

THE PROFESSIONAL



EDGE

ISSUE 152

SEPTEMBER/OCTOBER 2014



Aboriginal Canadians in the Professions

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Table of Contents

ISSUE 152
SEPTEMBER/OCTOBER 2014

-
- 05** President's Report
-
- 19** Member Profile
-
- 21** College Corner
-
- 25** Fees for 2015
-
- 26** Professional Development
-
- 30** APEGS View
-
- 31** Regina Engineering Society
-
- 32** Annual Meeting Survey
-
- 33** Call for Nominations
-
- 36** News Beyond Our Borders
-
- 38** News From The Field
-
- 44** Calendar of Events
-

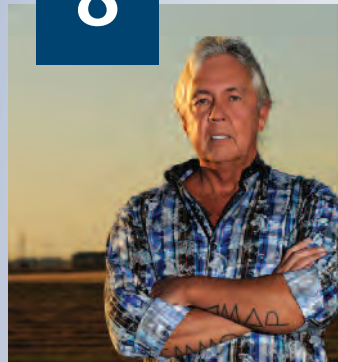
ON THE COVER:
Cameco Rabbit Lake Mine

7

Aboriginal Canadians in the Professions

By Martin Charlton Communications

8



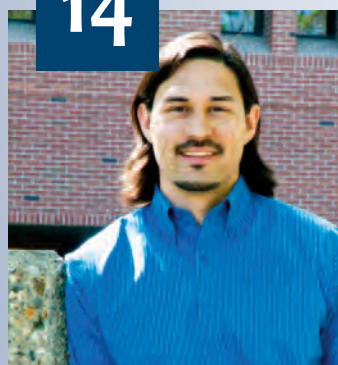
Roots of the Past, A
Vision of the Future:
Bryce Jardine-
Pelletier's Road to
Success

10



Cameco: A Leader in
Aboriginal
Engagement

14



U of S Indigenous
People Initiatives:
Shooting for the Stars

16



Rocks Pop at Summer
Camp

President's Report



APEGS President Andrew Loken, P.Eng., FEC

We do not have enough Aboriginal geoscientists and engineers in Saskatchewan. This is not based upon statistics but my own feeling as I meet members of our professions throughout the province. As hard as it is for an engineer to admit, sometimes numbers and statistics are less meaningful than feelings for a problem as wide-ranging as this.



President Loken presents the 2014 Environmental Excellence Award to Bryce Jardine-Pelletier, P. Eng. and his associates from Clifton Associates.

If we are going to ignore statistics, what other kind of criteria can we use instead? Here are a few questions I suggest we all reflect upon.

Do we have enough Aboriginal engineers and geoscientists that young Aboriginal people will feel welcome into our professions?

Do we have enough to act as mentors and role models who can relate to Aboriginal experiences in the professions and encourage other Aboriginal professionals through difficult times?

Do we have enough so that our committees can act with confidence knowing that Aboriginal members of the committee are represented in decisions and actions?

Do we have enough so that our Council can look to itself for an Aboriginal voice?

Do we have enough so that our industries, governments and other employers have the option to choose Aboriginal geoscientists and engineers for their workforce?

Do we have enough so that, when our public is interacting with all those employers and employees, they see a diverse workforce including many Aboriginal engineers and geoscientists?

Do we have enough so that our professions are enhanced by Aboriginal viewpoints?


These are the criteria that matter but we clearly aren't there yet. Until we can answer these questions confidently, we will have to continue to use statistics and math to figure out if we are getting any better.

In this month's *Professional Edge* you will be given a chance to learn about some of the challenges and successes currently experienced in encouraging Aboriginal people to understand our professions, consider education and employment, and to contribute to our society through participation in our professions.

APEGS takes seriously our role in our society. We want everyone, regardless of culture, gender, ancestry or race to view our professions representing all of society. No one should have the least concern that decisions and plans are made fairly and equitably. A diverse membership helps society see that we represent everyone and not just a portion. It also provides a comfortable platform for anyone to consider joining our professions.


In the coming months APEGS will continue to investigate how we can work with stakeholders to reinforce the efforts required to develop and encourage young Aboriginal people to be capable of undertaking a geoscience or engineering education, encourage and assist those already in the education process and mentor and train those in the professions so they can reach their goals. As with our goal for female participation in APEGS, it may take a long time to achieve but it is important to strive for and will help us improve every step we get closer to full diversity.

Andrew Loken, P. Eng., FEC
APEGS President



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Design of Sanitary Sewer and Storm Water Drainage Systems - Workshop	05-1119-2297	Winnipeg, MB	November 24-27	28
Flood Control, Land Drainage and Stormwater Management	05-0230-2305	Winnipeg, MB	February 12-13	14
Structural Engineering for Non-Structural Engineers	05-0224-2305	Winnipeg, MB	February 23-26	28
Flood Control, Land Drainage and Stormwater Management	05-0326-2305	Regina, SK	March 19-20	14
ELECTRICAL				
Modern Power System Protective Relaying	05-0222-2305	Regina, SK	February 2-4	21
ENVIRONMENTAL				
Understanding Environmental Regulations	05-0114-2305	Winnipeg, MB	January 28-30	19
Risk Assessment of Contaminated Sites	05-0225-2305	Winnipeg, MB	February 25-27	21
MECHANICAL				
A Practical Understanding of Industrial Piping and Associated Equipment	05-1205-2297	Regina, SK	December 3-5	21
Mechanical Engineering for Non-Mechanical Engineers	05-0223-2305	Regina, SK	February 9-13	35
Optimizing Equipment and Facilities Maintenance Programs	05-0319-2305	Regina, SK	March 9-10	14
Practical Understanding of In-Plant Cranes and Lifting Equipment	05-0320-2305	Regina, SK	March 11-12	14
A Practical Understanding of Industrial Piping and Associated Equipment	05-0419-2305	Winnipeg, MB	April 8-10	21

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Aboriginal Canadians in the Professions



Photo courtesy, artsandscience.usask.ca

There is a story in APEGS circles – a legend, almost – that once upon a time a senior staff member asked a member of the clerical staff to calculate the percentage of APEGS members who came from Aboriginal backgrounds. The clerical replied, “I can’t give you a percentage, but I can give you a number.” The number of Aboriginal engineers and geoscientists at that time was so low that they could be easily counted.

This story may well only be a legend, but it reflects a real ongoing imbalance in Saskatchewan society. While roughly 15 per cent of the Saskatchewan population identifies as Aboriginal, the U of S College of Engineering estimates that only three per cent of its students are Aboriginal.

This gap is detrimental for Aboriginal society since it means they lack the services of science professionals who understand their communities and their needs. It is also detrimental to non-Aboriginal society which is deprived of the insights of Aboriginal culture in fields such as environmental engineering and geoscience exploration.

In this issue, the *Professional Edge* examines a few of the people and institutions that are making a difference in bringing Aboriginal Canadians into the engineering and geoscience professions.

What’s in a Name?

Even though Columbus’s claim to have landed in India was quickly disproven, the label “Indian” stuck to North America’s indigenous peoples for no good reason for centuries. While that irrational term is well on its way to the dustbin of history, a host of new terms have arisen that carry important distinctions that can sometimes be confusing. It’s important for engineering and geoscience firms that deal with indigenous communities, clients and employees to appreciate the distinctions.

First Nations – people who identify themselves as belonging to mainly sub-Arctic nationalities of Canada’s original inhabitants.

Non-Status Indian (or simply Non-Status) – a legal term referring to a person who identifies as First Nations but who is not recognized as such by the federal government for various bureaucratic reasons. Previously, First Nations women lost their status if they married non-First Nations men but this rule has since been abolished.

Inuit – a person belonging to an Arctic nationality – the group previously erroneously named “Eskimos.” The term is not a blanket term for all Arctic nationalities and does not include the Arctic-dwelling Dene who are regarded as First Nations.

Metis – people who self-identify as belonging to a mixed First Nations and European heritage. Although the term originally applied to a particular French-First Nations mixed culture, it today refers to all European-First Nations mixed cultures in Canada.

Aboriginal – a blanket term referring to First Nations (Status and Non-Status), Inuit and Metis. When written, the term should always be capitalized.

Indigenous – an alternate term for Aboriginal, covering the same groups. Its use is determined mainly by personal preference but is used less often. As it is used more often as a technical/scientific term, Canadian Press style does not require it to be capitalized. It is often used in old acronyms as a substitute for the obsolete “Indian.”

Roots in the Past, A Vision of the Future:

Bryce Jardine-Pelletier's Road to Success

BY MARTIN CHARLTON COMMUNICATIONS



Bryce Jardine-Pelletier, P.Eng.

Sitting on the desk of Bryce Jardine-Pelletier, P.Eng. is a plaque inscribed with a quote from Chief Dan George that Bryce uses to guide his work as an award-winning environmental engineer.

“The time will soon be here when my grandchild will long for the cry of a loon, the flash of a salmon, the whisper of spruce needles or the screech of an eagle. But he will not make friends with any of these creatures and when his heart aches with longing he will curse me. Have I done all to keep the air fresh? Have I cared enough about the water? Have I left the eagle to soar in freedom? Have I done everything I could to earn my grandchild's fondness?”

- Chief Dan George

Jardine-Pelletier is one of only a few Aboriginal engineers registered in Saskatchewan. The quote reflects his determination to meld his Aboriginal culture and traditional beliefs with his professional life.

“It's a two-way relationship. I feel that my traditional spirituality guides my work in environmental engineering and my engineering knowledge helps me to preserve those values in a meaningful way. Every day, I find new ways that my culture and profession connect with each other,” Jardine-Pelletier says.

That's a message that Jardine-Pelletier likes to spread to Aboriginal students at career fairs and school presentations. Few Aboriginal students have the role models available to mainstream engineering students.

Even before he was born, his family faced a double-edged sword of racism. His maternal grandparents initially lived in an unincorporated settlement at the north end of Katepwa Lake called Dog Town, home to Aboriginal families that for one reason or another had few other places to live. Some years later his maternal grandparents had a home near the south end of Katepwa Lake in an area that now bears the name of his grandfather, Pelletier Park. He is technically a Non-Status Indian due to his family's mixed cultural background but he identifies himself as Aboriginal.

Adversity and Achievement

Jardine-Pelletier's own life is a microcosm of the challenges that many Aboriginal students face.

He dropped out of high school in grade 11 and pursued a number of jobs.

“I was leading a rather unproductive lifestyle and didn't feel my life was really going anywhere. I had some struggles with drugs and alcohol, but when I was about 25, I took a hard look at where I was headed and decided I had to make a change.”

Jardine-Pelletier completed an adult General Equivalency Diploma. He moved on to a skilled-trades career program aimed at Aboriginal students through SIAST in Moose Jaw.

“I started off in the architectural technology program and did quite well but decided that environmental engineering would be a better fit for me.”



Jardine-Pelletier and his colleagues won the APEGS Environmental Excellence Award for their environmental protection measures at the Northgate Commodity Logistics Centre site.

Once he made that decision, things proceeded quickly for Jardine-Pelletier. He was accepted to the adult education program at the U of R in 1989 and was then accepted by the Faculty of Engineering in 1990. He convocated in 1994 and went straight to work on environmental engineering projects.

This past May, Jardine-Pelletier marked two further achievements. He earned a Master of Engineering degree and at the APEGS annual meeting, his team received the Environmental Achievement Award for its work on the Northgate Commodities Logistics Centre project.

“I achieved all that and I’m one of the few engineers in the province who never officially finished high school.”

A Long Way to Go

Jardine-Pelletier’s struggles with racism were not limited to his early life. Sadly, they followed him into his early career in engineering.

“While I was never the target of direct racism, in some of my early workplaces my colleagues had bad attitudes. Even though many of the clients were First Nations communities, the senior staff in those companies often made negative remarks around the office about First Nations people and communities. It seemed unfair and quite hypocritical.”

He had a much better experience when he went to work for the federal Department of Indian and Northern Affairs in 1998.

“I managed contaminated sites on reserve land and promoted the development of engineered waste management systems to First Nations communities. I’m

proud to say that I’ve visited every First Nations community in Saskatchewan except two. I feel very blessed to have had that opportunity to build relationships with all of those chiefs and council members.”

Jardine-Pelletier is likewise pleased by the opportunities he has had to work with First Nations in his current role as Director Environmental Sciences at Clifton Associates.

“One of my first projects with the company was to lead the environmental assessment team for the wind turbine project launched by the Cowessess First Nation.”

The Road Ahead

Like many Aboriginal professionals, he emphasizes the importance of role models in improving the numbers of Aboriginals in science professions.

“I believe it’s important for Aboriginal kids to have similar role models as mainstream society kids that get into engineering. Few Aboriginal kids currently have the family members who are engineers that they can look up to.”

“Ultimately, it will have to come down to students believing in themselves, no matter whether they have role models or not. Still, the more stories they see like mine, the more it shows them that they can do it. I certainly don’t recommend the path I took because I had many stumbles but the kids need to hear that they can do it. They need to know that, even if they don’t get their grade 12 right away, it’s not the end of the world and it’s no reason to give up.”

“But it’s a slow process. If I can encourage just one Aboriginal kid to go into engineering because of something I’ve done, I would consider that a success.”



Photo courtesy Cameco

Cameco: A Leader in Aboriginal Engagement

BY MARTIN CHARLTON COMMUNICATIONS

During the 1980s, the executives of Cameco Corporation had an opportunity to take a step back and take a long look at their base of operations in northern Saskatchewan. What they saw was, and remains, astonishing: an area larger than the U.K., holding some of the greatest mineral riches in the world, that was home to only 44,000 people – most of them Aboriginal, suffering far higher levels of unemployment than the rest of the province.

In the face of these daunting statistics, the company decided to treat the situation as an opportunity.

“Following a number of public panels involving operations at Rabbit Lake, Key Lake and Cluff Lake, the provincial government provided us a set of guidelines to reach. We decided that wasn’t good enough. We put ourselves down the path to exceed what was expected from us,” says Sean Willy, Director of Corporate Responsibility at Cameco, who himself comes from a Metis background.

The Right Thing to Do

From the outset, the company has seen effective Aboriginal engagement as both a practical necessity and the right thing to do.

“Our operations involve developments on or near traditional Aboriginal lands. We need their co-operation to access those areas. We also need to have positive relationships with the local communities, Aboriginal and non-Aboriginal, to be able to carry on business. We also believe that it is just simply fair for Aboriginal communities and other northerners to benefit from the wealth of the north.”

As part of its efforts to earn that support, Cameco launched its now world-famous initiative to have the majority of its mine workers come from Aboriginal and northern backgrounds. While it has not yet reached its goal of 67 per cent employment from residents of Saskatchewan North (RSNs), its mine workforce is now over 40 per cent Aboriginal, making Cameco the largest



Cameco's Five-Pillar Corporate Responsibility Strategy

Workforce Development

The company works at local training, employment and education programs that focus on ensuring students stay in school, have the means to attend post-secondary programs and receive the training they need to advance if Cameco hires them.

Business Development

Cameco makes best efforts to acquire mine site services from companies owned by northerners.

Community Engagement

Company officials meet regularly with priority communities to keep them informed about projects and licensing plans and to involve them in projects and operations in other appropriate ways.

Community Investment

Cameco provides funds for infrastructure and programming in education, sports, recreation and

health promotion. Since 2004, they have donated nearly \$14 million to northern and Aboriginal groups.

Environmental Stewardship

Cameco encourages local communities to participate in the environmental assessment process and ongoing environmental monitoring activities. In northern Saskatchewan, this includes meeting with local trappers and communities to assess the effect of mining activities on traditional activities.

Community-Based Agreements

In order to solidify its relationships with Aboriginal communities, Cameco has entered into a number of agreements designed to codify the socio-economic benefits communities receive from Cameco, as well as its responsibilities to those communities.





Photo courtesy Cameco

Cameco staff visiting community barbeque.

industrial employer of Aboriginal workers in Canada. The company has consequently earned numerous accolades from Aboriginal organizations across the country.

A Marathon, Not a Sprint

While Cameco has become an unrivalled leader in this field, the company is not content with its results.

“We have been successful in filling entry-level positions with northerners but our challenge now is to advance northerners into technical and supervisory roles. We are maxed out on labourers – now we want to see more people move up the career pipeline.”

To achieve this, Cameco has had to stay focused on a steady, deliberate, determined approach.

“This isn’t a sprint – it’s a marathon. We look on this as a generation-to-generation project. Each generation wants to do better than their parents and we see that in our workforce. In the first generation, we were focused on recruiting the labourers – the miners and mill operators. In the second generation, we saw more employees going for skilled trades designations or other sorts of two- to three-year diplomas. In the third generation, we are starting to see university degrees and professionals.”

Cameco took pains to nurture over the course of decades a set of strategies to engage the area’s local people. [See page 11, *Cameco’s Five-Pillar Corporate Responsibility Strategy*]

Commitment to Education

One of Cameco’s strongest commitments is to better education and career training for northern residents.

“We try to get around to every school in the region at least once a year to push the message about staying in school and getting a post-secondary education. But it takes more than talk to get that done which is why we are continually

exploring new avenues and partnerships in education.”

To prove that its message isn’t just talk, the company offers an extensive set of education programs that nurture interest in Cameco careers from grade school onward. [See page 13.]

The company’s persistence has produced results. Willy reports that company-sponsored enrolments in engineering, technical and other professional training is rising steadily.

“We have many great success stories. One of the most memorable is John Desjarlais, P.Eng. He was a First Nations employee from Cumberland House. He started off working in our radiation department. He took a few classes here and there and then one day he told us he wanted to take engineering. The company supported him and now he’s back working for us in the engineering department at Key Lake.”

The company makes extensive use of Northlands College in La Ronge to deliver training courses, which Willy finds helps to whet employees’ career appetites.

“It helps them build their confidence so that they can handle post-secondary training. Once they get a taste of it, they often want to take more training to qualify for better jobs.”

Persistence is the Key

For all of its successes, the company continues to face challenges as the number of Aboriginal professionals in the company remains relatively low.

“The northern schools are not able to provide students with some of the basic classes they need for science and technology careers. Cameco has been investing in online and distance education programs in math, science and calculus to help northern students bridge that gap.”

But the biggest challenge Cameco faces in recruiting future Aboriginal engineers is simply building up a critical mass of existing ones.

“What we really need are role models. The kids in the north who go on to careers typically become social workers, police officers or teachers because those are the professions they see. We have to make a continued effort to get Aboriginal science and technology professionals to go out and serve as mentors and role models in northern schools.”

As with all of Cameco’s Aboriginal engagement programs, Willy is sure the process of building up that critical mass of role models will be a slow, steady effort.

“Some companies in the south look to us to give them ‘magic bullet’ answers that will work overnight. The fact is that it took us 25 to 30 years to get to the point of having Aboriginal engineers working for our company. Progress will come but it will take time.”

Cameco's Northern Education and Training Programs



Academic Awards & Scholarships for Students

Athabasca Education Awards – a monetary award and gift for students in grades 7-12 for high achievement in a variety of subjects.

Cameco Corporation Scholarship for First Nation and Métis Students – in partnership with Indspire, this scholarship will provide \$200,000 over the next four years in financial assistance to northern Aboriginal students, as well as networking and mentoring opportunities.

Cameco Aboriginal Scholarship in Business – recognizes and promotes excellence among Aboriginal students who have completed the second or third year of their program in pursuit of a Bachelor of Commerce degree at the University of Saskatchewan.

Bernard Michel Scholarships – provides support for a Saskatchewan Aboriginal student entering their second or third year of study within the College of Engineering or College of Arts & Science.

Apprenticeship Programs & Work Placements

Cameco's Apprenticeship Program – designed to increase the success rate of candidates entering trade programs. Includes workplace education, aptitude testing and academic assessments.

Work placements – one-, two- or three-week visits for students attending designated training programs in Saskatchewan.

Cameco Summer Student Program – provides real world work experience to high school, university and technical

institute students. Students work in a variety of areas with the goal being to supplement a student's education and create interest in future work in the uranium mining industry.

School Presentations & Ambassador Programs

School presentations and career days – in-school presentations where we encourage kids to stay in school and complete grade 12, while promoting science, math and mining-related occupations.

Science Ambassador Program – places graduate and senior undergraduate university students in northern schools with high Aboriginal enrolment for six weeks. Ambassadors assist teachers, act as role models and expose students to science-based career options.

Career Development

Career Transition Program – helps high-potential northerners who have some post-secondary or technical certification obtain a college diploma or university degree in a mining-related profession.

Career Compass – a career management program focused on helping employees grow their careers within Cameco.

Northern Workforce Skills Assessment Program – provides skills assessment and counselling to northerners interested in working for Cameco.

Workplace Education Program – gives employees and contractors online access to instructors from Northlands College and other resources to help them with their apprenticeship or university coursework, prepare for the GED or upgrade their computer or literacy skills

Counselling & Wellness

Elder Advisors – elder advisors work on site at our northern operations twice a week, providing traditional support and counsel to employees before and after their shifts.

Employee and Family Assistance Program – counselling, e-learning and wellness information for Cameco employees working in remote locations.

U of S Indigenous Peoples Initiatives: Shooting for the Stars

BY MARTIN CHARLTON COMMUNICATIONS



Matt Dunn, P.Eng. is a man with a mission. As the inaugural Indigenous Peoples Initiatives Coordinator for the College of Engineering at the University of Saskatchewan, Dunn has taken on the mandate to attract more Aboriginal students to the college.

“There is a lot of work to do. Fifteen per cent of

Saskatchewan’s population identifies as Aboriginal but the College at any given time has only around three per cent Aboriginal enrolment,” Dunn says.

Dunn’s goal is to double the college’s Aboriginal enrolment by the 2016/2017 academic year. It’s an ambitious target but Dunn is confident that he has the plan to get it done.

Dunn, a mechanical engineer and a member of the Athabasca Chipewyan First Nation, is no stranger to high ambitions.

“What attracted me to engineering in the first place was that, when I was in high school, I wanted to become an astronaut. I read a pamphlet that said aerospace engineer was one career path into the space program. But then when I got to college one thing led to another and I ended up being attracted to mechanical engineering instead. Out of college, I went to work in the potash industry. I like to joke that I shot for stars and ended up a kilometre underground.”

Dunn says that he did not experience any direct racism during his studies but encountered many second-hand “ignorant comments.”

“Being exposed to that sort of thing was very frustrating and awkward but it didn’t hold me back. If anything, it just motivated me to excel even more.”

It’s that drive to excel and his desire to contribute to the Aboriginal community that led Dunn to accept the Indigenous Peoples Initiatives Coordinator job last May.

After consulting with stakeholders and reviewing initiatives from other jurisdictions, Dunn has put together an extensive set of proposals aimed at driving Aboriginal

interest in engineering from kindergarten through to convocation. [See page 15.]

Dunn is also talking to contacts in the private sector about a program that would be largely funded and led by industry partners.

“It’s based on a successful industry recruitment program in France. In the Saskatchewan setting, the initiative assumes companies want more indigenous engineers and should therefore be prepared to invest in training them.”

The program involves companies paying for an Aboriginal student’s tuition, books and living stipend during their undergraduate studies. In exchange, the students commit to working for the company for three summers. After graduation, the formal contract between the company and the student ends but Dunn expects that in most cases companies will offer the graduate a permanent job.

While financial support would be an incentive, Dunn believes that building peer support is just as important.

“Our proposal includes a request for an Aboriginal student space in the College of Engineering. There are a number of those already in other places on campus and they’ve already proven successful. In my own case, I know that part of my success came from having a few Aboriginal peers to hang out with so that I didn’t feel so isolated.”

Above all, Dunn emphasizes the need for existing Aboriginal engineers to be active in outreach.

“The main reason we don’t have more Aboriginal engineers is because there aren’t enough role models in the communities. If you see your aunts and uncles going into engineering, it encourages you to believe it’s something you can do as well.”

Dunn is working with a number of groups to encourage this outreach, including the APEGS Equity and Diversity Committee and a proposed new Aboriginal engineering and science professional association.

While he has his work cut out for him, Dunn’s enthusiasm is infectious.

“This is my dream job. It is extremely gratifying to come to work every day to help build a better future for Aboriginal youth.”



Proposed Indigenous Peoples Initiatives at the College of Engineering

The College of Engineering has a strong commitment to incorporate indigenous culture into engineering research and teaching, develop partnerships with indigenous communities in Saskatchewan, aggressively recruit employees of indigenous background and recruit and retain indigenous students. The following Indigenous Peoples initiatives are being developed in order to meet these ambitions.

Indigenous Student Space

A dedicated space in the Engineering Building will be made available for indigenous students to create a welcoming sense of community and peer support.

Indigenous Student Ambassadors Program

Under this proposed program, indigenous engineering students would be recruited and paid a stipend to help develop and implement initiatives such as the K-12 Outreach Program and the Indigenous Community Engagement Program and will work on promotional activities such as the program newsletter, social media channels and organizing student events and company presentations.

Indigenous Student Association

The College of Engineering will help create an Indigenous Student Association that will operate autonomously as an affiliate of the Saskatoon Engineering Students' Society.

Outreach Program

The K-12 Outreach Program will be developed during the fall and winter terms of 2014/2015 with the help of the

Student Ambassadors. In partnership with other K-12 outreach programs (such as the Sci-Fi program), this program will develop presentations and information booths for schools, career fairs, pow-wows, youth camps, science camps and science fairs.

Community Engagement

The College of Engineering will work to develop partnerships with indigenous communities to raise the awareness of engineering and to identify ways that the College of Engineering can help the communities such as working on engineering design projects.

Access Program

Once the initial programs become established, the College of Engineering can look at creating formal access programs that could include initiatives such as math and science upgrading.

Curriculum Initiatives

The College of Engineering will work towards incorporating indigenous culture into the engineering curriculum. For example, the curriculum could be updated to include discussion of the impact of natural resource development on indigenous communities.

Research Initiatives

The College of Engineering will continue to look for opportunities to expand engineering research that meets the needs of indigenous communities such as lower-cost water and wastewater treatment for small communities.



Photo courtesy Mining Matters

Rocks Pop at Summer Camp

Not since the Pet Rock craze of the 1970s has anyone inspired high school kids to declare “rocks are cool”, but the Mining Matters program succeeds in doing that on a regular basis.

Mining Matters is a charitable organization dedicated to bringing knowledge and awareness about Canada’s geology and mineral resources to students, educators and the public. The organization provides current information about rocks, minerals, metals, mining and the diverse career opportunities available in the minerals industry.

While the organization strives to raise awareness throughout the general public, it has focused particular effort in recent years on its Aboriginal Education and Outreach Programs that deliver summer camps and school programming.

“Companies, governments and communities across Canada are becoming more attuned to the role Aboriginal Canadians play in natural resource management and are working to build relationships. One way they can show this commitment is by sponsoring opportunities to broaden awareness of earth science,” says Barbara Green Parker, Mining Matters Manager of Aboriginal Education and Outreach Programs.

Mining Matters travels to communities across Canada to deliver its Mining Rocks Earth Science Programs. These programs are tailored to fit the identified needs of each community and provide an exciting educational experience in a fun and engaging camp or school setting.

The program started modestly in 2002 with a single program delivered to 18 students in Nunavut. As of June 2014, the organization has delivered 27 earth science programs and before the end of the calendar year will complete another 13. More than 2,700 Aboriginal youth and adults participated in similar programs across Canada during the 2014 program year.

First Saskatchewan Camp

When delivering Mining Rocks Earth Science Programs, Mining Matters typically partners with companies with mining operations in the area. The organization launched its first Saskatchewan program at the invitation of Foran Mining.

“Foran has significant projects near Flin Flon. The town is a major mining centre for many companies but Foran noticed that students from the Peter Ballantyne First Nation, an hour’s drive away, had little awareness or understanding of the opportunities in and around Flin Flon,” says Fiona Childe, P.Geo., Vice President of Corporate Development for Foran.

In the summer of 2013, Foran partnered with four exploration and mining companies to sponsor a Mining Matters summer camp. A total of 18 youth, ages 12 to 17, from the Peter Ballantyne Cree Nation communities of Deschambault Lake and Southend as well as from the Clearwater River Dene First Nation, participated in the camp.

The week-long camp – which included many summer camp activities as well as the educational ones – wrapped up with a closing speech from Bradley Summach, a member of Foran’s board of directors, who talked about career opportunities for campers who pursue their new interest in geology and mining.



Photo courtesy Mining Matters

“We were lucky to find Camp Quest at Christopher Lake that had a week available for our use. The Quest camp staff members were on site to assist the Mining Matters staff in giving the campers a perfect summer camp experience in this beautiful natural setting,” says Childe.

New Year, New Activities

In 2014, Mining Matters expanded the program bringing in 30 teens from the same target communities to a camp sponsored by Foran Mining, North Arrow, Masuparia Gold, Fission Uranium, NexGen Energy and Alpha Exploration. Organizers were encouraged by the number of return campers and the new participants who came on the recommendations of their friends.

Also helping out with the camp were volunteers from the sponsor companies and from the new mining education centre at Northlands College in La Ronge.



Photo courtesy Mining Matters

Quest's outdoor activities complement the fun, hands-on activities of the Mining Rocks Earth Science Program as participants explore rocks and minerals around Christopher Lake.

One activity that is a perennial hit with students, Childe says, is the cookie mining program. Students use play money and rudimentary tools to "mine" a cookie while learning lessons about the impact of commodity prices and the effects of operations, equipment and reclamation costs.

The group was introduced to the basics of atomic science and the fission reaction of uranium for the process of power generation. The group was also led on an island exploration experience to experience the challenges of setting up a geological exploration camp.

Saskatchewan Specific

Kate Grapes-Yeo, P.Ge. is the Education Outreach coordinator for the Saskatchewan Mining Association. She helped deliver the Saskatchewan-specific elements of the program.

"All of the activities we delivered had hands-on components, which I think is the best way to teach. One of the most popular activities we hosted was a model potash solution mine in which students dissolved the potash and precipitated it back out into crystals," Grapes-Yeo says.

The asteroid demonstration was also popular since it depended on the universal enjoyment humans derive from dropping objects onto other objects.

"The basic idea was to drop various objects onto soft surfaces like flour or cocoa, observing the crater patterns and showing how those relate to real-life asteroid impacts," said Grapes-Yeo.

Looking Forward

The organizers have heard many great reviews of the camp.

"The youth get very interested in earth science after participating in the program activities, which ignites their imagination and illustrates the many applications of rocks, minerals, metals and mining in daily life. Greater understanding leads to lots of questions and excitement about career opportunities and the educational path needed." says Green Parker.

Now that the camps have a toehold in Saskatchewan, organizers hope to see it grow.

"We would love to see a Saskatchewan Mining Rocks Earth Science camp become an annual event, involving even more Aboriginal youth and sponsors. Additional capacity exists to increase both the number of campers and camps," says Childe.

Member Profile



This month *The Professional Edge* chats with Joely BigEagle-Kequahtoway, Engineer-in-Training, a distribution engineer at SaskEnergy.

Tell us about your personal and professional background.

I grew up in Regina and Saskatoon but graduated high school from the White Bear Education Complex. I studied mathematics at Saskatchewan Indian Federated College – which is now called the First Nations University of Canada – and went on to take civil engineering at the University of Calgary.

Why did you choose to go into engineering?

Living on my reserve during my teen years, I saw a great need for project management for First Nations communities – for housing, roads, water and so forth – so I looked for careers that led me in that direction.

What was your biggest challenge in college?

I was a single parent with three children so putting food on the table while handling my studies was my biggest challenge. I relied on food banks. There was one right on campus in Calgary that was a big help. That made it tougher to finish my degree so it took me a little longer. With juggling my family and my studies, we had to live by a very regimented schedule every day.

What was your first job after college?

I got a job with Bosgoed Project Consultants. Gary Bosgoed was one of the few First Nations engineers at the time. While I was with him, I was seconded to work at SaskEnergy. When Gary left the province in 2005, I applied to work directly for SaskEnergy. I've worked there off and on ever since, with a few breaks for a maternity leave and a stint at Stantec.

What do you feel has been your single greatest accomplishment as an engineer so far?

I value gaining the experience of doing project management with First Nations. In particular, I worked on the First Nations University Glass Tipi Project as junior project manager. I'm proud to have been involved on this project and work with the veterans and see their dream come to fruition. Every time I enter the building now I feel a sense of pride.

Have you ever met anyone famous?

I met Kevin Costner. I did a summer internship at Stoney First Nation in Morley, Alberta as an environmental youth summer camp leader. They were hosting their annual powwow and Costner was filming a scene for *Open Range* nearby. The leadership had agreed to allow him to film on their land if he agreed to talk to the youth and speak words of encouragement. He had just arrived by helicopter and I was volun-told by the youth camp leader that I would give an introduction to the 2000 attendees and welcome him to the territory. I felt honoured to welcome him even though I was not from the area.

What are your interests outside of work?

My family and I opened Tatanka Boutique last April. I've always had an artistic side and enjoy designing my own fashions, including my children's clothes and hallowe'en outfits. My husband is an entrepreneur so I drew on his skills to open a shop featuring First Nations fashions, including fashions and jewelry

designed by my family as well as many other, mainly Saskatchewan-based artists. My son and husband manage the day-to-day but I work there on evenings and weekends.

I also do quite a bit of volunteer work but not as much as I used to. While on maternity leave I was on a lot of boards, including the Globe Theatre and First Nations University. I've cut back now but I'm still pretty active. I'm president of the North Central Community Association. I still do some speaking engagements. I've been involved with a number of Aboriginal science professional associations.

You're so busy! Do you get a chance to relax on vacation at all ?

Not much! But we just got back from Santa Fe, New Mexico and California. We received a business marketing grant to market our products down there. Even though it was partially a working trip, that was our first vacation in over four years.

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

For my career, I consider myself very lucky to have had Gary Bosgoed as a mentor. Meeting him when I was in mathematics was what drew me into engineering.

For my life in general, of course I would have to say my mother. She worked in the housing department on the reserve doing clerical work and worked her way up to becoming the housing manager. She was also instrumental in starting the Bear Claw Casino at White Bear. She has been a mentor for my overall aspirations and has been the greatest inspiration for me to this day.

What advice do you have for young Aboriginal science professionals?

I know the trials and tribulations of the studentlife. It can be overwhelming. My



philosophy was just to take one day at a time, to put one foot in front of the other. Time management is key. It wasn't one of my biggest qualities to begin with but I had to learn it. Over the years, I've had to learn to balance my culture with achieving my goals physically, mentally, emotionally and spiritually. Every day is a new day to challenge myself with learning something new – that is what engineering has taught me.



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College Corner

In this new regular column, *The Professional Edge* will highlight views and updates from the deans and department heads of the colleges, faculties and departments related to the professions.



Georges Kipouros, P.Eng.
Dean and Professor, College of
Engineering, University of Saskatchewan

Safety is at the core of the profession of engineering. Given our mandate as engineers to ensure public safety, making safety an immediate consideration in our workplaces and in engineering education is a top priority. Our college is focused on teaching safety practices and instilling an ethic of safety awareness among our students and throughout our college community.



Safety Days presentation at the U of S.

As one significant example, the college held its second annual Safety Days this fall on September 10-11. Second-year and graduate students, as well as faculty and staff, were able to attend sessions that covered topics including industry culture and practices, safety-related regulations and discipline-specific training and hazards, including laboratory safety. APEGS and industry-based representatives were on hand to deliver presentations and training. Their participation was key to the success of our Safety Days, as they brought with them valuable experience and information for our students.

The college held its first Safety Day in January 2014, and we were pleased to have expanded its second iteration to two days of training. As we plan to hold Safety Days annually, we look forward to welcoming existing and new industry participants in the future. Our intent is to produce graduates who enter their workplaces and serve the public with a well-established safety mindset.

In other news, the college recently issued a brief survey to gather program feedback from our alumni and some industry contacts. We received an excellent response and very much appreciate the time and feedback of those who participated. The survey data was being compiled at the time of writing this column, but we expect to have results to share in the near future. Participants had the opportunity to indicate how they felt our undergraduate engineering program had prepared them for various attributes key to being a professional engineer. This is one example of how working members of APEGS have an enduring effect on our college.

In addition to informing the college's ongoing review and enhancement of its academic programs, the survey data will be useful for the college's accreditation review, which will take place over the coming year. New and key to this review is a focus on 12 graduate attributes, which also formed part of our survey. An accreditation team will visit the college in October as part of the process and we expect to know final outcomes by about June 2015.

I will close this message by welcoming anyone who has not taken the survey—in particular employers of our alumni, as well as alumni of our college—to please do so. You will find the survey button link on the Alumni & Friends page of our college website (engineering.usask.ca).



New Project: Mars Rover



Update from the University of Saskatchewan Space Design Team

This past summer the University of Saskatchewan Space Design Team (USST) travelled to the Mars Society Mars Desert Research Station in Hanksville, Utah to compete in the University Rover Challenge. For the challenge we built a Mars rover named MARCO that had to communicate wirelessly with a team of operators to accomplish tasks such as sample retrieval, terrain traversing, astronaut assistance, and equipment servicing.

MARCO and the USST team achieved great success and came in seventh out of 31 international teams, second out of the Canadian teams and first out of the first-time teams.

USST has also been busy launching high altitude balloons over the summer. These high altitude balloons ascend nearly 30 km into the sky and are used for a variety of different experiments, gathering data from sensors and taking remarkable pictures and videos.

The USST would like to thank APEGS for all of the support for the team, allowing us to pursue this opportunity and participate in this amazing learning experience.

Over the following months we will be using our new experiences and research to design a new and even better rover. We will very active in our community as we continue to design, compete, and explore.

For more information on USST, visit us at: www.usst.ca
<https://www.facebook.com/UofSSpaceDesignTeam>
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Fees for 2015 are due on or before December 31, 2014

Check your contact information in your On-Line Profile – Renewal notices will be mailed soon!

Renewal notices will be sent mid-November and it is the responsibility of members and the official representative for a Certificate of Authorization to make sure contact information is up to date, including your email address.

To check your contact information, log into your On-Line Profile by clicking “Login” in the top right corner on the APEGS home page. If you have never used the system before, click on “New password / Forgot password” and follow the instructions.

If you don't receive your dues notice by December 1, 2014, contact APEGS. Fees are due on or before December 31, 2014 regardless of problems with delivery.

Other things that can be done in your On-Line Profile are: all other fee payments, entering Continuing Professional Excellence (CPE) credits, renewing Permission to Consult, managing your email/mail subscriptions and volunteering for APEGS.

What happens if I don't renew?

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

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

What if I am not working in Saskatchewan?

Members who are retired or not working (at anything) in Saskatchewan can retain membership and may be eligible for a waiver of the fees for the annual licence. More information can be obtained from the documentation accompanying the dues notice or from the APEGS office.

What if my membership ceases and I need to reinstate?

Memberships that have ceased are subject to a 15 per cent fee to reinstate in the same calendar year. Members who notify the APEGS office in writing of their intent to resign their membership on or before January 31, 2015 may reinstate their membership and licence during the calendar year without the payment of a reinstatement or application fee. The late payment penalty for the holder of a Certificate of Authorization is 15 per cent of the annual fee.

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

Eligibility for Life Membership

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

Fall 2014 Professional Development Days

Best Western Seven Oaks Inn, Regina, SK • November 13 – 14, 2014

On-Line Registration Opens October 10, 2014

<http://www.apegs.ca/Portal/Pages/professional-development-days>

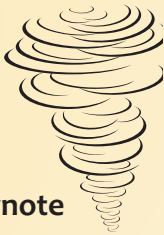
Thursday, November 13

9:00 am – 12:00 Noon

Aboriginal Issues

Bee Schadeck

The session will take you on a journey from pre-contact to today. Participants will gain an understanding of why things are the way they are today. Why are Aboriginal people on the lowest end of all social and economic indicators? What are Treaties? Why do we have them? What are Aboriginal and Treaty rights? How did those rights get enshrined in our Constitution? The significance of this and recent court cases will be tied to the duty-to-consult as it relates to Alberta and NE British Columbia in particular. This knowledge is foundational to resource development and business success in Canada and getting it wrong could be a significant business risk.

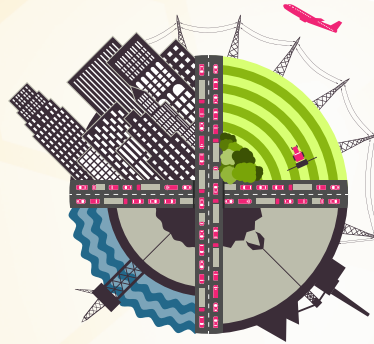


Lunch Keynote

Meet Greg Johnson, the Tornado Hunter.

Greg is one of North America's top professional storm-chasers and severe weather experts. He is also an accomplished photographer, speaker and workshop leader. With over 10 years experience, Johnson enjoys chasing classic prairie thunder and lightning storms, tornadoes, hurricanes and blizzards. He plans to continue travelling the world year-round to satisfy his appetite for capturing extreme weather.

Using sophisticated weather-tracking technology, his ability to read severe weather patterns and a team of dedicated sidekicks, Greg has put over 200,000 kilometres on his Tornado truck intercepting and documenting hundreds of storms across the United States and Canada since 2011. Audiences all over North America have enjoyed his presentations which encourage us to follow our passions, no matter what they may be.



1:00 – 4:00pm

Climate Change

Topics include :

- Assessing risk and uncertainty resulting from climate change
- Adapting methodologies, codes and standards
- Case studies
- Panel discussions

6:45 pm

Evening Networking Event

Bushwacker brewery tour and tasting.

\$35.00 per person

Your tour includes the tasting of four locally brewed beers, as well as some appetizers. If you love what you tasted, you can visit the off sale and take some home with you. Transportation provided both ways.

Friday, November 14

9:00 – 12:00, 1:00 – 4:00

Pinnacle Project Management

Lorrie Slade, P.Eng. received a degree in Industrial Engineering from Dalhousie University. After working as a process engineer for 10 years, she turned her focus to project management and is currently Service Line Leader of Training for Pinnacle Project Management.

Beyond the Gantt Chart

As project managers, it is often too easy to get caught up in trying to make the Gantt chart fit the project. While it is true that a project schedule is a necessary component of a successful project, we must remember to pay attention to all of the other aspects of a project. Aspects, such as human resources, communications, risks and change management, could require attention during the initial stages of project planning or may be required straight through to the end of a project.

During the morning session we will discuss each of the key areas of project success, what is meant by and required during each area and at what point you should start thinking about them.

At the end of this workshop, you will be able to:

- Speak to each of the key areas in project management
- Build a winning team
- Communicate effectively with resources throughout all levels of a project
- Define the types of and sources of risk and understand how to plan (or react to) each
- Understand how change affects a project
- Close out a project



Managing the Human Side of Projects

The afternoon session will focus on the human side of projects - specifically how as project managers you can use time effectively to get the job done as a team.

During projects a great amount of time is spent creating, developing and managing resources. Since no two resources are the same, given that they have varying skillsets, backgrounds, work and life experiences, each one will respond to a group/team environment in very different ways. Yet, because you are working as a team, you need to make decisions together, acting as one cohesive unit. This is often easier said than done.

We will walk through the various stages of forming a team, teach you how to bring together resources, how to build an effective team and work together towards a common goal. From facilitating meetings, to making decisions, to dealing with conflict, this session will provide you with tips and techniques that will set you and your project up for success.

At the end of this workshop, you will be able to:

- Identify different styles of leadership
- More effectively motivate and lead teams
- Make better decisions as a team
- Better resolve conflicts

Lunch Keynote

Monica Wagner IAF-CPF™

Monica Wagner is a Certified Professional Facilitator with the International Association of Facilitators and has provided facilitation expertise for over 12 years.

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Engineering and Geoscience Bursaries, Scholarships and Member Grants Available

The Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) is pleased to announce 14 annual bursaries and scholarships to be awarded at the University of Saskatchewan and the University of Regina and two member grants to be awarded by APEGS.

Entrance Bursaries

These bursaries are aimed at encouraging and assisting high school graduates entering the study of engineering or geoscience .

These bursaries are particularly aimed at Aboriginal students who are under-represented in the professions.

Two bursaries of \$3,625 (one for each university) to be applied towards first-year tuition in any field of engineering for a self-identified Aboriginal student.

Two bursaries of \$2,750 (one for each university) to be applied towards first-year tuition in any field of geoscience for a self-identified Aboriginal student.

Two bursaries of \$3,625 (one for each university) to be applied towards first-year tuition in any field of engineering for a student of any background.

Undergraduate Scholarships

These academic performance and community participation-based scholarships are aimed at recognizing leadership and volunteerism among students currently enrolled in engineering or geoscience.

Six scholarships of \$1,875 (three for each university) for current students of any field of engineering.

Two scholarships of \$1,875 (one for each university) for current students of any field of geoscience.

For more information on Bursaries and Scholarships contact the universities.

<http://www.uregina.ca/safa/>

<http://students.usask.ca/>

Member Grants

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

Two member grants of \$7,500 (one for each university) for current APEGS members returning for postgraduate studies in fields of engineering, geosciences or an MBA program.

For more information on Member Grants refer to the APEGS website.

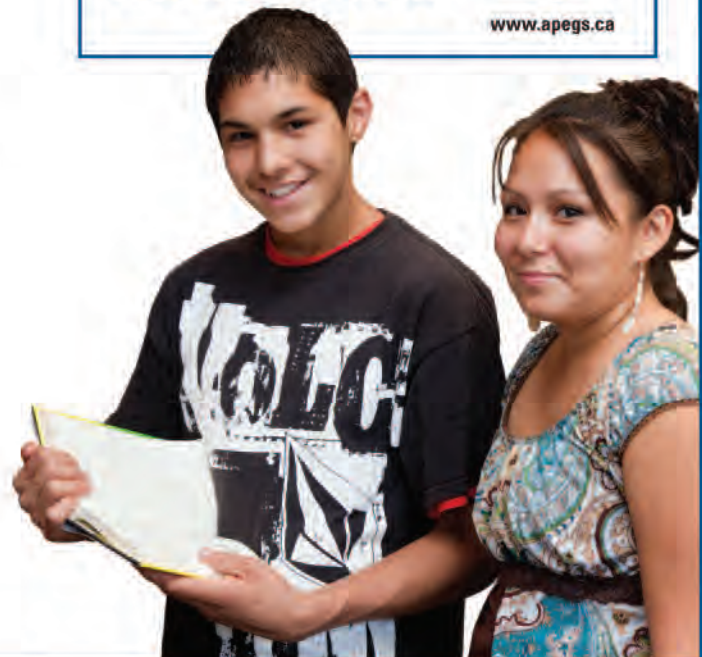
<http://www.apegs.ca/Portal/Pages/Scholarships-Bursaries-Grants>

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For more information on these scholarships please visit the APEGS website at www.apegs.ca

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Each scholarship will assist the candidate to pursue studies or research in a field other than engineering. The discipline should favour the acquisition of knowledge, which enhances performance in the engineering profession. Candidates must be accepted or registered, no later than September 2015, in a faculty other than engineering.

APPLICATION DEADLINE: March 1, 2015

Application forms are available at engineerscanada.ca or by contacting the Engineers Canada National Scholarship Program at awards@engineerscanada.ca

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APEGS View



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Rodney G. Ogilvie, P.Eng.
Arthur J. Pankratz, P.Eng.
A. Stewart Ringheim, P.Eng.
Thomas R. Stuart, P.Eng.
Benjamin B. Torchinsky, P.Eng.
Louis E. Toth, P.Eng.
Dr. Douglas G. Vandenberghe, P.Eng., FEC
Christopher A. Wagg, P.Geo.

2015

APEGS Annual Meeting and Professional Development Conference

Through the Decades - We See More

April 30, May 1 and 2, 2015
Hotel Saskatchewan, Regina SK

The APEGS Annual Meeting Planning Committee invites you to submit an "Expression of Interest" to do a presentation during the professional development sessions at the 2015 APEGS Annual Meeting and Professional Development Conference on Friday, May 1st, 2015 in Regina.

Presentations are scheduled for 45 minutes, allowing for a 40-minute presentation and 5 minutes of questions and answers.

Your "Expression of Interest" should contain the title of your presentation and a maximum 100-word description. Submissions should include an engineering or geoscience component or related theme.

Submissions should be forwarded to Robert Schultz: rschultz@saskpower.com or Chris Wimmer: cwimmer@apegs.ca

For additional information contact Chris Wimmer at (306) 525-9547 or 1 800 500-9547 (North America).

Terms and Conditions

All submissions will be subject to review by the APEGS Annual Meeting Planning Committee. If selected for the conference, authors are authorizing publication of their submission in the conference program.



regina **engineering** society

A Year in Review

The 2013-2014 year for the Regina Engineering Society (RES) concluded with its annual general meeting at the Murray golf course on June 6. Even the dreary windswept day did not put a damper on the annual golf tournament and barbeque. Prizes were won, the year was reviewed and a new executive was elected into council. A big thank you to all who supported us with their donations, time and golf swings. The Murray golf course would also like to thank you all for your generous donations of golf balls to their course wilderness.



Lisa Vindevoghel (right) presenting Dena McMartin with the award for volunteer service at the Horizons Dinner

The AGM ended a year of change for the RES. Among those changes is a beautiful new logo created by Bradbury Branding and Design, bringing a new look to the RES.

The year also included the RES annual Horizons Dinner, which featured guest speaker Jeff Eichhorst, Ph.D. As the director of toxicology, chemistry and newborn screening, Jeff provided a keynote on the design of the new Saskatchewan Disease Control Laboratory.

RES award recipients included Derrick Bellows, P.Eng., for engineering excellence, Dena McMartin, Ph.D., P.Eng., FEC, for volunteer service, and Tyler Whiteside for the Engineer-in-Training award.

Other 2013-2014 events included the annual IMAX and Science Centre day, pool night and support of the U of R fourth-year project day.

The RES is looking forward to 2014-2015. Along with our continued support for existing annual initiatives, we have started the year with a plan to get involved with new events. Over the summer, the RES helped sponsor the Saskatchewan Science Centre's Science Camp by presenting a two-hour seminar about engineering, with activities geared towards teaching details of electricity. Everyone involved had a great time using conductive Plasticine to learn about science and engineering.

For more info on the RES, visit our website at www.reginaengineeringsociety.com. To contact the RES or if you would like to get involved, please email: ReginaEngineeringSociety@gmail.com.

Annual Meeting Member Survey 2014

Approximately 5,000 APEGS members resident in Saskatchewan were invited by email to participate in the online Annual Meeting survey in 2014. The annual meeting survey solicited feedback regarding the events and structure of the 84th APEGS Annual Meeting held in Saskatoon May 1-3, 2014. The APEGS Annual Meeting is conducted every year during the first weekend in May.

Over 340 members completed the survey, representing a response rate of approximately 7 per cent. The respondents in attendance at the Annual Meeting were asked to rate each event on a scale of one to four (1 poor, 2 fair, 3 good and 4 excellent). All events were rated higher than a three on average. The Friday track sessions were individually rated, with 12 of the 20 sessions receiving a rating greater than three and no single session rated lower than a 2.5. The track sessions as a whole received an average rating of 3.41. The host facility was well received with an average rating of 3.45. Respondents who did not attend the 2014 Annual Meeting were provided the opportunity to provide general feedback on the Association's Annual Meeting.

The survey indicated that a large percentage of the people attending the Annual Meeting had been invited by APEGS to attend. It was inconclusive what percentage of attendees were invited by the Association, but 70 per cent of the survey respondents that attended the Annual Meeting stated they were APEGS volunteers.

Over 50 per cent of the attendees indicated they personally covered the costs to attend the Annual Meeting. Just under 30 per cent indicated APEGS covered their costs to attend and approximately 25 per cent stated their employer covered the costs. These percentages total greater than 100 per cent, so it appears for some attendees the costs are shared.

All respondents were asked to indicate for what events they were willing to pay a registration fee. Registration fees would help offset the costs APEGS incurs to conduct the Annual Meeting. Over 40 per cent indicated they would pay a registration fee for the professional development sessions. Over 40 per cent were also willing to pay to attend banquets and approximately 30 per cent would be willing to pay for luncheons. Thirty per cent of respondents indicated they would pay an overall registration fee to attend all the events. Just over 20 per cent indicated they are not willing to pay any fees.

Some general feedback was solicited from respondents regarding attending Annual Meetings. When asked why they did not or will not attend the APEGS Annual Meeting, over 35 per cent indicated they are not interested. This question received a large volume of comments, with the most common response being that they are too busy. Location of the Annual Meeting was also an important consideration in deciding whether to attend or not.

The Connection and Involvement Committee and the Professional Development Committee thank you for your participation in the survey. Additional comments or suggestions are always welcome and encouraged on an ongoing basis. Feedback can be forwarded to Chris Wimmer, P.Eng., FEC cwimmer@apegs.ca or Patti Kindred, P.Eng., FEC pkindred@apegs.ca at the APEGS office. All feedback will be provided, to the appropriate planning group in confidence.



Call For Council Nominations

Nominating Committee

The nominating committee, chaired by Past President, Dwayne Gelowitz, P.Eng., FEC, is soliciting names for the positions described below. You may contact staff support to the Nominating Committee, Bob McDonald, at rhmcdonald@apegs.ca to propose the names of potential candidates. Bob may also be reached through the APEGS office in Regina by phone at 306 525-9547 (toll free 1-800-500-9547 North America), or facsimile 306 525-0851.

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

Submission of Nominations

Any five members may nominate over their signatures an eligible nominee for any elective office, except that of President. Such nominations shall be in the hands of the Registrar at least forty-five days before the election is to take place. To meet this requirement, the nominations must be in the APEGS office no later than 5 p.m., Thursday March 12, 2015, as the election will take place when ballots are counted on Monday April 27, 2015, the 'polling day'.

2015 Vacancies & Terms of Office

Officers

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

Group and Electoral District Councillors - to serve three-year term

- Group II (Mechanical and Industrial)
- Group V (Agricultural and Forestry)
- Members-in-Training
- South-East District
- Geoscience South District

Eligibility for Nomination

- Only members in good standing are eligible for nomination. A person elected to Council may only hold office while a resident of Saskatchewan.
- A person nominated for President-Elect must have served at least one full year (i.e. from the close of business at one annual meeting to the close of business at the next annual meeting) as a member of APEGS Council prior to the date on which they would assume office as President-Elect.
- A person who is nominated as a representative of an electoral group must be classified with the association in that electoral group. The Councillor representing Members-in-Training can complete the term of office after obtaining his or her P.Eng. or P.Geo. status.



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News Beyond Our Borders



Fed. government supports science and engineering researchers

Government of Canada media release - The Government of Canada announced a significant federal investment to support scientists, engineers, post-doctoral fellows and students at universities in Canada as they drive innovation, and ultimately economic prosperity, across the country. Of the total investment, \$8.9 million will support researchers at universities in the province of Manitoba.

The awards highlighted at the University of Winnipeg are part of the 2014 competition results for the Natural Sciences and Engineering Research Council of Canada's Discovery Grants, Discovery Accelerator Supplements, Alexander Graham Bell Canada Graduate Scholarships, Postgraduate Scholarships and Postdoctoral Fellowships.

Canadians rank high in science knowledge, attitudes

Council of Canadian Academics - A new expert panel report, *Science Culture: Where Canada Stands*, released by the Council of Canadian Academics, helps to paint the clearest picture of Canada's science culture and science culture support system in 25 years. The expert panel who conducted the assessment found Canadians excel in public science knowledge, attitudes and engagement; however it also determined there is room for improvement in some areas, including skills development.

The expert panel based their findings on a review of relevant literature and a new public survey of 2,000 Canadians.

The panel's key findings:

Canadians have positive attitudes towards science and technology and low levels of reservations about science compared with citizens of other countries.

Canadians exhibit a high level of engagement with science and technology relative to citizens of other countries. (93 per cent of Canadians reported being interested in news of scientific discoveries and technological developments.

Canadians' level of science knowledge is on a par with or above citizens of other countries for which data is available.

Approximately 42 per cent of Canadians surveyed exhibit a sufficient level of knowledge to grasp basic concepts and understand general media coverage of scientific issues.

Canada's performance on indicators of science and technology skills development is variable compared with other Organization of Economic Cooperation and Development (OECD) countries. Canada ranks first among OECD countries in overall post-secondary educational attainment, but only 20 per cent of first university degrees are in the sciences and engineering.

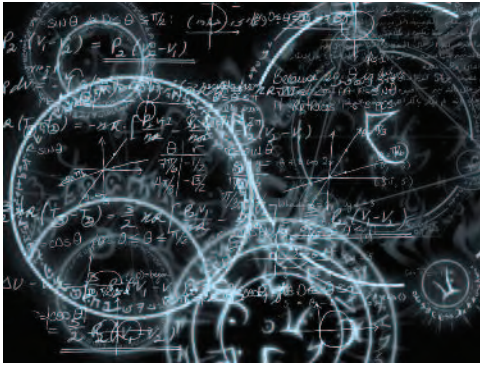
Engineers help Nova Scotia businesses innovate

Government of Nova Scotia media release - More small and medium-sized businesses will now have direct access to Dalhousie University engineers to develop and make prototypes of new products.

The Nova Scotia Product Design and Development Centre will provide Nova Scotia businesses with product research, development and prototyping services, helping to turn ideas into marketable products.

The centre merges two Dalhousie Faculty of Engineering groups, product research and design and the Innovation in Design Lab (iDLab). The merger means the centre will reach more businesses and better coordinate activities.

The Nova Scotia government is providing \$85,000 in one-time funding to help launch the centre.



Maths and science increasingly critical to career success

Canadian HR Reporter - In high school and university classrooms across the United States, a quiet revolution is under way as students adapt to a difficult job market by choosing more quantitative disciplines.

Nearly all the highest paid jobs in the United States require training in science, technology, engineering and mathematics (STEM) disciplines.

More than 30 of the 50 best-paid occupations in the United States require graduate or postgraduate training in STEM subjects, including medical sciences, according to pay data collected by the U.S. Bureau of Labor Statistics as part of its annual survey of occupational employment and wages.

In response, annual enrolments in undergraduate STEM programs have jumped by almost 700,000 (23 per cent) between 2003 and 2011, the latest year for which figures are available, according to the US Department of Education.

Enrolments in STEM disciplines have been growing much faster than for undergraduate programs as a whole, which rose by just 5 per cent over the same period. In fact, increased enrolments in STEM accounted for more than half of the total increase in university enrolments over the eight years between 2003 and 2011.

Pay incentives as well as the associated professional prestige are steering students towards the highly numerate training needed to be financially successful in an economy dominated by computers, data analysis, engineering and complex technology.

North America's oil and gas boom is just one example of how financial incentives are shaping the educational choices of a new generation. Average earnings for qualified petroleum engineers shot up from \$87,000 in 2003 to \$149,000 in 2011, a 70 per cent increase, at a time when earnings across the whole economy have been struggling to keep pace with inflation.

In other fields, average pay for mathematicians rose 34 per cent between 2003 and 2013. Pay for operations research analysts was up 32 per cent. Statisticians saw their average earnings rise 34 per cent. There were also better-than-average increases for materials engineers (39 per cent), aerospace engineers (39 per cent) and naval architects (31 per cent).

Lawyers, a literate discipline, experienced a smaller-than-average and below-inflation increase in average earnings of 22 per cent, while economists, another high status but more quantitative discipline, saw their average earnings increase just over 30 percent.

Enhanced oil recovery lab a draw for researchers

St. John's Telegraph - The new Hibernia Enhanced Oil Recovery Laboratory emerges like a scientific secret garden inside Memorial University of Newfoundland's Bruneau Centre for research and innovation.

Created over the past year in a space on the first floor once used for core storage, the lab has a touch of industrial chic — with tool box-like workstations and moveable, flexible fume hoods that snake down from the ceiling above.

Large pieces of state-of-the-art equipment shine, reflecting every penny of promise afforded by more than \$15 million in contributions to its development and operation to date.

The lab is the brainchild of Lesley James, an assistant professor and Chevron Chair in Petroleum Engineering in the university's Faculty of Engineering and Applied Science, and leaders at the Hibernia Management and Development Corp. (HMDC), notably president Jamie Long.

It is the only facility of its kind in Canada and focuses on studying enhanced oil recovery (EOR) techniques specific to the conditions of offshore Newfoundland and Labrador — beginning with the Hibernia oil field for at least the next five years.

The EOR studies, simplified to their most basic, look at what might be done to release oil still trapped within the subsea rock to move it through the microscopic pores in the oil-producing reservoir rock to the production well.

News from the Field

INFRASTRUCTURE AND CONSTRUCTION



panow.com

Sask. construction activity tops \$266M in May

Regina Leader-Post - Building permits in Saskatchewan in May totalled \$266.2 million, up 6.3 per cent from \$250.4 million in April, but down 5.9 per cent from \$282.9 million in May 2013, Statistics Canada reported.

Residential permits saw the biggest increase, with a 31.5 per cent rise to \$165.7 million from \$126.0 million in April and 16.2 per cent increase over \$142.7 million in May 2013.

However, non-residential construction was down on both a monthly and year-over-year basis in May. Permits issued for non-residential construction projects declined 19.2 per cent to \$110.5 million from \$124.4 million in April and 28.3 per cent from \$140.2 million in May last year.



Paving the Prairies – a dual use for canola oil

Global News - As municipalities and cities face tight budgets and the demand for safer commutes increases, one Saskatchewan man believes he may have a solution to the problem.

From the deep fryer to the road, Prairie Energy Resources collects used canola oil from about 100 restaurants all over the province to treat dusty gravel roads. The benefit is twofold. It prevents water from going into the road. It repels water off the surface so effectively that, within 10 minutes after it rains, the road is dry again.

The product is also cost-effective, especially since the company has found used oil to be more effective than new. Once the canola oil bakes in the sun, it forms a hard asphalt-like surface – an outcome which piqued the interest of the Saskatchewan Ministry of Highways and Infrastructure.

At a fraction of the cost, the province figured it was worth a trial run. Nine sections were part of the trial.

“One thing we found, especially on higher volume roads was that there would be a crust develop on the road which over time would break down with traffic flows and then there would be a rough surface for motorists to travel on,” said a Ministry of Highways spokesman.

The province will continue using magnesium chloride and calcium chloride to control dust on gravel roads instead. The City of Saskatoon is testing the oil as well. Prairie Energy Resources applied the product on Alberta Avenue on July 16. The surface appears hardened and dust free but Public Works says the city is still evaluating the results.

SK manufacturing sales hit record \$1.46B in May

Regina Leader-Post - Manufacturing sales in Saskatchewan reached a record \$1.46 billion (seasonally adjusted) in May, a 2.4 per cent increase over \$1.42 billion in April and the second-highest growth rate among the provinces, according to data released by Statistics Canada.

On a year-over-year basis, manufacturing shipments increased 4.8 per cent from \$1.4 billion in May 2013, good for fifth place among the provinces in terms of percentage change.

Manufacturing sales rose in six provinces in May, with almost two-thirds of the gain concentrated in Ontario.

IRD introduces new sensor technology

IRD media release - International Road Dynamics Inc. (IRD) introduced a new sensor technology and traffic data collection solution at two international conferences. The VectorSense(TM) sensor suite provides a new measurement technology for traffic data collection, commercial vehicle operations and toll road operations. The VectorSense sensor suite is a highly accurate in-road tire and vehicle footprint measurement technology.

“The VectorSense sensor suite also provides data that could only be estimated in the past,” said Randy Hanson, P.Eng., IRD’s VP and COO.

“The VectorSense sensor suite has the potential to change the way transportation agencies monitor roads and we are pleased to see strong interest from both traffic data users and road designers.”

IRD is a highway traffic management technology company based in Saskatoon.



www.producer.com

McMartin says the 2014 flooding could be more common from now on.

“Most of the flood predictions lead us to expect that we will see more floods in the future and that’s because we expect to have less frequent but much more intense rain activity,” McMartin said.

The professor said the province has done great work updating infrastructure and adding more dikes, ditches and flood protections. However, McMartin warns that much more work is needed.

McMartin suggests Saskatchewan needs to work with Manitoba and North Dakota to build new reservoirs that would not only drain water safely away after big rain events, but also act as a source of water when the area is dry.

“It’s a really expensive approach but I think that as we start tallying the cost of this year’s flood, those types of approaches start looking much more affordable.”

McMartin also pointed out it would be good to look at how Saskatchewan communities can better adapt to flooding.

ENVIRONMENT

Heavy rain and flooding could be new SK norm

CKOM - Saskatchewan could be in for more severe flooding in the future and one University of Regina professor warns that the province needs to continue to advance its infrastructure to prepare for it.

Dena McMartin, P.Eng. works in environmental systems engineering and says the current flooding is completely different than what Saskatchewan saw in 2011. The previous flooding was triggered by the spring melt in April 2011 - a month which saw very little rain. In 2014, the province didn’t see a big melt, but rather, a moist spring followed by significant rainfall in July.

Calls for government inspection of SK mine ponds

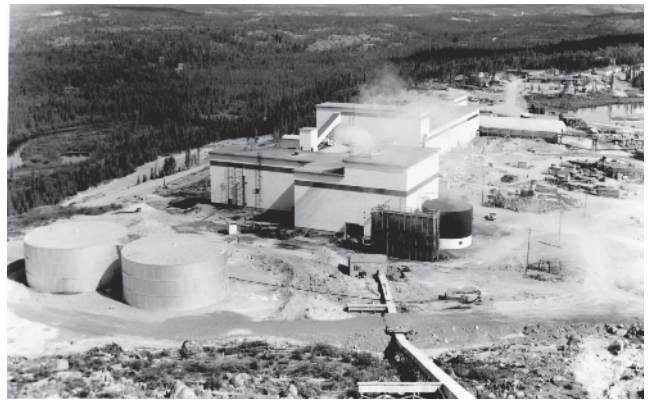
CBC News - On the heels of one of the worst spill disasters in Canadian history, some people in Saskatchewan are worried about how this province protects and regulates tailings ponds.

In Saskatchewan, mining companies hire consultants for tailings pond inspections. Those reports are passed on to the Ministry of Environment for review.

Peter Prebble of the Saskatchewan Environmental Society said he would prefer the government do its own inspections of the tailings ponds and not rely solely on the companies’ reports.



wikimedia.org



res.cloudinary.com

ENERGY

SK coal power plant shuts down after half century

CBC News - After 54 years of powering the province, Saskatchewan's oldest coal-fired power plant has been shut.

The closure of Boundary Dam unit 2 follows last year's shutdown of unit 1.

Tim Schuster, senior director at the power station, says the unit played a role in building Saskatchewan. He says the shutdowns are nostalgic events for people who spent their entire careers at Boundary Dam.

SaskPower says the 61 megawatts produced by Unit 2 will be replaced by an increase in natural gas generation, as well as electricity sold to the province by Manitoba Hydro.

While the shutdown represents a move away from coal power in Saskatchewan, nearby Boundary Dam Unit 3 — also a coal-powered generator — is being outfitted with a cutting edge carbon capture and storage system.

Estevan mine inks long-term agreement

Westmoreland media release - Westmoreland Coal Company has entered into a long-term coal supply agreement with SaskPower to supply coal from the Estevan mine. The agreement results in a commitment of over 60 million tons of coal from Estevan through 2024.

Westmoreland Coal Company is the oldest independent coal company in the United States and its operations include Saskatchewan.

URANIUM AND NUCLEAR

Nuclear watchdog requests checks

The Canadian Press - A toxic spill from a British Columbia

mine has prompted the country's nuclear watchdog to request a series of checks at uranium facilities.

The Canadian Nuclear Safety Commission asked the uranium mining and milling operations it oversees to ensure that all necessary inspections and monitoring are in compliance with licence conditions.

"The recent tailings dam breach that occurred at the Mount Polley mine in British Columbia on Aug. 4, 2014 has raised awareness of issues associated with tailings impoundments," said a letter sent to Areva Resources, Cameco Corp. , Rio Algom, Willet Green Miller, P.J. Brugger and Associates, EWL Management Ltd. and Denison Mines Inc.

"This is a reminder that vigilance must be maintained by ensuring that tailings dams continue to be properly designed, constructed, operated, maintained and monitored to prevent such occurrences."



Tough cleanup 50 years later at uranium mill

The Canadian Press - More than 50 years after a Saskatchewan uranium mill closed, heavy machinery is once again rumbling across the remote northern corner of the province.

But this time workers at the former Lorado mill are cleaning up a massive pile of radioactive, acidic tailings that has poisoned a lake and threatened the health of wildlife and hunters for decades.

“I think we’re a lot more environmentally aware than we were 40 or 50 years ago,” said Ian Wilson with the Saskatchewan Research Council, which is the Crown-owned company that’s carrying out the cleanup.

The Lorado mill is near Uranium City, less than 50 kilometres from the Northwest Territories boundary. It’s where uranium mining once supported a community of up to 5,000 people.

The Canadian Nuclear Safety Commission says the town was one of several in Canada to rise following the Second World War and during a boom in uranium demand that was driven by military needs.

Lorado only operated from 1957 to 1961, but during that time it produced about 227,000 cubic metres of tailings that were dumped beside Nero Lake. The tailings are acidic, according to the environmental impact statement for the cleanup project, and water has run from them into the lake and killed just about everything in it.

Windblown dust from the top of the tailings, the assessment says, also presents “a gamma radiation and radon concern.”

Wilson’s job is to lead a two-year project in which workers will cover the tailings with a layer of specially engineered sand to prevent water from running over them and into the lake. As well, a lime mixture is to be added to the lake to counteract the acidity.

It’s a difficult place to carry out such work. Some equipment is available from local contractors, but everything else has to come in via plane, barge or the ice road, which is open for only a short period each winter.

The project is controversial. The Prince Albert Grand Council, which represents a dozen First Nations in central and northern Saskatchewan, said many residents favour removal of the tailings rather than covering them up.

The Saskatchewan Environmental Society says more investigation should have been done on the feasibility of removing the tailings. It questions how the covering will stand up as climate change delivers more severe weather, and whether government will continue to monitor the sites.

Cameco Corp encounters delays at Cigar Lake

Mining.com - Uranium miner Cameco Corporation announced ore bodies at its Cigar Lake project in Saskatchewan would not be milled until early 2015 due to freezing problems.

The company said ground freezing, which is used to freeze the ore and ground around the mine site, has not advanced as quickly as expected.

Cameco maintains its long-term goal of mining 18 million pounds annually from Cigar Lake by 2018.

U of S partners with nuclear fusion company

Saskatoonhomepage.ca - General Fusion is working with the University of Saskatchewan trying to find advanced materials that can handle temperatures exceeding millions of degrees Celsius.

The BC company and the U of S’s Plasma Physics Laboratory will build materials that can be used for a prototype fusion reactor.

In the theory of nuclear fusion, magnetic fields hold together an extremely hot state of matter called plasma. Steam from the plasma would be used to generate heat.

Chief scientist at General Fusion Michel Laberge says there is one major issue: finding the right material inside the machine. Most experiments using plasma have been unsuccessful in sustaining the heat, which is similar to temperatures found on the sun. Laberge says they want to find a material that can keep the plasma hot as long as possible.

The partnership is set for 10 months but, if successful, the two sides could continue to work on the groundbreaking technology.

OIL AND GAS



www.engineering-today.com

Mistral starts construction of NGL plant, pipeline

Oil & Gas Journal Online – Last year, Mistral Midstream Inc., Calgary, reported construction on a gas processing and natural gas liquid (NGL) extraction facility, a 105-km ethane pipeline and a 75-km gas gathering pipeline near Midale, Sask.

The company recently received the required regulatory and environmental approvals for the facility and pipelines and is now starting the work, targeting a first-half 2015 in-service date.

MINING



Mixed views on mining, new survey says

Saskatoon StarPhoenix - Canadians love farmers, have split opinions on forestry and don't understand mining, according to a survey of perceptions of resource industries.

The Canada West Foundation's Centre for Natural Resources Policy had Ipsos Reid survey 600 residents from British Columbia, Alberta, Saskatchewan, Manitoba and Ontario for their perceptions of four natural-resource sectors.

The survey looked at perception, trust and willingness to advocate for the four sectors: energy, forestry, mining and agriculture. Responses were weighted by provincial population, while Ontario results were kept separate to compare attitudes with a region far less dependent on natural resources.

Forestry was the most polarizing of sectors. The report notes that the sector is better respected after criticism over clear-cutting spiked in the late 1990s. But sustainability came out as both the top reason to support the sector at 22 per cent, and the top reason not to, at 30 per cent.

Mining had the most varied support by province. Overall, the sector had the lowest familiarity among Western Canadians, which didn't surprise Pierre Gratton, president and CEO of the Mining Association of Canada. Gratton's group has commissioned similar annual surveys specific to mining for the past three years, all of which had similar results.

Meanwhile, agriculture came out on top, with more than half of respondents saying that they trust the industry, understand it well enough to have an opinion and would be willing to speak positively about it.



Federal government invests in mine school in Saskatchewan

Journal of Commerce - The federal government recently announced \$2.5 million in funding for Northlands College in northern Saskatchewan to help create the Northlands College Mine School and to support mining skills-training.

Northlands will use the funds to purchase heavy equipment simulators and build a new facility to house the simulators, which enable students to operate heavy machinery virtually and learn how to handle emergencies.

The simulators will assist in training for the master driller program, as well as on-the-job skill demonstration for certification.

The announcement was made July 30, 2014 at the La Ronge campus of Northlands.

The new Mine School will also include lab facilities which will allow Northlands College to contribute to research initiatives in mining exploration and mine operation, in conjunction with the Saskatchewan Institute of Applied Science and Technology and the University of Saskatchewan.

Almost one in every 16 jobs in Saskatchewan comes directly or indirectly from mining. It is expected that this statistic will rise to one in five jobs by 2028.

Finding experienced and skilled mining employees is becoming increasingly difficult in Saskatchewan, while industry demand continues to grow.

Northlands College will focus on recruiting northern residents, as well as Aboriginal students from across Saskatchewan, for the new mining programs.


Construction of the facility to house the simulators is expected to be completed by December 2016.

5 not-so-true ideas about life insurance

(and how to get your facts straight)

1 Employer benefits are enough

Employers usually provide life insurance that's 1-2 times your salary. Is that enough for your family? If you change jobs, will you be able to take your coverage with you?



1-2 times
your annual income is usually provided by employers



7-10 times
your annual income is often cited as the rule of thumb for coverage amount¹

2 Optimists need not worry

Plan like a pessimist — hope for the best but prepare for the worst — especially when going through a life-changing event.

Marriage

Mortgage

Children

New job

3 It's complicated

How much insurance is right for you? It depends on your situation. Here's a formula you can use to figure it out:²

$$A - (B + C + D + E) = \text{Insurance amount}$$

- A** = Your family's **assets** and income
- B** = Your family's monthly **budget** needs
- C** = **Costs** associated with your death
- D** = **Debts** to be paid off
- E** = **Exceptional expenses** (e.g., education costs)

4 They're all the same

Not in this case. Only the **Engineers Canada-sponsored Insurance Plans** are created specifically for engineers. *They are not available to the general public!*

EXCLUSIVE

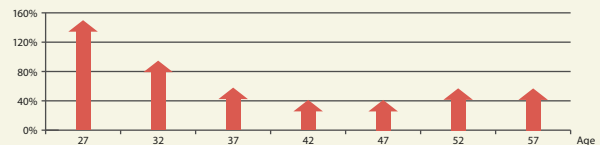
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¹ http://money.cnn.com/retirement/guide/insurance_life.moneymag/index11.htm ² www.gailvazoxlade.com/articles/just_in_case/how_much_insurance.html ³ LifeGuide® Release 2013.7A



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traveladventureeverywhere.blogspot.ca

Tunnelling in a Resource Driven World Tunnelling Association of Canada 2014 Annual Conference

October 26-28, 2014, Vancouver, BC
www.tac2014.ca

16th Canadian National Conference on Drinking Water

October 26-29, 2014, Gatineau, QC
www.cwwa.ca

Buildings for Tomorrow Canadian Conference on Building Science and Technology

October 28-31, 2014, Toronto, ON
obec.on.ca/CCBST2014/NEWS

Masterclass: Shutdowns and Turnarounds

October 29-31, 2014, Regina, SK
www.pmtp.ca

Effects of Climate Change on Healthcare Webinar

October 29, 2014
<http://www.ches.org/conferences-and-events/>

2014 IEEE Electrical Power and Energy Conference

November 12-14, 2014, Calgary, AB
www.ieee.org/conferences_events/conferences

Influencing Decisions - Politics in Project Management

November 25, 2014, Vancouver, BC
www.apegbc.ca/Events

Emerging Issues Conference

November 26, 2014, Winnipeg, MB
www.meia.mb.ca

Development of a Business Plan for Engineering Consulting Firms

December 09-10, 2014, Vancouver, BC
www.apegbc.ca/Events

Mineral Exploration Roundup 2015

January 26, 2015, Vancouver, BC
www.amebc.ca/roundup/2015

APEGS Law and Ethics Seminar

April 10-11, 2015, Saskatoon SK
www.apegs.ca/Portal/Pages/Professional-Practice-Exam

APEGS Annual Meeting

May 1-2, 2015, Regina SK

APEGS Professional Practice Exam

May 30, 2015, Regina and Saskatoon SK
www.apegs.ca/Portal/Pages/Professional-Practice-Exam

New Dimensions : Canadian Institute of Mining 2015 Convention

May 9-13, 2015, Montreal, QC
convention.cim.org/en.aspx