communication needs.

Air Quality Measurement and Monitoring Requires Innovation for Long-Term Results

SUBMITTED BY SASKATCHEWAN RESEARCH COUNCIL

From potash to oil and gas to manufacturing, industrial air quality measurement and monitoring has historically focused on reporting for regulatory purposes, with an end goal of protecting people and the environment.

With industry and government focusing more on improving the environmental performance of industrial facilities, the ability to measure, monitor and model air quality is important to reporting and delivering on these goals.

For over 45 years, the Saskatchewan Research Council (SRC) has helped important economic sectors across the Prairies keep a close eye on their air emissions to meet environmental standards and regulatory requirements, and to implement process improvements for emissions reduction strategies.

With more than 17 years of experience in air quality at SRC, Team Lead Kent Orosz is at the helm of a group of specialized experts who – through measuring, monitoring and modelling – help clients achieve long-term environmental and economic benefits.

Photo courtesy SRC

SRC's air quality team offers a wide range of services for a variety of industries, such as mining, manufacturing, biofuels, construction and electricity generation.

"Our team is diverse in terms of skills and expertise," Orosz said. "We offer a variety of services that can be integrated to meet a client's needs."

The air quality team offers a wide range of services, from industrial source testing to ambient air monitoring and industrial hygiene, for industries such as mining, manufacturing, biofuels, construction and electricity generation.

"While stack sampling makes up the majority of our work," Orosz said, "we also work with clients on other aspects of measurement and monitoring, such as environmental protection plans under the *Industrial Source (Air Quality)* chapter of the Saskatchewan Environmental Code."

Expertise in Safe Stack Sampling

SRC is a trusted provider of stack sampling. And while technology has changed, manual testing methods remain the most reliable approach to stack sampling.

"Stack sampling is a unique job because it's a mix of labour, technical work and some science as well," Orosz said.

A typical field day starts with the team's early morning trip to an industrial site to measure gases and particulates released from the facility.

Team members might climb ladders or stairs to reach high platforms or rooftops to carry out their work.

"Safety is an overriding priority at SRC," Orosz said. "Because our work exposes us to numerous hazards, we are continually assessing and reassessing risk, implementing controls and monitoring whether our controls are effective to ensure we can finish the job safely. We are COR-certified, which is the industry standard in safety certification."

Insight into Process Refining and Pollution Control Equipment

Generally, large facilities are required to test what is emitted from their stacks annually. SRC's air quality team conducts this regulatory compliance testing at field sites.

The team also helps clients refine their processes or test new types of pollution control equipment to reduce their emissions.

"Helping clients implement process improvements that reduce their air emissions is where our expertise really shines," Orosz said. "A lot of companies can come in and do compliance testing, but we are able to take the data and use our air quality expertise and experience to help clients improve their processes and navigate next steps."

This expertise has proven valuable in the potash industry.

SRC works with nearly every potash mine in the province, conducting stack sampling, compliance testing and creating or updating environmental protection plans (EPPs) under the Saskatchewan Environmental Code's Industrial Source (Air Quality) chapter.

"Potash mining requires complex processes related to air emissions," Orosz said. "We have the skills, expertise and knowledge to give industry the information and resources needed to help improve the environmental performance of their operations."

Beyond testing and providing air quality reports, the team has measured dust from mine ventilation exhaust, sampled particulate and gases in stacks from dryers and other process equipment, and measured airflow, temperatures and pollutant rates entering and exiting pollution control equipment.

"We've worked on a lot of different issues related to elevated emissions," Orosz explained. "Based on the data we measure, we can help a facility develop and implement a test plan based on their operational conditions, giving them the information they need to make informed decisions."

Integrated Services for Managing Air Emissions

SRC provides clients with integrated services and advanced technologies that all work toward a goal of helping them manage their air emissions.

SRC can deploy customized mobile stations for ambient air monitoring offering real-time data. These stations can monitor gases like sulfur dioxide, hydrogen sulfide, carbon monoxide and weather data, such as wind speed and direction, temperature and more.

With services like trace analysis testing, SRC can measure the amount of volatile organic compounds, total hydrocarbons and metals in emissions.

When it comes to indoor air quality, Orosz and his team can identify and measure gases, fumes and biological hazards – like mould or bacteria.

Photo courtesy SRC

Kent Orosz leads a team of specialized experts at SRC who – through measuring, monitoring and modelling – help clients achieve long-term environmental and economic benefits.

The team can also measure the visual opacity of emissions plumes.

"There are regulations and limits on how much light is blocked by the plume, so measuring that is important," Orosz said. "Traditionally, someone would stand there watching the plume and record the percentages of light blocked every 15 seconds for 15 minutes."

SRC has adopted a more accurate automated method to measure the opacity by using digital cameras that automate the analysis.

Orosz has also witnessed big shifts in the government's approach to regulating industrial activities. Saskatchewan has been a leader in a measurable, outcomes-based approach that benefits both industry and the environment.

Part of that approach has been the requirement for industries to develop EPPs under the Industrial Source (Air Quality) chapter of the Saskatchewan Environmental Code.

SRC helps industries develop an EPP

"We can take all of our stack sampling knowledge and all of our air dispersion modelling capability and roll it into an EPP for clients," Orosz said. "Our work is not just about taking a sample – it's understanding clients' needs and what information they require to make decisions."

Helping to Keep Prairie Skies Clear

SRC's air quality team works closely with its Environmental Analytical Laboratories on field sample analysis and also its Centre for the Demonstration of Emissions Reductions (CeDER) platform to support clients in transitioning to a low-carbon future.

A Comparison Between CWB-Certified and Non-Certified Organizations

SUBMITTED BY CANADIAN WELDING BUREAU GROUP

In today's competitive business world, companies face pressure to improve their products, services and business processes to gain competitive advantages.

One effective strategy for companies to maintain competitiveness while ensuring compliance with Canadian rules and regulations governing the construction of buildings, bridges, other specific products and their structural components is to obtain Canadian Welding Bureau (CWB) certification.

This applies to welding, fabricating, or erection organizations in Canada, the United States, or internationally, that are working with or providing applicable structural welded products for use within Canada.

UNDERSTANDING CWB CERTIFICATION

In Canada, like many countries, regulations and guidelines govern the construction of buildings and their structural components. These regulations may be mandatory as per national, provincial or municipal laws, as well as contractually obligated.

CWB certification is a voluntary process relevant for organizations of varying sizes and industry sectors, with or without a plant or shop.

This certification is generally mandated for structures and ancillary components fabricated to meet Canadian municipal, provincial, and federal building codes, bridges, occupational health and safety codes, specifications and regulations.

The CWB certification process involves a thorough review of an organization's personnel qualifications, welding procedures, documentation and quality-control programs to ensure compliance with the applicable CSA standard.

Selected individuals may choose to register for a course and are required to pass a series of exams to obtain the welding supervisor qualification, and others, to be approved as welding engineers.

Photo credit: Pexels

Additionally, welders are required to pass a series of performance qualification tests to demonstrate skills and knowledge and maintain those skills by retaking the mandated tests every two years.

Organizations certified by CWB are audited biannually to ensure they demonstrate the necessary skills, knowledge and quality-control systems to produce high-quality welded fabrication.

CWB-CERTIFIED VS. NON-CERTIFIED ORGANIZATIONS

Trust and Credibility

CWB-certified organizations demonstrate an unwavering commitment to building customer confidence in an ever-evolving business environment.

These organizations implement the correct welding procedures while upholding high-quality structural welding standards.

CWB certification assures clients and stakeholders that the organization adheres to Canadian-recognized welding-related standards.

Additionally, CWB's independent assessment and approval of an organization's welding processes and personnel reinforces trust in the reliability and consistency of the organization's work.

In a business world where trust and credibility are critical, this validation becomes an important business tool.

Structures are inspected for compliance during and after installation. Site-built structures undergo inspections at key stages by the engineer of record and authority having jurisdiction.

A certification program helps consumers and reduces reliance on regulators to confirm compliance with requirements.

Non-certified organizations may struggle to communicate the same level of commitment to quality and may encounter difficulties in effectively resolving issues, potentially resulting in product failure, customer dissatisfaction and expenses for additional engineering and inspection services.

Operational Excellence

CWB certification is a crucial tool to attain and uphold operational excellence. It fosters a culture of efficiency and transparency by providing a roadmap for continuous improvements.

CWB-certified organizations can streamline procedures and processes, pinpoint inefficiencies and take necessary measures to enhance productivity and decrease welding defects by using qualified and competent personnel and procedures.

By doing so, the company maintains a strong foundation that can withstand and adapt to the challenges of the ever-changing market and customer needs.

Non-certified organizations may lack the structured welding processes and qualified personnel that CWB certification promotes. This can lead to inconsistent operations, reduced efficiency and increased operational risks.

Risk Management

CWB-certified organizations are required to follow applicable CSA welding standards which ensure the personnel and companies involved in the design and construction of structures follow standard practices. This helps minimize the risk of failure and potential harm to the public.

By obtaining certification, organizations provide an additional level of trust and assurance that their documentation, weld quality and the level of knowledge their fabricators and erectors have are independently verified against applicable CSA standards, helping to reduce public safety concerns and liability.

Non-certified organizations may not prioritize risk management and compliance in the same way. They may not use accepted welding procedures and could potentially lack qualified welders and other personnel needed to provide safe and effective welding operations.

As a result, non-certified organizations may face an increased risk of operational disruptions, quality issues and legal non-compliance leaving them vulnerable to fines, legal repercussions and irreparable reputational damage.

Business Growth

CWB certification can provide a competitive edge and open new markets and business opportunities, as numerous industries and regulatory bodies stipulate CWB certification. CWB-certified organizations find it easier to navigate complex regulations, as their welding processes align with or exceed international standards and expectations.

CWB certification is valuable for marketing as the requirements of CWB certification meet or exceed the requirements of many national and international codes. CWB certification can also assist organizations in accessing new international markets.

Non-certified organizations may be excluded from markets where regulations or contracts require certification. Conforming to Canadian standards and regulations

Photo credit: Pexels

without CWB certification can be a daunting task, resulting in delays in processes, quality issues or even legal complications.

Commitment to Quality Management Systems

Quality management programs are an inherent aspect of a CWB-certified organization. CWB-certified companies have qualified welders, approved welding procedures and qualified supervisory and welding engineering personnel.

CWB independently verifies all elements of the welding operation with regular frequency. Clients view certified companies as reliable, due to their commitment to strict standards, which translates into confidence in the quality of their welded products.

Non-certified organizations may lack structured quality management programs, leaving them more susceptible to inconsistencies and performance challenges.

CWB certification provides the necessary tools and culture to consistently improve processes and maintain quality. Non-certified organizations may struggle to maintain the same level of quality and throughput.

CONCLUSION

Obtaining CWB certification is a business decision organizations should make based on the benefits they stand to gain.

It's important to note that certification is more than just a certificate or validation letter. It's a symbol of quality and competence demonstrating the ability of individuals and companies to weld metal structures.

The certification augments the safety of welds and is a necessity for organizations looking to enhance operations, gain customer trust and expand their business.

CWB-certified organizations can enjoy numerous benefits, such as increased quality, reduced waste, immediate cost savings and confidence in their products, knowing that they are high quality and meet Canadian welding standards.

For more information contact
Mark.Fernandes@cwbgroup.org | Direct: 780-809-2638 | Mobile: 587-708-7092

University of Regina Alumni Awards

University of Regina – Every year, the University of Regina celebrates the achievements of its nearly 95,000 alumni through the Alumni Awards.

Established in 1992, these awards honour exceptional alumni for their dedication to excellence, community engagement, leadership and their significant impact on the social, cultural and economic well-being of our communities.

Photo courtesy U of R

Amy Richter P.Eng., BASc'15, MASc'17, PhD'21

Outstanding Young Alumni Award

Dr. Amy Richter is a dedicated professional engineer and environmental advocate, currently contributing her expertise to the Ministry of Environment in Saskatchewan, where she works on advancing waste recycling initiatives.

A three-time graduate of the University of Regina, Amy earned her Bachelor of Applied Science (2015), Master of Applied Science (2017), and PhD (2021) in Environmental Systems Engineering.

Her academic work, particularly her doctoral research, focused on using data-driven approaches to enhance regional waste management systems across Canada, reflecting her deep commitment to sustainability and environmental innovation.

In addition to her role with the ministry, Amy maintains a strong academic presence as a part-time postdoctoral researcher at the University of Regina.

There, she actively mentors graduate students and continues to contribute to research that supports Canada's evolving waste management strategies and environmental practices.

Photo courtesy U of S

Celebrated USask structural engineer receives prestigious university award

University of Saskatchewan via Education News Canada – Dr. Lisa Feldman P.Eng., (PhD), Head of the Department of Civil, Geological, and Environmental Engineering in the College of Engineering, is the 2025 recipient of the Publicly Engaged Scholarship Team Award (PESTA).

The award is given annually to a member of the USask faculty in recognition of outstanding collaboration with students, post-doctoral fellows, other faculty or community partners to create impact in the community.

"When you write a building code, it affects every single project," she said. "Working with industry partners and connecting with them to understand their needs, and then doing research that might help move towards finding solutions for them, it makes the research – at least to me – more meaningful, that I know I'm helping people today."

Feldman, who is also the director of the Saskatchewan Centre for Masonry Design, has long been a leader in cutting-edge construction practice and design. Her particular expertise in reinforced concrete and unique knowledge of structural evaluation and rehabilitation practice has helped her stand out as a hands-on researcher in the field of structural engineering.

And, as Feldman puts it, hands-on is truly key to this kind of work.

"It really helps to work with industry for the students, for them to see that industry is motivated towards getting good results for the research we're doing," she said.

Feldman's work has contributed to national and international building codes, shaping construction and engineering practices worldwide.

But beyond her accomplished work in the field, Feldman is an avid instructor and mentor for students following a similar path. She recounted a story of travelling to a conference with a pair of students, one of whom was discussing companies and locations where they'd like to work.

At the first night of the conference, Feldman introduced the student to one of her industry connections – another engineer who worked for a well-respected company in the region that this student had targeted. Now, that student works for that company – and as Feldman jokingly noted, might someday exceed her as a structural engineer.

"If you're doing your job properly, it's kind of like being a parent in that you want the people that you train to go off and do even bigger and better things than you've done," Feldman said.

"So if I'm able to provide them with the tools and connections to get started, then I've accomplished what I'm supposed to be doing."

As a faculty member, Feldman has contributed as both a researcher and mentor in the USask community. She has consistently been a voice for accessibility in the field of engineering and has been the recipient of many other awards for her work – including the Canadian Society for Civil Engineering Casimir Gzowski medal for the best civil engineering paper in surveying, structural engineering or heavy construction.

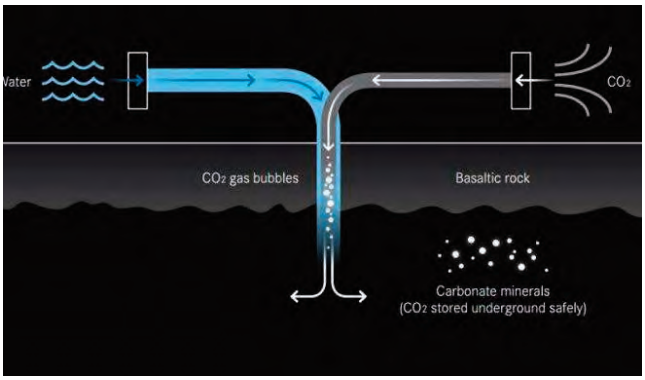
Feldman said receiving the PESTA was not something she expected but was nonetheless grateful for. She pointed out the importance of the "team" aspect of the award, citing her students, colleagues and too-often-overlooked lab co-ordinator as being integral to the work she does.

"The award is given to me, but it's not just for me," she said. "There's my students, and my students and I wouldn't get anywhere if the lab co-ordinator wasn't committed to the work and really invested... hopefully it'll lift the spirits of my colleagues as well."

PTRC receives prestigious award for southeast CCS project

Discover Weyburn – A groundbreaking Saskatchewan-based carbon storage initiative has earned international recognition.

The Petroleum Technology Research Centre (PTRC) has been awarded the Suzanne West Environmental Excellence Award for its Aquistore project, located near Estevan's Boundary Dam, at the Global Energy Show in Calgary.



The award highlights innovations and technologies that significantly reduce the environmental footprint of the energy industry.

Aquistore was selected for its pioneering role in carbon capture and underground storage, becoming the first project in the world to store CO_2 captured from a coal-fired power plant.

The Aquistore project has stored more than 620,000 tonnes of carbon dioxide in a deep saline aquifer 3,300 metres underground since it launched over a decade ago.

It was developed alongside SaskPower's Boundary Dam Carbon Capture Facility and serves as a permanent storage site for CO_2 not used for enhanced oil recovery in the Weyburn oilfield.

"We were the first project in the world to store CO_2 from a coal-fired power plant," said PTRC Director of Communications, Norm Sacuta, about the importance of the award. "There was a lot of interest globally in what it was we were doing. So, when we were nominated for this award, it was really a reflection of that global awareness of the Aquistore project."

Sacuta noted Aquistore has become a model for similar projects in Alberta and the United States, due to its long track record of safety and detailed research data on CO_2 monitoring.

Other nominees for the award included Alberta solar energy company Greengate and global oil and gas giant Saudi Aramco.

For Sacuta and the PTRC team, the win is more than symbolic; it's practical. The recognition helps raise the profile of Saskatchewan's leadership in carbon storage and bolsters the PTRC's ability to attract research partnerships and funding from across Canada and abroad.

"We're enthusiastic because I think we may be drilling an additional well at Aquistore to do some more measurement and monitoring," Sacuta added. "We've had the University of Regina, University of Alberta and University of Saskatchewan all benefit from the money that we bring in for research."

News From the Field

Coal to 2050, nuclear by 2030s

Discover Moose Jaw

Saskatchewan will keep coal-fired power plants running until 2050 and build a nuclear energy industry from scratch – asserting constitutional authority to ignore federal climate deadlines while simultaneously asking that Ottawa pay 75 per cent of the province's first nuclear reactor costs.

The Saskatchewan First Energy Security Strategy and Supply Plan, released in late October, commits SaskPower to extending the life of 1,530 megawatts of coal-fired capacity for up to 20 years beyond the federal government's 2030 phase-out deadline while preparing to deploy small modular reactors (SMR) near Estevan by the mid-2030s.

"Extending the life of our coal-fired assets will ensure that we have reliable baseload power as a secure bridge to nuclear power generation," the strategy states. "We have a workforce of nearly 1,100 people who know how to operate and sustain coal power stations and mine the coal that fuels them."

world-nuclear-news.org

The plan positions Saskatchewan to profit from energy exports and become a North American hub for the nuclear industry, the document explains.

However, aside from asking Ottawa for most of the money upfront, it has no specific timelines or budget estimates.

The plan appears to depend on Ottawa agreeing to pay for most of it, raising the question of how Saskatchewan will proceed if the federal government refuses.

Saskatchewan's coal extension directly contradicts federal regulations and the province's own previously released strategy, requiring all coal-fired electricity generation to cease by 2030. The province currently generates approximately 30 per cent of its electricity from coal, with natural gas accounting for about 50 per cent.

Three facilities will see their operational lives extended to 2050: Boundary Dam, Shand Power Station and Poplar River Power Station's Units 1 and 2.

The strategy justifies the extension by citing coal's reliability – averaging 79 to 86 per cent availability compared to wind and solar at 20 to 25 per cent – and Saskatchewan's century-plus supply of coal reserves in the southern part of the province.

The province's nuclear ambitions centre on deploying two GE-Hitachi BWRX-300 small modular reactor units near Estevan, working through SaskPower's SaskNuclear subsidiary in partnership with Ontario Power Generation, which is deploying the same technology at Darlington by 2030.

The strategy provides no timeline for when the first Saskatchewan SMR would become operational other than "the 2030s."

The province is specifically requesting Ottawa fund 75 per cent of the costs for Saskatchewan's first nuclear reactor.

Export power

The strategy envisions Saskatchewan becoming a major electricity exporter by building surplus nuclear capacity and expanding transmission infrastructure.

The province argues that expanding transmission infrastructure with federal investment will position Saskatchewan to export power to energy-hungry U.S. markets while connecting isolated northern communities currently served by diesel generation.

The strategy forecasts electricity demand increasing by 40 to 100 per cent by 2050, driven by population growth, electrification and data centre development.

Natural gas dependency drives coal extension

Saskatchewan currently imports more than 80 per cent of its natural gas despite natural gas generating about 50 per cent of annual electricity, making the province dependent on external fuel supplies while North American demand for natural gas-fired

generation is expected to rise by an additional 10 gigawatts over the next 10 years.

"Saskatchewan cannot rely on a single fuel source, especially one the province does not control, as the dominant source for electricity generation," the strategy states, framing coal extension and nuclear development as twin pillars of energy independence.

$6.3 Million in Funding to Establish Four Nuclear Research Chairs

Government of Saskatchewan – The Province of Saskatchewan through SaskPower will invest $6.3 million during the next six years to establish four new nuclear research chairs at post-secondary institutions in the province.

The chairs, whose work will support nuclear science and the deployment of nuclear energy generation in Saskatchewan, are made possible by partnerships with the University Network of Excellence in Nuclear Engineering (UNENE) and the Sylvia Fedoruk Canadian Centre for Nuclear Innovation.

The funding includes $3.3 million over six years in order to join UNENE and establish Western Canada's first two UNENE nuclear research chairs-one at U of R and the other at U of S.

Another $3 million will be invested over six years with the Fedoruk Centre to establish two additional nuclear research chairs.

One will be at Saskatchewan Polytechnic to develop training for skilled trades and technical careers in the nuclear sector.

The other will be at First Nations University of Canada to research integrating and supporting the use of Indigenous knowledge in the licensing, construction and operation of nuclear power facilities.

Regina launches PedApp to aid blind and deaf users at busy intersections

Sask Today – Walking across a sidewalk can be challenging for those who are visually impaired or hard of hearing.

To ensure walking across the street is safer, the City of Regina, in partnership with the Canadian National Institute for the Blind (CNIB), has launched the PedApp at nine intersections between Broad Street and Albert Street along Victoria Avenue.

The app allows users to push a button on their phone to activate the walk indicator when they have the right of way.

When it's their turn to cross, users will be prompted with a timer sound or vibration on their phone to indicate how long they have to cross.

Vikas Ravada, manager of traffic engineering with the City of Regina, said the city has been working over the past five years to install accessible pedestrian signals while developing the app.

Currently, the city has 97 intersections with accessible pedestrian signals and plans to install more.

3D-printed lungs could improve disease prevention and treatment

Sask Today – Lung diseases like tuberculosis and cystic fibrosis can be difficult to treat. In part, that's because the two-dimensional models researchers use to study the diseases don't accurately reflect the shape of human lungs – and animal models don't behave like humans when they encounter disease.

University of Saskatchewan (USask) researchers from the Vaccine and Infectious Disease Organization (VIDO) and the College of Engineering are working to build a better model.

"We've realized that we're lacking a realistic model for lung diseases… and that means that we can't really plan a better strategy for lung therapies," says VIDO's Dr. Nuraina Dahlan, one of the scientists working to make a three-dimensional lung tissue model. Nuraina is studying under Drs. Neeraj Dhar and Arinjay Banerjee (both at VIDO), and Dr. Daniel Chen (College of Engineering).

Lungs contain scaffolding – called an extracellular matrix – inside which lung cells live. Dahlan and her team used the Canadian Light Source at USask to look at their 3D-printed models, so they could understand the tissue's shape and function without damaging the samples.

Dahlan says having a model that perfectly mimics actual human lungs would be a game changer for lung treatment.

Creighton copper mine on track for commercial production for mid-2026

Northeastnow.com – Saskatchewan's first copper mine in nearly 30 years is on track for commercial production by mid-2026.

Foran's McIlvenna Bay Mine in east-central Saskatchewan, located approximately 65 kilometres southwest of Creighton, is now 60 per cent complete.

According to a provincial media release, McIlvenna Bay represents a capital investment of more than $1 billion, and the project will produce copper, gold, zinc and silver over an initial 18 years.

Foran Mining vows eco-friendly McIlvenna Bay Mine

Sask Today – Foran Mining says its McIlvenna Bay Mine will protect the environment while creating jobs and boosting Saskatchewan's global role.

Erin Carswell, vice-president for exploration at Foran Mining Corp., said the company is aware of the impact mining projects can have on the environment and assured that steps have been taken to protect the land, soil, air, water and the entire ecosystem around the McIlvenna Bay Mine in northeastern Saskatchewan.

The mine, rich in critical minerals such as copper and zinc, will create jobs when production begins in the second quarter of 2026 and boost the province's presence in the global market.

The site, southwest of Creighton near the Flin Flon Greenstone Mining Belt, has a capital investment of over $1 billion.

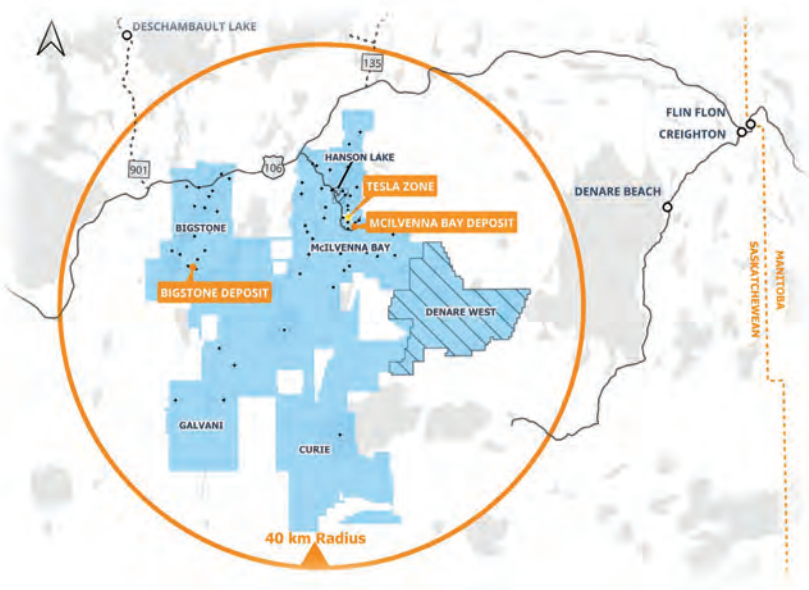
Carswell said the company is using advanced technology and clean energy from hydroelectric power to support its environmentally responsible mining operation.

The project involves constructing and operating an underground mine and a surface processing facility to produce mineral concentrates.

"We're incredibly proud of our green credentials, and a lot of the ways that we're being forward-thinking in this regard are around the ultimate aim of carbon neutrality. In particular, bringing in interesting innovations like our heat exchange processes that we have for reducing energy use underground," Carswell said.

Carswell said Foran will have a processing plant above the mine to speed up the processing of minerals on site, which also contains gold and silver. She added that this is common practice in mining – separating ore minerals from rock once collected.

"It goes through big crushers and then concentrating tanks so that we produce what's called a concentrate. That will go to a smelter where they turn it into the products they need. The demand for critical minerals is only increasing as we go through the energy transition over the next few decades, particularly for copper and zinc as well," Carswell said.



Uranium sales, production hit records as Saskatchewan eyes new mega-project

West Central Online – NexGen's Rook I Project in Saskatchewan's Athabasca Basin, a proposed underground uranium mine and mill awaiting final federal approval before construction can begin, represents an estimated $2.2-billion initial investment.

It is expected to become one of the world's largest uranium production facilities once operational.

The Athabasca Basin is home to the largest high-grade uranium reserves globally.

NexGen says construction of Rook I is expected to create 2,300 jobs in Saskatchewan, with 430 permanent positions at the mine and mill once operations begin.

The company says it has engaged with local and Indigenous communities during the development phase and launched initiatives to support economic development, health and well-being in the region.

Saskatchewan uranium sales reached a record $2.6 billion in 2024, surpassing the province's growth plan target of $2 billion by 2030. Uranium production also hit a record 16,700 tonnes last year, up 28 per cent from 2023.

The province expects mining exploration spending in 2025 to exceed $400 million, a five per cent increase from 2024 and 40 per cent higher than 2022.

From lab to land

University of Regina Research Communications – What if waste from making clean drinking water could help clean polluted water, and then fertilize soil?

That's the question being answered by Ecoloop, a new Saskatchewan startup born out of University of Regina research.

Ecoloop Sustainable Technologies Limited, founded by U of R environmental engineering professor Dr. Jinkai Xue, officially launched with the powerful mission of tackling some of the world's most persistent environmental contaminants using sustainable, scalable and circular solutions.

The company is the University of Regina's first-ever research spinout – a venture grown from an early-stage idea to full incorporation, with critical funding and industry partnerships secured.

At the heart of Ecoloop's work is a problem many people never think about: the sludge waste generated by water treatment plants. While clean drinking water is essential for public health and the economy, the purification process leaves behind large volumes of waste that are expensive and environmentally unsustainable to dispose of.

"It costs about $1 million a year to haul sludge from the Buffalo Pound Water Treatment Plant, which supplies clean drinking water to Regina and Moose Jaw, to the landfill," says Xue. "We're developing technologies that eliminate this cost and transform that waste into something valuable."

Xue's research uncovered that the leftover sludge is rich in minerals like aluminum, calcium, magnesium and silicon – the same minerals found in bricks, concrete and ceramics.

By partnering with the Buffalo Pound Water Treatment Corporation, he and his team developed a method to convert sludge into a lightweight, porous material called ceramsite.

Ceramsite can remove up to 90 per cent of phosphorus from polluted water under various challenging conditions. And when it's done filtering pollutants, it can be repurposed as a landscape fertilizer mulch that gradually releases phosphorus back into the soil.

"Rather than treating something to be buried or incinerated, I saw the potential to create a circular solution where waste becomes part of the solution. Turning that into a business was a natural next step, shifting the technology from the lab to something with a real-world impact," said Xue.

Once commercial deployment begins, any profits generated will be reinvested into the company to support scaling, research and development, and growing the team to include dedicated technical and business development personnel to expand partnerships, commercial channels and operations. The long-term goal is to build a self-sustaining, mission-driven enterprise.

"This is research that's making its way out of the lab and into the world," says Xue.

Fifty-ton historic rock found in Saskatchewan, possible largest concretion on record

CTV – A unique rock formation found in southwest Saskatchewan could be one of the world's largest concretions.

For almost 10 years, Brian and Janie Gillis have been excavating soil from their land located a few kilometres outside of Swift Current.

However, one morning workers dug out something that was not dirt.

"He just said, 'You better come and look at the weird rock we dug out," Brian said.

Photo credit: CTV

The rock in question turned out to be a 50-ton concretion forming about 80 million years ago.

After making phone calls and sending emails out to different curators, Janie said the geology department at the University of Saskatchewan confirmed the finding to be of significance with it being "two or three times larger" than ones found in the province's record books.

"It comes out of really unlithified sediment and therefore it really is a cemented boulder inside unlithified or poorly lithified sediments and that's really what a concretion is," explained Brian Pratt, Professor of Geological Sciences.

"It really represents a geochemical precipitate in a well sphere or an oblong or even a bed sometimes."

This is the first time Pratt has come across a concretion this large, stating findings he usually works with are at most half a metre wide – compared to this one measuring almost four metres.

Although some concretions may have fossils buried inside of them, they are not all classified as fossils. Pratt pointed out a concretion is different from a fossil as it does not possess any living properties, but rather earthly elements.

"For us in paleontology and geology, a fossil is essentially a petrified or preserved organism. A plant, a animal, a microbe, a dinosaur, a clam or a trilobite," he said.

"… But, sometimes we say things like 'This is a fossil concretion' and when we say that, we're really meaning that it's old. It's a geological phenomenon, not an archeological thing, but a geological thing."

Two new Schulich leaders "couldn't stop smiling" when awarded prestigious scholarship

USask – Receiving the Schulich scholarship is life-changing, said Anastasiia Finovska, who immigrated to Canada from Ukraine with her family when she was five years old.

"When I got the call that I received a Schulich Leader Scholarship… felt surreal. After the news settled, nothing could stop me from smiling."

Lucas Sulewski, the recipient of the $100,000 Schulich Leader Scholarship, also couldn't stop grinning when he received the good news.

"I was so happy that I just couldn't stop smiling," he said.

Finovska is a recipient of the $120,000 Schulich Leader Scholarship. A graduate of Campbell Collegiate in Regina, Finovska will be entering the University of Saskatchewan's (USask) College of Engineering this fall. She earned a gold medal for the highest average at her school in Grades 9 through 11, while also pioneering a drone program at Campbell Collegiate. She said the amount of time spent researching drone technology, searching for sponsorships, and becoming certified drone pilots has created a branch of Campbell Robotics that utilizes drones for the enrichment of education.

Meanwhile, Sulewski received 15 academic awards – including maintaining bilingual status while living in an anglophone home – in a two-year span. A graduate of Greenall High School in White City, Sulewski achieved this while also posting podium finishes in track and field – despite injuries – including capturing back-to-back provincial long-jump championships and the title of Athlete of the Year at his school.

Enrolled in the College of Arts and Science, Sulewski envisions building his own consulting company in the STEM field, while Finovska hopes to gain experience with concepts like artificial intelligence (AI) to advance Canada's capabilities.

Greening the production of cement

USask – In Canada, it can seem like there are two seasons: winter and construction. Whether it's repairing sidewalks and streets, or building new homes and apartments, much of this work uses cement – the key ingredient of concrete.

Construction comes with an environmental cost though: eight to 10 per cent of total global greenhouse gas (GHG) emissions are due to the production of cement.

A team from the University of Saskatchewan's (USask) College of Engineering is exploring whether it's possible to make cement production more environmentally friendly by substituting biochar for some of the cement that goes into making concrete.

Biochar is the fine, carbon-rich powder produced by burning plant waste (biomass) in a low-oxygen environment.

"We're using the non-edible component, like flax or wheat straw," says Ravi Patel, a PhD student at USask. "Normally, this kind of plant waste is left on the field."

Patel and his colleagues were curious what impact swapping in biochar would have on the durability of concrete. Switching from cement to biochar reduces the amount of cement required, plus it traps the carbon contained in the plant matter.

The researchers added varying amounts of biochar to the cement mix and studied each sample, first looking at how each sample stood up to the wear and tear that concrete is subjected to in real life.

Then, they brought their samples to the Canadian Light Source, a national research facility of USask, to examine in ultrafine detail the inner structure of the concrete. Patel and colleagues found the samples with biochar were stronger and less porous than the ones with more cement.

Next, the team will assess how well the biochar-enhanced concrete performs over the longer term.

"In our research we have studied the new formula concrete for up to 56 days," says Patel "But we need to check this concrete strength after a year or two years, because all the structures are going to stay here for 50, 60, 70 years. We need to understand the long-term behaviour of how the biochar helps to improve the strength properties."

The project could lead to several improvements in the construction industry: concrete production could be more environmentally friendly, using plant waste that otherwise would go to the landfill and help concrete last longer.

"As a researcher, we want to give back to our society, our environment," says Patel "It feels really good to get a positive result so that we can actually help address climate change."

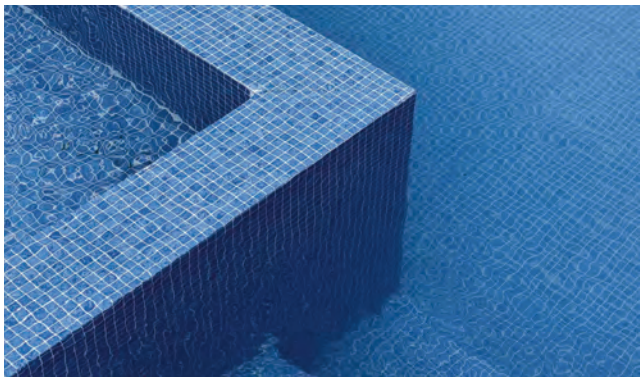
'Goldilocks zone:' Why Regina is well suited to use geothermal heat for new indoor aquatic centre

Regina Leader Post – The sound of shovels hitting the ground at the site of Regina's new Indoor Aquatic Facility (IAF) will soon be accompanied by drilling related to the geothermal portion of the project.

Designed to make the facility sustainable and nearly emissions-free, the city's plan to heat the IAF using deep geothermal energy is a big step forward for the renewable sector, said geologist Erik Nickel.

"We're not breaking new ground in the world, but it is new for Canada and for Saskatchewan," said Nikel.

As chief operating officer at Petroleum Technology



Research Centre (PTRC), Nickel co-authored the preliminary feasibility study that the City of Regina used in 2023 to secure federal funding for the two joined projects through the Investing in Canada Infrastructure Program (ICIP).

The geothermal aspect was a key factor in landing federal money for the pool, which officially broke ground last month. Using a renewable resource made the project eligible for ICIP funding under Recreation and Green Infrastructure streams, which require clean energy or other climate change adaptations.

While the IAF is set to cost $285.1 million, the geothermal facility has a separate budget of $28.5 million. The city says that estimate is on track as of August, with $14.7 million sourced from federal and provincial contributions.

The two attached facilities will be built together, planned to open in 2029.

Southern Sask. is a geothermal hotspot

Geothermal energy is a largely untapped renewable resource in Saskatchewan, despite much of the southern half of the province sitting atop an expansive underground saline aquifer called the Deadwood formation.

One of the largest of its type, this aquifer stretches tens of thousands of square kilometres from the Rocky Mountains across Alberta and Saskatchewan, and down to South Dakota.

"Regina is in a kind of Goldilocks zone, where the water is hot enough but not so deep it's as expensive to drill," Nickel explained.

He compared Regina's position to Estevan, where a private company called Deep Earth Energy Production Corporation drilled 3,500 metres to source for its power plant – the only other large geothermal energy project in the province.

"If Saskatoon wanted to do this exact project, it would be more difficult because the water is not as hot there, because it's shallower," added Nickel.

Geological researchers have known about Regina's geothermal potential since a test well was drilled at the

University of Regina in 1979, originally planned to heat buildings on campus.

The project never went ahead because of cost, but Nickel said the data collected helped geologists understand the aquifer and informed his company's evaluation of the IAF project.

In its modelling, PTRC also used data from the last decade gathered via disposal wells at the Co-op Refinery Complex as well as wastewater injection wells for potash mines, like the one at Belle Plaine.

How does geothermal heating work?

Regina will use the heated brine water stored in the aquifer's porous rock, which requires extraction using methods similar to oil drilling.

Two wells will be drilled to a depth of around 2,200 metres – angled about one kilometre apart underground at their base – to reach water at a temperature of 60 degrees Celsius.

Pumps pull the hot water up via the source well, where it will be processed through an above-ground heat exchanger. The cooled water is then pumped back underground through the return well.

Heat collected during this process replaces a natural gas boiler that would otherwise be used for the IAF's pool water and building.

PTRC says move is innovative

PTRC estimates the Deadwood aquifer will be a viable source of heated water for up to 70 years before the extraction process cools the overall temperature of the underground formation – well within the lifespan of the pool.

In Nickel's opinion, geothermal has remained an under-utilized energy source in Canada largely due to the up-front costs to drill, and the relatively cheap cost and convenience of natural gas.

Unpacking the black box of AI

USask – Dr. Sakib Mostafa (PhD) went into artificial intelligence research because he's fascinated by AI – and because he's afraid of it.

As a child in Bangladesh, Mostafa was both captivated and disturbed by the depictions of technology in films like *The Terminator* and the writings of Jules Verne.

"I'm the kind of person who really likes to face the fear rather than running away from it. So throughout my whole life, if there was something that bothered me, or if there was something that I was afraid of, rather than staying away from it I preferred to solve that problem," Mostafa (MSc'20, PhD'24) said.

The USask College of Arts and Science and College of Engineering graduate recently began a prestigious post-doctoral fellowship at Stanford University, where he is building AI models to detect cancer. The work grew out of his graduate studies at USask, which focused on the problem of explainable AI.

With today's AI tools, the most likely danger isn't the rise of killer robots, but the rise of systems that are ineffective or untrustworthy because they can't be understood — even by their creators. Such a system is called a black box. Most deep learning-based AI systems, such as ChatGPT, are black boxes.

"Once you have a result (from an AI model), if you try to go backwards to figure out how the input data was used to get that result, it's just not possible. Because once that data goes through the AI model, it is broken down into so many pieces that it's not possible to keep track of the data flow," Mostafa said.

"It's really important to understand the tool that you are using.

This issue will become vitally important as AI tools are brought into high-stakes fields such as law enforcement and medicine. You wouldn't trust a police detective who makes arrests based on eye colour, or a doctor who only looks at shoe sizes – no matter their success rate.

That's why Mostafa's roots in explainable AI are vital to his current work in Stanford's Department of Radiation Oncology. His group is developing AI tools to detect cancer in individual patients. Similar to a human doctor, their system is able to consider multiple types of data together, such as genomics and medical images, to arrive at a diagnosis.

Mostafa is working to understand exactly how the system is interpreting that onslaught of data – not only to ensure the system can be trusted with life-altering medical diagnoses, but to make it more effective at its job.

"What I found out (during my PhD studies) was that if we create an explanation of a model, we can improve the model. If we are giving it data and there is some portion of that data that is causing the model to make the wrong decisions, now we can fix that data and make the model better and better," he said.

The goal of Mostafa's team is to build a system able to detect not just the presence of cancer, but its stage and type. The system could also identify patterns and connections between data types that traditional methods overlook, improving accuracy and saving lives.

If successful, the system could be piloted at Stanford Hospital and eventually serve as a diagnostic tool.

"That's the end goal for us," said Mostafa.

USask Engineering alumnus Rob Dutton named 49th C.J. Mackenzie Distinguished Lecturer

USask – The USask College of Engineering announced Rob Dutton (BE'93, chemical engineering) is the 49th C.J. Mackenzie Distinguished Lecturer.

Dutton is a professional engineer and executive leader with more than 30 years of experience spanning the energy, power generation and industrial sectors.

He is an advisor with Augur Venture Capital, a firm dedicated to advancing artificial intelligence and energy innovation.

Prior to that he held senior leadership roles with Heartland Generation Ltd. and Devon Canada, and worked with ConocoPhillips Canada, Anadarko Canada and Archer Daniels Midland Co.

A former Huskie football player who was drafted by the Saskatchewan Roughriders, he remains a committed mentor, coaching youth and high school football and emphasizing the lessons he learned at USask.

"USask gave me the foundation for a career built on teamwork, accountability and perseverance. I take great pride in being an alumnus of an institution whose global impact continues to strengthen communities and create a remarkable legacy."

Dutton will be honoured at the C.J. Mackenzie Gala of Engineering Excellence on Jan. 27, 2026.

One of Saskatchewan's premier engineering events, the gala brings together alumni, students, faculty and industry to honour an alumnus who has made a lasting impact on the profession and exemplifies the college's motto, "engineers the world needs."

"The C.J. Mackenzie Gala is a hallmark occasion for our college," said Dr. Michael Bradley, P.Eng., (PhD), dean of the College of Engineering.

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The APEGS Awards highlight Saskatchewan engineers and geoscientists for their contributions to the public and the professions.

They showcase and recognize exemplary competence and conduct to foster professional excellence among members, inspire the next generation of professionals and raise awareness of the roles of engineers, geoscientists and APEGS in protecting the public.

There are various awards for engineering and geoscience registrants of APEGS, as well as an award for an individual for achievements or contributions in support of the engineering and geoscience professions.

The awards are presented at a banquet in March as part of Engineering and Geoscience Week.

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

News Beyond Our Borders

Debate grows over Nova Scotia's uranium mining future

Canadian Mining Journal – As opposition to uranium mining resurfaces in Nova Scotia, a provincial mining group is urging the government and public to look to other jurisdictions.

Sean Kirby, executive director of the Mining Association of Nova Scotia (MANS), said: "Discussion about uranium needs to be based on science and facts, not myths and misconceptions."

Kirby added: "Experts like the Canadian Nuclear Safety Commission say uranium mining is safe for people and the environment, and decades of experience in Saskatchewan prove it."

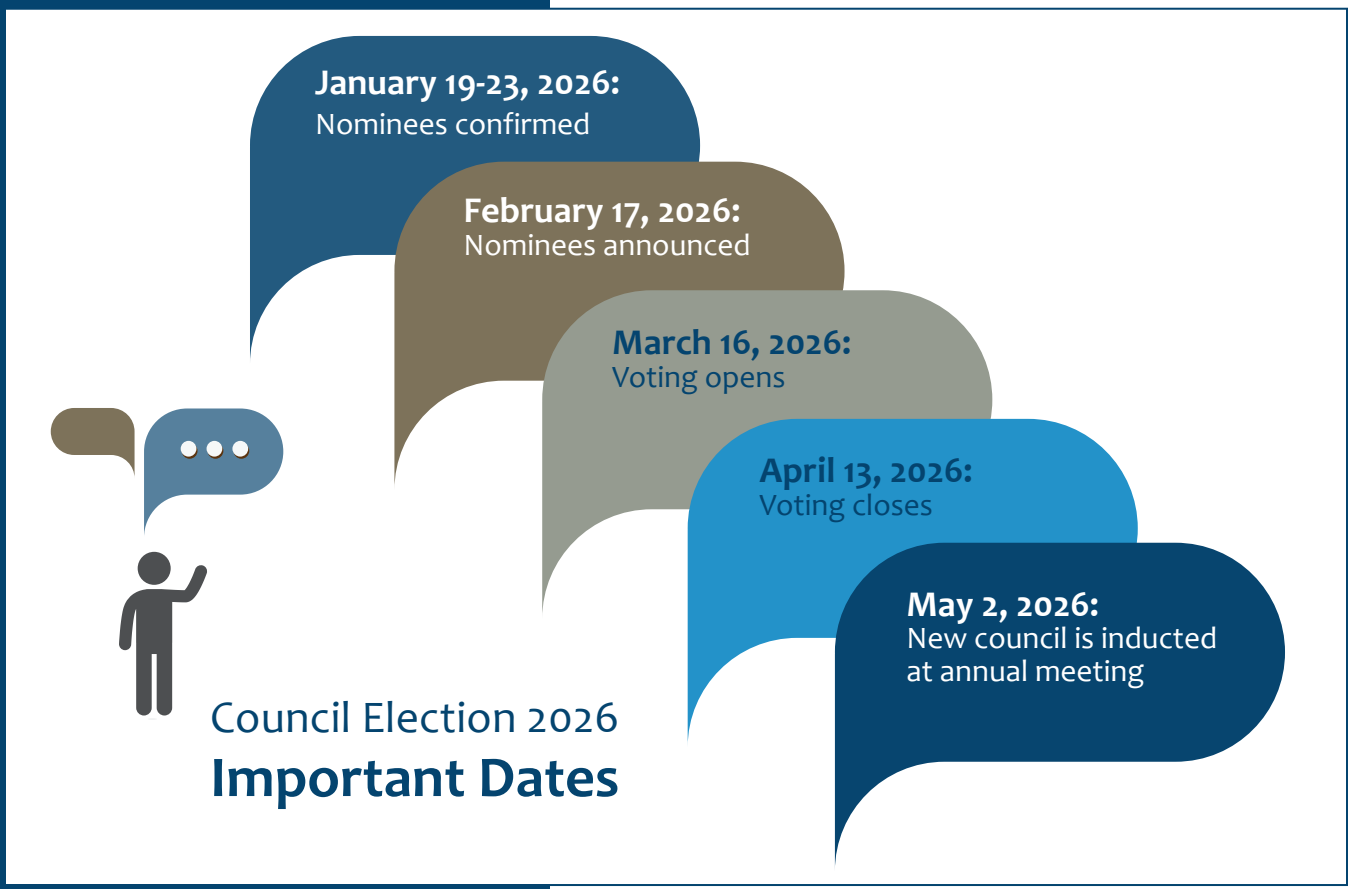
He continued: "If uranium actually caused the problems that some allege, the people of Saskatchewan would tell us so. Instead, 83 per cent of people in Saskatchewan support uranium mining, according to polling.

Uranium mining has bipartisan support in Saskatchewan. Both of the province's main political parties, the Saskatchewan Party and the NDP, support uranium."

Nova Scotia made national headlines when the government lifted the province's decades-long ban on uranium exploration and mining, effective March 26, 2025.

Not everyone agreed. A petition with 7,000 signatures was recently tabled in the Nova Scotia House of Assembly, calling for the ban to be reinstated.

Kirby countered that polling commissioned by the mining association in 2024 showed 54 per cent of Nova Scotians supported uranium mining with only 22per cent opposed.



AI will affect the engineering job market in more ways than one

With artificial intelligence now a prominent part of everyday life, the question arises of how this will affect the job market, specifically in engineering.

Artificial intelligence presents both benefits and negatives.

Benefits

According to Johns Hopkins Whiting School of Engineering, "Working with AI leads to increased productivity, efficiency and creativity within a broad spectrum of engineering subfields." With these benefits, more can be accomplished in much less time.

Additionally, the American Society of Civil Engineers stated, "The proliferation of artificial intelligence is reshaping how the architecture, engineering and construction sector operates as firms grapple with the rapidly evolving capabilities of these systems." With less time spent creating models and generating plans, more time can be put toward innovative thinking.

"The good news for all engineers is that their jobs involve more than just routine calculations. Instead, engineers work with an untold number of variables to understand long-term cause and effect, bringing creativity and synergy to their projects in order to succeed," the American Society of Civil Engineers stated. Artificial intelligence takes the calculations away and makes operations run smoothly.

Negatives

Looking at the negative effects of AI, "the use of AI could fundamentally change the economics of countless engineering firms, disrupting their business models and potentially replacing labour hours with data-driven digital outcomes," the American Society of Civil Engineers said.

It is important that these companies learn to adapt and stay up to date on emerging technology.

Michigan Technological University states that artificial intelligence will create more jobs than it will remove. Some of these careers are in health care, robotics and cybersecurity.

Scientists say they have identified Earth's oldest rocks

CNN – A rocky outcrop in a remote corner of northern Quebec appears serene in its eerie isolation on the eastern shore of Canada's Hudson Bay.

But over the past two decades, this exposed remnant of ancient ocean floor, known as the Nuvvuagittuq Greenstone Belt, has been a heated scientific battleground in the quest to identify Earth's oldest rock.

New research suggests the geological site harbours the oldest known surviving fragments of Earth's crust, dating back to 4.16 billion years ago.

It's the only rock determined to be from the first of four geological eons in our planet's history: the Hadean, which began 4.6 billion years ago when the world was hot, turbulent and hell-like.

"Rocks are books for geologists … and right now we're missing the book (on the Hadean). The Nuvvuagittuq Greenstone Belt would be at least one page of that book, so that's why it's so important," said geologist Jonathan O'Neil, author of the research published in the journal Science.

Debate put to rest?

It's not yet clear whether Nuvvuagittuq outcrops will become widely accepted as Earth's oldest rocks, according to other scientists who were not involved with the research.

The age of the rocks "remains an unsolved mystery," according to Hugo Olierook, a geoscientist and senior research fellow at Curtin University in Australia.

Very little is definitive when dealing with rocks and minerals that have complex geological histories spanning more than 4 billion years, according to Jesse Reimink, the Rudy L. Slingerland Early Career Professor of Geoscience at Penn State University.

"Even if these rocks are 'only' 3.8 billion years old, it is quite amazing that they are preserved. This current work presents more compelling data, supporting an age of 4.15 billion years ago, than that which was previously produced, which was already compelling," Reimink said.

"The timescales are so long, and the history of these rocks and minerals is so tortured, that gleaning any primary information from them at all is pretty amazing."

AI expected to make itself felt in food systems

Glacier FarmMedia via Western Producer – If cocoa was in short supply, could the taste of chocolate be reproduced from other ingredients?

The answer is apparently yes, with the help of artificial intelligence.

The chocolate-free chocolate bar was made with the input of AI platform Giuseppe, developed by NotCo, a company best known for its plant-based protein alternatives mimicking animal products.

According to the company, the confection was created "using residual ingredients from other industries and innovative ingredients" in a precision fermentation process.

The client company that tapped Guiseppe for the work, which wasn't named, was driven by sustainability concerns and issues facing the cocoa industry.

Chocolate without chocolate was one example of emerging food technology given by a panel of industry experts at the Manitoba Sustainable Protein Research Symposium in Winnipeg earlier this year.

It's still relatively early days for artificial intelligence, panellists said, but it's already being used in novel ways throughout the agri-food system and is likely to have transformative effects in the future.

AI in animal nutrition

Artificial intelligence will help make livestock production more efficient, said Qiang Zhang, a professor of biosystems engineering at the University of Manitoba.

In swine production, for example, farmers have to deal with environmental controls, nutrition and animal body condition, markets and feed costs – all of which contribute to overall profitability.

"It's difficult for individual farmers to track everything," Zhang said.

AI could give advice on the most efficient feeding strategy, the Manitoba researcher used as an example.

New Nova Scotia Mining Program

CIM magazine – Saint Mary's University (SMU) in Halifax is launching a new resource engineering program.

The program is meant to teach students essential technical skills as well as soft skills including project management, financial analysis, engagement with First Nations communities and an understanding of the full life cycle of a mine, from project proposal through to its closure and legacy.

SMU currently offers a two-year engineering diploma and is currently in the project proposal and development stage for its final two-year program, with a 16-month co-op in between years, that would give students a bachelor's degree in resource engineering.

A critical moment for mining education

The industry is facing a looming workforce shortage. According to the Mining Industry Human Resources Council, one in every five mining workers was 55 or older in 2023.

"With the rising demand for critical minerals, one thing is clear – Canada's mining industry needs a fresh influx of talent," the council said in its report.

The 2023 CIM Convention found that all mining engineering schools on average did not have enough students to meet their full enrolment capacity.

Engineers Canada also reported in 2020 that mining engineering programs had seen a 33.5 per cent decline in enrolment since 2016.

New APEGS Scholarships

APEGS has launched a refreshed scholarship program to support future engineers and geoscientists in Saskatchewan.

These full tuition scholarships for the University of Saskatchewan and University of Regina are designed to help students complete their education, pursue licensure and build their careers close to home.

For more information, visit www.apegs.ca/about/scholarships

University of Calgary launches new energy science program

Globe and Mail – A new program at the University of Calgary is taking a broad approach to energy, a nod to the industry's ever-changing global picture in the face of net-zero goals and geopolitical turmoil.

The bachelor of science in energy science, which was set to begin in September, is far from the siloed approach of a traditional geoscience or oil and gas degree. Instead, the multidisciplinary program includes courses in economics, communication, government policy and Indigenous relations.

The university cancelled enrolment in its bachelor of science in oil and gas engineering in 2021, after a massive decline in student interest. The plan at the time was to reallocate resources into courses that produce graduates able to glide more smoothly across different facets of the energy sector.

Key to the program is a recognition that the global energy demand will continue to grow – in part because of a shift toward power-thirsty data centres and machine learning – and the sector will rapidly change as new technologies emerge.

Instead of niche training in petrochemical engineering, for example, the program focuses on the science of energy writ large, from subsurface energy such as oil and gas to renewables and emerging forms of energy.

That's not to say fossil-fuel degrees are dead. The University of Calgary relaunched its undergraduate oil and gas engineering last year with an updated curriculum.

UVic to launch Canada's first Doctor of Engineering program

University of Victoria's The Martlet – UVic is launching a new doctoral program aimed at working professionals in the engineering industry – the first of its kind in Canada.

Programs like the DEng are geared toward professionals who have experience in their given field. While UVic does offer other PhD programs in engineering, there are some key differences, primarily in the program's audience.

"We're requiring students to have seniority in the industry, which in this case is at least seven years."

Penn State launches artificial intelligence engineering degree, first in the U.S.

Penn State University – Penn State has launched a new bachelor of science degree in artificial intelligence engineering (AIE), one of the first of its kind in the United States.

The program, housed in the School of Electrical Engineering and Computer Science (EECS) within the

College of Engineering, will be focused on foundations of AI, encompassing both hardware and software, in addition to applications of AI.

For those who would like to broaden their knowledge in AIE but not commit to an entire undergraduate degree, the AIE minor equips students with core AI techniques and tools, enabling students to apply these techniques in their major discipline, particularly computer science, computer engineering and electrical engineering.

David Miller, professor of electrical engineering and one of the faculty who helped to develop the curriculum, emphasized how comprehensive the degree is.

Raising Awareness of Engineering Fraud

Engineers Canada – Several of Canada's engineering regulators have launched a campaign to draw attention to the fraudulent use of engineering stamps and signatures, and to remind the public and those who hire engineers of the importance of verifying engineering credentials.

The Verify Before You Hire campaign is a joint effort by Engineers Nova Scotia, Engineers Geoscientists New Brunswick, Engineers PEI, and Engineers Yukon. It is a response to the real-world cases where impersonators have forged seals, signatures, digital stamps, submitted false building permit applications and provided unsafe or unverified engineering advice.

These cases have led to regulatory investigations, legal actions and in some cases criminal convictions. But the issue continues to be a serious concern across the country that is exacerbated by digital technologies.

The Verify Before You Hire campaign features an anonymized but true account by an engineer who had their credentials forged. Wrote the engineer, "I never imagined I'd see my stamp on engineering documents I didn't authorize, but that's exactly what happened."

"Engineering is a profession built on trust. When someone violates that trust by forging a stamp or impersonating a licensed professional, they don't just commit fraud; they endanger lives. They undermine the entire system. And they leave real engineers, like me, to pick up the pieces."

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†The 50% premium rate reduction does not apply to existing Term Life coverage. Premium rates have been reduced by 50% for new or additional Member and Spouse Term Life coverage. This 50% premium rate reduction will end, and premiums will increase on April 1, 2026, for all applicable Term Life coverage.

Individual circumstances may vary. Conditions, limitations, and exclusions apply. See policy for details. You may contact one of Manulife's Licensed Insurance Advisors or your licensed insurance agent if you need advice about your insurance needs.

Engineers Canada-sponsored Insurance Plans are underwritten by **The Manufacturers Life Insurance Company (Manulife)**.

Accessible formats and communication supports are available upon request. Visit **Manulife.ca/accessibility** for more information.

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- Support your peers' professional development
- Showcase your expertise
- Earn verifiable CPD credit

To pitch your webinar idea contact cpd@apegs.ca.

Did you know?

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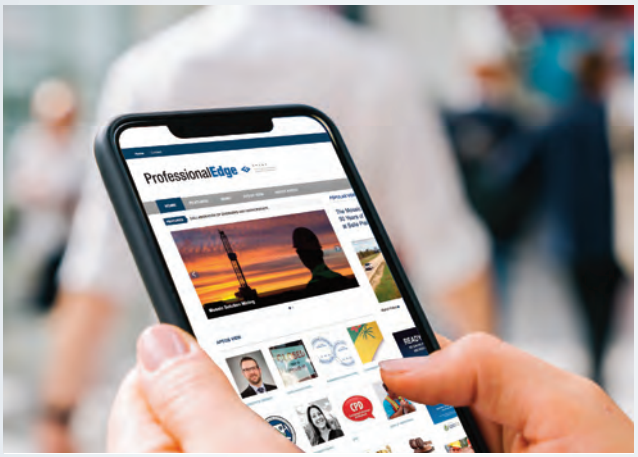

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