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# EDGE

ISSUE 148

JANUARY/FEBRUARY 2014



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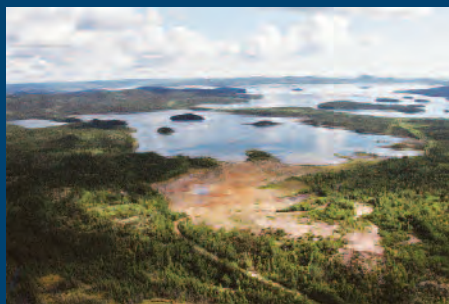
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Photo courtesy of:  
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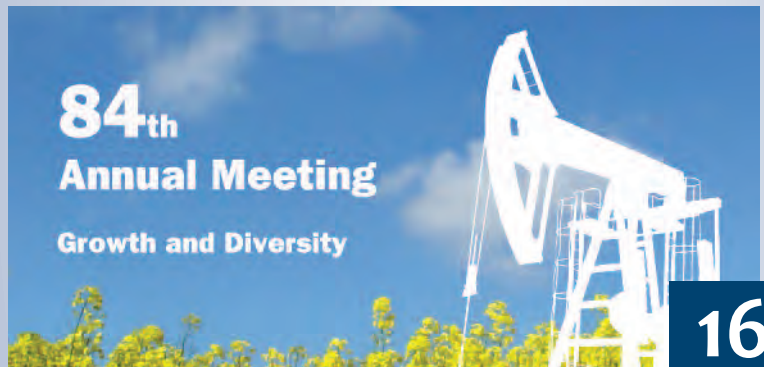
Former Lorado Uranium Mill Site and Nero Lake  
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# President's Report



President Dwayne A. Gelowitz, P.Eng., FEC

Thinking back to the day of our graduation, we left university with an initial education on the theory and application of engineering or geoscience principles.

This is the basis of the knowledge that we possess as professionals, but is far from sufficient to sustain us throughout our careers. It is often said that the goal of universities is to teach students how to learn so that as graduates will be able to continue to learn and develop. It is our responsibility to continue learning and adapting throughout our career to develop or maintain competence in areas that we currently practice or intend to practice.

Many of our more senior practitioners graduated in times when the use of personal computers was not even envisioned, yet today the use of these tools is virtually mandatory to any job function. This also applies to the use of software for the modelling of problems, the production of drawings or financial analysis and reporting.

Advances in all areas of technology are ongoing with the life cycle from introduction to obsolescence sometimes measured in terms of only a year or two. Applications of technology and the types of equipment developed to accommodate the technological advances are also constantly changing.

As individual professionals, we have an ethical obligation to maintain our professional competence and practice only in areas that we are competent. We are all required to develop an outline for our personal continuing professional excellence program and pursue those learning opportunities with our current and future career goals in mind. Some of the many ways our competence can be maintained or enhanced include;

- Ongoing professional practice
- Formal education (courses applicable to our current or future practice area)
- Informal education (employer sponsored learning opportunities, attendance at seminars, tradeshow, conferences)
- Reading of technical journals or articles
- Publication or presentation in your areas of knowledge, and
- Participation in professional or volunteer associations.

As a self-governing professional association, APEGS is responsible for the continuing competence of its members to ensure the protection of the public and the environment. APEGS fulfills its mandate by requiring its members to annually submit their professional development activities over the previous year to APEGS. This is currently accomplished through submission on the APEGS website. With the recent upgrade to the website, submission of the continuing professional development activities will be easier for the members and will allow staff to conduct additional analyses for compliance reviews in support of APEGS mandate.

The need for continuing professional development cannot be overstated. All significant technological developments are most likely the result of significant advancements in research or learning. We all need a reminder periodically to focus on our professional development and to annually submit the results of our activities to APEGS. This will help us to maintain our individual competencies and APEGS to fulfill its regulatory mandate.

Within this issue a number of projects and individuals will be highlighted in the profiles in achievement. While reading these profiles think of how continuing education and technological advancement played a role in these achievements.


Have a great day!

Dwayne A. Gelowitz, P.Eng., FEC  
President



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Structural Engineering for Non-Structural Engineers	04-0334-2286	Regina	Mar 17-20	28
Infrastructure Asset Management: A Strategic Approach Toward Sustainability	04-0408-2286	Winnipeg	Apr 24-25	14
	04-0411-2286	Regina	Apr 28-29	14
<b>CONSTRUCTION</b>				
Foundations of Construction Law	04-0407-2286	Winnipeg	Apr 10-11	14
<b>ELECTRICAL</b>				
Electrical Overhead and Underground Distribution Systems	04-0413-2286	Regina	Apr 28-May 2	35
<b>MECHANICAL</b>				
Building Control Systems	04-0406-2286	Winnipeg	Apr 8-9	14
Aboveground Storage Tanks	04-0412-2286	Regina	Apr 28-29	14
<b>WEBINARS (All Times are in EDT)</b>				
		<b>Time</b>		
Harness the Business Writing Process (Emphasis on Email)	0206-WEB14	12:30-2:00 PM	Feb 19	1.5
Performance Management	0205-WEB14	12:30-2:00 PM	Feb 20	1.5
Conflict Resolution	0302-WEB14	12:30-2:00 PM	Mar 3	1.5

**\*PDHs:** Continuing professional education for licensed engineers is measured in Professional Development Hours (PDHs). A PDH is one contact hour of instruction or presentation.



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# Profiles in Achievement

## A Gallery of 2013 Engineering and Geoscience Projects

Usually, our job at *The Professional Edge* is telling Saskatchewan engineering and geoscience stories to APEGS members. This month, we're turning the tables. We invited APEGS members to send us pictures and descriptions of their proudest achievements from 2013.

We want to thank the contributors to this special feature. For those of you who didn't contribute this year, we will be doing this again next year, so keep your cameras handy to capture your 2013 engineering or geoscience success stories.



Courtesy of Woodland Aerial Photography

## Project CLEANS

### The Institution:

The Saskatchewan Research Council (SRC) is one of Canada's leading providers of applied research, development and demonstration (RD&D), and technology commercialization. With more than 350 employees, over \$67 million in annual revenue and 66 years of RD&D experience, SRC provides products and services to its 1,800 clients in 24 countries around the world.

### The Achievement:

Project CLEANS (Cleanup of Abandoned Northern Sites) is currently the largest remediation project in Saskatchewan. In 2007, the provincial government contracted SRC to manage the remediation of the Gunnar uranium mine and mill site and the Lorado uranium mill site, along with 36 other abandoned uranium mine sites in northern Saskatchewan.

The project is a reflection on the legacy of the Cold War era of uranium exploration and extraction in Northern Saskatchewan. Environmental standards were much lower than now and there were few decommissioning regulations. Project CLEANS is helping to repair that legacy.

Seven years into the project, work continues at all the sites, along with the regular community engagement activities in the Athabasca area that have been a priority for SRC. The environmental assessment for Lorado is almost complete and remediation work at that site is planned for 2014. The immediate public safety hazards have been dealt with at the Gunnar site and remediation is also underway at 18 satellite uranium mine sites.

### The Team:

Working with SRC's remediation team of scientists, technologists and other specialists, the Project CLEANS team includes Dianne Allen, P. Eng., Mark Simpson, P. Geo., David Sanscartier, P.Eng. and Chris Reid, Engineer-in-Training. The project takes an integrated approach, involving a large number of engineering firms and environmental consultants from across Saskatchewan and Canada.

# Saskatoon's Circle Drive South Project



## The Organization:

Graham is an employee-owned construction solutions partner with over eight decades of experience. Graham provides general contracting, design-build, construction management and public-private partnership (P3) services to the commercial, industrial and infrastructure sectors. Graham was founded in Moose Jaw in 1926. While it is now headquartered in Calgary, the company retains offices in Saskatchewan and throughout North America. With over 1,350 professionals and office staff, Graham is one of Canada's largest construction companies.

Flatiron builds heavy civil infrastructure for the transportation, energy and water sectors. Named after the unique rock formations found near Boulder, Colo., Flatiron has grown from a small materials company to one of the largest transportation and infrastructure contractors in the US. Today, with more than 2,000 employees, Flatiron is consistently ranked as one of the top bridge and transportation contractors in North America.

## The Achievement:

On July 31, 2013, officials from the federal, provincial, and municipal governments helped the residents of Saskatoon celebrate the opening of the long-awaited Circle Drive South Bridge.

Construction began in 2010 on the Circle Drive South Project, which is the largest single project in Saskatoon's history at an estimated cost of \$300 million.

The Circle Drive South Project includes a new six-lane south bridge, five new interchanges, 10 kilometres of freeway/expressway, three railway grade separations, sound attenuation walls and pedestrian and cyclist pathways.

Major benefits include the shorter commuting distances and a 35 per cent reduction in traffic using the Senator Sid Buckwold Bridge at afternoon rush hour.

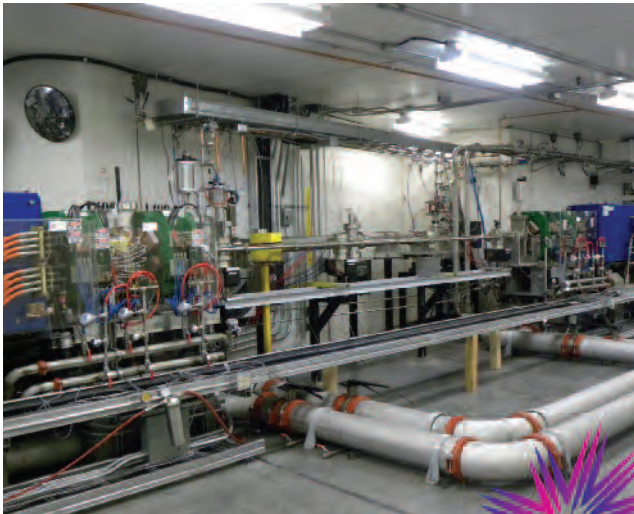
Construction of the massive project required 21,000 m<sup>3</sup> of concrete, 2 million m<sup>3</sup> of earth, 120,000 tonnes of asphalt concrete pavement, 17,000 linear metres of steel piling, 3400 linear metres of concrete girders and 4,300 tonnes of steel girders.

## The Team:

In March 2010, Saskatoon City Council awarded the design/build contract to Flatiron-Graham Joint Venture. The joint venture employed six engineers directly, as well as approximately 100 additional engineers through contractors.



# Canadian Lightsource Synchrotron's Medical Isotopes Project



Courtesy of Canadian Light Source

With the licence, the MIP will undergo rigorous testing to ensure the facility is ready to produce medical isotopes in the very near future. The CLS will have the ability to produce medical isotopes using X-rays from a particle accelerator instead of a nuclear reactor.

The facility uses a particle accelerator to convert molybdenum-100 metal into technetium-99m that is used for tagging radiopharmaceuticals for medical diagnostic tests.

Technetium-99m is by far the most used medical isotope in Canada with about 5,500 medical scans daily.

Researchers maintain that two or three accelerator systems like the one operating at the CLS could produce enough medical isotopes to supply all of Canada.

## The Organization:

The Canadian Light Source is Canada's national centre for synchrotron research and a global centre of excellence in synchrotron science and its applications. Located at the University of Saskatchewan in Saskatoon, the CLS employs more than 200 people including scientists, engineers, technicians and administrative and business personnel.

As one of the largest science projects in Canadian history, the CLS has hosted 1,700 researchers from academic institutions, government and industry since beginning operations in 2005.

## The Achievement:

On June 2, 2010, the Government of Canada announced the \$35 million non-reactor-based Isotope Supply Contribution Program to promote research into alternative methods for producing medical isotopes to address the shortage of certain isotopes in Canada due to ongoing difficulties with the National Research Universal Reactor. The Canadian Light Source led a proposal to investigate the technical and economic feasibility of using an electron linear accelerator to produce suitable isotopes.

In 2013, CLS scientists began testing the Medical Isotope Project (MIP) facility after receiving the commissioning licence from the Canadian Nuclear Safety Commission.

## The Team:

The MIP is supported by a large team of researchers from many scientific backgrounds. APEGS members on the team include Doug Ulrich, P.Eng. Chris Regier, P.Eng. and Linda Lin, P.Eng.



Courtesy of Canadian Light Source

# Queen Elizabeth Station Expansion



Courtesy of SaskPower

## Queen Elizabeth Power Station

### The Company:

SaskPower is the principal supplier of electricity in Saskatchewan, serving more than 460,000 customers and managing \$4.5 billion in assets. The company operates three coal-fired power stations, seven hydroelectric stations, four natural gas stations and three wind facilities as well as manages purchase agreements with alternative energy suppliers such as the Meridian Cogeneration Station and SunBridge Wind Power.

### The Achievement:

On September 30, 2013 SaskPower began construction of a \$514 million expansion at the Queen Elizabeth Power Station in Saskatoon that will add enough capacity to power an additional 205,000 homes.

The project will see the “D” plant at the natural gas facility converted from simple cycle to combined cycle. Combined cycle facilities are 10-15 per cent more efficient than simple cycle gas turbines.

Simple cycle gas turbines generate electricity by turning

the turbine using hot gas produced during the combustion process. This type of electricity generation is best for meeting peak loads, such as hotter periods in the summer or colder periods in the winter. The exhaust air from a combustion turbine is typically very hot (450-600°C) and contains useful energy. Large-scale systems will often add a cycle that converts the heat of the combustion turbine exhaust to create steam, which can be used in a secondary steam turbine generator.

The station was officially commissioned in 1959 and has a net capacity of 430 megawatts (MW). After the expansion, an additional 205 MW will be added.

Site construction is expected to be complete by July 2015. The new plant will be commissioned in September 2015.

### The Team:

There are approximately 18 SaskPower engineers and approximately 60 engineers from external consultants working on this project.



# The 101<sup>st</sup> Grey Cup



Courtesy of canada.com

## The Organization:

The Saskatchewan Roughriders are the greatest football team in Canadian football history.

## The Achievement:

The Grey Cup may have seemed like a mere sporting event but in fact it required the efforts of numerous professionals to bring the event to life. The Roughriders spent over \$14 million to increase seating capacity to approximately 45,000 by adding temporary seats in the end zones. Corporate boxes, concessions and washroom facilities were also added to accommodate the increased number of fans at the stadium. A new 60-foot-wide digital LED screen and scoreboard were located in the northeast end zone while another new 55-foot-wide digital LED screen and scoreboard were attached to the west grandstand. PCL Construction Management Inc. was the lead contractor on the stadium upgrades.

Festivities elsewhere in the city required the City and game sponsors to temporarily re-engineer parts of the downtown plaza. Mosaic and Crescent Point Energy hosted events and displays that not only celebrated Saskatchewan sports fandom but also showcased the province's resource sector.



Courtesy of nationalpost.com

## The Team:

In addition to the Grey Cup champions, the event received engineering support from the City of Regina, game sponsors and outside contractors. Approximately 20 professional engineers were involved in the stadium upgrades alone under the direction of PCL project manager Ryan J. Schindelka, P.Eng.

# QEMSCAN®



Courtesy of SRC

SRC's QEMSCAN 650F Instrument



## The Institution:

The Saskatchewan Research Council (SRC) is one of Canada's leading providers of applied research, development and demonstration (RD&D) and technology commercialization. With more than 350 employees, over \$67 million in annual revenue and 66 years of RD&D experience, SRC provides products and services to its 1,800 clients in 24 countries around the world.

## The Achievement:

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## The Team:

SRC's QEMSCAN® service is represented by an integrated team of engineers and geoscientists, including Dr. Lucy Hunt, Dr. Steven Creighton, P.Ge., Dr. Bryan Schreiner, P.Eng., P.Ge., and Craig Murray, P.Eng.

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# Member Profile



This month *The Professional Edge* chats with Nathalie Brunet, Engineer-in-Training, a civil engineer and hydrologist with the Water Security Agency in Moose Jaw.

## Tell us about your personal and professional background.

I was born in Sudbury, Ontario and did my undergrad studies at the University of Waterloo. Then I took my master's degree at the Centre for Hydrology at the University of Saskatchewan.

## Why did you choose to go into hydrology?

I have always had a general love and appreciation for water. I grew up on a lake where I enjoyed swimming, miniature dam building, and paddling so I developed a fascination with water. It's a very satisfying area of study since water is such an important resource that requires responsible management. That's especially true here in Saskatchewan, a land of extremes when it comes to water; it goes from drought to deluge, yet the water has to be managed carefully in all cases because it is vital to the whole economy and contributes to our quality of life.

## What was your biggest challenge in college?

I studied in French in high school so it was a challenge going into an all-English environment in college. In the end, I think my second language skills helped me more than they hurt me. My second language skills helped make me a better writer in English. Choosing a few lower paying, but more interesting research based co-op placements was a difficult decision.

## What was your first job after college?

Officially, my first engineering job after college was a brief stint at Associated Engineering. But that wasn't the first thing I did after college. When I finished my master's degree, I decided to take a break and go on a six-month canoe trip across Canada, from Vancouver, British Columbia to Saint John, New Brunswick.

I was in charge of organizing the food. It took a lot of research and planning. I had it all laid out in an elaborate spreadsheet detailing food densities and the quantities we would need if we ate so much per day. We then set up drop points and shipped food bins to friends and family throughout the country.

The whole trip took 171 days and covered 7620 kilometres. We partnered with the Nature Conservancy of Canada and Canadian Heritage Rivers System. The project was aimed at promoting, protecting and enhancing Canada's waterways. We're currently working on a video documentary of the trip and hope to complete it this spring.

## How many people were on the trip?

There were six people on the team – four women and two men. Two of us were engineers and hydrologists.

## How did you manage the portages? Did you carry the boats?

The entire trip was "people-powered." We had bikes to pull custom made carts for the canoes up the mountains in BC and other carts that helped us pull them while walking, up to 40 km one day on grid roads to avoid Lake Winnipeg's gigantic waves! We had other specially designed equipment, like carbon fibre paddles that were as light as 300 g, to make it easier to paddle all day without injury.

## That sounds like such a great adventure. What did you learn from it?

It was nice to be part of a team and learn to draw from the strengths of different people. We enjoyed seeing the country at a

slower pace. We met many people and many were inspired by what we were doing. Everyone wanted to help us achieve our goal and they all wanted to tell us about a dream they wanted to pursue someday or an adventure they had gone on when they were younger.

### Were there any parts of the trip that were scary or challenging?

Most parts of the trip were extremely well planned and went smoothly. But there were times when things did not go according to plan. That's when things got interesting. Along the St. Lawrence, it sometimes got hairy dodging ferries and freighters – especially with a plate of poutine on your lap. But I'm proud to say we never capsized once on the whole trip. The spraydeck coverings that prevent water from entering boats were a major contributor to us staying upright.

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

It's still early in my career so although I've participated in many projects there isn't one in particular I can put my name to. So I would have to say it was the canoe trip. That was, in many ways, a feat of engineering. As far as I know, we made the complete cross-Canada trip in the fastest time ever and it was the first time that a group of women completed the trip.

### What are your interests outside of work ... and canoeing?

I have many interests. I've taken classes in woodworking, pottery and Spanish. I enjoy gardening. I'm making an effort to be involved in my community and specifically the francophone community. I recently bought an old house, so fixing it up has been taking much of my time.

### What is your favourite vacation spot?

I go back to Ontario often but I really do like visiting the undiscovered spots and hidden gems in Saskatchewan - parks, lakes, natural anomalies and so on. This province really is amazing!

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

Of course, my parents had the biggest influence on my life in general. I got from them the desire to do things well and to help other people.

My friend in high school, Dominique Ansell was a great motivator for me. I wouldn't have finished my homework without her. In university, Professor Ric Soulis at the University of Waterloo helped to keep me interested and engaged in engineering with his fluid mechanics class. At the U of S, my thesis supervisor, Cherie Westbrook, P.Eng. was patient and showed that you can have a good work-life balance. Here at the Water Security Agency, Bart Oegema, P.Eng. is a great mentor for me.



## CANSTRUCTION™ Regina 2014

Monday, February 24, 2014 will mark the fifth annual CANSTRUCTION™ Regina event hosted by the Regina Food Bank. This international community service project of the design and construction industry was initiated to benefit community food banks. Regina is one of 25 Canadian cities participating with over 140 cities worldwide. Over 17.5 million pounds of food have been collected worldwide since the CANSTRUCTION™ inception.

APEGS is proud to support CANSTRUCTION™ Regina as a sponsor in the "Fighting Hunger" \$1,000 category.

For more information on how you can get involved, contact Todd McCauley, Marketing and Special Event Manager, Regina Food Bank, **306-526-9533**, [tmccauley@reginafoodbank.ca](mailto:tmccauley@reginafoodbank.ca)

# 84<sup>th</sup> Annual Meeting

## Growth and Diversity

**May 1-3, 2014**

Delta Bessborough, Saskatoon

### **Thursday May 1**

- Evening Welcome Event

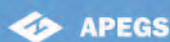
### **Friday May 2**

- Professional Development Streams and Luncheon
- President's Reception

### **Saturday May 3**

- Business Meeting
- Partners Program
- Youth Science Day
- Volunteer Luncheon
- Awards Banquet

**We see more.**





## Event Schedule

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### Thursday May 1

Welcome Event. . . . . 6:00 - 10:00 p.m.

### Friday May 2

Buffet Breakfast. . . . . 7:30 - 9:00 a.m.

Professional Development Streams. . . . . 8:30 - 12:00 p.m.  
3:00 - 4:30 p.m.

Tours . . . . . 9:30 - 11:30 a.m.  
3:00 - 4:30 p.m.

Professional Development Luncheon. . . . . 12:15 - 2:15 p.m.

Committee Fair . . . . . 2:15 - 3:00 p.m.

Past Presidents'/Council Meeting. . . . . 3:00 - 4:00 p.m.

Volunteer Social and BBQ . . . . . 5:00 - 8:00 p.m.

Past Presidents' Dinner (by invitation) . . . . . 5:00 - 8:00 p.m.

Presidents' Reception . . . . . 8:00 - 11:00 p.m.

### Saturday May 3

Buffet Breakfast. . . . . 7:30 - 9:00 a.m.

Annual Meeting (Registration). . . . . 8:30 - 9:00 a.m.  
9:00 - 12:30 p.m.

Youth Science Day . . . . . 9:00 - 4:00 p.m.

Partners' Program. . . . . 10:00 - 3:00 p.m.

Recognition Luncheon. . . . . 12:30 - 2:30 p.m.

Committee Meetings . . . . . 2:30 - 4:30 p.m.

## Business Meeting

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### Saturday May 3

The 84th Annual Meeting of the Association will be called to order at 9:00 a.m. Members must register between 8:30 and 9:00 a.m. to obtain a voting card.

The agenda will include:

- Minutes of the last Annual Meeting
- Business arising out of the minutes
- Report of committees
- Audited financial report
- New business
- Report of the scrutineers

## Social Events

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### Thursday May 1

#### Welcome Event

### Friday May 2

#### Buffet Breakfast

#### Professional Development Luncheon

Keynote address from Andrea Beaty author of *Rosie Revere, Engineer*

#### Volunteer Social and BBQ

BBQ in the Bessborough Gardens

#### Presidents' Reception

This reception in honour of APEGS past presidents is a wonderful opportunity to gather and socialize.

### Saturday May 3

#### Buffet Breakfast

#### Partners Program

Activities and networking for the companions of the business meeting attendees

#### Recognition Luncheon

This luncheon will acknowledge our new professional and life members and recognize the many volunteers who contribute their time and talents to the Association.

#### Awards Banquet

Saturday evening we celebrate members whose outstanding achievements and contributions have earned them the recognition and respect of their peers.

#### Hospitality Suite

## Growth and Diversity



# Track Sessions

## Growing My Own Personal Style Leadership

**Kathy Dahl, B.Comm and Mitch Riabko BSPE**

You have the power to make positive change in your workplace, whether you are in a formal leadership role or not. What are the keys to being a strong leader, no matter what role you play in your workplace? This session explores ideas to grow your leadership and make a positive impact in your workplace. Mitch and Kathy will provide practical, real-life examples of how you can strengthen your own leadership style.

## VIDO-InterVac

**Cameron J. Ewart, Associate Director – Operations, VIDO-InterVac**

This presentation will focus on the International Vaccine Centre (or InterVac), the recently completed biocontainment lab that was built on the University of Saskatchewan campus. Built at a cost of \$145M, it is currently one of the most advanced laboratories of its kind in the world and one of the largest research-accessible containment lab in North America.



## Personal Financial Planning

**Cliff Wiegiers, CLU, CH.F.C., B.Comm. – Certified Financial Planner, Wiegiers Financial & Benefits, Manulife Securities Investment Services Inc.**

Are you financially secure? This presentation will help participants consider whether they are hitting their financial objectives. Have you established a financial plan? Are you interested in minimizing your taxes payable? Are your estate planning objectives being met? Do you have the most efficient banking solutions? How much risk do you need to accept in order to reach your financial goals? These are just a few of the questions that Cliff Wiegiers will explore in this presentation.



## Urban Runoff in a Booming Economy

**Kangsheng Wu, Ph.D., Engineering Licensee, Water Security Agency**

We are booming in Saskatchewan. While more and more shopping centres and residential houses are being built in Regina and other communities, it seems that we are neglecting the management of urban stormwater.

This presentation will introduce a recently completed three-year urban runoff project conducted in Yorkton, Saskatchewan. Along with analysis of unique datasets including 2010 flooding in Yorkton, a framework of stormwater management will be proposed; its principles, examples, and challenges will be discussed with our engineers, city planners and other professionals.



## How to Achieve Your Dreams – an introduction to the book by Kay Nasser

**Karim Nasser, P.Eng.**

Born and raised in Lebanon, Professor Emeritus Karim (Kay) Nasser, P.Eng. earned his Bachelor of Science in Engineering at the American University in Beirut, his masters degree in Kansas, and his Ph.D. at the University of Saskatchewan, where he served as a professor of civil engineering for 33 years.

Dr. Nasser recognizes he would not be where he is today without the financial assistance of others. He and his family are passionate about helping others achieve their educational goals and have been generous supporters of the U of S and other causes for over 40 years.



## Mini Toastmasters' Session

**Mitch Nemeth**

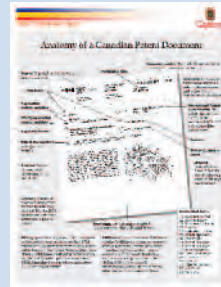
Saskatoon Toastmasters Club 450 aims to inspire communication and leadership skills in each member of the club. As Saskatoon's first Toastmasters club, our members are experienced and seasoned speakers who will help you reach your goals when it comes to public speaking, presentation skills and developing self-confidence – all of which will aid in developing your professional career. Whether you are a beginner speaker frightened of public speaking or an expert presenter who simply needs to maintain your skills, Saskatoon Toastmasters is a great option for you.



## The Changing Face of Entrepreneurship in Saskatchewan

**Stephanie Yong, Director, W. Brett Wilson Centre for Entrepreneurial Excellence**

A key component to entrepreneurship is understanding the end user and being able to properly conceive, design, and execute a sustainable and feasible venture. At the W. Brett Wilson Centre for Entrepreneurial Excellence, we emphasize the importance of human-centered design thinking and being able to empathize with your potential customers. In this session, individuals will gain an insight on the five components associated with human-centered design thinking and how this is key to being successful in business.



## Patent Searching

**Tasha Maddison, Engineering Librarian,  
University of Saskatchewan**

How do you search through the seemingly endless array of patent documents?

What information is freely available on the web? Where do you go when you need more assistance?

Attend this session for an overview of the different types of patents. We will discuss the anatomy of a patent document and review the main patent databases that are freely available online. You will also learn helpful search strategies such as using classification systems that will enable you to retrieve relevant materials.

## U of S Library – Library in the Digital Age

**Tasha Maddison, Engineering Librarian,  
University of Saskatchewan**

Do you wonder how you can access resources from a university library and what materials are available to you? Are you aware of the library privileges that are granted to you as an APEGS member?

Attend this session to learn how the university library can support your research from resources to general research tips for more effective searching. We will also focus on retrieving open access materials and staying current with the research literature in your discipline from email alerts to RSS feeds.



## KEYNOTE SPEAKER

# Andrea Beaty

At the 2014 APEGS Annual Meeting, we will be honoured to welcome as our special guest renowned children's author Andrea Beaty.

Ms. Beaty has written numerous books that help children learn about life and career choices in fun and inspiring ways.



Her latest book, *Rosie Revere, Engineer* touches on many APEGS priorities. Not only does it help young people understand the importance of engineering in our lives but it also inspires young women to consider a future in engineering.

Where some people see rubbish, Rosie Revere sees inspiration. Alone in her room at night, shy Rosie constructs great inventions from odds and ends. Hot dog dispensers, helium pants, python-repelling cheese hats. Rosie's gizmos would astound—if she ever let anyone see them.

Afraid of failure, she hides them away under her bed until a fateful visit from her great-great-aunt Rose, who shows her that a first flop isn't something to fear—it's something to celebrate.

APEGS is pleased to host Ms. Beaty as our keynote speaker at our Professional Development Luncheon. Ms. Beaty will also be staying in Saskatoon for several days as she tours schools in the area.

Andrea Beaty was born in southern Illinois and raised in the village of Ewing, Illinois which was the basis of her novel, *Secrets of the Cicada Summer*. She studied biology and computer science and worked for a software company before she began writing children's books.

She has published 11 books with more on the way. She visits many schools each year to share her love of creativity, books and writing.

The characters in Andrea Beaty's humorous picture books and novels are smart, funny and unapologetic in their passion. They are doers. Curiosity, creativity, innovation and persistence are recurring themes in her work.

Andrea's books have been awarded the Friends of American Writers Award, Parents Choice Silver and Gold Medals, Bank Street College Best Books, National Association of Parenting Publications Gold medals and the Prairie State Award.

The APEGS K-12 Committee will be doing its part to spread Ms. Beaty's insights by buying a copy of *Rosie Revere, Engineer* for every school library in Saskatchewan.

# ACEC-SK 2013 Awards

Outstanding performance was the focus of the Association of Consulting Engineering Companies - Saskatchewan (ACEC-SK, formerly Consulting Engineers of Saskatchewan) Annual Awards of Distinction Banquet held November 28, 2013 in Saskatoon. The Association acknowledged the accomplishments of an industry leader, a young professional, an engineering student and four member firms accepted Brian Eckel Awards for exceptional projects.

## Lieutenant Governor of Saskatchewan Meritorious Achievement Award



### R. S. (Ray) Pentland, M.Sc., P.Eng., FEC

Ray Pentland graduated from the University of Manitoba with a Bachelor of Science degree in civil engineering in 1965, and completed a Master of Science at the University of Regina in 1981.

Mr. Pentland has over 40 years of water resource engineering experience, working extensively across western Canada and on several international assignments. Mr. Pentland is regarded by his peers as the pre-eminent hydrology expert in Saskatchewan.

He began his career with Prairie Farm Rehabilitation Administration, then accepted a position with Saskatchewan Environment and became director of the hydrology branch. Mr. Pentland served as director of Saskatchewan Urban Affairs and vice-president of Saskatchewan Water Corporation. A founding partner of Water Resources Consultants in 1986, he later became sole proprietor.

Recently he was lead consultant to the Saskatchewan Water Security Agency in delivery of the 2011 and 2013 Emergency Flood Damage Reduction Programs. In 2012 this program received the APEGGS Exceptional Engineering/ Geoscience Project Award.

Ray Pentland is a member and past president of the Association of Professional Engineers and Geoscientists of Saskatchewan, a long-time contributor to the Canadian Water Resources Association, The Canadian Dam Association and the Canadian Society for Civil Engineering, and is the recipient of an Engineers Canada Fellowship.

Actively engaged with the ACEC-SK Environment/Water Resources Committee since its inception, he is also a sessional lecturer at the University of Regina Faculty of Engineering and Applied Science.

## ACEC-SK 2013 Brian Eckel Awards

### Buildings Category

**GENIVAR Inc.** - Campbell Collegiate - 1962 Building - Underpinning - Award of Merit

### Environmental Category

**PINTER & Associates Ltd.** - In situ Treatment of High Nitrate Loaded Groundwater Plume with a Large-Scale Permeable Reactive Barrier - Award of Excellence

### Municipal Infrastructure and Water Resources Category

**Bullée Consulting Ltd.** - Town of Hudson Bay Water Treatment Plant - Award of Merit

### Studies and Soft Engineering Category

**Associated Engineering (Sask) Ltd.** - City of Regina Lift Station Condition & Operational Assessment - Award of Merit

## 2013 Young Professional Award



**Eleah Gallagher, P.Eng.** - Structural. J.C. Kenyon Engineering Inc.

## Brian Eckel Memorial Scholarship Award

**Tessa Lennox**, U of S, College of Engineering

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Top left: R. S. (Ray) Pentland, M.Sc., P.Eng., FEC accepting the Lieutenant Governor of Saskatchewan Meritorious Achievement Award from Her Honour The Honourable Vaughn Solomon Schofield, S.O.M., S.V.M., Lieutenant Governor of Saskatchewan

Above (L to R): Eleah Gallagher, P. Eng. accepting the Young Professional Award from ACEC-SK Vice Chair Stormy Holmes, P.Eng., FEC.

# APEGS View



## New Website!

APEGS much-anticipated new and improved website went live on January 1, 2014. The new site boasts a revamped look and new online features for members. It even has a new, streamlined URL.

Check us out at

[www.apegs.ca](http://www.apegs.ca)

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## *In Memoriam*

Robert V. Kinash, P.Eng.

Charles H.S. Donald, P.Eng.

John M. Lane, P.Eng.

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# COUNCIL NOTES

November 28, 2013

Hotel Saskatchewan, Regina, SK

## 16 of 19 Councillors present

- Mike Famulak, P.Geo. was welcomed to Council to complete the term vacated by Mark Wittrup, P.Eng.
- Council reaffirmed its opposition to Incidental Practice and directed the President to send a letter communicating APEGS position on incidental practice and the reasons for its opposition to each councillor of APEGBC and APGO and to the president and CEO of each of the other engineering and geoscience constituent associations in Canada.
- Council was advised of the following appointments by the Governance Board: Gregory Andrist, P.Eng. to the Experience Review Committee for a three-year term.
- The Experience Review Committee and the Academic Review Committee reported record numbers of applications in 2013.
- Council was advised of the following appointments by the Image and Identity Board: Deb Rolfes as Vice-Chair of the *Professional Edge* Committee for a two-year term; Mohammed Chowdhury, Engineer-In-Training to the Connection and Involvement Committee for a three-year term; Devin Mutschler, P.Eng., P.Geo. to the Awards Committee for a three year term.
- Andrea Beaty, author of *Rosie Revere, Engineer* has been selected as the keynote speaker for the 2014 Annual Meeting. The 2014 Annual Meeting will also feature a “Committee Fair” during the professional development streams. The fair will be an opportunity for each committee to provide information on its activities.
- Council appointed Stephanie Campbell as Chair of the Student Development Committee for a second two year term.
- Council supported the concept of safety orientation and training for all students in the College of Engineering at the University of Saskatchewan, and upon receipt of a budget for a safety training event, approved a grant of 20 per cent of the budgeted expenditure to a maximum of \$5,000.
- Council approved the Association’s 2014 budget.
- APEGS has secured [www.apegs.ca](http://www.apegs.ca) as the domain name for the new website, which will replace the existing [www.apegs.sk.ca](http://www.apegs.sk.ca). The new site is expected to go live mid-December.
- The next Council meeting is scheduled for February 6 and 7, 2014 in Saskatoon.

## REPORT ON THE Professional Practice Exam - 2013

Patti Kindred, P.Eng., FEC, Director of Education and Compliance

The Professional Practice Exam was written by 330 candidates in 2013, a increase of 16 examinees over 2012.

EXAM DATE	JUNE 1	OCTOBER 26
# Candidates	188	142
Highest mark (%)	92%	94%
Average mark (%)	74.9%	78.19%
# Failures *	3	0

\* The grade required to pass the exam is 65%.

## 2014 Registration, Seminar and Exam Dates

### Spring 2014

- Friday, March 14, 2014 - registration deadline for spring exam and seminar AND deadline for submission of post-bachelor's work experience report (if none submitted previously). This is also the last day to cancel seminar and/or exam (reapplication would be required).
- Friday and Saturday, April 25/26, 2014 - Law and Ethics Seminar (Saskatoon)
- Saturday, June 7, 2014 - Professional Practice Examination (Regina and Saskatoon)

### Fall 2014

- Friday, August 15, 2014 - registration deadline for fall exam and seminar AND deadline for submission of post-bachelors work experience report (if none submitted previously). This is also the last day to cancel seminar and/or exam if you had applied for the fall 2014 exam previously (reapplication would be required).
- Friday and Saturday, September 19/20, 2014 - Law and Ethics Seminar (Regina)
- Saturday, October 25, 2014 - Professional Practice Examination (Regina and Saskatoon)

The seminar runs from 10:00 a.m. to 7:30 p.m. on Friday and 8:30 a.m. to approximately 4:00 pm on Saturday. Complete exam information, including the application and how to order textbooks, can be found at [www.apegs.ca](http://www.apegs.ca) under Registration, Professional Practice Exam.

## 2013 APEGS MLA Reception

APEGS held its 13th annual MLA Reception on Wednesday November 27, 2013.

The reception provides an opportunity for all MLAs to meet with members of the Association including Council, past presidents and committee Chairs. A variety of issues related to the engineering and geoscience professions were discussed in an informal setting.

APEGS President Dwayne Gelowitz, P.Eng., FEC presided over a short program which included greetings from the Honourable Don Morgan, Minister of Education, Minister of Labour Relations and Workplace Safety, Minister Responsible for Saskatchewan Workers' Compensation Board and from Cam Broten, Leader of the Opposition. APEGS would like to thank the MLAs for attending and the volunteers for helping make the event a success.



LEFT: The Honourable Don Morgan  
RIGHT: Leader of the Opposition Cam Broten



LEFT TO RIGHT: Sheri Praski, P.Eng., FEC, Andrew Loken, P.Eng., FEC, Dwayne Gelowitz, P.Eng., FEC and Honourable Bill Boyd, Minister of the Economy, Minister Responsible for the Global Transportation Hub, Minister Responsible for Saskatchewan Power Corporation

# News Beyond Our Borders

## **PEO gains standing at Elliot Lake inquiry**

*Professional Engineers Ontario* - Following up on its July 19 closing submission and recommendations to the Elliot Lake Commission of Inquiry, Professional Engineers Ontario (PEO) was invited to participate in the inquiry's policy round table on the Role of Professionals and Other Consultants, November 20-21 in Ottawa.

The Elliot Lake Inquiry is looking into the events leading to the partial collapse of the rooftop parking lot of the Algo Centre Mall on June 23, 2012, which killed two Elliot Lake residents, injured several others and created significant economic disruption to the northern Ontario community. PEO was granted standing in Part I of the inquiry, dealing with events prior to the collapse.

The commission is holding two policy round table sessions as required by its terms of reference, with the first session, held on November 18-21. The second session, dealing with emergency response, was held on December 5-6.

Others participating in the round table are the Ontario Society of Professional Engineers, Ontario Association of Architects (OAA), Ontario Association of Certified Engineering Technicians and Technologists (OACETT), Dale Craig, P.Eng., chairman, J.L. Richards and Associates Ltd., who is the commission's retained engineering expert, and Professor Jag Humar, P.Eng., Carleton University.

PEO has also opened its own investigations into what part, if any, the conduct of its licence and certificate holders might have played in the tragedy.

## **Roundabouts make inroads**

*Association of Professional Engineers and Geoscientists of Alberta* - A \$6.4-million roundabout northwest of Edmonton has been designed with oversized vehicles – among them the type used in the oilfield – in mind. Could it reflect an Alberta trend in adopting the staple of British traffic engineering?

In late summer, Alberta Transportation started construction of the roundabout, located just east of Villeneuve at the intersection of Highway 44 and Highway 633. The Edmonton branch of CIMA+ designed the challenging structure, which must accommodate the turning radius of large vehicles.

The design includes splitter islands for oversized vehicles to go over when necessary. The structure will also feature signs on movable bases for directing large vehicles.

Highways 44 and 633 are frequented by both commuter traffic and heavy-load vehicles. It's hoped the new roundabout will reduce collisions at the intersection. This will be the third roundabout built by the province since 2007. Others were constructed in Sylvan Lake and Peace River.

## **BC-Ontario agreement on geoscience mobility**

*Association of Professional Engineers and Geoscientists of British Columbia* - APEGBC and the Association of Professional Geoscientists of Ontario (APGO) have signed an agreement that will support improved labour mobility for geoscience professionals in both provinces.

Implementation of the agreement on a two-year pilot basis took effect January 1, 2014. The Professional Geoscience Mobility Agreement allows geoscience professionals registered in one of the signatory provinces to perform short-term work (defined as 45 days or less per year) in the other without the need to hold a licence in that province.

Currently, a geoscientist must hold a separate licence for every jurisdiction in which they practice, regardless of the length of time spent working there.

APEGBC and APGO have legislated authority through provincial statute to enter into this type of agreement, known as incidental practise. Other engineering and geosciences bodies, including APEGS, have objected to these types of incidental practice.



## Vancouver could be template for retrofits

*Association of Professional Engineers and Geoscientists of British Columbia* - Cities in North America are facing the common problem of how to best retrofit older and aging multiple-unit residential buildings (MURBs) to achieve maximum energy efficiencies. The National Institute of Building Sciences estimates that over 70 per cent of today's existing buildings will be present in 2030. This year's recipient of the APEGBC Sustainability Award, RDH Building Engineering (RDH), tackled the problem with innovative solutions set out in a multi-phase energy upgrade of The Belmont, a 26-year-old Vancouver structure with 13 storeys and 37 suite owners.

The Belmont has gone through an extensive \$3.6 million upgrade, with the initial phases focusing on its building enclosure and a further planned mechanical upgrade in 2014.

"The work on The Belmont is the accumulation of knowledge that we have gained over hundreds of buildings," says RDH principal and senior building science specialist Warren Knowles, P.Eng. Over the past decade, RDH has looked at and studied buildings in the Metro Vancouver and Victoria areas in an effort to determine which upgrades yield the most energy savings and when is the best time to undertake such upgrades to achieve cost efficiencies.

While RDH's research with The Belmont has been geared towards older MURBs, the research can be applied to newer structures too as the findings impact general building design.

"It creates a template that can be applied to thousands of other buildings," says Knowles.

It is RDH's hope that The Belmont's study results will play a role in providing governments and utility providers with information when considering incentives or other energy efficiency programs related to retrofits of existing buildings.

"We are hoping this building will become a case study for anyone considering implementing incentives," says Knowles.

After eight months of monitoring energy consumption, the renewal project is expected to result in a 20 per cent reduction in total building energy consumption and a 90

per cent reduction in in-suite space energy. The retrofit will nearly eliminate the need for baseboard heating used in the suites today. Energy prices are expected to continue to rise and residents in such buildings will reap further cost savings.

The projected savings in the suites from heat alone are significant.

"We are estimating a potential reduction of over 70 per cent," says BC Hydro engineer and technology integrations manager Gordon Monk, P.Eng., one of the study's alliance partners.

## U of C engineering anniversary expansion

*Association of Professional Engineers and Geoscientists of Alberta* - Hundreds of new, potential professional engineers will enter the market for skilled labour each year, thanks to a \$158.3-million expansion and renovation of the University of Calgary's Schulich School of Engineering. Officially announced October 9, the project includes a new building and is slated for completion in 2016, in time for the U of C's 50th anniversary.

The project consists of 18 300 square metres of new space and renovations to 11 100 square metres of existing space. It will give the school room for at least 400 new undergraduate and graduate students a year, and it adds teaching, learning and research space.

The Alberta Government is kicking in \$142.5 million for the project. Another \$15.8 million will come from the donor supported U of C Engineering Leaders fundraising campaign. A \$7-million gift from Canadian Natural Resources Limited, an APEGA permit holder, will help fund the expansion — the single largest corporate donation in the U of C's history. The newly named Canadian Natural Resources Limited Engineering Complex will serve as the engineering school's hub of teaching, learning and research.

The expansion includes new state-of-the-art technology and labs, a larger career centre, two new 240-seat theatres, an expanded first-year study centre and an expanded student lounge.

# News From The Field



www.reginacondo.com

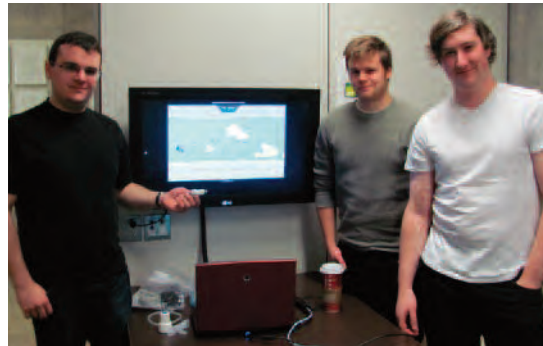
## Sask. construction hits record \$370M in October

*The Canadian Press* - Building permits totalled a record \$370.6 million in Saskatchewan in October, 2013, up by 26.2 per cent from September and the highest percentage increase among the provinces, Statistics Canada said.

On a year-over-year basis, building permits were up by 14 per cent compared with October 2012, the second-highest percentage increase in Canada and far better than the 6.2 per cent decline recorded nationally.

Residential building permits were \$172.5 million in October, up seven per cent over last year, while non-residential permits came in at \$198.2 million, a 20.9 per cent rise over last October.

## UNIVERSITIES AND RESEARCH



www.newstalk650.com/

## U of S Engineering students create video game for kids with cystic fibrosis

*CJME News* - Three University of Saskatchewan engineering students have invented a video game for kids with cystic fibrosis.

The game and small device required to play the game were created by Tyler Spink, Thomas Bazin and Dalton Mainil as part of their fourth year engineering project.

A Saskatoon woman with cystic fibrosis suggested a video game should be made to make daily breathing therapy, known as positive expiratory pressure (PEP), more fun.

The game for kids involves a little squirrel that collects acorns. The squirrel hovers between two bands of clouds in the sky and its height is controlled by the child's breathing.

The child breathes into existing equipment they already have for PEP, but the difference is the students have created a small device that looks like a flashdrive and plugs the tubing of the PEP equipment into the computer.

The typical PEP therapy involves blowing into a tube and keeping a plastic bar hovering between two lines.

"A lot of the kids don't understand why they have to sit at the kitchen table and blow into this tube for anywhere between 20 minutes to an hour a day," Bazin said.

This video game is more interactive and also lets the parents play less of a role during a child's PEP therapy.

The product is still in the development stage, but the students plan to work on it more once they finish their electrical engineering and computer science degrees next year.

They eventually want to sell the device and also make video games available on their website for kids to play.

The students have also developed a game for older kids or adults with cystic fibrosis that involves a spaceman who has to collect energy and fight off robots.

In the meantime, the trio is using prize money from the i3 Idea Challenge and scholarships from the U of S to develop the product.

### Timmins, Saskatchewan colleges sign agreement

*Northern Ontario Business* - Northern College in Timmins and Northlands College in Saskatchewan have signed an agreement to train students through the mining engineering technician program at the Northern College's Haileybury School of Mines.

The proposed program could allow graduates of Haileybury's mining engineering technician program to take a bridging program, and then an additional two years of schooling in order to obtain a bachelor of technology, offered jointly by Queen's University Faculty of Engineering and Northern College Haileybury School of Mines.

The program would create a pathway for students in rural and remote areas to obtain a bachelor of technology in mining engineering degree online with two-week field school components at the end of each semester.



### Engineering students invent magnetic heater plugs

*Global News* - Many call it "the drive of shame" – taking off with the block heater cord still plugged into the vehicle.

University of Saskatchewan engineering graduate Arash Janfada said his car was badly damaged after he took a trip with his cord.

"I first set out to try to find the device that would alleviate that problem, but there was none, so I decided to create one," he explained.

Janfada invented the MagnoPlug. If someone drives off while it's still plugged in, the magnets gently pull apart.

"You clip the two sides together and that makes it work. It sits permanently on your car, zip-tied to your vehicle," Janfada explained.

Janfada enlisted the help of electrical engineering student Will Topping, who designed the plug.

"It's really interesting now, because a lot of people are coming back with these neat, new ways of using MagnoPlug, in places that we never even thought about it," explained Topping.

The two young men are discussing the product with emergency personnel in Calgary and Winnipeg.

The two entrepreneurs are using the funding platform Kickstarter to raise money for their product's launch.

### U of S releases cost-cutting report

*Saskatoon StarPhoenix* - Environmental engineering programs face the most potential cuts, after the University of Saskatchewan released its long-awaited vision on how to best focus its finite finances and shave up to \$25 million from its budget.

The TransformUS task force went over each of the nearly 500 university programs, looking at enrolment, employment prospects, graduation rate, cost and other factors.

The task force found dispensable programs throughout the university but, broadly speaking, traditional core areas and specialty strengths will see continued or increased funding, while other entire departments could all but disappear.

Grades were given to each program. A grade of one means the program is a candidate for increased funding. A grade of five means the program is a candidate to be cut.

Six of seven programs within the department of environmental engineering received a grade of five. Only the bachelor's program is recommended for stable funding.

No concrete dollar figures were attached to the recommendations. The university will also hold town hall meetings in January to get feedback. The university is expected to make final decisions about its programs by May.

## Student engineers combat osteoarthritis

*Saskatoon StarPhoenix* - In a biomedical engineering lab at the University of Saskatchewan, a 3D printer drips a mixture of living cells and biodegradable plastic into a grid design about the size of a shirt button.

These miniature support structures called “scaffolds” could hold the key to combatting osteoarthritis. PhD student Zohreh Izadifar carefully designs the scaffolds, enabling cartilage cells to grow into natural three-dimensional shapes in the lab.

Osteoarthritis is caused when cartilage—the cushioning tissue in joints—wears down and bones painfully rub each other. It is the most common form of joint disease and is becoming more prevalent as populations age and average life expectancy rises.

The problem is that cartilage cannot repair itself. Since the body cannot grow new cartilage, Izadifar is doing it in the lab instead.

## MINING



### Mining firms spent \$297M in '13

*Regina Leader-Post* - Mining exploration and development companies spent about \$297 million in Saskatchewan in 2013, down from \$324 million in 2012, according to preliminary estimates released by the Saskatchewan Geological Survey.

This year's expenditure estimate “reflects the difficulty many junior companies continue to have in raising exploration capital,” said the report, which was released at the Saskatchewan Geological Survey's open house in Saskatoon.

Despite the decrease, exploration spending in Saskatchewan continues to be well above historic levels, the report said. In the past decade over \$2.7 billion has been spent on exploration and evaluation programs, a dramatic increase when compared to the total \$674.5 million spent in the 20 years previous.

The bulk of 2013 spending was on potash and uranium projects, but there were also significant expenditures on gold, base metal, diamond, coal, platinum group metal and rare earth element projects.

### Processing plant bid raises concerns

*Saskatoon StarPhoenix* - The Saskatchewan Ministry of Environment should refuse a proposal to build a mineral processing plant near Langham, says the Saskatchewan Environmental Society (SES).

An Environmental Impact Study for Fortune Minerals' proposal to build a \$200 million Saskatchewan Metals Processing Plant just outside of Langham is currently under review by the ministry.

Fortune intends to ship bulk concentrate from the company's NICO mine in the Northwest Territories to be processed at the Langham plant.

SES board member Ann Coxworth said the hazardous waste produced by the plant and stored on-site will last forever and poses a significant risk to the community.

Others in the community are concerned about the impact the plant might have on the area's main water supply from the Dalmeny aquifer.

Rick Schryer, Fortune's director of regulatory and environmental affairs, said the company has been able to reduce water usage by 35 per cent from what was originally proposed and added that the provincial watershed authority agrees with the company's finding that the plant's water use is not going to affect any other existing groundwater users in the area.

The plant has an operational life of about 20 years and the company says it will generate 158,000 tonnes of toxic waste annually, to be stored permanently in pits beside the plant.

Schryer said the storage facility is the most sophisticated ever designed in Saskatchewan, consisting of layers of impermeable clay and a 60-mm liner, with a leak detection system underneath.

### Golden Band sidelines mines, mill

*Canadian Mining Journal* - Golden Band Resources of Saskatoon has been forced by low gold prices to suspend work at its Roy Lloyd underground and Golden Heart open pit mines as well as its Jolu mill for an “indefinite” time beginning January 1, 2014. The shutdown will last perhaps six months, but no restart date has been determined.

Despite upgrades to infrastructure, restructuring and significant cost cutting, the falling gold price made the mines economically questionable. The last straw was lower than anticipated ore grades.

While the production facilities are on care-and-maintenance, Golden Band intends to hire consultants to aid it in developing more effective mining plans.

### **MARS making claims staking easier, cheaper**

*Regina Leader-Post* - For mining companies in Saskatchewan, going to MARS can save them thousands of dollars and weeks, if not months, of waiting for their mineral claims to be processed.

The Mineral Administration Registry Saskatchewan, or MARS for short, has handled mineral claims covering three million hectares since its inception nearly a year ago. That's a 40 per cent increase over the old paper-based mineral claims staking system, which dates back to the late 19th century.

Since MARS was implemented December 1, 2012 the staking rate in the province has multiplied by a factor of five. The online system has reduced approval for claims from a minimum 30 business days to five, a substantial saving of time for exploration companies.

The old paper-based system was also costing the industry a lot of money. Under the old system, the cost for staking the average claim of about 3,000 hectares was \$30,000. Under the new system, this would cost about \$1,800.

More importantly, the old system was costing the province and the industry a lot of missed opportunities. MARS provides exploration companies with an electronic map of the province to help them locate and acquire claims, eliminating staking costs and creating savings that can be redirected to field exploration. MARS also comes with a tutorial system and 24-hour help desk, making it easy for industry to use.

MARS is currently used for uranium, kimberlite (diamond), base and precious metals exploration, mainly in Northern Saskatchewan. It does not include potash, coal, oil and gas and a handful of other minerals.

## **URANIUM AND NUCLEAR**

### **Creighton shortlisted for nuclear waste facility**

*Saskatoon StarPhoenix* - Only one Saskatchewan town has made the short list of those seeking to host a multi-million dollar nuclear waste facility.

Creighton, located approximately 500 kilometres northeast of Saskatoon, was approved for further study following a preliminary assessment by the Nuclear Waste Management Organization (NWMO).

Two other Saskatchewan communities – Pinehouse and the English River First Nation – were not selected.

More assessments will be conducted on other communities across Canada, but a final selection is still years away, say NWMO officials.



### **Jet boring in ore under way at Cigar Lake**

*Cameco press release* - Cameco announced that jet boring in ore is under way at the Cigar Lake uranium project in northern Saskatchewan. All additional mine work identified in September 2013 has been completed and construction is essentially complete.

Cameco is on track to begin ore production at Cigar Lake during the first quarter of 2014 as previously announced.

During production, ore from the Cigar Lake mine will be transported 70 kilometres by truck to the McClean Lake mill for processing to uranium concentrate. The McClean Lake mill is majority owned and operated by AREVA.

AREVA has reported that work on required mill modifications is proceeding on schedule for completion by the end of the second quarter of 2014 when milling of Cigar Lake ore is expected to begin.

### **Cameco reports minor spill**

*Saskatoon StarPhoenix* - Problems in the treatment plant of a northern Saskatchewan uranium mine led to the release of approximately 200 cubic metres of water before it was fully treated, but both company and government officials say the effect on the environment was minimal.

The water was released into Horsefly Lake on December 2 with elevated acidity levels, but all radiation, heavy metals and other harmful contaminants had been removed, said Cameco spokesman Gord Struthers and Saskatchewan Environment manager of uranium and northern operations Tim Moulding.

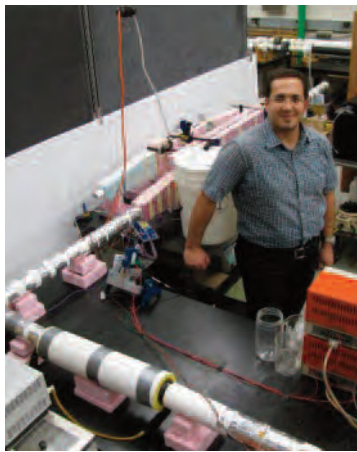
Tests revealed no detectable increase in the acidity of the lake or surrounding areas.

## Millennium Project gets green light

CBC News - The province is giving the go-ahead to Cameco Corporation for its Millennium Project, a new uranium mine 600 kilometres north of Saskatoon. The government approved the company's environmental impact assessment in December.

One of the features of the project is that there will be no mill or long-term waste management facilities at the site. Rather, the uranium will be shipped by truck to the nearby Key Lake mine for processing.

## ENERGY



## Engineering research could save energy worldwide

Saskatoon StarPhoenix - Up to 20 per cent of all energy in the developed world is consumed by a single source - heating, ventilation, and air conditioning (HVAC) systems.

Ph.D. student Davood Ghadiri Moghaddam is part of a U of S mechanical engineering research group that designed an HVAC system capable of reclaiming up to 80 per cent of energy other systems would waste.

This single invention could have a significant impact worldwide.

“Around four per cent of the total energy being used in the developed world can be saved ... That’s a really huge amount,” Moghaddam said.

The system was developed in partnership with Saskatoon-based Venmar CES Inc., which will soon be putting the unit on the market.

Other energy recovery systems exist, but the jointly developed HVAC is up to 20 per cent more effective than today’s technology. The new HVAC can also be easily fitted to older buildings, unlike some other systems that require major building renovations.

## Saskatoon gas collection system is operational

Journal of Commerce - The City of Saskatoon has completed construction of a landfill gas collection system at the regional waste management centre and has started flaring gas at the site.

“Commissioning this new facility is a step toward replacing conventional energy sources with green energy technologies,” said Kevin Hudson, P.Eng., manager of metering and sustainable electricity with Saskatoon Light & Power.

“Not only will the facility reduce greenhouse gas emissions, but we can sell the power generated to SaskPower and receive enough revenue that the facility will pay for itself over the next nine years. So it’s a win-win.”

The facility will capture landfill gas produced by decomposed organic waste, pipe the gas to a generating station and use the gas to produce electrical energy.

When fully completed later this year, the facility will produce about 13 gigawatt-hours of electrical energy each year. This is enough energy to power about 1,300 homes and reduce annual greenhouse gas emissions by more than 45,000 tonnes, which is equivalent to removing more than 9,000 vehicles from city roads.

## SES wants end to coal power

CBC News - The Saskatchewan Environmental Society (SES) is calling for SaskPower to phase out its coal-fired generating stations.

The SES released a 40-page submission to the Crown-owned electrical utility asking that it permanently close all of its coal plants.

Titled “Yes They Can: A 20-20 Vision for SaskPower,” the document says Saskatchewan’s Shand, Poplar River and Boundary Dam plants are aging and are ready to be retired within the next 10 to 12 years. It asks SaskPower to commit to more environmentally-friendly energy sources, rather than attempting to retrofit or replace them.

In September 2012, federal regulators relaxed emissions requirements, and promised SaskPower its older power plants would be allowed to stay open longer than expected.

Coal power has historically been considered a cheap and reliable source of electricity in Saskatchewan. The provincial government, Ottawa, and SaskPower have invested heavily in carbon capture and storage technology. To date, retrofitting one demonstration coal stack at Boundary Dam has cost \$1.355 billion.

Robert Halliday, P.Eng., a Saskatoon engineer and author of the report, noted that roughly half the power generated in Saskatchewan came from coal-fired power plants.

# 4 questions to ask about critical illness

The financial impact can be as devastating as the disease itself.

Because of medical advances, Canadians are more confident about physically surviving cancer or other critical illnesses than surviving the impact on their net worth. Find out if you're financially prepared for a critical illness.



## 1 Are you at risk for a critical illness?

About **2 in 5 Canadians** will develop cancer in their lifetimes. In 2013, it was estimated that:<sup>1</sup>

- **96,200 Canadian men** will be diagnosed with cancer
- **91,400 Canadian women** will be diagnosed with cancer
- **Over 500 Canadians** will be diagnosed with cancer every day

About **9 in 10 Canadians** already have at least one risk factor for heart disease and stroke. In Canada, there is:<sup>2</sup>

- 1 stroke every **10 minutes**
- 1 heart attack every **7 minutes**

## 3 Can you afford the financial impact?

- Cancer drugs taken outside the hospital – and not automatically covered by the government – cost about **\$20,000** for a course of treatment. Newer drugs cost **over \$65,000**.<sup>1</sup>
- Recovery from heart disease and stroke can **continue for years**, resulting in more medical bills and lost income and productivity<sup>2</sup>
- Family caregivers also have to deal with **wage loss** and the real potential of a **decreased standard of living**<sup>3</sup>

## 2 What are your chances of surviving it?

- **63% of Canadians** diagnosed with cancer are expected to survive for **5 years or more** after diagnosis<sup>1</sup>
- The cardiovascular death rate in Canada has **declined by nearly 40%** in the last decade<sup>2</sup>
- **1.3 million Canadians** are living with the effects of heart disease, and **315,000** are living with the effects of stroke<sup>2</sup>

## 4 How can critical illness insurance help?

The **Engineers Canada-sponsored Critical Illness Plan** pays a lump sum upon diagnosis of a covered condition. You and your spouse may apply for benefit amounts **between \$25,000 and \$1 million** to help meet the costs associated with surviving a serious illness, including cancer, heart attack and stroke.

Choose from two types of coverage:

- **Essential** – covers **6** conditions
- **Enhanced** – covers **18** conditions

LEARN MORE AND APPLY FOR:  
**Engineers Canada-sponsored Critical Illness Plan**  
[www.manulife.com/APEGS/CI](http://www.manulife.com/APEGS/CI)  
**1-877-598-2273**  
(Monday-Friday, 8 a.m. to 8 p.m. ET)



Sources: <sup>1</sup>Canadian Cancer Statistics, 2013. <sup>2</sup>Heart & Stroke Foundation Statistics, 2013.  
<sup>3</sup>Colleen Nelson B.Ed, PBCE, "The Financial Hardship of Cancer in Canada: A Literature Review," Canadian Cancer Society, 2010.  
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# Calendar of Events

**CSCE Saskatoon Section Luncheon Series  
Supertanks in Martensville**  
February 19, Saskatoon, SK  
[www.cscsaskatoon.ca](http://www.cscsaskatoon.ca)

**International Conference on Stormwater  
and Urban Water Systems Modeling**  
February 26-27, 2014, Toronto, ON  
[www.chiwater.com/Training/Conferences](http://www.chiwater.com/Training/Conferences)

**2014 Electrical Safety, Technical and Mega  
Projects Workshop (ESTMP)**  
March 3-5, 2014, Calgary, AB  
[iee.org/estmp](http://iee.org/estmp)

**Spring Professional Practice Exam  
Registration Cut off date**  
March 14, 2014  
[www.apegs.ca](http://www.apegs.ca)

**Law and Ethics Seminar**  
April 25-26, Saskatoon, SK  
[www.apegs.ca](http://www.apegs.ca)



**APEGS Annual Meeting**  
May 1-3, 2014, Saskatoon, SK  
[www.apegs.ca](http://www.apegs.ca)

**2014 27th Canadian Conference on Electrical and Computer  
Engineering**  
May 5-8, 2014, Toronto, ON  
[ccece2014.org/index.html](http://ccece2014.org/index.html)

**Sustainable Municipalities Conference**  
May 28-31, 2014, Halifax, NS  
[www.csce2014.ca](http://www.csce2014.ca)

**Water: What is the Future We Want?**  
June 2-4, 2014, Hamilton, ON  
[www.cwra.org/en/](http://www.cwra.org/en/)

**The Value of Green: Building Lasting Change**  
June 2-4, 2014, Toronto, ON  
[www.cagbc.org](http://www.cagbc.org)

**OCEANS 2014**  
Oceanic Engineering Society conference  
September 14-19, 2014, St. John's, NL  
[www.ieee.org/conferences\\_events/conferences](http://www.ieee.org/conferences_events/conferences)

**Western Canada Water 2014 Annual Conference  
and Exhibition**  
September 22-26, 2014, Regina, SK  
[www.http://wcwwa.ca/events/](http://www.http://wcwwa.ca/events/)

**Warming of the North 2014 Conference**  
September 28-30, 2014, Ottawa, ON  
[www.umanitoba.ca/faculties/management/ti/2772.html](http://www.umanitoba.ca/faculties/management/ti/2772.html)

**2014 IEEE Electrical Power and Energy Conference**  
November 12-14, 2014, Calgary, AB  
[www.ieee.org/conferences\\_events/conferences](http://www.ieee.org/conferences_events/conferences)