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Association of Professional Engineers & Geoscientists of Saskatchewan

THE PROFESSIONAL EDGE

ISSUE 174 MAY-JUNE 2018

Annual Meeting

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President's Message

Stormy Holmes, P.Eng., FEC

The 88th Annual Meeting and Professional Development Conference of APEGS took place May 4 and 5, 2018 in Saskatoon.

Over 200 voting members registered for the business session, an all-time record attendance. I believe more members attended this year as a result of the important bylaw changes, discussed below.

Continuing Professional Development

APEGS has had a Continuing Professional Development program for around 20 years. While we do believe that our members are competent practitioners, we needed to demonstrate to the public and the government, in a transparent way, that our competence and ethics are of the utmost importance in our role to protect the public. The Professional Development Committee and APEGS staff put in many hours to create a revised program with required reporting and ethics training, and to promote these changes to our membership. At the Annual Meeting, our members unanimously passed a motion to enact these changes. This vote demonstrates our members' understanding of the importance that demonstrated competence has in maintaining our privilege of self-regulation.

Competency-Based Assessment

Another exciting development, again in process for many years, is competency-based assessments for our Engineers-In-Training. This change means that our newest engineering members will be evaluated based on the competencies that they have developed over four years as an intern. The evaluation will be web-based, allowing for easy access and transfer of data between intern, verifier and evaluator. We will be giving our newest members the best chance to be successful in their careers. Again, there was a lot of staff and volunteer time put into creating this new program.

This meeting was also personally important to me, not just as an incoming President, but also because of the family connections. My family is immersed in engineering: husband, brother, sister-in-law, and father are all members of APEGS with me. My mom worked in the industry as well. The meeting was especially personally important as I had the privilege of giving my dad his Life Member

pin. Dad has always been a champion of mine and made sure that I had no idea that there could be limits in my accomplishments. Though he also left no room for thoughts of another profession! Thank you to my family and friends, many of whom are members, for the support over the years.

I am looking forward to a few different areas of resolution, or at least progress towards resolution, for the coming year. The completed work of the Sponsorship Task Group is anticipated later in 2018. They are looking at how APEGS provides and receives sponsorship. Guidance will flow down to all committees to make sure that we are working off the same information towards the same end. Somewhat related to this work is discovering more of what advocacy means in a regulatory environment. There are many questions coming up lately on how or what APEGS does or should be doing in the advocacy realm. Now that we have competency for members well in hand, APEGS will start to tackle the area of Certificate of Authorization. Just as our members need to be competent, we should be able to demonstrate that the companies associated with our organization are operating in an ethical and competent manner. Board and committee structure will also be a part of the discussions at the Council, board, and committee levels to make sure that we are using our valuable volunteer time as effectively as possible.

I will be participating on behalf of APEGS members as Engineers Canada moves towards a 100 per cent plan (meaning a combined strategic and operating plan). Many hours have gone into creating a renewed purpose by engaging with us and the other provincial associations. The new purpose will be voted on during the Engineers Canada spring meeting at the Meeting of Members this May in Saskatoon.

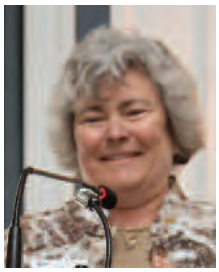
I look forward to serving our members over the next year!

Stormy Holmes, P.Eng., FEC

Lightning Talks!

BY MARTIN CHARLTON COMMUNICATIONS

This year's Plenary Session of the APEGS Annual Meeting featured a series of "lightning talks" – five mini-presentations limited to seven minutes in length.



Continuing Professional Development Reporting

Shawna Argue, P.Eng., MBA, FEC, FCSSE, FGC (Hon.), APEGS Director of Registration, gave a talk on the proposed changes (confirmed at the Business Meeting) to Continuing Professional Development (CPD) requirements for APEGS members. The biggest change is the move to mandatory reporting. The changes also require a more precise breakout of hours in the various categories with new minimums and maximums of hours that can be claimed in those categories. There is a further requirement for a regular ethics refresher course.

If members are unable to meet their requirements for personal or professional reasons (e.g. a parental leave or a sabbatical), they may apply for a "variation" – essentially a waiver on their requirements for a specified period of time.

If members fail to complete their CPD requirements without good cause, the main response from APEGS will be that APEGS staff will work with you to help bring you back into compliance. Only in the most extreme cases of a member refusing to comply would APEGS consider revoking the member's licence. Those of APEGS's sister organizations that have long-standing mandatory CPD have reported that revocation has only had to be used once or twice for the most stubborn cases of refusal to comply.

Competency-Based Assessment

Tina Maki, P.Eng., FEC, FGC (Hon.), APEGS Director of Special Projects, stole the show at the lightning talks with her presentation which she dubbed "Competency Karaoke." Maki sang her presentation to the tune of M.C. Hammer's "*Can't Touch This*." Maki's vocal stylings were so engaging that few in the audience were able to focus on the content of the presentation, but everyone came away with the understanding that competency-based assessment is cooler than it sounds, is not scary and that more information was available at a booth throughout the Annual Meeting.

Following this presentation, all successive presenters felt compelled to apologize for not preparing a song.

Ethics and Social Media

Bob McDonald, P.Eng., MBA, LL.B., FEC, FGC (Hon.), FCSSE, APEGS Executive Director and Registrar, gave a presentation on the ethical pitfalls of social media. McDonald noted that social media is nothing new. Essentially, all forms of media – from the earliest cave paintings to the invention of the printing press to letters to the editor – are social media to one degree or another. Professionals have always had to be cautious about what they say or write in public in case their words are interpreted as defamatory or unprofessional. The distinguishing factors of today's online electronic social media are their speed and abundance. Reputational damage happens faster through social media and can be much harder to fix. Some professionals are under the illusion that their personal social media accounts are protected as free speech and not subject to professional ethics regulations. The courts have consistently deferred to regulators on this matter, such as the case of the nurse who was disciplined for making disparaging comments about the health care system on her personal social media account.

Strategic Communications Planning

Communications and public relations are an increasing concern for APEGS as an organization and for APEGS members individually. APEGS Manager of Communications Sheena August outlined the nine steps to effective strategic communications.

The first is to analyze the communications situation. Why do we want to communicate? What are the risks if we don't or do so in the wrong way?

Second is to analyze the organization by conducting a thorough SWOT analysis of the organization's strengths, weaknesses, opportunities and threats.

Then the organization must determine the audiences it wishes to reach and the nature of those audiences.

As with any undertaking, a communication plan must set out clear and measurable goals and objectives. On the basis of those goals, it must formulate the actions it will take as well as an overall message strategy.

With the strategy in place, the organization can then begin to select tactics such as advertising, one-on-one discussions, media events, social media or any of the numerous other communications tools. Of course, once you have determined the tactics, then you have to go out and implement them.

Finally, once the strategy and tactics have been carried out, it is imperative to evaluate their effectiveness.

Digital Signatures and Authentication

If you work in an office, the odds are you hate paper. It stacks up, it's hard to track and it's a pain to store. Yet many offices continue to keep volumes of paper because they believe that original signed documents carry special legal weight.

Fred Mazzarello, the business solutions director at Notarius, offered a solution to the paper mountain. Notarius specializes in electronic authentication systems such as digital signatures which provide greater certainty of the source of the document and identities of the signators than paper documents. Originally founded by the professional notaries association of Quebec, Notarius prides itself on systems that meet the highest legal standards of document verification. Their clients include seven provincial engineering and geoscience associations and numerous engineering and geoscience companies.

Something to
Brag About

The January-February issue of *The Professional Edge* is all about you!

Our annual Company Profiles issue will profile Saskatchewan- based engineering and geoscience companies and projects. If you want your company or project profiled or would like to recommend one, let us know. Please contact: Professional Edge editor Lyle Hewitt @ **lyle@martincharlton.ca**

Trash Talk

BY MARTIN CHARLTON COMMUNICATIONS

You don't find too many people who get excited about garbage but Michelle Jelinski, P.Eng. can barely contain her excitement about her role as Environmental Operations Manager for the City of Saskatoon. Some garbage collectors may give themselves airs by calling themselves "sanitation engineers", but Jelinski's job – and passion – actually involves applying the principles of engineering to waste management.

In her presentation at the Annual Meeting, Jelinski noted the Saskatoon landfill was built in 1955 and holds a staggering six million tonnes of waste. At that size, the facility not only holds waste but also produces it in the form of contaminated water and landfill gas which are a constant challenge for the City to keep under control.

One of the landfill's most innovative features is its landfill gas collection and power generation plant which has turned a problem into a revenue source for the city. This facility reduces greenhouse gas emissions by the equivalent of taking 10,000 cars a year off the road. The gas generated by the landfill gases is enough to power approximately 1,200 homes.

For all of its innovation, the site faced the same ultimate problem of any product of engineering – lifespan. In 2010, the landfill had only 10-15 years remaining on its projected lifespan.

"The costs to replace a landfill are massive," Jelinski said. "First there's the process of shutting down the old site. Environmental regulations require us to monitor the environmental impacts there for at least 35 years and likely much longer, at a cost of over $200,000 a year. Then, building a new site takes a decade to complete and is projected to cost $100 million all in. Plus, since a new site would be further away from the city than the current one, the ongoing transportation and operations costs would be higher."

It, made more sense for the city to try to extend the life of the current site. Under the 2010 Landfill Management Plan, the city improved compaction methods, made the side slopes steeper so garbage could be piled higher and made some relatively modest expansions to the site by acquiring neighbouring land. All told, the improvements have increased the landfill's lifespan by over 40 years.

Even with these enhancements, the city's Environmental Operations department can't rest on its laurels about long-term planning. Any number of risks could arise to undermine the current plan.

" What if our population suddenly grows more quickly than expected? What if a regional landfill shuts down and that waste is diverted to us? What if, when it comes time to build a new landfill, we can't get the environmental approvals to proceed (which has happened in other places)?"

To manage these long-term risks, waste engineers are looking increasingly to waste diversion – quite simply, creating less garbage that needs to go to the dump.

Recycling programs are an obvious and well-established example of this but there is more that can be done, Jelinski says.

"Out of everything that gets sent to the landfill, only about 23 per cent of it is actually garbage – totally unusable waste. Fifty-eight per cent is organics that could be composted. Ten per cent is unrecycled recyclables. Another 9 per cent is assorted other reusable items – appliances that could be refurbished, scrap metal, electronics from which precious metals could be reclaimed and other items."

The City of Saskatoon has set an aggressive target to achieve 70 per cent waste diversion by 2023. Its current level of diversion is 23 per cent.

"That's going to be a bit of a stretch but it's important that we set our sights high."

The recycling component of the city's waste diversion plan is already in place and requires little more than continued promotion to increase compliance.

For organic waste, the city has taken a few modest steps. There is a composting depot where residents can drop off organic waste. The city runs annual Christmas tree drop-off centres. It has also started a residential "green bin" curbside collection program for yard waste but, unlike some other cities with residential green bins, Saskatoon's program is optional and users pay a fee for the service.

The city also operates drop-off facilities for other recoverable waste such as scrap metals, appliances, used oil and antifreeze, propane tanks, batteries and bicycles.

Jelinski's department also runs promotional activities such as the 30 Day Waste Challenge which featured waste reduction information on the city website as well as automated educational emails on the topics of recycling, composting, reduction and diversion.

Looking down the road, Jelinski sees three major opportunities to enhance Saskatoon's waste diversion efforts.

The first would be a mandatory green bin program without a special fee but with the capability of handling both yard and food waste.

Second is a vision she calls "Recovery Park," a sort of landfill alternative that would offer a "one stop shop" for voluntary recycling and waste diversion.

Finally, her department has floated the idea of changing waste collection to a civic utility model, or "pay-as-you-throw" as Jelinski calls it – a sort of garbage equivalent to a carbon tax. Residents would be charged according to the amount of waste collected, giving them a financial incentive to seek out waste diversion alternatives.

But no matter how efficient Jelinski's department is at extending the landfill's lifespan, sooner or later it will have to close and the city will have to consider how to use the reclaimed land. Because of the need for ongoing long-term monitoring, this land obviously could not be turned over to development even if that were feasible or desirable.

Other jurisdictions' solutions have bordered on the ridiculous. One city in the US converted its former dump into a tourist attraction called Mt. Trashmore, which for a while included play slides until there were some incidents with exposed rebar. Edmonton built a golf course over its former dump but golfers can't smoke on the course for fear of igniting landfill gases.

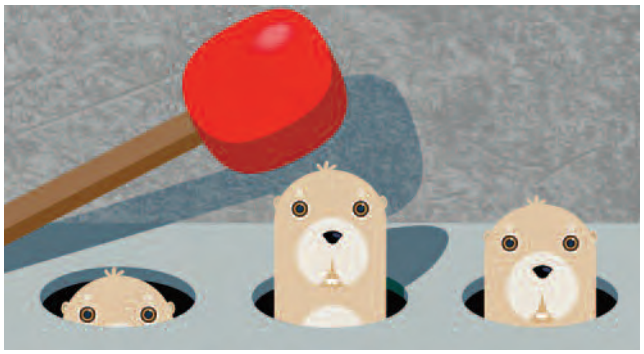
Saskatoon is aiming for a more modest solution with plans to cover the landfill, whenever it eventually closes, with vegetation so that the area could eventually be turned into walking trails, tobogganing hills or a ski hill.

No matter what solution is eventually used, the process of planning for landfill decommissioning is one that requires engineering's highest qualities of risk management and long-term planning.

Something Wicked This Way Comes

BY MARTIN CHARLTON COMMUNICATIONS

Life, especially in the world of engineering, can be a bit like a game of Whack-A-Mole.



You smash down one problem and four more crop up.

For her presentation at the Annula Meeting, Margot Hurlbert calls a "wicked problem" – one in which there are no easy, black-and-white answers and in which the solution may well cause as many or more problems as the original issue.

As an example, she points to the single biggest public health crisis in New York City in the 19th century – horse manure left behind by the city's main mode of transportation. This problem was totally solved by the invention of the automobile – which then contributed to greenhouse gas emissions and climate change.

Hurlbert's research focus is on governance and climate change, energy and water. She has participated in and led research projects focusing on aspects of governance including energy, water, agricultural producer livelihoods, drought and flood.

As Hurlbert describes, "climate change represents the most severe wicked problem humanity has faced to date."

Solving the problem will cause severe economic and social repercussions but ignoring it could lead to worse consequences.

Hurlbert notes that the Intergovernmental Panel on Climate Change (IPCC) and the Paris Accord on climate change require that the world achieve a zero-carbon emissions level by 2050 in order to avoid the worst consequences of climate change.

Getting to that zero-carbon state will be profoundly difficult, to say the least. Simply achieving political consensus on this objective is proving elusive given the continued influence of climate change deniers and others who minimize the problem.

However, the influence of climate change deniers is not the only or even the most difficult hurdle in achieving public consensus. For example, the IPCC plan requires increased use of carbon capture, yet government and industries have

"Some say we should just leave the oil in the ground. But petroleum is used for many other things besides fuel. Most of the clothes I'm wearing have some petroleum component. If we eliminated oil, how much land would have to be taken out of food production to support growing more cotton to replace artificial fabrics?"

been slow to adopt these technologies, in part because of their expense. Similarly, the IPCC objectives could be achieved through proven, existing small modular nuclear reactors, yet there is sharp public resistance to this technology, often by the same people who are the most vocal supporters of climate change action.

Even on the topic of oil, a frequent target of climate change activism, Hurlbert notes that there are no simple solutions.

Eliminating petroleum as a fuel source would likewise cause complications.

"The IPCC plan also requires complete conversion to electric cars. But here in Saskatchewan there is no way the provincial grid could keep up with the increased electrical demand through conventional or renewable sources. We could achieve it with small nuclear generation, but then we would face public backlash," Hurlbert says.

Efforts at electrical conservation have also faced challenges, such as smart meter initiatives that have run into technical problems in many jurisdictions, including Saskatchewan, where they have been implemented.

On the bright side, Hurlbert notes that a number of so-called "terraforming" technologies have been developed, such as a facility in Switzerland that sucks carbon directly out of the atmosphere and converts it into useful products. However, these technologies may lead to their own unintended consequences and raise the question of whether mankind has the capacity to reverse engineer the planet's climate.

" None of these questions have easy answers but engineers and geoscientists will nonetheless be heavily involved in trying to find the answers. These issues of technology, resource use, the environment and risk management are all areas on which policymakers routinely look to your professions for guidance. I encourage engineers and geoscientists to be active in becoming aware of these issues, thinking about solutions and providing the best counsel you can to policymakers and the public at large," said Hurlbert at the APEGS Annual Meeting.

What Would Your Mother Say?

Navigating conflicts of interest in the workplace

BY MARTIN CHARLTON COMMUNICATIONS

" The common good and the virtue approach are the two I think about the most when making decisions," she said. "You have to consider all those different layers as you make those decisions sometimes."

Along with having a certain standard in education and training, professionals have ethical and moral expectations. They have a responsibility both to their profession and to themselves to make the right decisions, but sometimes making the best moral decision isn't always clear cut.

In Harper's presentation, "Conflicts of Interest in Your Professional Work" at the APEGS Annual Meeting, she outlined the different tactics people use when making moral judgments. Harper has a private practice in counselling and consulting and serves as an adjudicator for Social Services for the government of Saskatchewan.

Common approaches include:

UTILITARIAN

"What is the greatest good that will come from this decision that we're going to make?"

RIGHTS

"Will this decision respect and uphold the dignity and inherent worth of the other person?"

FAIRNESS

"Does this decision treat everyone equally?"

COMMON GOOD

"Does this action contribute to life in the community?"

VIRTUE

"What kind of person will I become if I do this? Is this action consistent with my acting at my best?"

To put it another way, "If this was made public, if the media got hold of this . . . what would happen? If this became public knowledge, would we still make that decision? How would it be perceived?" Or as one commentator suggested, "What would your mother say?"

In all of the examples discussed, disclosure and transparency were considered the best ways to avoid falling into a moral conundrum when it came to a conflict of interest, though Harper did note that workplaces with a poor culture will make these decisions more difficult.

"The culture and the relationship of you to your manager, to your team – the workplace culture really does change how we disclose information. Who are our mentors who help guide us and figure out how to navigate these situations".

Conflicts of interest can easily arise when you work for more than one client. Other examples included leaving an organization to join a competitor or private work, or participating in a bidding selection where family is involved.

"We live in a province where there's a lot of dual relationships, and we live in a province that is rural or remote, and you can't help but have a relationship with a client in more than one way," she said.

"We try to prevent conflicts of interest from happening, but sometimes they can pop up."

When it comes to conflict of interest, though, perception is as important as reality. A perceived conflict of interest could be as damaging as a real conflict, leading to a loss of trust or an erosion of public confidence.

"Not only do people start to mistrust, but then they could potentially take their business elsewhere or increase the capacity for negative interaction with you because they don't trust that what you're doing is coming from a professional place but out of a place of interest . . . Loss of trust is extremely important to think about."

Lowering Emissions Without a Carbon Tax
The Saskatchewan Government's Climate Change Strategy

BY MARTIN CHARLTON COMMUNICATIONS

The effects of climate change can already be seen in the province, says Sharla Hordenchuk, executive director of the climate change branch with the Ministry of Environment.

"Typically we see fires in the North but now we're seeing grass fires in the southern part of the province," she said. "Even if emissions went to zero, we'd still have to prepare ourselves for a changing climate."

It was standing room only at Hordenchuk's talk at the APEGS Annual Meeting, "Prairie Resilience: A Made-in-Saskatchewan Climate Change Strategy".

The Saskatchewan Party provincial government has challenged a federally imposed carbon tax in court, and while Hordenchuk said she couldn't speak to that court case, she did explain why they believe the provincial plan is more effective than a tax.

"Putting a tax on the people of this province won't lower the emissions here," she said. "We have the most landfills per capita, we have the most highways per capita. We're geographically dispersed and we're sitting on resources. We're really different."

The cold climate in Saskatchewan and its resource-based economy make reducing emissions difficult, she said. Instead, the plan they've developed tries to balance the province's natural systems, infrastructure and economy.

Emissions are still part of the story, just not the whole story. There are 42 commitments in the strategy, including frameworks for emergency response plans, wildfire response plans, crop diversification, increasing renewable energy and using recycled water for industrial facilities.

One of the options they're looking at regarding emissions is "flexible compliance." If the standards couldn't be met, the lack of compliance could be made up by paying into a technology fund or paying an offset credit.

In non-regulated industries like agriculture and transportation, they would reward those who are doing well in those sectors despite the lack of regulation. Saskatchewan's forests and fields are also carbon sinks, and Hordenchuk said she would like to see the province recognized for that contribution.

One of the challenges of working on any sort of climate change plan is how quickly the situation can change. "It's a fast-paced file; it always has been," she said.

Their goal going forward is to make sure the plan continues to be executed. They plan on having a resiliency model and regulatory framework released by January 2019.

"We have to report on progress. We aren't just releasing the strategy and walking away," Hordenchuk said. "We have a pretty rushed path to January 1, 2019, but it's of utmost importance to our province."

Provinces have been invited to submit their own plans for the federal government to consider, and she said they're "thinking about what that might look like."

Organizing During a Crisis

A case study of the Fort McMurray wildfire

BY MARTIN CHARLTON COMMUNICATIONS

MoneySense

Jason Vanderzwaag flew from Fort McMurray to a meeting in Edmonton the day before the fires broke out in 2016.

" I watched the whole thing unfold between social media and text messages with friends and family," he said. "It was difficult to watch."

But that was just the beginning for Vanderzwaag — as a professional engineer with Associated Engineering, he also became one of the project leads in AE's role of rehabilitating the water system.

Vanderzwaag outlined the challenges of such an undertaking in his talk "Fort McMurray Wildfire: Response, Repair and Recovery of Infrastructure Systems" at the APEGS Annual Meeting.

He said crises go through three distinct phases: response, repair and recovery.

During the response phase, one of the challenges is emotional. Municipal staff were dispersed or stressed, and the question of "what needs to be done next?" loomed large. The number one task during the response phase is to protect life and property, he said. "An attitude of just do it, just go out and get it done."

During the repair phase, it's about damage assessment and restoring services, which is where AE played a big role.

Every damaged house became a leak in the water service. They had to shut off water to entire neighbourhoods to prevent water loss.

A plan had to be put in place, created jointly with AE and the local and provincial governments, for how to lift the boil water advisory and how to restore the water system and fire protection in order to bring residents back in to the community.

Everything had to be documented and reported, and that's easier said than done, especially with complex systems. As they restored the system, they had to deal with inaccurate or outdated drawings, broken and aged infrastructure and water main breaks.

People were working around the clock from multiple organizations, and everyone needed to be coordinated. Where are people sleeping? Where are they eating? How long are their shifts? Have they taken rest?

"We also had to be wary of the emotional toll of people working on our team," he said.

In addition to making sure the workers were getting adequate food and sleep, they hosted barbecues and get-togethers to keep spirits up.

The longest phase is recovery, which is ongoing to this day. That phase is about rebuilding what was there before, or perhaps building something better.

" Build resiliencey into your infrastructure systems in case, God forbid, it happens again," Vanderzwaag said.

At the beginning of the cycle, there's low complexity but high urgency. During recovery, that flips to high complexity, low urgency.

The complexity in recovery stems from organizational issues like permits, budgets, insurance, resources and seasonal constraints.

There are no easy solutions. Waterways was one of the worst-hit neighbourhoods with 90 per cent loss, and it was built on a flood plain so there was discussion about whether they should even be allowed to go back and rebuild.

" They did allow them to return and rebuild in the flood plain, for better or worse," Vanderzwaag said.

In the end, all the work paid off. On May 3, 2016, the entire city of 88,000 people was evacuated, but by June 1, people started to come home, thanks to the hard work of everyone involved during the repair phase.

insBlogs

"During these types of events, creative minds come together to support the community," Vanderzwaag said.

Huffington Post Canada

Pharmaceuticals in the Water

Testing for emerging substances of concern

BY MARTIN CHARLTON COMMUNICATIONS

Over the last few decades, new substances such as pharmaceuticals, endocrine disrupting compounds and pesticides have started to be detected in the environment. Referred to as "emerging substances of concern," some studies have shown that these compounds find their way into surface water, groundwater, and drinking water.

Arasu Thirunavukkarasu, Ph.D, P.Eng., has been conducting a study on these compounds in Saskatchewan water.

"No studies have proven that these compounds have an effect on human or animal health," he said. "But we get many calls from the public: What is the level of that compound in the water?"

Thirunavukkarasu is with environmental protection services, EMMS division, Water Security Agency, and he spoke on the topic "Emerging Substances of Concern in Saskatchewan Water and Wastewater" at the APEGS Annual Meeting.

His current research Is testing water both upstream and downstream from different wastewater and water treatment plants by Lloydminster, North Battleford, Prince Albert, Melfort, Saskatoon, Buffalo Pound and Regina.

So far, the results have been good – there are only very low levels of certain emerging substances of concern in the water after it has been treated.

The study looked at 34 compounds, and the results of first set of samples collected showed that none of the compounds were present in the drinking water. Many of the pharmaceutical and personal care products are detected in both raw and treated wastewater, but the systems used to remove the compounds work well.

They're still collecting and analyzing the samples, but the study should be complete by next year.

Saskatchewan is only the second province in Canada to monitor the level of emerging substances of concern in the water. Currently these emerging substances of concern are not monitored by regulatory agencies, but the studies Thirunavukkarasu and his team are conducting will give them data to work with down the road, he said.

Thirunavukkarasu has more than 25 years of experience in civil and environmental engineering, especially in water and wastewater engineering. He's been working with the Water Security Agency for more than 17 years, developing standards, guidelines, regulations and policies for water, wastewater and biosolids treatment units in Saskatchewan.

His work includes studying and sampling water and delivering conclusions based on the results. The studies help regulators develop science-based water quality guidelines.

"Saskatchewan is very good about providing regulation in terms of water and wastewater," he said.

All of the data from water research in the province is added to Saskh20.ca, available in a searchable database. "Once in the database, it is always open," Thirunavukkarasu said.

PD Lunch Hyperloop

BY MARTIN CHARLTON COMMUNICATIONS

Imagine living in Montreal, working in Toronto and being home for supper in the evening. That's the near-future world that Sarah Hanson, P.Eng., invited guests at the annual Professional Development Lunch to consider.

Hanson is a transportation planning professional with AECOM Canada and is the team lead of AECOM HYPERCAN, a project approved under the international Hyperloop One initiative.

Hyperloop is a new mode of transportation that moves freight and people quickly, safely, on-demand and direct from origin to destination. Passengers or cargo are loaded into a pod which gradually glides above a magnetic levitation track inside a near-vacuum low-pressure tube. By minimizing air and ground resistance in these ways, the train can travel at airline speeds – over 1,000 kilometres an hour – using relatively little energy and with no direct carbon emissions.

The international Hyperloop One organization issued a global challenge for proposals for places where the first Hyperloop pilot projects could be built. AECOM's proposal, which involves a route between Toronto, Ottawa and Montreal, was accepted as one of the top 10 in the world.

The Toronto-Ottawa-Montreal corridor is the most heavily travelled inter-regional corridor in Canada. The metropolitan areas combined contain over 25 per cent of the population of Canada. This corridor has the population base, existing travel demand and geography to support an operational Hyperloop.

Historically, there has been interest and public support for improved connections through the corridor (particularly high-speed rail), including provincial and federal feasibility studies.

The freeway connections between Toronto, Ottawa and Montreal are the busiest freeways in Canada. The annual average daily traffic on Highway 401 exceeds 450,000 vehicles within the City of Toronto alone and never drops below 20,000 between urban centres along the route. As well, VIA Rail (Canada's passenger rail service) earns 67 per cent of its revenue within the Quebec-Windsor corridor and all the major air carriers in the regional market offer dozens of daily flights between the three cities.

But all of these existing methods of transportation have drawbacks, not the least of which is wasted time. Under ideal conditions, the drive from Toronto to Montreal is a minimum of five hours.

HYPERCAN would turn travel among these cities into little more than a long subway ride. An express trip from Toronto to Montreal would take 45 minutes. Travel from Toronto to Ottawa would be a bit more than half an hour. A non-express trip from Toronto, stopping in Ottawa and ending in Montreal would take less than an hour.

But faster commutes aren't the only goal of the Hyperloop. HYPERCAN envisions bringing these centres closer together to form what Hanson calls a "mega region."

"With a combined population reaching 16.5 million in 2040, the region would be well-positioned to rival with major North American metropolitan areas to attract workers, visitors, businesses and investment."

Through its capacity to move freight, Hyperloop would also enhance the region's position as a trade centre. It would allow goods imported through the Port of Montreal to be moved almost instantly to Toronto for redistribution to other centres across North America. Going the other way, the system would permit Canadian goods to reach the Port of Montreal much faster, which would bolster Canada's export position.

"This is a phenomenal opportunity to create a New Canada that can compete better in the global economy," Hanson says.

But AECOM is also already envisioning the next steps for Hyperloop beyond Canada's borders, such as potential branch lines to Niagara, Buffalo and New York City – a world in which Toronto residents could catch a Broadway show and be back in their own beds that night.

While the HYPERCAN vision is exciting, it is also a long way off. Although governments at all levels have been supportive of the project to date, there is still a long road of government engagement – not to mention bureaucracy – for the project to travel. At a projected price tag in excess of $30 billion, AECOM expects the project will not likely be built public funds alone but will require a serious level of private-sector investment, possibly through a P3 structure.

Once government backing and potential funding sources are secured, HYPERCAN will have to go through the usual process of any major engineering project such as feasibility studies, preliminary designs and environmental assessments.

But Hanson is confident the pieces will come together.

"HYPERCAN will happen. It's not a matter of if, it's a matter of when. It represents a big investment but it also delivers big returns for the economy and the environment."

As an engineer, Hanson is proud to have the opportunity to contribute to the project.

"We engineers strive to build the cities of the future – something better for our children, something resilient. That's what we are doing with the Hyperloop project."

Member Profile

This month The Professional Edge chats with Jason Whitelaw, Engineer-in-Training, an electrical systems engineer working for the Generation Technical Services Group at SaskPower.

Tell us about your personal and professional background.

I was born and raised in Regina. After high school, I went to Calgary to find a job to pay for my university. I found a job in a woodworking shop, and was offered the opportunity to take an apprenticeship in cabinetmaking, but I always knew that the job was just a means to an end and that I was destined for engineering. I came back to study at the U of R in 2009.

Why did you choose to go into [engineering/ geoscience]?

As early as grade school, I always felt that I was going to become an engineer. When I was a child, I always felt compelled to figure out how things worked. I disassembled and reassembled things until I could figure out how they worked. I built my first computer at the age of 12 from scratch using parts from several non-working computers.

My mom's side of the family all comes from farming backgrounds so I'm no stranger to working on farm equipment. One time, I was helping my uncle fix some grease lines on his combine. He said to me, "If you become an engineer and you ever design a part like this, I'll kill you!" That always stuck with me – that as engineers the things we work on might look good on paper but in the field, something as simple as a grease fitting could prove impractical for maintenance and result in unnecessary down-time.

What was your biggest challenge in college?

It was not a challenge so much as an opportunity. In 2010-11, I went on a student exchange to Mexico. It was a tremendous experience that allowed me to learn a lot of soft skills not normally taught in engineering. I married my wife just before departing to Mexico that year and she moved down there with me. Back at the U of R, I served as VP Professional Affairs for two years followed by President of the Regina Engineering Students' Society for two years.

I have also served on numerous other committees and groups, and participated in countless activities during my time at the university. I was a participant and student leader of the U of R Engineering Canstruction team. Throughout our participation in this event, our team raised in excess of $20,000 for the Regina Food Bank.

What was your first job after college?

Just before my final year, I got a job opportunity with SaskPower as a summer co-op student and gained permanent employment with the same workgroup after college.

Do you do any professional volunteer work?

Yes. My involvement with APEGS started when I was a student liaison to the Student Development Committee on behalf of the RESS. Then, when I became a professional member of APEGS, I became a full member of the same committee. So, I went from the student side of the table, applying for funding for student programs over to the professional side of the table handing out the money for those programs.

I also volunteer with IEEE Saskatchewan and the U of R Faculty Planning Committee looking at the feasibility of a new engineering building.

I'm involved in many other volunteer activities but the one I'm most proud of are my efforts for the Regina Engineering Equipment Fund (REEF), which I helped establish during my time at the university. REEF aims to replace the existing RESS equipment fund which has proved unsustainable. REEF is modelled after a University of Waterloo. It's essentially an endowment fund where the goal is to raise enough money that you only spend the interest. The fund is currently growing about $600,000 per year. In three to five years, it will take over the existing equipment fund and will be able to provide at least $150,000 a year in new equipment for the faculty of engineering. In the future, this fund may assist with funds for a new engineering building in Regina.

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

The level of responsibility I have been given on the projects I'm working on right now. Shortly after starting with SaskPower, I was put in charge of the PCB mitigation project for Power Production, which is an important environmental initiative to remove a pervasive contaminant and prevent possible environmental consequences. As a young engineer, I was trusted to carry out this environmentally sensitive multi-million dollar project. At first, I was assigned a senior engineer to supervise and mentor me, but after the first site-work season, it was decided I could manage the majority of the project alone, with bits of helpful input from my senior team members.

What is your favourite vacation spot?

Mexico. I grew an affinity for it through my student experience. I've learned basic Spanish and enjoy practising it. My wife and I have been there several times. We usually stick to the coasts, but we like to try a variety of things including trips to Mexico City.

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

A special professional mentor for me was Dr. David DeMontigny P.Eng., Associate Dean Academic of the Faculty of Engineering at the U of R. He taught one of my first-year engineering classes and I've had many opportunities to interact with him over the years. I saw in him as the kind of engineer I wanted to be, so throughout university I sought out his advice.

In terms of my life in general, of course, my parents. They set me up for success. They always encouraged me to do better, to get an education and to do my best. That has rung through everything I have done through the rest of my life.

CORRECTION NOTICE:

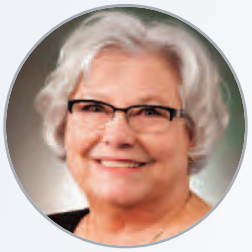
INACCURACIES REGARDING LOUIS-PIERRE GAGNON, P.ENG IN THE AWARDS BANQUET PROGRAM

In the 2018 Awards Banquet Program, APEGS mistakenly printed an incorrect biography for Louis-Pierre Gagnon, P.Eng., recipient of the Brian Eckel Distinguished Service Award. The biography contained inaccuracies which were corrected in the awards video and newspaper advertisement. The correct biography for Mr. Gagnon appears here on page 28. APEGS apologizes to Mr. Gagnon, his family and guests the error and will be reviewing its procedures to ensure accuracy in producing the awards program in the future.

Recognizing Remarkable Achievements

Friend of the Professions Award

This award was established in 2013 to recognize exceptional achievements or unique contributions by a non-member in the promotion of the professions.



This year the APEGS Friend of the Professions Award recognizes

Wendy Paddock

Wendy Paddock was born Wendy McDonald, daughter of Hugh and Dolores McDonald in Wiseton, Saskatchewan. She attended Wiseton School and was the last grade 12 graduate from that school.

Wendy's parents raised her with a strong work ethic and the values of life-long learning and community service. As well, all of the McDonald children were required to participate in music, including a family dance band.

Wendy attended the University of Saskatchewan, graduating with a Bachelor of Education degree. She taught school in North Battleford and Prince Albert until her retirement.

During her teaching career, Wendy presented teacher in-services in early childhood development, music, visual arts and special education. She also served as a member of the Saskatchewan Department of Education's advisory committee that created the first Arts Education Curriculum for Saskatchewan.

Her teaching career also provided her with opportunities to mentor students of all ages about engineering and geoscience. She was always delighted to welcome those professionals into her classroom.

Wendy is married to Dennis Paddock, P.Eng. For the past 30 years, she has had the opportunity to promote the professions in a more formal way. She has worked with volunteers from APEGS and its predecessor APES and has promoted the professions in Saskatchewan, across Canada and in the United States.

Wendy and Dennis have two sons, both graduates of the University of Regina. Brett has a Master of Education and Jared is a Professional Engineer. Wendy and Dennis are the proud parents-in-law to Chrystal and Jeanelle and grandparents to Elizabeth, James, Julia and Jessica.

Although she continues to advocate for APEGS, she and Dennis are now enjoying a little more casual time travelling, golfing, fishing and spending time with their family and friends at their Elk Ridge cottage.

The Promising Member Award

The Promising Member Award, established in 1995, recognizes exceptional achievements by professional members in the early stages of their careers in Saskatchewan.

This year the award recognizes

Michael Walker, P.Eng., P.E., PMP.

Born in Yorkton in 1985, Michael was raised in Regina and Calgary, graduating from Winston Knoll High School in Regina.

From a young age, Michael had an inquisitive nature and loved to dismantle, build and fix things. He was inspired by the do-it-yourself attitude of his parents, grandparents and a few handy uncles who were constantly working on building and repair projects around their farms and homes.

After attending the University of Alberta in Edmonton, he eventually moved back to Saskatchewan to establish the Regina office of McElhanney Consulting Services Ltd and manage McElhanney's Saskatchewan division. He also has continued his professional development through training such as Arctic Engineering through the University of Alaska.

Michael is a certified Project Management Professional through the Project Management Institute and is in charge of managing multi-disciplinary projects across Western Canada and has consulting and construction experience over a large variety of projects.

Michael is proud of many of the projects he has worked on over the years. Some of his most notable achievements include the Grasslands Scenic Roadway at Grasslands National Park, the York Factory Slope Stability Analysis, the Elbow River Rehabilitation in Calgary, the Warman and Martensville Interchanges, his contributions to the Regina By-Pass and the asset registry and infrastructure improvements for the town of Unity.

Throughout his career, Michael has been an active volunteer with the professional associations in both Saskatchewan and Alberta, as well as nationally, and is currently representing Canada's Young Professionals at the international level.

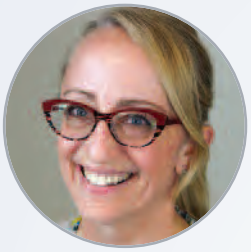
He is also active in the community. He is working with McLurg School for presentations on science, technology, engineering and math careers, and has volunteered to help build a new playground, designed by McElhanney, for the school. He has also gotten McElhanney involved in designing and contributing to building a park and trail system in Deer Valley. On behalf of the Children's Wish Foundation and Ronald McDonald House, he has volunteered for the Saskatoon Dragon Boat Festival since 2002 providing water race coordination and safety. He is also an ongoing volunteer for the Cancer Care Manitoba's Dragon Boat Festival.

Michael received the 2017 ACEC-SK Young Professional Award and was also awarded the 2018 Allen D Williams scholarship from ACEC Canada. Michael has been nominated for the 2018 FIDIC Young Professional Award where he will represent Canada on the international stage.

Michael and his wife Kerri have a two-year-old and are expecting their second child in June.

The Environmental Excellence Award

The Environmental Excellence Award was established in 2005. It is given in recognition of exceptional achievements by an individual or team in the application of engineering, geological or geophysical methods related to environmental protection and preservation.



This year the APEGS Environmental Excellence Award recognizes

Shelise Berteig, P.Eng.

Shelise was born in Winnipeg, Manitoba. At an early age, Shelise moved with her family back to the Berteig family farm southeast of Swift Current.

Shelise grew up on the farm building forts, riding motorbikes, catching frogs, riding horses and still had time for various sports off of the farm.

After high school, she attended the University of Saskatchewan and obtained a bachelor's degree in biochemistry. Several years later, she earned a Bachelor in Applied Science in Engineering from the University of Regina. Shelise graduated from Industrial Systems Engineering with Great Distinction.

After graduation Shelise was hired with Husky Oil in Rocky Mountain House, Alberta at the Ram River Gas Plant. She started her career working in the plant as an operator on shift work. After eight months, she was moved into the engineering department and worked as a field engineer. Through this she gained experience with both sour and sweet gas facilities and oil facilities. Eventually Shelise was moved into the gas plant to work as a facility engineer.

In 2009 she moved back to her childhood home in the Swift Current area to take on the role of Management of Change and Pipeline Integrity.

In June 2016 Whitecap Resources bought the southwest Saskatchewan assets from Husky Oil Operations. Shelise was offered the same position with the new company. The focus has been reducing risks associated with pipelines. Whitecap Resources has a very proactive outlook on pipeline integrity and understands the importance of addressing pipeline integrity issues.

Every pipeline is reviewed yearly for over a dozen different risk factors. Based on the reviews, action items are generated and tracked to completion. The reviews focus on addressing inactive lines, aging infrastructure, leak detection and water issues.

Shelise has helped oversee a great deal of pipeline integrity work done in the area but it is an ongoing task. The result is a positive and proactive focus on pipeline integrity from the operational to the corporate level. This has a positive effect on environmental impact, landowner relations and pipeline integrity awareness.

Shelise and her husband, Gregory Genert, live on an acreage north of Swift Current. They have two sons, Hudson age 4 and Sawyer age 5, who keep them very busy.

The Exceptional Engineering and Geoscience Project Award

This award, founded in 2001, recognizes accomplishments in engineering or geoscience. The project team must be predominantly made up of Saskatchewan engineers or geoscientists. The project may be located in or outside Saskatchewan.

This year, the APEGS Exceptional Engineering and Geoscience Project Award recognizes the

Co-Op Refinery (CRC) Complex for the Wastewater Improvement Project.

Commissioned in 2016, the Wastewater Improvement Project has been recognized as a world-class achievement in wastewater management.

The refinery requires an enormous amount of water to function. But water is a scarce resource in Saskatchewan. The provincial Water Security Agency tightly regulates Saskatchewan's water resource and sets strict quotas for industrial and resource sector users. As its use continued to grow, the CRC was faced with the prospect of needing more water than regulators would allow.

To meet this need, the refinery launched its ambitious water recycling initiative. At a cost of roughly $200 million, this cutting-edge environmental initiative was one of the largest mega-projects in Saskatchewan history.

The Wastewater Improvement Project allows the refinery to clean 100 per cent of its wastewater and recycle up to 65 per cent, making it the first refinery in North America to recycle so much of its wastewater for reuse in the oil refining processes.

By recycling, the refinery is making impressive strides in reducing freshwater use. While it's refining capacity has increased, the WIP cuts freshwater use by roughly 28 per cent - the equivalent of the water used by 3,100 households in the Regina.

The project not only improves CRC's use of water, it also improves the air. The facility significantly reduces volatile organic compounds which cause odours in the area around the refinery.

On April 24, 2017, the Wastewater Improvement Project was named Industrial Water Project of the Year at the annual Global Water Awards held in Madrid, Spain.

The McCannel Award

The McCannel Award was established in 1983 to honour service to the Association of Professional Engineers and Geoscientists of Saskatchewan, and to the professions as a whole. The McCannel Award is named after Roy McCannel, a founding member of the Association.

This year, the APEGS McCannel Award recognizes

Cathy Lynn Borbely, P.Eng.

Cathy was born and raised in Regina and is proud to have lived her whole life in the Queen City.

Her father, an electrical engineer, says he saw a budding engineer in her at an early age and instilled in her a love of designing and building things. Her current skills in highways and infrastructure were honed at an early age, building miniature cities and highways with her brother in the backyard sandbox.

Cathy graduated from the University of Regina in 1986 with a bachelor's degree in regional systems engineering.

Straight out of college, Cathy went to work for the Ministry of Highways and Infrastructure where she has held progressively senior positions. She is currently the Director of Land Acquisition and Management for the ministry.

Over the years, Cathy has been credited with a number of achievements within the Ministry, including managing Saskatchewan`s first recycled asphalt paving contract, developing construction practices for using geotextile fabric in road subgrade construction and implementing improved project management and team building principles.

Cathy has a long list of awards and honours, including the Ministry's Celebrating Excellence One Team Award, the Canadian Society for Civil Engineering Sanford Fleming Award, Saskatchewan Centennial Medal in 2006 and the Deputy Minister's Award in 1996. She has also been named a Fellow of the Engineering Institute of Canada and the Canadian Society for Civil Engineering.

Cathy has always followed her parents' example of giving back to the community. She was a fundraiser and participant in the 'Believe in the Gold' childhood cancer run in 2017. She was a volunteer for the Canada 150 celebrations. She has been a girls' camp mentor for the U of R's EYES summer science camps. She was co-chair and co-master of ceremonies for the CSCE International Conference in Regina in 2015. She has been the prairie region representative on the CSCE Honours and Fellowships Committee since 2011. She has been a fundraiser for the Terry Fox Run, a mentor for the APEGS Women in Engineering Mentorship Program and made numerous other community and professional contributions.

Perhaps her most notable contribution came in 2004 when she was elected the first woman president of the CSCE in the organization's 117-year history.

The Outstanding Achievement Award

The Outstanding Achievement Award was created in 1998 to honour members who show technical excellence and achievement in engineering or geoscience in Saskatchewan.

This year, the APEGS Outstanding Achievement Award goes to

Daniel X.B. Chen, Ph.D., P.Eng., FASME, FCSME, FEIC.

Daniel Chen was born and raised in China, where he received both his bachelor's and master's degrees in mechanical engineering. His first professional job was a relatively humble one, designing circuits for Scientific Instruments Corporation in China.

He moved to Canada in 1998 to complete his Ph.D. at the University of Saskatchewan. After a brief stint at as a Post-Doctoral Fellow at Queen's University in Kingston, Ontario, he returned to the University of Saskatchewan in 2003 where he has been a valued member of the faculty ever since.

Over the course of his career, Daniel has published over 144 peer-reviewed journal articles and has supervised over 46 post-graduate students.

Daniel requires a large trophy wall to hold all the awards and distinctions he has received over the years. He is a Fellow of the Engineering Institute of Canada, the Canadian Society for Mechanical Engineering and the American Society of Mechanical Engineers and is a Senior Member of Institute of Electrical and Electronics Engineers.

He received the 2016 Achievement Award from the Saskatchewan Health Research Foundation, the 2014 College of Engineering Award for Research Achievement in Engineering, the 2012 University of Saskatchewan New Researcher Award, the Educator of the Year 2007 and the 2002 NSERC Postdoctoral Fellowship and was named Educator of the Year in 2007.

One of Daniel's most significant achievements is creating and leading an interdisciplinary tissue engineering research program with the aim of developing artificial tissue and organ substitutes which would provide a permanent solution to damaged tissue or organs. This program currently involves over 10 professors, clinicians and scientists from both engineering and life sciences.

The focus of the research is on the design and fabrication of tissue to help repair peripheral nerves, spinal cord damage and cartilage, as well as in the treatment of heart attacks and strokes.

In his personal life, Daniel is a big believer in staying fit. No matter how busy he is with his teaching and research pursuits, he dedicates at least an hour a day for some sort of activity such as badminton, squash, fitness, running or biking.

Daniel and his wife Qi Huang have been married for over 26 years. Their daughter Angel is a graduate student at the University of Victoria.

The Brian Eckel Distinguished Service Award

The Brian Eckel Distinguished Service Award was established in 1978 to recognize outstanding contributions in service to the community, the Association, technical and learned organizations, as well as to honour distinctive and outstanding achievements in professional and technical fields. In 2004 this award was renamed the Brian Eckel Distinguished Service Award in recognition of Brian Eckel's contribution to society, the profession and the Association.

This year the Brian Eckel Distinguished Service Award goes to
Louis-Pierre Gagnon, P.Eng.

Louis-Pierre was born and raised in St-Bruno near Montreal. From an early age, Louis-Pierre displayed traits of an engineer. He showed perseverance and his commitment to others in the daily delivery of newspapers over five years. Being a long-term planner, he saved most of these earnings and, in grade 12, used them to pay for Class Afloat. This sailing trip around the world inspired his curiosity and determination to make a difference.

Back on shore, Louis-Pierre completed a degree in marine biology. Then a summer engineering position at the Alouette Aluminum Smelter and the excitement of developing large projects led to pursuing a mining engineering degree. In 1995, Louis-Pierre obtained his bachelor of mining engineering from McGill University and earned the British Association medal for highest grade point average in engineering. In 2003, he achieved a master's in applied sciences from Laurentian University.

Louis-Pierre's career has included working with many of the biggest players in mining across Canada and around the world: INCO, Vale, Cameco, Mosaic and his current employer ORANO Canada (formerly known as AREVA). Along the way, he also worked for two years at Dyno Nobel, the explosives manufacturer famous for its founder, Albert Nobel, the inventor of dynamite.

Just before moving to Saskatchewan, Louis-Pierre and his family lived for four years on the South Pacific island of New Caledonia. There, Louis-Pierre played an integral role in the start up of a nickel mine.

In Saskatchewan, Louis-Pierre has made extensive contributions to the province's mining industry. He served as Senior Mine Engineer for Cameco, Manager of Mining Engineering for Mosaic and today he is General Manager, Mine Projects for ORANO. His abilities have guided decisions for mining projects costing millions of dollars.

In his present role as General Manager, Mine Projects, Louis-Pierre plays an instrumental role in the development and implementation of SABRE – Surface Access Borehole Resource Extraction, an innovative surface jet boring technique for extracting uranium.

Louis-Pierre's further contributions to Saskatchewan's mining community include the development of higher education. In 2012, he designed and taught the University of Saskatchewan's first mine ventilation course. Since 2013, he has been chair and board member of the Saskatchewan Polytechnic Program Advisory Committee for the Mining Engineering Technology Program.

Notes From APEGS Council

The APEGS Council met April 5-6 in Regina with 16 of 19 Councillors present. Council will meet next on June 21-22, 2018 in Yorkton.

Council received the following presentations and information items:

An ethics moment focusing on the need to be diligent in reinforcing ethics and professionalism when interacting with students and doing presentations at the universities.

Activity updates were provided from the constituent society liaisons, the ACEC-SK liaison, the Sponsorship Task Group liaison and the 30by30 Task Group liaison.

The Executive Director and Registrar provided Council with an update on staffing which included some office renovations. A cost estimate to develop the additional office space was provided to Council.

The Executive Director and registrar provided Council with a presentation on prohibition. The presentation led to discussion on protection of title and scope of practice.

The Communications Manager reported on the Association's strategic communications planning activities to date and processes upcoming.

The APEGS Directors to Engineers Canada and Geoscientists Canada reported on activities at the two national organizations.

The Director of Special Projects reported on the progress of testing the new member database. The upgrade project warranty and close date is August 31, 2018 with some additional testing of annual fee renewals to be completed in September.

Council passed motions as follows:

Clarifying the process assessors will follow when a candidate fails the Competency Based Assessment (CBA). The information regarding the processes to follow has been added to the CBA Assessment Guide.

Approving all of the Experience Review Committee recommendations in the Issues Document and the proposed transition plan to CBA.

Approving the Significance of Regulatory Agencies Guideline.

Approving the updated Professional Practice Exam Policy 1.0, addressing the examiner succession plan and the security of the exam.

Approving the new Professional Practice Exam Policy PPE2.0, eligibility to write the Professional Practice Exam.

Approving Life Membership for the following members:

- Bijeljanin, Ljubomir L., P.Eng.
- Brad, Robert A., P.Eng.
- Dagdick, Louis A., P.Geo.
- Feldkamp, Heinrich F., P.Eng., FEC
- Fortunato, John, P.Eng.
- Grier, David H., P.Eng.
- Hannah, Tedford W., P.Geo.
- Hill, Roy W., P.Eng.
- Laing, Alexander C., P.Eng., P.Geo.
- Leavens, Ivan L., P.Eng.
- Martin, Andrew F., P.Eng.
- Oliver, Richard H., P.Eng.
- Ritenburg, John W., P.Eng.
- Simpson, Mark A., P.Geo.
- Stewart, Dave D.M., P.Eng.
- Ward, Larry, G., P.Eng.

Appointing Kevin Ness, P.Eng. as Chair of the Experience Review Committee, Jaylyn Obrigewitsch, P.Eng. as Chair of the Connection and Involvement Committee, and Tara Zrymiak, P.Eng, FEC as Chair of the K-12 Committee.

Approving the plan and expenditure for the development of the additional office space as per the proposal dated April 2, 2018.

Council noted and received the following reports:

Registrar's reports for January and February 2018.

The report on compliance activities for January to March, 2018 and the CPD reporting statistics report for 2017.

The audited financial statements for December 2017 and the unaudited financial statements for January and February 2018.

Executive Committee minutes, 30 by 30 Task Group minutes, Sponsorship Task Group minutes, board minutes, and reports from the committees.

30 By 30 Report

To celebrate Engineering and Geoscience Month in March 2018, APEGS's 30 by 30 Task Force partnered with the University of Saskatchewan and the University of Regina for two celebratory events. Both were a hit with students, as APEGS connected with its members of the future to provide some insight into what professional life after graduation has in store.

March 19, 2018 – University Club at the University of Saskatchewan

The Ron and Jane Graham School of Professional Development, the College of Engineering and APEGS's Student Development Committee recently teamed up to pilot a women's mentorship luncheon. The focus of this event was providing an opportunity for university students in engineering and geoscience to speak in small groups with professionals in their fields, specifically on the topic of what it is to be a woman in our industry. By providing these networking opportunities, we hope to increase dialogue about, and awareness of, the barriers that exist for both current and future women in our professions, and build on the discussion of how we can all support each other to overcome them.

This luncheon was a pilot event, which we hope to expand as part of APEGS's 30 by 30 goal to raise the portion of newly licensed engineers and geoscientists who are women to 30 per cent by 2030.

The event, held on March 19, was attended by 12 professionals and 20 students. APEGS would like to thank all of the volunteers and attendees who donated their lunchtimes to help make this a successful event. We would also like to thank all of those who helped behind the scenes in the initiation and planning of this event. We look forward to building on the success of this luncheon and hope to expand to future events in both Regina and Saskatoon.

- Greg Godwin, P.Eng.

March 27, 2018 – Innovation Place at the University of Regina

Moderated by third-year industrial systems engineering student Kaylee Hayko, a panel of women engineers, ranging from recently graduated (Nicole Gienow-Barber, Engineer-In-Training), to early to mid-career (Gina Escanlar, P.Eng.), to mid- to near-end career (Tina Maki, P.Eng.) to end of career (Patti Kindred, P.Eng.), all of whom were graduates from the University of Regina, provided their insight and experience related to being a woman engineer in a male-dominated profession. The well-attended event was hosted at the University of Regina on Thursday evening, March 27. The panel unanimously agreed that the value of mentoring and role models was one of the key aspects of "What Every Woman Needs to Know to Succeed in Engineering."

The work environment often creates an atmosphere where self-doubt can occur, and the panelists encouraged women to speak up and to simply ask questions. Being interested in learning and asking questions was the key component to being able to succeed in the workplace. Everyone has biases, and overcoming these requires one to ask challenging questions. Having grit and persevering were key attributes that the panelists viewed as providing them with the ability to continue in the engineering and geoscience professions. Often informal conversation is what helps to establish the networks needed for success. These networks are not only with women but also with male colleagues.

As engineers continue to develop new materials and technologies leading to 3D printing, along with integrating software and artificial intelligence, the results will change testing, prototyping, production and manufacturing. Questions of sustainability and social consciousness must be vigorously integrated into engineering. Women are particularly well-equipped to meet such challenges of conscience. After all, physiologically women have been equipped with the ultimate 3D printers, being able to create new life. Women can achieve success with their ability to balance life as an engineer, mom, wife and community-engaged individual.

The APEGS 30 by 30 Task Force provided 17 students with the book *What I Wish I Knew When I was Twenty* by Dr. Tina Seelig, to provide additional insight into career success.

- Dr. Denise Stilling, P.Eng.

Honouring Mentors

Do you have a story to tell about someone who was a special mentor in your life?

Was there a university professor, a workplace supervisor or a colleague who made exceptional efforts to guide you on your professional career?

The November-December 2018 issue of the Professional Edge will be all about mentors. We invite you to take this opportunity to help us give these special people the credit they deserve.

Please send your suggestions to:

Lyle Hewitt, Managing Editor, Professional Edge
lyle@martincharlton.ca

A P E G S

Association of Professional Engineers & Geoscientists of Saskatchewan

REPORT ON THE

88th Annual Meeting of APEGS

The 88th Annual Meeting of the Association was called to order in The Battleford Room, Delta Bessborough Hotel, Saskatoon, Saskatchewan at 9:00 am Saturday May 5, 2018.

The business of the meeting included:

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

The membership in attendance confirmed the amendment to Appendix 3 of *The Engineering and Geoscience Professions Regulatory Bylaws*, passed by Council on February 2, 2018 adopting the Competency-Based Assessment process for experience reporting for Engineers-in-Training. The motion passed 187 in favour and zero opposed. These changes will come into effect January 1, 2019.

The membership in attendance also confirmed the additions of section 23.2 and Appendix 5 of *The Engineering and Geoscience Professions Regulatory Bylaws*, passed by Council on February 2, 2018 adopting the Continuing Professional Development Program. The motion passed 192 in favour and zero opposed. The program will come into effect January 1, 2019.

The Executive Director and Registrar reported on the results of the Council elections. The total number of votes cast was 2,157, being 16.40 percent of the 13,151 total eligible voters. There were 2,157 electronic ballots and 46 paper ballots, and no spoiled ballots.

The results of the vote were:

Officers of Council — 1 year term

- President – Stormy Holmes, P.Eng., FEC
- President-Elect – Terry Fonstad, P.Eng., FEC
- Vice-President – Andrew Lockwood, P.Eng., FEC

Councillors — 3 year term

- Group II (Mechanical & Industrial) – Lesley McGilp, P.Eng.
- Group V (Agricultural and Forestry) – Kurtis Doney, P.Eng.
- Member-In-Training – Nicole Barber, Engineer-in-Training
- South-East District – Jessica Theriault, P.Eng.
- Geoscience South – Gavin Jensen, P.Geo.

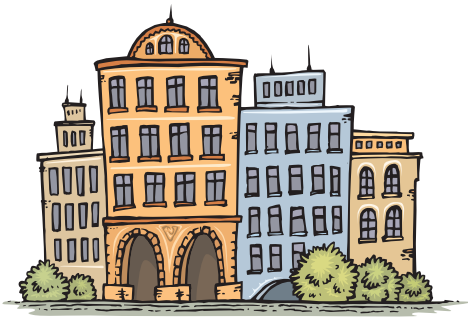
Returning Members of Council

- Terry Fonstad, P.Eng., FEC – President-Elect
- Dave Kent, P.Eng., FEC – Group I (Civil)
- Leo Niekamp, P.Eng. – Group III (Electrical & Engineering Physics)
- John Unrau, P.Geo., FGC – Group IV (Geology, Mining, Petroleum, Geophysics, and Geoscientists)
- Jeanette Gelleta, P.Eng. – Group VI (Chemical, Ceramic and Metallurgical)
- Anastassia Manuilova, P.Eng. – Group VII (Environmental)
- Tami Wall, P.Eng. – South-West District
- John Desjarlais, P.Eng. – North District
- Cory Belyk, P.Geo. – Geoscience North District
- Dwaine Entner – Public Appointee
- Wendell Patzer – Public Appointee

Reporting

Continuing Professional Development

First Aid training counts as Formal Activity



FINAL REPORT
Town Hall Meetings

From January to March, APEGS staff and volunteers from the Experience Review Committee and the Professional Development Committee hit the road and travelled to 12 locations across the province and held 14 Town Hall consultations. The purpose of these meetings was to meet with members and present proposed changes to experience reporting (for Engineers-in-Training) and to the Continuing Professional Development Program.

Approximately 650 or 10 per cent of Saskatchewan-based members attended. Town Halls were held in the following locations: Coronach, Estevan, Humboldt, Lloydminster, Moose Jaw, North Battleford, Prince Albert, Regina, Saskatoon, Swift Current, Weyburn and Yorkton.

Thank you to everyone who attended the meetings. You can find further information and results from the meetings by clicking on "Town Hall Meetings" on the APEGS home page.

Annual Meeting Gallery

The welcome event featured fantastic food and entertainment

Luncheons had full attendance

Full house for the Past Presidents' Dinner and President's Reception

News Beyond Our Borders

Engineers Canada launches new website to explore engineering

Engineers Canada - To help youth discover the world of engineering and how their skills and interests can fit in, Engineers Canada has launched ExploreEngineering.ca, a year-round resource hub that offers, among other things, event calendars for National Engineering Month events.

"We want people to be as excited as we are about engineering and to use Explore Engineering to share that excitement during National Engineering Month and beyond, especially in their conversations with the youth in their lives, " said Jeanette M. Southwood, FCAE, FEC, LL.D. (h.c.), P.Eng., IntPE, Engineers Canada's Vice-President of Strategy and Partnerships.

ExploreEngineering.ca is also a great place for students and youth to explore the different types of engineering. The interactive "Chart Your Course" feature allows visitors to discover which types of engineering may appeal to their interests most. The site also profiles everyday engineers, real engineers from different disciplines sharing the story of their careers.

OIQ deals out discipline

OIQ - The Disciplinary Council of the Ordre des ingénieurs du Québec has had a busy spring, dealing out a range of disciplinary actions.

Three members were struck from the roll for periods ranging from 11 months to 10 years for participating in contract-sharing schemes that circumvented the competitive bidding process of the City of Laval and the City of Saint-Jérôme.

Another member was found guilty of signing a final report that he had not prepared himself, which resulted in a substantial fine.

The OIQ also reached a conciliation agreement with former employees of Genivar Inc. who, between 1998 and 2010, received a refund from their employer as compensation for a political contribution. In its inquiries, the Office of the Syndic found that neither the professional competence nor the diligence of the engineers concerned were at issue. However, according to the Office of the Syndic, these engineers' participation in a political party funding process involving a contribution from their employer constitutes an act derogatory to the honour and dignity of the profession that must be brought to the public's attention and penalized in order to maintain the transparency required in political contributions.

Toronto-area man fined for use of the title "Professional Engineer"

Professional Engineers Ontario - On February 22, the Ontario Court of Justice fined a Toronto-area man $15,625 (including a 25 per cent victim fine surcharge of $3,125) after his guilty plea to four counts of breaching the *Professional Engineers Act* by misrepresenting himself as a Professional Engineer.

Kevin Kirk Smith used the titles "Professional Engineer" and "P.Eng." in the employment application and interview for a position as a senior consultant, a position which called for credentials as a Professional Engineer. After being hired, Smith presented and displayed a forged licence certificate and used the title "P.Eng." in internal correspondence and reports issued to clients.

The employer contacted Professional Engineers Ontario (PEO) and determined that Smith was not licensed as a Professional Engineer. Smith subsequently used the titles "Professional Engineer" and "P.Eng." in the employment application and interview for another position.

Her Worship Justice of the Peace Ruby Wong convicted Smith of one count of breaching section 41(1) of the *Professional Engineers Act*, which prohibits issuing a false licence

certificate. Nick Hambleton, associate counsel, regulatory compliance, represented PEO in this matter. PEO thanked both employers for their diligence and co-operation in its investigation.

Geoscientists Canada names new CEO

Geoscientists Canada Press Release - Andrea Waldie, P.Geo., FGC, took over as chief executive officer of Geoscientists Canada on the retirement of the current CEO, Oliver Bonham, P.Geo., FGC, on March 1, 2018.

For the past five years, Waldie has consulted to the geoscience profession, through her company, Waldie Geo-Governance, on matters of governance and geoscience professionalism, as well as acting as business manager to the APGO Education Foundation and consulting to Geoscientists Canada on a variety of projects. Prior to her consulting work, Waldie was the executive director and registrar of the Association of Professional Geoscientists of Ontario (APGO) for six years. She began her career as an exploration geoscientist, working for several major and junior mining and exploration companies.

"I am honoured to be given this opportunity to lead Geoscientists Canada into the next chapter of our development, applying my skills to the profession I love to the benefit of our geoscience regulators, geoscience professionals and the Canadian public." said Waldie."I look forward to working with all concerned parties and our international partners as we all strive to achieve excellence in geoscience professionalism."

The geoscience profession, which encompasses many specialized practice disciplines, currently comprises 14,000 licensed professionals (P.Geos.) and Geoscientists-in-Training registered at associations across Canada.

TECH CORNER >>>>>>>>>>>>>>>>>

Oil sands research could be game changer for renewable energy

CBC News - Originally from South Africa, JT Steenkamp doesn't usually enjoy brisk Canadian winter weather, but this year is different for the engineer who is testing out a new type of battery at Shell Canada's research centre in Calgary. The battery is built using a little-known metal found in bitumen, and the technology could represent a pivotal moment for both the oil sands industry and the renewable energy sector.

Shell's project aims to extract a metal called vanadium from bitumen and use the material to produce large, utility-scale electricity storage for the renewable energy sector, which has struggled with ways to store large amounts of energy in a stable, reliable way.

"If successful, it could be an absolute game changer. It will prove that we are capable of delivering renewable energy not in spite of traditional energy but precisely because of it," said Steenkamp.

So far, the vanadium battery can only hold a charge of 6 kilowatt hours, enough to run a hair dryer for about four hours. It would need to be much larger to store electricity from a wind farm or solar field, but Steenkamp says this type of battery can easily be scaled up.

Vanadium is a largely obscure metal often used in making steel. It retains its hardness at high temperatures, so it's ideal for making drill bits, engine turbines and other parts that generate heat.

In the oil sands, vanadium is one of the metals that comes out of the ground with bitumen. The concentration is quite low: a barrel of bitumen would contain just 30 millilitres of vanadium, on average, experts says. But multiplied by the millions of barrels of production from the oil sands every day, Steenkamp says there is a "boatload" of vanadium.

Laser-powered robot insect achieves liftoff

University of Washington - For robots of all sizes, power is a fundamental problem. Any robot that moves is constrained in one way or another by power supply, whether it's relying on carrying around heavy batteries, combustion engines, fuel cells or anything else. It's particularly tricky to manage power as your robot gets smaller.

At the IEEE International Conference on Robotics and Automation in Brisbane, Australia, roboticists from the University of Washington in Seattle presented RoboFly, a laser-powered, insect-sized flapping wing robot that performs the first (very brief) untethered flight of a robot at such a small scale.

RoboFly—a design based on the RoboBee flapping-wing microrobot from Harvard's MicroRobotics Lab—is about the size of a bumblebee and weighs just 190 milligrams (a bit more than a toothpick). It's powered by an infrared laser aimed at that tiny little photovoltaic cell, which can harvest the 250 mW required to get the robot airborne. Ultimately a RoboFly could be controlled by a ceiling-mounted laser that tracks it wherever it goes, or even lasers mounted on moving vehicles (or other robots) that can follow the RoboFly around and provide power to it indefinitely.

Researchers imagine a number of applications for RoboFly such as in farms and for finding leaks in oil pipes.

News From The Field

Robot invasion

Humboldt Journal - Saskatchewan Polytechnic welcomed Saskatchewan 120 high school teams to their Saskatoon campus for their 10th annual Robot Rumble on March 22.

Besides learning about coding and electronics, this was also a great opportunity for the social aspects as well.

Corrinne Arnold with Bruno School says her students learn much more than just robotics with the program but also problem-solving.

"There's a motherboard with a lot of holes and columns and rows. They have to know where to put the resisters and follow diagrams and problem solve your way as you go through it."

That is what students enjoy the most, says Arnold, as the students move from one problem to another to make their robot run.

Starting the program was an opportunity to spark interest in careers, training, and education in robotics and electronic systems, says Jamie Hilts, Dean for School of Mining, Energy, and Manufacturing at Saskatchewan Polytechnic.

And that potential is growing, says Hilts, with both the industry becoming more advanced than 10 years ago and the event itself also growing with only a small number of schools competing at the first robot rumble.

U of S student headed to "Mars"

Saskatoon StarPhoenix - University of Saskatchewan graduate student Doug Campbell, who dreams of a career in space, is currently on a "space mission" to Mars, simulated deep in the Utah desert.

"I am looking for opportunities to build my skills and resumé for the next time the Canadian Space Agency puts out a call for astronauts," said the master's student in biomedical engineering.

His two-week mission simulation at the Mars Desert Research Station ranges from growing his own food to doing outdoor explorations in a spacesuit.

Campbell has been selected to join a two-year scientist-astronaut training program based in the United States that will help him prepare for venturing into outer space research once space flight becomes more accessible. The simulation at the research station is one of the last steps before completing his training in August.

He works in a landscape that is an actual geologic Mars analog — minus the dangerous atmosphere. The station is owned by the Mars Society, which supports Earth-based research for human space exploration and has received some funding from the Musk Foundation.

The "full Mars" experience in the Utah desert tests Campbell and his four fellow crew members on teamwork, research and interpersonal skills in a stressful environment. A mix of Americans and Canadians, the crew includes experts in health, geology and engineering.

As the science officer on the mission, Campbell oversees the crew's science work, ensuring that projects move along and that data are collected. Campbell has invented and is currently testing a waterless dishwasher as a special part of his space simulation. His device holds promise for making astronauts' lives easier when space travelling.

Campbell plans to apply for grants that will help him build his reputation in the space research community while continuing his studies at the U of S and keeping his day job at the Saskatchewan Health Quality Council.

U of S Geology rocks teen's world

CKOM - A teen geologist from the Saskatoon area is feeling a bit more weighed down after a visit to the rock vault at the University of Saskatchewan.

But he's fine with that.

Professor Kevin Ansdell, P.Geo., invited 13-year-old Judah Tyreman to visit the Geology Building to help replenish some of the rare rocks and minerals that were stolen from the teen last month.

Judah and his sisters opened the Sesula Mineral and Gem Museum and Rock Shop two years ago in Radisson, about 65 kilometres northwest of Saskatoon.

The museum was receiving glowing reviews, but then a thief stole between $6,000 and $8,000 worth of exhibits.

The professor wanted to help Judah resupply the museum, so he gave the boy and his family time to pick rocks from the university vault to take home.

"This is a geologist's candy store," Judah said of the visit.

The teen and his sisters were told to pick any rock specimens they liked. The three searched through hundreds of shelves and selected a variety of fossils and gems to bring back to their Radisson home.

"It's quite amazing. There are so many pieces," Judah said. "I'm so honoured."

Ansdell said many of the rocks in the vault had been sitting in the basement of the Geology Building since it was constructed in 1986.

"Once I heard on the news about the break-in, I decided it was obvious the department would want to help him re-stock," Ansdell said.

He noted the teen's knowledge of the field was impressive.

"I was amazed … he could identify minerals very, very quickly," the professor said. "He would put many of our students to shame."

Ansdell said he hopes to convince Judah to attend the University of Saskatchewan's geology program when he's ready.

For now, the boy is focusing on his own short-term plans for his rock museum.

The family is contemplating an expansion — including a 19th-century mine theme in the basement.

Iranian professionals face challenges in Sask.

CTV Regina - Iranians in Saskatchewan have said it used to be quick to get work permit renewals or residency status, however, their applications have been tied up for months.

Some have lost high-skilled positions due to delays in work permit renewals.

"I was working as an engineer in one of the companies. It was my ideal job. I just lost it because I cannot extend my contract," Sahar Safaei, who is an engineer, said.

At least 20 Iranians have been affected in Saskatoon and more in Regina. Many have said colleagues from other countries are not facing similar problems.

Public Safety minister Ralph Goodale said Ottawa is trying to speed up the process.

"There was a disruption a number of years ago in diplomatic relations and we don't have the on the ground consular services in Iran to be able to pursue the security issues and get the information that we need," Goodale said.

Goodale also said Iran poses a special problem when it comes to conducting background checks.

"We are working on the backlog as rapidly as we can, including making increased staff available to try to do the processing," he said.

Sask. expands coding and robotics in schools

Global Regina - To ensure classrooms are meeting the needs of 21st-century students, the Saskatchewan government announced new coding and robotics opportunities for middle-years and high school students in Saskatchewan.

During the 2016-17 school year, the government sought input from stakeholders throughout the province regarding curriculum renewal.

Robotics modules that incorporate coding will be developed in the area of provincial practical and applied arts in response to requests from the education and tech sector stakeholders.

These elective courses will be available to all high schools in the province and teachers for grades 7 – 9 will also have access to introduce students to coding and robotics.

In 2017, a Practical and Applied Arts Reference Committee was formed to provide direction, later recommending that coding and robotics courses be developed.

A writing team was made up of teacher experts and ministry consultants who will begin developing robotics courses that incorporate coding this spring, with the goal of piloting them in the 2018 -19 school year.

The writing team will use locally developed secondary robotics courses approved for use in Saskatchewan schools as guides for the province-wide curriculum.

ENVIRONMENT

Not so permafrost

National Post - Scientists published new evidence that old or even ancient carbon, pulled out of the atmosphere and stored in the bodies of plants hundreds or thousands of years ago, is being set loose again from soils in the Arctic region.

It's a potentially worrying indicator that these "permafrost" soils may already be worsening the problem of climate change. However, scientists are still debating just how much old carbon Arctic soils should release normally even without climate change, leaving the ultimate significance of the findings unclear.

The new study, which was published in the journal *Environmental Research Letters*, employed radiocarbon dating to examine the content of river and lake waters in Canada's Northwest Territories in 2014. It found an increasing prevalence of older dissolved carbon and carbon dioxide in the waters as the summer advanced. The research also discovered one case of carbon in methane gas that was more than 2,000 years old.

The new work isn't definitive on the question of increasing permafrost carbon emissions – but it's something to worry about, say researchers.

Over thousands of years, the Arctic has stored up massive amounts of carbon as plants have died but have not fully decayed due to the region's cold temperatures. Instead, their roots and other plant parts have been preserved in the frozen soil. Layer upon layer of Arctic soil has built up, representing a kind of time capsule with the oldest layers and the oldest carbon generally found at the greatest depths.

As a warming climate thaws this permafrost, more and more of the older carbon will be broken down by microbes and released as carbon dioxide or methane, with the potential to greatly warm the planet. But it's not clear how much carbon is vulnerable or how fast such a release could happen.

Emissions to get worse before they get better

Regina Leader-Post - Saskatchewan's carbon emissions are currently going up.

Emissions in Saskatchewan will hit record-high levels in 2020 — more than 15 million tonnes of carbon dioxide — before they start going down.

SaskPower's 2016-17 annual report states, "We will see our emissions profile rise slightly until 2020."

Saskatchewan's own climate change plan, known as Prairie Resilience, was released after that report came out, but according to SaskPower, it does not change the rise in emissions.

Growing SaskPower's generation capacity by way of more megawatts coming from natural gas is what will increase the province's emissions, according to the Crown corporation.

"(The) Prairie Resilience Plan will not impact SaskPower's plans to grow its generation capacity," said a statement from a spokesman at SaskPower.

SaskPower's projections show emissions dropping to below 10 million tonnes of carbon dioxide by 2030, due to an increased reliance on renewable energy sources, a reduction in electrical generation emissions and federally imposed methane regulations.

Saskatchewan's emissions are projected to be 55 per cent higher by 2030 than 1990 levels, according to a report from the country's auditors, but that same report — *Perspectives on Climate Change Action in Canada, A Collaborative Report from Auditors General*, March 2018 — shows the province's emissions will drop 11 per cent between 2017 and 2030.

Forecasting for climate change

Global Saskatoon - Researchers say they've come up with a way to better predict severe storms and protect infrastructure caused by increasing temperatures in Western Canada.

Researchers from the University of Saskatchewan said they've seen temperatures rise up to 8 C in winter over the last 50 years in the Northwest Territories.

At the same time, temperatures across the Prairies have risen two to three degrees overall.

Water resources professor John Pomeroy said they have come up with a more precise model to predict what the future could look like as water levels continually change.

Pomeroy said there is 14 times more water flowing out of eastern Saskatchewan now than in the 1970s and 1980s.

He said their research can help in designing municipal reservoirs to store water in the spring for periods of summer drought.

UNIVERSITIES AND RESEARCH

SRC lauded for sustainable performance

Global Regina - The Saskatchewan Research Council (SRC) has been recognized, once again, for its sustainable performance, ranking first on the Corporate Knights Future 40 Responsible Corporate Leaders listing.

This is the fifth consecutive year that the SRC has been recognized for its positive impacts and responsible practices by Corporate Knights.

The Future 40 was established in 2014 and ranks Canadian companies that have revenues under $1 billion, or fewer than 2,000 employees. It is based on 16 key performance indicators — all related to employee, environmental and financial management.

Information that is publicly available, including annual reports and corporate social responsibility reports, are used to provide data for the analysis.

"As one of Canada's leading and most valued research and technology organizations, we are proud to conduct our business activities in an environmentally and socially responsible manner while continuing to provide positive economic impacts in Saskatchewan," said SRC president and CEO Laurier Schramm. "Third-party recognition

demonstrates that corporate social responsibility has become embedded in our organizational culture."

Food for thought

Global Saskatoon - On March 22, the Saskatchewan government announced that the Innovation and Science Fund, Innovation Saskatchewan will be providing $800,000 for state-of-the-art equipment in a new Roots of Food Security research facility at the University of Saskatchewan (U of S).

The new facility supports the university's Canada Excellence Research Chair (CERC) Program, which is led by Leon Kochian, an internationally recognized plant scientist.

Kochian is a faculty member in plant and soil science at the U of S College of Agriculture and BioResources and is also the associate director of the Global Institute for Food Security.

The CERC program embraces a multidisciplinary approach involving researchers in plant physiology, molecular biology and genomics, engineering, physics and computer science fields.

The total cost for the new facility is $2 million, and additional funds will be provided by the Canada Foundation for Innovation ($800,000), the U of S ($9,000) and $391,000 in in-kind contributions of cutting-edge technology from vendors.

Research done at the facility will focus on designing and breeding better crops with healthier, more active and more efficient root systems that can grow successfully in less fertile soils, with a goal to position the province as a national driver for agricultural change and food security issues that Canada faces.

U of Regina suspects "significant" cheating

CBC News - The University of Regina's Faculty of Engineering says there was cheating during a fourth-year law and ethics exam.

In February, George Sherk, an instructor in the Faculty of Engineering, handed out a quiz to his fourth-year law and professionalism class, then left the students under the supervision of teaching assistants.

According to a February 26 email from David deMontigny, P.Eng., the associate dean of engineering to the students, the university discovered "there may have been a significant amount of academic misconduct" during the quiz.

"I trust that the irony of cheating in a law and ethics class is not lost on anyone," wrote deMontigny. "I am not impressed."

The university says deMontigny sent the email "after he received reports from two students indicating they had witnessed other students cheating on the quiz."

Sherk said he regrets what happened.

"I have to take responsibility for that. If I had been in the room it may not have happened. Or if I had been in the room and seen it I could have taken action against students."

He said leaving the teaching assistants in charge put them in an awkward position: supervising an exam of their fellow students.

In an email to CBC News, the university indicated no students have been disciplined in this case because the students who reported the incident "did not provide the names of the students who were allegedly cheating and the invigilators that were in the class indicated they had not witnessed any misconduct occurring."

However, in an email to all the students, deMontigny threatened action against any who are found to have cheated.

"If you are found to have cheated in ENGG 401, you will not graduate this year and you will forfeit your iron ring," deMontigny wrote.

ENERGY

SaskPower and FNPA sign agreement

Regina Leader-Post - SaskPower and the First Nations Power Authority (FNPA) signed a "pioneering agreement", marking a new economic opportunity for First Nations communities and businesses.

Signed by SaskPower president Mike Marsh and FNPA president Guy Lonechild, the First Nations Opportunity Agreement agrees to source 20 megawatts of flare gas power generation projects worth an estimated $300 million in potential revenue over 20 years.

Flare gas power generation takes waste flare gas from oil and gas operations and uses it to produce electricity, instead of emitting it directly into the atmosphere.

As a result, the oil and gas operation reduces its environmental footprint, and the power is used to meet the growing demand for electricity in Saskatchewan.

The First Nations Opportunity Agreement gives FNPA the responsibility of securing First Nations-led flare gas power production projects. Power purchase agreements will then be signed and negotiated for the electricity to be sold to SaskPower and distributed on the provincial power grid over the next 20 years.

FNPA has been working closely with Flying Dust First Nation on developing a flare gas power generation opportunity.

Member Benefits and Affinity Programs

As an APEGS member you are eligible to participate in the member benefit and affinity programs.

Corporate Discounts

APEGS partners with selected suppliers to offer discounts to members on various products and services.

APEGS Travel Insurance Program

ATI INSURANCE BROKERS INC.

This program is available to members, employees of members, and staff of the association.

It has been specifically designed to deliver the most comprehensive and cost-effective travel health and accident insurance available.

APEGS Travel Discount Program

travel discounts

APEGS is pleased to offer an exclusive worldwide travel discount service to our members.

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Numerous services are available and many costs are included in the APEGS membership fee.

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- Local Constituent Societies
- Engineers Canada Affinity Programs

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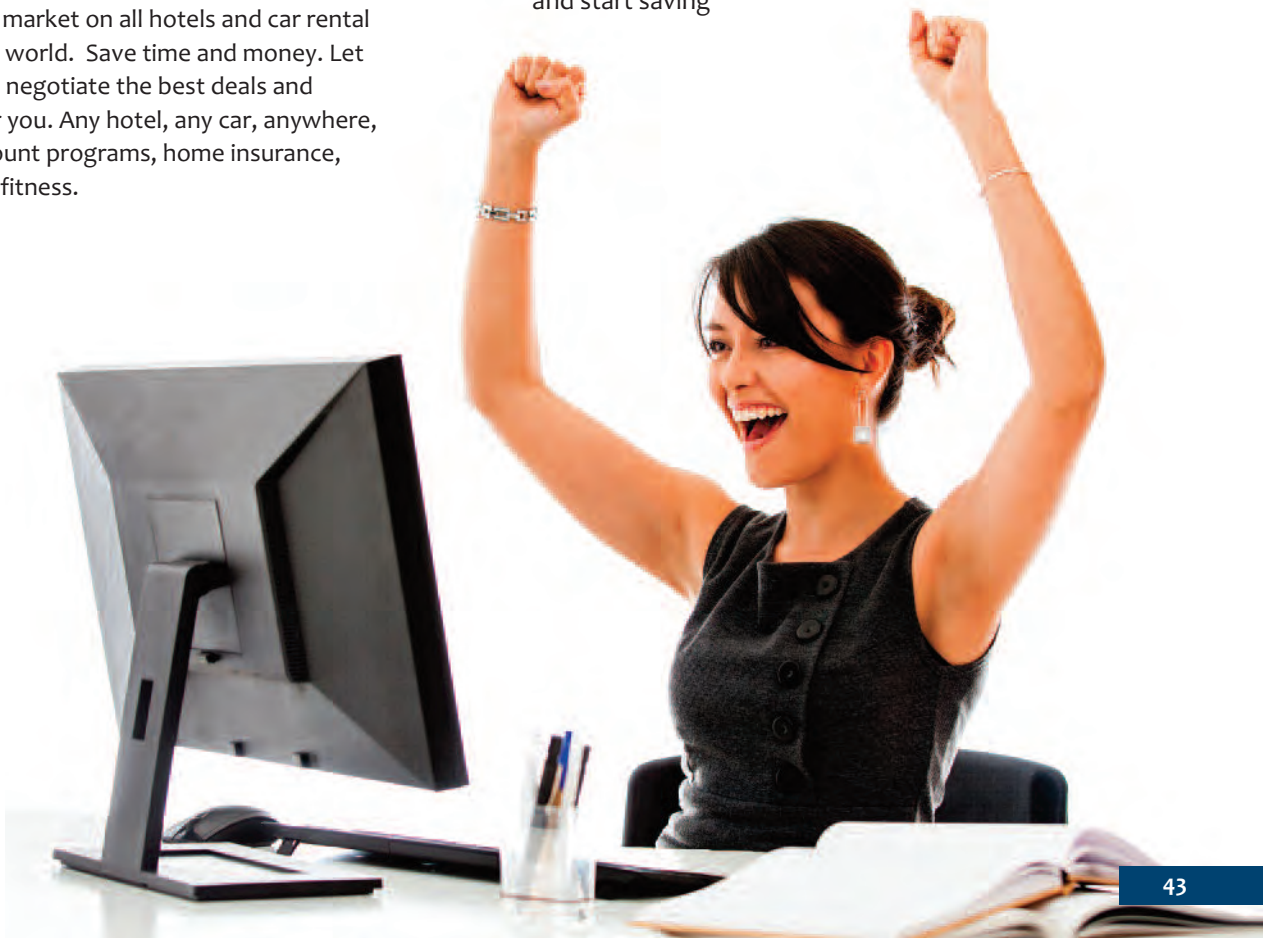

Calendar Of Events

GTA Photography Classes

International Conference on Science, Engineering & Technology - ICSET 2018
July 27–28, 2018
Ottawa, ON
researchfora.com/Conference2018/Canada/2/ICSET

CSCE 10th International Conference on Short and Medium – Span Bridges
July 31–August 3, 2018
Quebec City, QC
www.smsb-2018.ca

Extraction 2018
August 26–29, 2018
Ottawa, On
www.extractionmeeting.org

2018 Canadian Crude Oil Conference
September 11 - 13, 2018
Lake Louise, AB
www.ccoconline.com

North American Mining Expo (NAME)
September 12–13, 2018
Sudbury, ON
www.northamericaminingexpo.com

IEEE Canada Electrical Power and Energy Conference (EPEC 2018)
October 10–11, 2018
Toronto, ON
epec2018.ieee.ca

2018 APEGBC Annual Conference and Annual General Meeting
October 18–20, 2018
Vancouver, BC
www.egbc.ca

Third International Convention on Geosciences and Remote Sensing
October 19–20, 2018
2018 Ottawa, On
geosciences.conferenceseries.com

ACEC National Leadership Conference
October 21–23, 2018
Ottawa, ON
www.acec.ca/events_awards/conference/2018/about.html

Fall Professional Development Days
November 5–6, 2018
Saskatoon, SK
www.apegs.ca

Saskatchewan Geological Open House
December 3–5, 2018
Saskatoon, SK
openhouse.sgshome.ca

Prairie Wood Solutions Conference
December 11, 2018
Calgary, AB
cwc.ca/event/prairie-wood-solutions-conference

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