THE PROFESSIONAL

EDGE

ISSUE 153 NOVEMBER/DECEMBER 2014

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Achieving a Safe and Prosperous Future through Engineering and Geoscience

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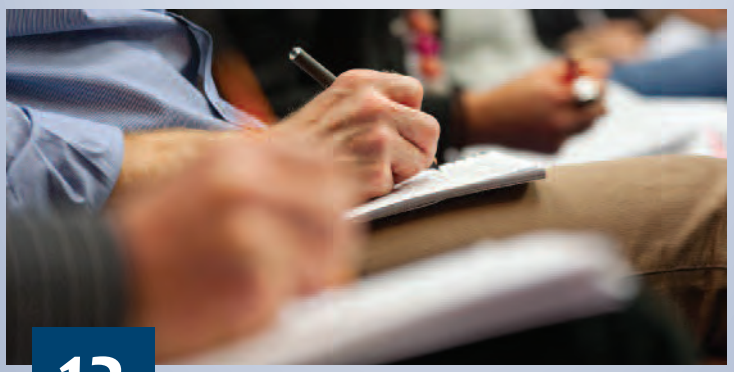

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BY MARTIN CHARLTON COMMUNICATIONS

President's Report

APEGS President Andrew Loken, P.Eng., FEC

On October 1, I was in Ottawa with my wife preparing to fly home after a couple of days of Engineers Canada board meetings. While there, we took the opportunity to tour the Parliament buildings and visit the National War Memorial.

AT THE MEMORIAL I SPOKE WITH A YOUNG OFFICER who was in charge of the detail providing sentry duty for the tomb of the Unknown Soldier. I learned that different branches of the Canadian military were taking turns with sentry duty this year. Three weeks to the day later, Corporal Nathan Cirillo was killed. Although this message will come to you after Remembrance Day, I wanted to say thank you to all those who have sacrificed and continue to sacrifice their safety and even their lives on behalf of all Canadians, from those of us who strive to ensure public safety within our professions.

On a less sombre note, this edition of *The Professional Edge* is focusing on engineering and geoscience education from kindergarten through to career-long professional development. Training our future engineers and geoscientists is an important job that is continually evolving.

Internships, entrepreneur programs and multi-discipline learning are just a few of the changes that have occurred since I was in university. This type of training takes a lot of resources. It is debatable whether our educational institutions have everything they need to continue to meet the demand for trained future professionals.

APEGS, under the leadership of past president Dwayne Gelowitz, P.Eng., is starting a study to help determine what our future needs are so that government and educators can work together to ensure we have a sustainable supply of new professionals.

In the past I have highlighted our need for more women and Aboriginals in our professions. The first place where we can start to build up those numbers is in the schools. This month APEGS is sponsoring a student initiative, the National Conference on Women in Engineering (NCWIE) which is being held at the University of Saskatchewan.

Foundation education for our members is important but we actually have a career-long obligation for learning to maintain and further our professional competence. In order to help our members keep track and monitor their own lifelong development, APEGS has developed a program called Continuing Professional Excellence. CPE helps our professional members define their scope of practice, determine what they need to do to reach their career goals, maintain their ongoing competence and keep track of their professional development activities throughout the year. The goals of CPE are:

- Assist members in defining, planning and tracking their professional development activities.
- Provide members with a foundation to look at opportunities for additional professional development.
- Allow APEGS to better understand how the members are meeting their continuing competency requirements.

- Provide a visible means to assure our external stakeholders such as the government and the public that our members are diligent in maintaining their professional competence.

The last two goals are the ones where we need a little more effort from our members. We have a (mostly) voluntary reporting structure for CPE and unfortunately most of our members' are voluntarily not reporting. In order for APEGS to understand and speak knowledgeably about our members continuing competence, we need to have our members report their CPE credits. Each year when you pay your dues, we provide you with the opportunity to calculate and report your CPE credits.

Today I am asking you to go online to www.apegs.ca and look under the Members heading for Continuing Professional Excellence. This will provide you with a very well written document that explains the process and a lot of the reasoning that went into developing a program that is quite simple to use once you understand it and yet captures the essence of how we view career-long professional development.

I won't attempt to explain the program here but I do ask you to read the material. Even if you have already done so I would recommend going back and refreshing your memory; I did and learned some new things. Then I ask you to go into the Members' area and fill in your credits for the past year if you have not done so already.

I am a big believer in participation. If you participate in the program, it will help you and it will help us.

It is my plan to increase our understanding and participation in CPE through more *Edge* articles and seminars around the province. If you want to know more, please contact me, ahloken@sasktel.net

Respectfully,

Andrew Loken
APEGS President

Future Einsteins:
Take Our Kids to Work Day

BY MEGHAN GERVAIS, P.ENG.

Take Our Kids to Work™ is an annual national program in which grade 9 (or equivalent) students are hosted for one day by parents, friends, relatives and volunteers at workplaces across the country every November.

As a relatively new parent, I'm most comfortable spending time with adults and toddlers. So when I heard a group of grade 9 students would be visiting the Saskatchewan Research Council (SRC) for Take Our Kids to Work™ day, I took it as an opportunity to step out of my comfort zone and get to know the energetic and creative minds of the future.

ABOVE: Grade 9 students pose with their completed wind turbine models

Three Engineers. Three Different Career Paths.

Two colleagues and I introduced the students to wind turbine technology and equipped them with the tools and parts required to build their very own desktop model wind turbine. Prior to getting started on the project, we each introduced ourselves and talked about the path that led us to the roles we are in today. The students seemed to find the introductions interesting, given that the three of us are engineers but there is very little overlap in the type of work we do at SRC.

Looking back to when I was making early career decisions, it definitely would have been valuable to learn more about how a similar education can lead to such varied career paths – not to mention the time and tuition I may have saved along the way. I think that insight into career planning must be one of the most impactful aspects of Take Our Kids to Work™ day for the students.

Building a Mini Wind Turbine

The wind turbine project required the students to measure and cut pieces of PVC pipe and wire, and to collect elbows, tees and other small parts required in the final assembly. One of the students described the task of assembling the

required parts as a "science potluck," given that each student independently selected the parts they were planning to use. Both hands-on activity and analytical thinking were needed, as the students had to figure out in what order to assemble the turbines and stands to ensure they were able to complete the project.

I was impressed with the students' immediate willingness to don the required personal protective equipment (PPE), which meant wearing gloves and safety glasses when sawing pipes and cutting and stripping wires.

Safety is an overriding priority at SRC, so the kids were given a full safety orientation at the beginning of their morning, outlining PPE requirements for the different places they attended and projects they worked on.

It was interesting to watch the students' faces as they grasped the range of tasks they were asked to complete. For some students, the project was intuitive and they quickly related it to Lego kits. In other cases, the students had never done anything quite so hands-on, and it took a bit of time for them to get comfortable working with the small tools that connected the wire inside of each turbine. In either case, the students were clearly proud of their accomplishment, as they gingerly whispered, "Cool . . . that's awesome!" when their battery was connected and their turbine began spinning.

Participating in Take Our Kids to Work™ day was even more fun than I had expected, and I'm grateful to have had the chance to get to know the students who visited SRC. The career choices available to today's grade 9 students are quite different from those I was aware of when I was in their shoes.

When asked at the beginning of the morning what kinds of careers the kids could see themselves having as adults, we heard a lot of the typical jobs like lawyer, doctor and teacher. Hopefully, spending time at SRC opened the students' eyes to some of the different, unique job types that are out there. And even if they aren't yet sure what path to go down, they can now all add "building desktop model wind turbines" to their first resumés.

Student wears safety gloves and glasses while sawing a PVC pipe held by instructor

Student connects wind turbine model to the battery

About the Author: *Meghan Gervais is a Senior Advisor for Major Projects at SRC. Her responsibilities include evaluation and commercialization of intellectual property, proposal writing and project management. Prior to joining SRC, she served as Plant Manager and Manager of Business Development at POS Bio-Sciences.*

SRC
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Science Summer Camps:

Educating Youth in Engineering and Science makes learning fun

BY MARTIN CHARLTON COMMUNICATIONS

ENGINEERS AND GEOSCIENTISTS ARE NOT SHORT-TERM THINKERS. Their minds work in terms of decades – sometimes even centuries. So it is no surprise that Saskatchewan's engineering and geoscience association has always made special efforts to plan for the next generation of engineers and geoscientists.

APEGS is proud to sponsor a wide range of educational programs across the province. Two of the best known programs are the EYES and SCI-FI summer camps.

EYES on Success

Whether building Lego robots, doing a dissection, or learning about the mantis shrimp, the kids who take part in EYES camps are sure to have a good time. EYES (Educating Youth in Engineering and Science) offers in-school workshops and summer day camp programs to over 15,000 students in southern Saskatchewan each year.

This year the Regina camps included EYES Jr. for youth entering grades 2 and 3, EYES Camp for grades 4 to 9, E-Design for grades 7 to 9, and the All Girls Program. EYES also offered its camp program in Assiniboia, Esterhazy, Estevan, Foam Lake, Moose Jaw, Shaunavon, Swift Current and Weyburn.

The camps are based on the themes of Innovation and Discovery. Younger groups go on a week-long science story adventure, while older groups do hands-on science, engineering and technology activities based on theme days. In 2014, theme days included Biotech, Everyday Science, Elon Musk (SpaceX, Tesla, and Hyperloops), Construction, Evolution, Invertebrate and Density. ("Trust me," their website reads, "we will make mass over volume interesting.")

E-Design takes a different approach than the camps, allowing the kids to direct their own learning experience. The project-based program is entirely self-directed, with EYES giving the youth access to specialized digital technology under the guidance of qualified supervisors. Campers can design and print 3-D objects, build and program robots, develop photo editing skills, design video games, create web pages, program applications, and more.

During the school year, EYES hosts programming on Saturday afternoons from January to March, and visits classrooms to present their 45-minute EYES workshops during May and June. This year, workshops included The Three Little Pigs ("Is your building strong enough to stand tall against the hurricane-like winds?"), Protect the Pill (about time-released medication) and Microbes and Microscopes (about water analysis and treatment).

Each year the programming changes, so students are always learning the most up-to-date science, and will learn something new even if they participate every year from grade 2 to 9. This non-profit organization also keeps costs reasonable, and offers bursaries to needy campers. In the past, EYES has run free programming for disadvantaged neighbourhoods in Regina and partnered with the Open Door Society to run a camp for newcomers to Canada.

SCI-FI Science Camps

SCI-FI Science Camps was founded in 1989 by a handful of engineering students. It delivered its first summer camp in 1990 and reached 140 youth.

Since inception, it has reached over 140,000 children through more than 7,000 classroom workshops, and has enrolled another 22,000 youth in week-long summer camps. SCI-FI has grown from a summer staff of four (a director and three instructors) to a summer staff of more than 30.

SCI-FI was the first program of its kind in Western Canada and is currently one of the largest nationwide.

Today SCI-FI is staffed by students from various colleges on campus including Engineering, Education, Medicine, Vet Med, and other sciences. It carries out classroom workshops, community programs, science clubs and, during the summer months, holds camps at the College of Engineering on the U of S campus. It also runs camps in over 10 other locations across the province.

SCI-FI's summer camp programs run for eight weeks in July and August. The program now offers five unique types of camp: Science Camps, Technology Camps, Computer Science Camps, Medical Science Camps, and Veterinary Medicine Camps.

In Saskatoon, SCI-FI offers a Girl Power program, aimed at promoting science and engineering to young women. The organization also runs satellite camps in numerous Saskatchewan communities.

To keep programs fun, interesting and relevant, SCI-FI creates new projects every year. This means that campers coming back year after year will always have a unique experience. During May and June while instructors are delivering workshops in classrooms around the province, they are also busy planning a fresh batch of projects for campers to enjoy.

All projects and activities at SCI-FI Science Camps are designed to be fun. No matter what the scientific topic may be, the instructors will present it in a fun, hands-on manner.

Huff Chair in Innovative Teaching

BY MARTIN CHARLTON COMMUNICATIONS

SEAN MAW MAY COME FROM ONTARIO, but he's already figured out one of the keys to survival in Saskatchewan: whenever possible, talk about sports.

Maw is the new holder of the Jerry G. Huff Chair in Innovative Teaching at the University of Saskatchewan (U of S). Prior to this, he worked in sports engineering research. He's found his sports experience useful as a tool to teach engineering.

"First year engineering students often struggle with dynamics and statics. I like to use sports analogies, which makes it more fun and interesting," Maw said.

Coming up with interesting classroom analogies is just one of the ways Maw hopes to improve engineering instruction. Under the terms of the Huff Chair position, the University of Waterloo graduate has a mandate from the U of S to research new approaches to engineering education in the classroom and beyond.

The Huff Chair was made possible through a generous donation by Don Listwin, who graduated from the College of Engineering in 1980 with a BE in electrical engineering and received an Honorary Doctorate of Laws from the U of S in 2001.

Listwin became a successful Silicon Valley executive and entrepreneur. He has since become active in numerous philanthropic causes. Listwin credits Jerry Huff, a professor in the College of Engineering, with introducing him to his chosen field.

The Huff Chair resides in the college's Ron and Jane Graham School of Professional Development. The school is focused on helping students and working engineers develop communication, leadership, design and entrepreneurship skills necessary to move beyond the technical dimensions of engineering.

"Our main goal is to develop new and better ways to teach engineering students. The lecture model has its place but it's not the best solution all the time," says Maw.

Maw's initial emphasis will be on looking at design and innovation in the college itself and finding innovative ways to deliver instruction.

"For example, we'll be working closely with the George LaBorde Chair in Engineering Entrepreneurship and Innovation to work with undergrads on projects that might springboard them into entrepreneurial employment after graduation," Maw said.

One case that merged Maw's interests in sports, entrepreneurship and unconventional instruction saw undergraduate students working with the university volleyball team to develop automated spike-blocking training equipment.

"That project has special meaning for all of us because the Chair's founder, Don Listwin, had been on the Huskies' volleyball team all through his undergrad years."

Maw is hoping next year's mechanical engineering students will pick up the project and work with the College of Kinesiology to build units based on the current ECE team's intelligent systems design.

In addition to his work with university students, Maw would like to see the roles of the Chair expand to include more outreach to the schools and professional development for working engineers.

"Another area I'd like to explore is Aboriginal education. There is so much untapped potential there. I've been working on some interesting curricula based on the various designs for traditional Aboriginal watercraft across Canada, looking at how those structures were adapted to meet specific needs."

Overall, Maw is focused on making the College of Engineering a leader in engineering-related educational research.

"Our high schools are giving more emphasis to science and technology classes but that doesn't necessarily give students a true perspective on engineering. Too often we see students who don't enrol in engineering simply because they don't understand what it is or, conversely, who enrol in the field for the wrong reasons. I'm hoping that, through both our outreach efforts and the things we are doing on campus, we can help correct that."

ABOVE: Professor Sean Maw.

Continuing Professional Excellence

BY MARTIN CHARLTON COMMUNICATIONS

Studies have shown that lifelong learning is one of the keys to success and happiness for anyone in any profession. Engineering and geoscience in particular require high standards of continuing professional excellence. To meet the professions' commitment to public safety, members must stay ahead of the curve of the latest information.

MOST APEGS MEMBERS NATURALLY HAVE INQUISITIVE minds and are always eager for new information. As a result, in an average year most members complete more professional development than required.

Unfortunately, much of this naturally motivated self-improvement goes unrecorded simply because members neglect to do the paperwork. APEGS has taken a number of steps to make the process of professional development reporting as easy as possible.

Make a Plan

Patti Kindred, P.Eng., FEC, APEGS Director of Education and Compliance, oversees the association's Continuing Professional Development Program. She emphasizes that continuing professional development is a personal journey for each member.

"Lifelong learning is about what you know and what you need to learn. I can't tell you what you need to learn or where your skills need to be sharpened. That's an assessment each member has to make for him or herself depending on their career," Kindred says.

Kindred encourages all members to put together a personalized, four-step professional development plan, which not only addresses current skills gaps but is also forward looking, including skills you may need as you advance in your career.

Step One: Identify where you are - What combination of professional responsibilities, knowledge, skills and abilities do you currently have?

Step Two: Decide where you want or need to be - What knowledge, skills, and abilities are required for your current career or future one? What knowledge, skills, and abilities do you need or want to gain or enhance?

Step Three: Plan your program. What activity categories are covered? What categories need more attention? Is your goal balance or specialization?

Step Four: Record and report your activities on the online personal profile.

We Trust You

Members are required to log an average of at least 80 professional development credits per year. This is the minimum benchmark, and members who are practising can easily exceed the required credits.

"That's a very reasonable number compared to some other professions and even some industries within our professions. Some of our members are already required to do two or three times that amount of professional development, depending on they type of work they do," Kindred says.

To make it even more convenient to comply, APEGS members are allowed to average their credits over three years so that they can make up credits if they fall behind in a particular year, or claim credits for significant development opportunities beyond the completion date.

Kindred notes that members are requested to report their credits in six activity categories. They are not required to submit detailed activity reports, but retain them for their records.

"It would be a bureaucratic nightmare for APEGS to retain every record of development activity for a member. Besides, we know our members are ethical and complete their requirements honestly. We advise members to keep track of their professional development activities for their own benefit. For example, if a discipline case arose, they might be asked to produce proof of professional development to prove competence."

What Qualifies

If you haven't reviewed APEGS's options for professional development lately, Kindred recommends that you check them out at http://www.apegs.ca/Portal/Pages/Continuing-Professional-Excellence. You can access a member guideline that describes the categories in which you can report credits and the details of what activity can be claimed in each category. APEGS also provides worksheets for members to plan their development activity.

"Professional development doesn't just mean signing up for formal classroom courses or sitting through vendor seminars. There are many options that members may not even realize exist. You could be earning your professional development credits doing things you are already doing ," says Kindred.

CPE Categories:

Professional Practice - otherwise known as "doing your job." APEGS recognizes that a significant part of upgrading one's skills comes simply from practising them. Members can claim one professional development credit for every 20 hours of professional practice within one's scope of practice to a maximum of 50 credits per year.

Formal Activity - a structured course or program. APEGS doesn't require any specific level of formal activity but recommends that members include it in the mix. Every hour spent in attendance at a course earns one credit. For courses offering continuing education units (CEUs), each CEU equates to 10 credits. A maximum of 30 credits per year towards the annual 80 credit total requirement may be claimed for formal activities.

Informal Activity – Reading technical journals. Learning new software. Attending conferences. Critiquing technical papers. Attending meetings of professional associations. These are just a few of the recognized options for informal activities. (Hint: volunteering for APEGS committees counts.) One hour of informal activities counts for one credit to a maximum of 30 credits per year.

Participation – This category could be called "Mentoring and Role-Modelling." If you serve as a mentor or supervisor to a member-in-training, a licensee, a technologist, a student or other less experienced person, you can claim this as professional development. You can also claim it for community service. If you volunteer with a charity, a sports team, a school board, to give a few examples – and if your service allows you to demonstrate the high standards and ethics of the professions, then you can also claim credits. Members can claim one credit for each hour of service. Members can claim up to 10 credits per year for community service and up to 20 credits per year for participation in general.

Presentations – If you present a paper or conduct any other sort of technical of professional presentation or instruction at a conference or meeting, you can claim one credit per hour of preparation to a maximum of 20 credits per year.

Contribution to Knowledge – Activities that expand or develop the technical knowledge base in the disciplines of engineering and geoscience must be recognized although not every member is able to make such a contribution outside his or her normal job functions. A maximum of 30 credits per year towards the annual 80-credit total requirement may be claimed for various activities that contribute to knowledge.

Much the Same All Over, But the Winds are Changing

In 2004, Engineers Canada issued a landmark report that set the stage for harmonizing the reporting of engineering and geoscience professional development reporting across Canada.

Today there are only minor variations among the jurisdictions. Some require only 60 credits per year. Some have fewer categories of allowed activities. Some carry out spot checks of members' professional development registers.

Since establishing its CPE requirements in 2002, APEGS has continued to assess the best practices of all jurisdictions and evolve its guidelines.

"We continue to refine our system to keep pace with national trends for all professionals. Members' participation in continuing competence activities is mandatory, not only because it is stipulated in *The Engineering and Geoscience Professions Act* but, more importantly, that it reflects that our members regard competence in their field of practice as a paramount foundation of public safety. "

While it is currently not mandatory for APEGS members to report their CPE credits to the association, APEGS provides a simple online method of reporting CPE credits via members' APEGS Online Access.

"Most members choose to do this while they are accessing their online profile to pay their annual membership and licence fees. Some jurisdictions and other professions in Canada have made professional development reporting mandatory, penalizing members who don't comply. We are monitoring the national landscape, and are confident that in the next few years it will be mandatory that APEGS members report their CPE credits to the association."

Kindred advises that members not only establish a development plan and retain the details of the activities they have completed, but also begin to build the habit of reporting their credits when paying their annual fees.

Member Profile

This month *The Professional Edge* chats with Jeff Glenney, P.Eng., an electrical engineer with Littelfuse Startco.

Tell us about your personal and professional background.

I was born in Tisdale but I was raised all over. My Dad was in the RCMP so we moved every four or five years. I went to high school in Assiniboia and went on from there to study engineering at the U of S.

Why did you choose to go into electrical engineering?

I had had some experiences with Rotary exchange programs in high school. One was called Adventures in Energy, which was to go to Alberta and was focused on the oil and gas sector. The other was Adventure in Technology which was in Saskatoon. Those trips opened my eyes to the different sorts of career options open to me. I just felt electrical was the best fit.

What was your biggest challenge in college?

Calculus was a challenge. At that time, not many small town high schools offered it, so I had to tackle it for the first time in university. In general, as with all of us in engineering, I found the amount of material they throw at you and the amount of study time you have to put in to be a challenge but you struggle and get through it.

I was fortunate to get on with SaskTel for my summer jobs. They not only paid well but it was a good experience to see the technology in action and to be introduced to corporate culture.

What was your first job after college?

The same one I have now! Startco Engineering, now part of Littelfuse, hired me the year I graduated. I took on the responsibility of growing our US business.

What does the company do?

We have innovative technology, developed here in Saskatchewan, for protecting and managing electrical equipment in many major industries around the world. We also manufacture power centres and E-houses. Locally, our clients are primarily the major potash producers and other mining companies. We've since adapted our technology for other industries, including pipeline, petrochemical operations, pulp and paper and others.

How did you end up working in sales with a degree in engineering?

It was certainly not something that I thought I would end up doing when I was in school but I guess I had the right personality for it. The company recognized in me a nice balance of technical knowledge and extroverted personality. Much of my work now is sales management. I oversee sales teams in the US. I suppose it just shows that there are a lot of different things an engineer can do. This role has given me some great experiences, including the opportunity to work in Chile and Peru.

What was your impression of South America?

My first trip down gave me a strong sense of how fortunate we are to live in Canada. In Chile, there is a much wider gap between the rich and poor. The income inequality is far more noticeable than in Canada. But, all in all, they are great people, very friendly. It was a great growth opportunity for me.

What do you feel has been your single greatest career accomplishment so far?

Persistence. We are dealing with such large clients that already have pre-existing systems so you really have to develop tremendous patience to do this job. My longest sales cycle was for ground-check monitoring equipment sold to a mine in

Colorado. From the first sales call, it took six years to finally close the sale.

As well, I'm proud of having contributed to the growth of the company. That has been a major accomplishment.

What are your interests outside of work?

I have too many hobbies and not enough time. My kids and their sports take up a lot of my time. But when I have an hour or two, my latest obsessions include golf and radio controlled (RC) airplanes.

Do you have any favourite aircraft?

I have a Super Chipmunk with a seven foot wingspan. I have an electric plane called the Adrenalin which lives up to its name; it spins faster than you can count.

Do you compete?

I have been to a few competitions, mainly to observe. Once when I was in Billings, Montana, I was asked to be a judge for a competition called RC Combat. Just as it sounds, it involved 50 guys trying to crash their planes into each other. That was a lot of fun.

Have you ever met anyone famous?

With all the flying I do for work, I've ended up sitting beside a lot of famous people although I don't usually talk to them except to say 'hi'. In that sense, I've met Donny Osmond, Gordie Howe and Michael Buble. I once met Doug Gilmore at a resort while on vacation.

What is your favourite vacation spot?

That's another hard choice. My wife is a travel agent so we've enjoyed travelling a lot since we met. We've been on cruises and trips to the Caribbean many times. On the whole, I would have to say the Turks and Caicos is probably our favourite. But anywhere that has a beach and nice weather is fine with me.

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

Well, of course my parents for life in general. I get my extroverted qualities from both of them. For my career, I would say Dr. Garry Paulson, P.Eng., the former owner of Startco. The way he handled his business and solved customer problems was an inspiration. He was an excellent mentor.

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.

Student enrolment at the Faculty of Engineering and Applied Science at the University of Regina is at an all-time high. For the second year in a row, enrolment has increased by more than 20 per cent at the undergraduate level. As of the fall 2014 term, the faculty had 1,304 undergraduate students.

Our graduate programs are also growing, with 74 Ph.D., 117 M.Eng. and 96 M.A.Sc. currently registered in the Faculty. The Master of Engineering program (M.Eng.) has grown considerably. The program was recently revamped to address the demand and become a truly professional degree, by including three new courses on the practice of engineering:

- **ENGG 701** Engineering Practice and experience in Canada
- **ENGG 702** Engineering Practice and Continued Learning in the Workplace
- **ENGG 703** Engineering Practice, Professional Development, Communication and Ethical Challenges

Our M.Eng. program offers an attractive co-operative work experience and contains an engineering project component. Individual courses within the program are available to practicing engineers who wish to upgrade their credentials.

Dr. Lei Zhang

Dr. Babak Mehran

We are pleased to announce two new faculty members have joined our team. Dr. Lei Zhang joined the Faculty of Engineering and Applied Science in November 2013. Previously she worked as a consultant and electronic design engineer in the United Kingdom.

Her research work and industrial experience focused on the design and development of the Teletest® Focus+ system, which inspects pipelines using guided wave ultrasound. The new system is smaller, faster and more energy efficient. It has been distributed to more than 70 companies in 23 countries and won the 2014 Global Guided Wave Testing Product Leadership Award by Frost & Sullivan. The system was considered "outstanding for its advanced design, extended capabilities, technological innovation and current market share."

At the University of Regina, Dr. Zhang will continue her research into Field Programmable Gate Array embedded system design and non-destructive testing of pipelines using ultrasound guided waves.

Dr. Babak Mehran joined the Faculty of Engineering and Applied Science in November 2014. Previously he held research positions at the University of Tokyo and the University of Waterloo as well as an industrial research and development position with the IBI Group in Toronto. Dr. Mehran's expertise and research interests are in traffic flow theory and modelling, traffic operations and applications of intelligent transportation systems. The demand for mobility is increasing in urban areas with strong economic growth, which results in extended periods of traffic congestion. The development of efficient traffic management strategies is needed to improve mobility in urban areas on our existing road networks. Dr. Mehran's research at the University of Regina will focus on the applications of intelligent transportation systems and new technologies in road traffic management and congestion mitigation in urban areas.

Our annual Engineering Project Day that showcases our graduating undergraduate students will be held on Saturday, March 28, from 8:30 a.m. to 4:30 p.m. in the Education Building at the University of Regina campus. We invite everyone to attend the project presentations and exhibitions to see the innovative engineering projects our students have worked on this year.

Fees for 2015 are due on or before

December 31, 2014

Check your contact information in your

On-Line Profile –

Renewal notices have been mailed.

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 practising 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.

APEGS View

Implications of Allowing your Membership to Cease

Please notify APEGS if you will not be renewing for 2015!

If you are unsure if you will need a licence in 2015, we recommend that you apply for a licence waiver or you resign. It is less costly and much easier to reinstate if you have applied for licence waiver or have resigned. Don't let your membership lapse without notifying APEGS of your intentions.

Annual dues notices will be sent out mid-November. If you do not pay your annual fees by January 31, 2015 or we do not receive your resignation by that date, then your status will become "Inactive ceased for non-payment." In this situation, if you want to reinstate in the same calendar year, you will be assessed a reinstatement fee (15% of the annual fees).

Information on how to apply for licence waiver will be included with your 2015 dues notice. In order to resign, simply send an email to apegs@apegs.ca stating that you wish to resign.

Full details on reinstatement can be found on the APEGS website under Apply, Reinstatement.

Council Notes

October 10, 2014, Hotel Saskatchewan, Regina, SK

14 of 19 Councillors present

- Council endorsed the APEGS Value Proposition as developed in two planning sessions. Council also adopted the concept of an annual planning cycle to be completed each year in June.
- The Governance Board reported the following appointments: Zuojing (Joe) Zhu, P.Eng., Ryan Morelli, P.Geo. , Archie Gillies, P.Eng. and Kara Fagnou, P.Eng. to the Experience Review Committee; John Styles, P.Eng., Alec Aitken, P.Geo., Jafar Soltan P.Eng. and Danny Baliad, P.Eng. to the Academic Review Committee; and Lori Matthews, P.Eng. to the Professional Practice Exam Committee.
- John Styles, P.Eng. was appointed by Council as Chair of the Academic Review Committee for a two-year term.
- Gordon G. Borycki, P.Eng., Henry K. Chou, P.Eng., Stephen B. Clarke, P.Eng., Thomas A. Dickson, P.Eng., Ronald B. Matthews, P.Geo., Barry A. McLellan, P.Eng. and George C. Sharpe, Geoscience Licensee were approved for Life Membership.
- Council approved the updated criteria for each of the APEGS awards and the revised terms of reference for the Awards Committee.
- The Image and Identity Board reported the following appointments: Marcia Fortier, Geoscientist-In-Training, Brett LaRoche, P.Eng., Ken Linnen, P.Eng., FEC, John Masich, P.Eng. and Zahra Darzi, P.Eng. to the Professional Edge Committee; Nicole Beatch, P.Eng. and Meghan Gervais, P.Eng. to the Communications and Public Relations Committee; Sandra Foster, P.Geo., FEC (Hon.), FGC to the Awards Committee; Peter Zrymiak, P.Eng., Amanda Schinold, Engineer-In-Training, Yanan Xing, P.Eng., Dawn Friesen, P.Eng., Rajeshkumar Shah, P.Eng. and Dena McMartin, P.Eng., FEC to the Equity and Diversity Committee. Peter Zrymiak will serve as Vice-Chair of the Equity and Diversity Committee for a two-year term.
- Cathy Starkell, P.Eng. was appointed by Council as Chair of the Equity and Diversity Committee for a two year term.
- The Image and Identity Board reported sponsorship to the Women's History Month in the amount of $750 and the Canstruction Saskatoon Design Build Competition in the amount of $1,000.

Continued on page 20.

Consulting Engineer and Entrepreneur Honoured at

ACEC-SK Awards Event

The Honourable Vaughn Solomon Schofield, Lieutenant Governor of Saskatchewan, presented the prestigious Lieutenant Governor of Saskatchewan Meritorious Achievement Award to Milt Walker, P. Eng., PMP.

The Association of Consulting Engineering Companies - Saskatchewan (ACEC-SK) honoured Milt Walker, P.Eng., PMP as the 2014 recipient of the prestigious Lieutenant Governor of Saskatchewan Meritorious Achievement Award at their 2014 Awards of Distinction Reception on November 4, 2014.

President and CEO of Walker Projects Inc., Mr. Walker has over 40 years of experience in the consulting engineering industry. He graduated from the University of Saskatchewan with a Bachelor of Science in civil engineering in 1973, and holds a Certified Project Management Professional (PMP) designation.

Milt Walker's early career included working as a structural engineer with Dominion Bridge, a steel fabricator. He worked for Fennell Cochrane Group, Cochrane Lavalin (Special Projects), was a partner with Patrick Walker Consulting Engineers, and a partner at Cochrane Walker. For almost two decades, from the late '70s to the mid-'90s, Mr. Walker led many high-profile projects that make up Regina's downtown skyline, including the SGI office tower, Crown Life (now Canada Life) head office tower, McCallum Hill Towers I and II and the SaskTel Head Office. The Regina Centre Crossing Complex, Riddell Centre at the University of Regina and the Manitoba Entertainment Complex in Winnipeg are representative of the types of projects he has delivered.

Throughout the course of his career, peers and clients acknowledged Mr. Walker's exceptional project management and leadership skills. Always an astute businessman, he recognized the benefits of offering clients consulting engineering and management services from project design to project completion. He implemented this business model when he started his own company, Walker Projects Inc., in 1995.

Today he manages a group of companies, including Walker Projects Inc., with over 100 employees, that embraces an integrated practices philosophy and includes architectural design, civil and structural consulting engineering, professional management services and construction services.

Mr. Walker is a Past Chair of the ACEC-SK board of directors, and continues to this day to be an active member of the ACEC-SK Regina Buildings Committee. He is a member of the Association of Professional Engineers and Geoscientists of Alberta, Saskatchewan and Manitoba.

For six years he participated on the Centre of the Arts board of directors, but his passion has always been for sports, be it as a supportive father of three sons, a participant or a coach. He attributes much of his passion for developing people to his 12 years as a minor hockey coach.

The Association of Consulting Engineering Companies - Saskatchewan (ACEC-SK) is a non-profit association representing the business interests of the majority of consulting engineering and consulting geoscience firms in Saskatchewan. As the business voice of the consulting engineering and geoscience industry in Saskatchewan, ACEC-SK is the link between private industry, government, purchasers, decision makers and owners.

ACEC-SK Showcases 2014 Awards of Distinction

Jaclyn Donald, Engineer-In-Training, (right) accepted the 2014 Association of Consulting Engineering Companies - Saskatchewan (ACEC-SK) Young Professional Award.

Outstanding performance was the focus of the Association of Consulting Engineering Companies - Saskatchewan's Annual Awards of Distinction Reception held November 4, 2014 in Saskatoon. The Association acknowledged the accomplishments of an industry leader, a young professional and an engineering student, and four member firms accepted Brian Eckel Awards for exceptional projects.

The Honourable Vaughn Solomon Schofield, Lieutenant Governor of Saskatchewan, presented the prestigious Lieutenant Governor of Saskatchewan Meritorious Achievement Award to Milt Walker, P.Eng., PMP.

Jaclyn Donald, Engineer-In-Training, accepted the 2014 Association of Consulting Engineering Companies - Saskatchewan (ACEC-SK) Young Professional Award.

The Brian Eckel Memorial Scholarship Award was presented to U of S Environmental Engineering student, Alyssa Kimber.

Four Brian Eckel Awards of Merit were presented to member firms in recognition of their exceptional innovative projects. The 2014 award winning firms were: WSP Canada Inc., SAL Engineering Ltd., Bullée Consulting Ltd. and Tetra Tech. Stantec Consulting Ltd. was presented with a Certificate of Recognition.

Beverly MacLeod, ACEC-SK executive director, acknowledged the growing significance of this event. "An increase in project submissions this year and the national recognition received by one of last year's winners at the recent CCE Awards highlights the vision, leadership and performance of our members," said MacLeod.

Council Notes *Continued from page 18.*

- Council appointed David Rezansoff, P.Geo., Jon Gillies, P.Eng., FEC, FCSSE, FGC(Hon.), Grant Gingara, P.Eng. and Brent Marjerison, P.Eng., FEC to the Discipline Committee for a three-year term.
- Council approved the amendments to the Audit Committee terms of reference and appointed Margaret Anne Hodges, P.Eng., FEC as Chair and Dwayne Gelowitz, P.Eng., FEC as Vice-Chair of the Audit Committee.
- All 2015 budget requests were received by Council.
- Council noted and received the Competency Profile for Professional Geoscientists at Entry to Practice report submitted by Geoscientists Canada.
- The next Council meeting is scheduled for November 27 and 28, 2014 in Saskatoon.

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.

Call for Nominations for Awards

The Awards Committee is seeking nominations for the APEGS awards, as well as other provincial and national awards such as the Saskatchewan Order of Merit, the Order of Canada, the Canadian Engineers' Awards (Engineers Canada) and the Canadian Professional Geoscientist Award (Geoscientists Canada).

If you would like to nominate someone for these awards, please let us know. The provincial APEGS awards criteria include:

Brian Eckel Distinguished Service Award
Accomplishments in Engineering/Geoscience (35%). Service to the professions in public education and/or active participation in engineering/ geoscience associations, societies, institutes (35%). Service to community (30%).

Outstanding Achievement Award
Accomplishments in Engineering/Geoscience (70%). Service to the professions in public education and/or active participation in engineering/geoscience associations, societies, institutes (20%). Service to community (10%).

McCannel Award
Accomplishments in Engineering/Geoscience (20%). Service to the professions in public education and/or active participation in engineering/geoscience associations, societies, institutes (70%). Service to community (10%).

Promising Member Award (available to any member who has held P.Eng./P.Geo. for less than 5 years)
Accomplishments in Engineering/Geoscience (50%). Service to the professions in public education and/or active participation in engineering/geoscience associations, societies, institutes (25%). Service to community (25%).

Exceptional Engineering/Geoscience Project Award
Accomplishments in Engineering/Geoscience (100%). The person must be from Saskatchewan or the project team must be made up predominantly of Saskatchewan engineers or geoscientists. The project may be located inside or outside of Saskatchewan. The award will be granted when the efforts of an individual or team of engineers/geoscientists are deemed to be of great significance.

Environmental Excellence Award (all professional members of APEGS are eligible)
Environmental awareness, preservation, protection and reclamation through education, leadership and/or involvement (25%). Enhancement of quality of life by improvement of the physical or social environment through engineering, geoscience or other works (10%). A real extent of environmental protection or preservation as a result of the efforts (50%). Prevention of potential environmental impacts vs. correction/ remediation of existing impacts (15%).This award is intended to have broad scope and be open to a wide range of projects, achievements, initiatives and activities contributing to the protection and preservation of the environment.

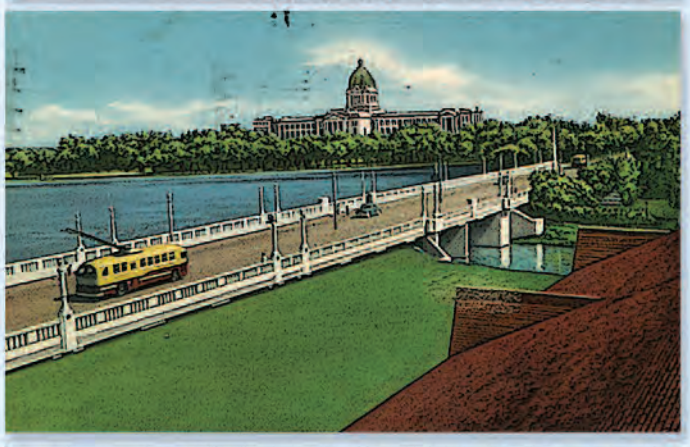
Friend of the Professions Award
The Friend of the Professions Award was established in 2013 to recognize exceptional achievements or unique contributions in the promotion of the professions by someone who is not a member of APEGS.

For more information or to obtain nomination forms, please contact:

APEGS Awards Committee
300-4581 Parliament Ave.
Regina, SK S4W 0G3
Fax: (306) 525-0851 or
Email: apegs@apegs.ca

85th Annual Meeting and Professional Development Conference

Through the Decades - We see more



April 30 - May 2, 2015

Hotel Saskatchewan
Regina SK

Thursday April 30

- Evening Welcome Event

Friday May 1

- Professional Development Streams and Luncheon
- President's Reception

Saturday May 2

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

Call for Expressions of Interest

2015 APEGS Annual Meeting

April 30 - May 2, 2015, Hotel Saskatchewan, Regina, SK

"Through the Decades – We see more"

APEGS invites you to submit an Expression of Interest to do a presentation during the professional development sessions at the 2015 APEGS Annual Meeting on Friday May 1st, 2015 in Regina.

The Annual Meeting Planning Committee is inviting speakers for track sessions with a focus on the theme, "Through the Decades -We see more."

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 related to the themes described above.

Submissions should be forwarded to Robert Schultz, P.Eng. - rschultz@saskpower.com or Chris Wimmer, P.Eng. - 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 and their final presentation electronically.

Professional Engineers and Geoscientists

We see more.

www.apegs.ca

Celebrating Our Own

APEGS is pleased to announce the following Fellowships for 2014

These dedicated professionals have the honour and privilege of using the designation "Fellow of Engineers Canada [FEC]". The individuals who are not engineers may use the designation "Honorary Fellow of Engineers Canada [FEC (Hon.)]."

- Luigi Benedicenti, P.Eng.
- Zahra Darzi, P.Eng.
- Ashley Forbes, P.Eng.
- John Styles, P.Eng.
- Terry Werbovetski, P.Eng.
- Darren Wingerak, P.Eng.

These dedicated professionals have the honour and privilege of using the designation "Fellow of Geoscientists Canada [FGC]". The individuals who are not geoscientists may use the designation "Honourary Geoscientists Canada Fellow [FGC (Hon.)]."

- Rick Forbes, P.Eng., FEC
- Kate MacLachlan, P.Geo.
- John Pearson, P.Geo.
- Gary Yeo, P.Geo., FEC (Hon.)

These dedicated professionals have the honour and privilege of using the designation "Fellow of the Canadian Society for Senior Engineers [CSSE]."

- Wayne Clifton, P.Eng., FEC
- Bob McDonald, P.Eng., FEC, FGC (Hon.)
- Karim Nasser, P.Eng.

Left to right: Lawrence Pinter, P.Eng., Ryan Riess, M.Sc., P.Eng. and Gail Pinter

PINTER & Associates wins Engineering Award

PINTER & Associates Ltd. of Saskatoon, a member of ACEC-SK, accepted the Award of Excellence in the Environmental Remediation category at the Canadian Consulting Engineering Awards on October 23 in Ottawa. The Canadian Consulting Engineering Awards represent the highest honours for achievements in consulting engineering in Canada.

A total of 60 projects from seven provinces were submitted in seven categories.

Their project, Groundwater Remediation with Permeable Reactive Barrier, was up against four others in the Environmental Remediation category.

The judges stated that PINTER's project "implemented a small-scale research process for permeable barriers and applied it to the real world. We appreciated how the process eliminated the need for the traditional excavation and disposal of material."

The firm's president, Lawrence Pinter, P.Eng., acknowledged the significance of the national awards event to the Canadian consulting industry and to PINTER & Associates Ltd.

"All too often engineering is the silent profession. We do remarkable work which impacts the lives in our community on a

daily basis. We save lives, improve the quality of life and support the economy. By these awards the Canadian engineering profession acknowledges and highlights the highest quality and innovation of our profession," said Pinter.

"This award also demonstrates that PINTER, as a small, vibrant, innovative Saskatchewan engineering consultant, is able to compete successfully with even the large multinationals."

Beverly MacLeod, executive director of ACEC-SK, applauded the accomplishments of the PINTER team. "We have always known that our members can stand shoulder to shoulder with the best engineers in this country."

Lal Kushwaha Earns International Award

The International Society for Terrain-Vehicle Systems (ISTVS) has selected Lal Kushwaha, P.Eng., FEC, professor emeritus at the College of Engineering, as the recipient of its Bekker-Reece-Radforth Award for 2014. The award, established in 2002, honours exceptional research and/or industrial achievements in engineering practice of the principles of terramechanics.

Kushwaha received the award at the 18th ISTVS Conference in Seoul, South Korea, held at the end of September.

Zhang is SES Educator of the Year

The Saskatoon Engineering Society (SES) has selected mechanical engineering professor Chris Zhang, P.Eng., as its 2013-14 SES Educator of the Year. The award recognizes

outstanding work in engineering education and was selected from nominations by the SES Awards Committee on the basis of innovation, organization and effective delivery of education material; mentorship of others; service to the profession in public education; and educational service to the community.

Zhang was presented with the award at the SES Annual Awards Banquet and AGM in September at the Willows in Saskatoon.

Dalai Named to Royal Society of Canada

Ajay Dalai, P.Eng., Professor of Chemical and Biological Engineering and Canada Research Chair of Bio-energy and Environmentally Friendly Chemical Processing, has been named a Fellow of the Royal Society of Canada (RSC) – one of Canada's highest academic honours. He was among 90 new Fellows announced in September 2014 by the RSC.

The fellowship of the RSC comprises distinguished men and women from all branches of learning who have made remarkable contributions in the arts, the humanities and the sciences, as well as in Canadian public life.

The Royal Society of Canada: the Academies of Arts, Humanities and Sciences of Canada was established in 1882 as the senior Canadian collegium of distinguished scholars, artists and scientists. As Canada's National Academy, it is our country's senior body for distinguished scholars.

New Website!

Check us out at

www.apegs.ca

News Beyond Our Borders

APEGA president steps down to avoid conflict of interest

APEGA press release - APEGA President Dr. Jim Gilliland, P.Eng., has chosen to resign in light of a potential conflict of interest. Gilliland is an employee of the Canadian consulting engineering firm Williams Engineering Canada Inc., which was named in a recent provincial court ruling regarding breaches of the Alberta Building Code at the Rocky Mountain Court building parkade.

"Maintaining the integrity of APEGA as a self-regulating entity is critical to maintaining our social licence. I have tremendous faith in the network of highly dedicated volunteers and employees that discharge the association's regulatory functions on a daily basis. I believe that by stepping down, APEGA's integrity can't be questioned as they move forward," said Gilliland.

Professional engineer and APEGA President-Elect Connie Parenteau will not become president until April 2015 but will assume the responsibilities of the president immediately.

Robot teaches kids to play instruments

GoLocalPDX Portland - Meet WIGL, the new dancing robot that teaches children how to correctly play musical instruments.

A squint-eyed, white dome-shaped robot, WIGL is intended to motivate children to practice their musical skills. The tiny robot hears music notes from any instrument (singing too), and lights up or dances if the notes are played correctly.

The inventor, Vivek Mano, studied electrical engineering at the University of Florida and created his first robot, a tennis-ball retrieving robot, in 2005. After getting his degree, Mano went into sales, marketing and business development within the big robots industry.

Now Mano is trying to bring WIGL to classrooms and homes with a Indiegogo campaign.

With WIGL, Mano hopes to get children involved in engineering through creative problem solving.

“People seem to believe that strong math skills are the most important prerequisite for being an engineer. However, I think that creative problem solving is far more important, and is really the foundation of engineering. With Wigl, we can develop this skill and get kids excited about engineering!”

Toronto summit discusses infrastructure deficit

Engineering Dimensions - Policies for dealing with Canada’s much-talked-about infrastructure deficit are moving to a new level of sophistication and complexity – and not a moment too soon, say presenters at the annual infrastructure summit, held September 16-17 in Toronto.

Zoubir Lounis, Ph.D., P.Eng., senior research officer with the National Research Council’s civil engineering/infrastructure

section, said infrastructure systems now and in the future should be marked by durability, low maintenance, high resistance and dependable functionality, especially in response to new and unforeseen disruptions.

Darla Campbell, P.Eng., executive director of the Ontario Coalition for Sustainable Infrastructure (OCSI) and a member of PEO's Government Liaison Committee (GLC), said the top reasons for inactivity on infrastructure include poor appreciation for infrastructure's contributions to healthy communities, weak political leadership and a lack of data on how to plan and build new projects.

Environment Canada senior climatologist David Phillips said engineers should expect more strange weather incidents in the future.

"We as a society are replacing nature's infrastructure with our own. Engineers and others involved with infrastructure need to look to adaptation measures and to factor in a warming climate in all their decisions," Phillips said.

AB launches new petro research station

The PEG - The sky is blue above a remote field near Brooks, Alberta, but Dr. Don Lawton, P.Geoph., is more interested in what happens 300 to 700 metres below the surface. As director of the Containment and Monitoring Institute (CaMI), he's shepherding work that could soon have implications for the entire planet.

Three quarters of a section of land about two hours southeast of Calgary will soon be home to CaMI's new field research station. A first in Canada, the station is being developed by the University of Calgary and CMC Research Institutes, Inc. Working in real-world conditions, researchers in academia and industry will be able to develop and field test new technologies that track and monitor carbon dioxide and other fluids that have been injected underground.

Subsurface activities, including carbon storage, hydraulic fracturing, steam assisted gravity drainage (SAGD) and cyclic steam stimulation, are under increasing scrutiny from regulators and the public. There is an urgent need to better understand potential containment risks in both natural and engineered systems, says Dr. Lawton.

"We need to improve monitoring technologies so that we can assure the public of fluid containment . . . ," says Dr. Lawton, also a U of C professor of geophysics.

CMC is investing $4.4 million to get the station up and running and has applied for another $5 million in grants for further expansion. A top priority is to move new carbon capture and storage (CCS) technologies from the laboratory to the field — and this will be a main area of research at the station. The Government of Alberta has invested $1.2 billion in CCS projects as part of its pledge to reduce greenhouse gas emissions.

Megawatt manure mush

The PEG - A huge helping of liquid manure with a pallet of rotten fries, please — it's not something your average human would order. But it is a typical meal at Lethbridge Biogas, a cogeneration plant where employees play chefs of a sort to hungry microbes, fine-tuning how much of this goes with how much of that as they create powerful recipes.

The ingredients at their disposal are the organic byproducts and waste that arrive from nearby livestock operators, meat and food processors and restaurants. From these feedstocks come energy and fertilizer, with a lot of help from those voracious microbes.

The main ingredient is liquid cow and hog manure, of which there's an abundant supply from farms within 15 kilometres of the plant.

Other organic products are also added to the mixture. Earlier this year, 15 pallets of frozen fries had gone bad and were destined for the dump — but a savvy truck driver knew about the biogas plant and took them there instead. The cardboard went to the recycler. Nothing went to the landfill.

Located in Lethbridge County in the Rave Industrial Park, the plant features three bio-digesters that will, when at full capacity, process up to 120,000 tonnes of raw materials per year. That includes enough manure to fill more than 3,300 tanker trucks.

The methane gas produced by the bacteria powers the plant's generators, which feed the Alberta power grid. Right now, the plant can produce up to 1.2 megawatts of electricity. By 2017, it should reach full capacity of 4.2 MW – enough energy to power more than 2,500 homes. It's estimated the plant will offset greenhouse gas emissions by 45,000 tonnes every year.

News From The Field

MISCELLANEOUS

SK construction tops $275M

Regina Leader-Post - Building permit values in Saskatchewan increased 4.7 per cent to $275.3 million in August from $262.9 million in July, largely on the strength of residential construction activity, according to the monthly building permit report released by Statistics Canada.

Despite the nearly 5 per cent increase between July and August, the value of building permits issued by Saskatchewan municipalities was down slightly (0.4 per cent) from the $276.5 million issued in August 2013, the federal agency said.

While the total value of Saskatchewan building permits did not change much, there was a major shift to residential construction activity from non-residential construction.

Between July and August, the value of residential permits was up 41 per cent to $192.5 million, while the value of non-residential permits was down 35 per cent to $82.8 million. Year over year, residential construction activity was up 16 per cent from $165.1 million in August 2013, while non-residential was down 25 per cent from $110.9 million during the same period last year.

Kitsaki Development Corporation partners with March Consulting Associates Inc.

Canada News Wire - Saskatchewan-based March Consulting Associates Inc. and Kitsaki Development Corporation announced an equity partnership. Kitsaki has acquired 25 per cent equity in March that will allow it to access professional project engineering and management services in turn providing March with access to First Nations resources and services.

"March is pleased with this partnership as it creates many new opportunities for our company," said Barry W. Schmitke, P.Eng., president and CEO of March. "We will have direct access to additional First Nation businesses and projects that require engineering and management expertise."

The partnership brings together two Saskatchewan success stories that have a long history of business in the province.

Kitsaki is owned by Lac La Ronge Indian Band, the largest First Nation in Saskatchewan. March Consulting Associates is an employee-owned, multi-discipline engineering company based in Saskatoon.

UNIVERSITIES AND RESEARCH

Vet table tilts a cow's world

WCVM Today – Veterinarian Dr. Chris Clark is looking forward to tipping cows.

The associate professor at the Western College of Veterinary Medicine (WCVM) is talking about regaining the use of the tilt table – a highly efficient piece of equipment that was recently refurbished and reinstalled in the WCVM Veterinary Medical Centre's Large Animal Clinic.

The hydraulic tilt table is an indispensable tool that's primarily used for bovine hoof treatment and trimming. Over the years, many of Western Canada's top show cattle have taken a ride on the unique tilt table for their regular "bovine pedicures."

The table is also invaluable for examining and treating injuries and problems with a bull's genitals or a cow's udders.

While the WCVM's recently installed table may appear new, it's actually an updated version of the device that was developed in the mid-1970s by Arnie Brockman, an engineering consultant from Humboldt, Sask. With advice from veterinarian Dr. Jim

The Canadian Cattlemen

Sawatsky, he built two tables – one for Sawatsky's veterinary clinic in Foam Lake and one for the WCVM.

After 40 years of regular use with few technical issues, the original tilt table had to be retired in 2013 when it started showing signs of mechanical problems. The University of Saskatchewan began its search for an engineering company that would take on the job of reconditioning the equipment and making some upgrades – improvements to the design that were now possible because of modern technology.

The successful firm was RMD Engineering, a Saskatchewan company that has worked on other university projects.

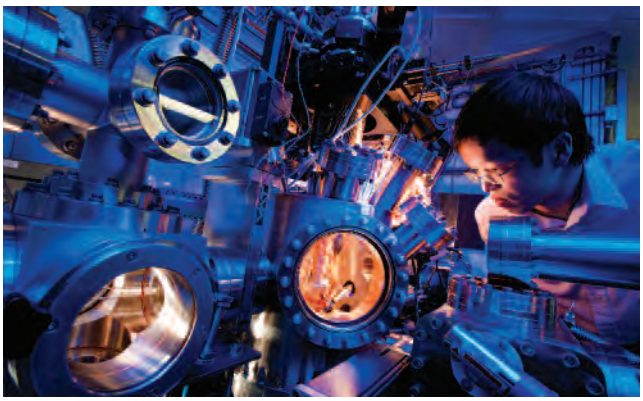
"They saw it as a real challenge and had fun working with it," says Clark. "They did an incredible job of adapting the table."

Saskatchewan Manufacturing Centre of Excellence launched

Canadian Manufacturers and Exporters - The province's manufacturing sector is receiving a significant boost with the launch of the Saskatchewan Manufacturing Centre of Excellence in Saskatoon.

A Memorandum of Understanding was signed this morning between the Canadian Manufacturers & Exporters (CME) and Saskatchewan Polytechnic to formally establish the Centre of Excellence at Polytechnic's Saskatoon campus. The centre will focus on productivity improvement, innovation, and workforce development for the Saskatchewan manufacturing sector.

The Ministry of the Economy has committed $1.5 million over three years to the Centre and is working with CME to develop its programming. Other organizations providing support to the Centre include Athabasca University, which is also working with Polytechnic to deliver some of the programming, and the National Research Council of Canada Industrial Research Assistance Program.



U of S celebrates decade of synchrotron

Metro Saskatoon - To mark the 10-year anniversary of the Canadian Light Source's Synchrotron at the University of Saskatchewan campus, a group of researchers hosted an event aimed at educating the public about the work done at the massive facility.

The Canadian Light Source's (CLS) Synchrotron is a

building-sized machine accelerating electrons to produce a "source of brilliant light" for the study of "microstructure and chemical properties of materials," and has been used to study everything from salmonella infections to mad cow disease.

Now a group of young researchers using the machine showcased the synchrotron's power and importance at an event called "See the Light: Health Research at the Canadian Light Source."

Alongside learning about the research conducted at the CLS, members of the public had a chance to use and observe the U of S's Anatomage virtual dissection table, which featured a number of 3-D images including a more than 2,000-year-old mummy, a human body and a two-headed calf.

The event featured more than 20 CLS researchers. The public learned about the CLS's role in everything from researching reproductive aging to examining how toxic substances can be useful.

Alongside a self-guided tour of the CLS mezzanine which circles the massive machine, residents also had an opportunity to get closer to the CLS than ever before, as for the first time in CLS history, researchers offered tours to four beam-line research areas on the ground level.

MINING

Aecon wins mining, refinery contracts

Canadian Manufacturing - Construction firm Aecon Group Inc. said it has been awarded a pair of contracts for mining and energy projects in Western Canada worth a combined $275 million.

According to the company, it won a contract with K+S Potash Canada worth $200 million for work on its Legacy mine project in Saskatchewan.

The contract covers mechanical, piping, electrical and instrumentation work for the north tank farm and evaporator, crystallization and clarifier plant portion of the project.

Work is scheduled to begin in December 2014, with expected completion in the second half of 2016, according to Aecon.

Agrium to cut 500 jobs, sell some businesses

Reuters - Canadian fertilizer producer Agrium Inc. will cut 500 jobs and look to sell several non-core businesses as it aims to find $475 million in savings by 2017.

Agrium will also target savings from reducing working capital at its farm retail business and trimming operating and administrative expenses.

Fellow fertilizer producers Potash Corp of Saskatchewan and Mosaic Co. have already started deep cost-cutting programs as profits decline after the price of potash fell to a six-year low earlier this year. Weak grain prices have also dampened spending by US farmers on fertilizer.

Among the businesses Agrium will try to sell are its micronutrients and European UAN (urea-ammonium nitrate) lines.

While the Calgary, Alberta, company cuts costs, other expenses are climbing.

Agrium said the cost of expanding its lone potash mine, at Vanscoy, had climbed to $2.3 billion from an estimate of more than $1.9 billion in August. A brutal winter and tight labour conditions in Western Canada pushed up costs.

The expansion is expected to wrap up by the end of the year. Production is expected to be 2.1 million tonnes in 2015, climbing to 2.8 million by 2017.

ENVIRONMENT

New code overlooks climate change

Global News - The province of Saskatchewan will be adopting a new environmental code to protect natural wealth for future generations.

The supporting regulations that make up the new Saskatchewan Environmental Code are contained within *The Environmental Management and Protection Act 2010* and *The Forest Resources Management Amendment Act 2010*.

The code will address areas such as air quality, environmentally-impacted sites, water management and natural resources protection, but it won't address climate change.

Only a day after the United Nations released its final report on climate change – calling on governments to take urgent action – critics in Saskatchewan were quick to point out that nothing on greenhouse gases was included in the new environmental code.

The process to develop the new code was lengthy, with more than 200 experts and industry leaders from all sectors contributing to its development. In 2012, the province made a draft version of the code available to the public, and more than 1,300 people responded by either attending meetings or providing written submissions.

Saskatchewan Environment said a climate change chapter was drafted but ultimately dropped, as the province is waiting for guidance from the federal government.

The old code specified outcomes as well as the exact process needed to reach that outcome. The government says businesses are now able to present their own plans to comply with environmental standards and can use new technology or more modern practices.

The new code will come into effect through stages to allow affected industries to prepare for changes.

The first new code change, dealing with forest management, will come into effect on January 15, 2015.

Areva outlines impacts of proposed mine

NutasiaqOnline - Areva Resources Inc.'s 11-volume final environmental impact assessment report for the proposed Kiggavik uranium mine (80 kilometres west of Baker Lake) claims that the project will bring jobs, training, money and hope to a region in need of those things.

But there will be costs during three to four years of construction, 14 years of proposed operation and 10 years of decommissioning the mine, says the report.

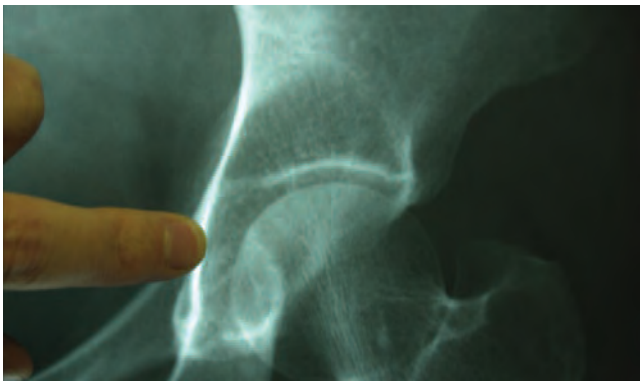
The lengthy final EIS, submitted to the Nunavut Impact Review Board Oct. 2 and made available online Oct. 17, outlines how the company hopes to cut those costs to people, animals, the land and air while taking into account the current, and changing, northern climate.

The site will be accessed by a winter road between Baker Lake and Kiggavik and by an on-site airstrip. An all-season road will be considered, "should the winter road be unable to adequately support the project."

Supplies for the mine will be shipped into a dock facility at Baker Lake during the summer barge season. The yellowcake will be transported by air.

Areva is planning to organize dozens of barge trips annually, thousands of truck trips down the winter road, and about 350 flights per year to transport the yellowcake.

Northern Saskatchewan Dene groups have been vocal in their opposition to yellowcake flights that will pass over their communities.



SK expects to be nuclear med. research leader

Global News - A $5-million grant awarded to the University of Saskatchewan (U of S) by the provincial government will change the way scientists do research.

The money was given to the Sylvia Fedoruk Canadian Centre for Nuclear Innovation at the U of S on Oct. 30, and will go toward the "people part of research," meaning more jobs in Saskatoon.

The first PET/CT scanner is up and running at Saskatoon's Royal University Hospital as of June 2013 and, announced earlier this year, a cyclotron is expected to open in 2016 next to the synchrotron on campus.

All three of these devices will work together to help detect and treat diseases like cancer.

The provincial funding will allow researchers and students to do things that they once had to rely on other provinces for. Isotopes, crucial for treatment, are currently being flown in from Hamilton, Ont.

Saskatoon scientists make medical isotopes without nuclear reactor

CTV Saskatoon - Canadian Light Source scientists have developed a way to produce medical isotopes without the use of a nuclear reactor.

The Saskatoon-based facility announced they recently shipped isotopes made by powerful X-rays to Winnipeg for clinical trials.

Medical isotopes are used in medical imaging to diagnose cancer and heart disease. According to Health Canada,

energy emitted by the isotope is detected by a special camera during a scan.

The Medical Isotope Project facility in Saskatoon is the first of its kind in the world, light source officials said. A particle accelerator hits molybdenum-100 metals — which resemble dimes — with high-energy X-rays. The rays knock a neutron from the nuclei and convert the molybdenum-100 to molybdenum-99, which then decays into a medically useful isotope — technetium-99m. Leftover metals are recovered and recycled. A nuclear reactor is not needed and no nuclear waste is created.

The isotope is used in about 5,000 medical scans each day in Canada.

Ontario's Chalk River nuclear reactor produces the bulk of the world's medical isotopes, but the aging reactor is scheduled to shut down in 2016.

Two or three accelerator systems similar to the Medical Isotope Project could produce enough medical isotopes to supply all of Canada, according to light source officials. The project could prevent a potential isotope shortage when Chalk River stops production.

Light source officials said they expect approval by 2016.

Cameco

First uranium produced from Cigar Lake ore

Cameco news release - Cameco announced that the McClean Lake mill has started producing uranium concentrate from ore mined at the Cigar Lake operation in northern Saskatchewan.

The McClean Lake mill, operated by AREVA Resources Canada Inc., recently completed modifications required to safely process the high-grade ore from the Cigar Lake mine. Cigar Lake ore is transported by truck for processing at the McClean Lake mill located 70 kilometres northeast of the mine site.

Mining at Cigar Lake began in March 2014. To date, Cameco has delivered about 1400 tonnes of ore to McClean Lake. Mining was suspended in July 2014 to allow the ore body to freeze more thoroughly. Mining resumed in the first week of September and ore deliveries to the mill are ongoing. The mill is expected to produce up to 1 million pounds of uranium concentrate from Cigar Lake ore in 2014 and ramp up to its full production rate of 18 million pounds by 2018.

"Cigar Lake is among the world's richest and most technically challenging ore bodies and I congratulate all of the people who helped to bring it into production," said Cameco president and CEO Tim Gitzel. "It provides Cameco with a large-scale, low-cost production centre and positions us to take full advantage of the long-term growth we see coming in our industry."

INFRASTRUCTURE

rabble.ca

New rail safety requirements

Reuters - Transport Canada says it will hire more auditors to review internal safety protocols at rail companies and will increase the number of handbrakes to apply on idle trains in response to the July 2013 derailment disaster in Lac-Mégantic, Que.

Transport Minister Lisa Raitt announced four new safety measures, which follow the Transportation Safety Board's final report on the tragedy at Lac-Mégantic, where 47 people died after a crude-filled runaway train derailed and exploded downtown.

Raitt said rail companies will be required to set a new minimum number of brakes on idle trains, which will depend on the weight of the train and the grade of the slope on which the train is parked.

Raitt said the government will also conduct further research into crude oil transportation "to ensure dangerous goods are properly classified, tested and verified."

There was no mention of third-party insurance requirements. The now-bankrupt company that owned the runaway train that exploded in Lac-Mégantic didn't have enough insurance to pay the cleanup bill, leaving Canadian

taxpayers on the hook for hundreds of millions of dollars.

Raitt said she's still in talks with rail companies about minimum insurance requirements.

OIL AND GAS

CHOPS: but just not for your BBQ

Regina Leader-Post - Billions of dollars lie in wait beneath Saskatchewan's resource-rich soils in the form of the 90 per cent of heavy oil that remains in the ground after the accessible oil has been removed using current well production technology.

Heavy oil is abundant in Saskatchewan and Alberta. There are thousands of wells to the northeast and southeast of Lloydminster that produce heavy oil through a method called Cold Heavy Oil Production with Sand (CHOPS). CHOPS doesn't require thermal input such as steam.

For the last 15-20 years, CHOPS has been applied to heavy oil reservoirs in Saskatchewan. While CHOPS wells continue to be drilled in our province and existing wells mature, we're starting to lose production from this valuable resource.

The Saskatchewan Research Council (SRC) is raising awareness within the industry and government about the limited time available to address this market effectively and still gain from the existing wells. SRC is working with major operators who use CHOPS wells to help them develop, commercialize and promote Post-CHOP technologies.

The Star Phoenix

SK firm fined $172K for fuel spill

HazMat Management - Saskatchewan-based gold and exploration firm Claude Resources Inc. has been ordered to pay $172,000 after pleading guilty to a 2013 diesel fuel spill in northern Saskatchewan.

Claude Resources Inc. pled guilty to one charge under the federal *Fisheries Act* and one charge under Saskatchewan's *Environmental Management and Protection Act* in provincial court in La Ronge.

The charges stem from an investigation into a spill of approximately 24,000 litres of diesel fuel from a storage tank at the Seabee Mine in January 2013.

The Saskatchewan Ministry of Environment and Environment Canada conducted a joint investigation into the cause of the spill. Enforcement officials discovered that the diesel fuel storage tank was located on the north shore of Laonil Lake, 35 metres from the shoreline.

Investigators determined that the tank had not been serviced by a certified installer and that a connection point failure resulted in the release of the diesel fuel.

Enforcement officials concluded that, given the circumstances in the case, the release was preventable and Claude Resources Inc. was subsequently charged.

Explosion prompts evacuation at Saskatchewan gas pumping facility

Canadian Press - A blast occurred at a TransGas facility near Prud'homme, northeast of Saskatoon.

TransGas is a subsidiary of Crown-owned SaskEnergy, and a company spokesman said several buildings at the site were damaged but there were no employees there when the incident happened.

Automated equipment shut the facility down and vented off any remaining natural gas that was in the pipes, which he said isn't toxic.

SaskEnergy said it appeared the flames were sparked when there was a release of gas at the wellhead from one of seven underground caverns at the site. The caverns are used to store natural gas for the winter when demand for heating is greater.

The caverns are about a kilometre-and-a-half down and are carved with water in underground salt deposits. Each cavern is about as tall as a 12-storey office building.

SaskEnergy was unsure about whether there was a risk of the gas igniting underground.

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 amount[1]

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) = 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

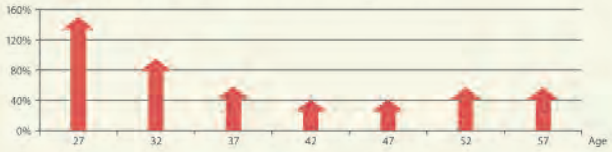
For members of Canada's 12 engineering regulators.

80,000

Over **80,000** of your peers and their families are covered.

5 The lowest price is right

Many advertised rates may seem low at first. But see how the average rate of our 3 lowest-priced competitors **exceeds** our rates over 15 years.[3] For example, a 32-year-old male non-smoker who buys $100,000 coverage from them would end up paying **95% MORE** over 15 years.



[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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Calendar Of Events

Calgary Herald

Kananaskis Short Course on Principles of Hydrology, University of Saskatchewan Centre for Hydrology/CWRA Canadian Society for Hydrological Sciences

January 10-11, 2015, Kananaskis Valley, AB
www.usask.ca/hydrology/CSHS_PoH_Short Course_2015.php

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

Remediation and Prevention Conference
February 25, 2015, Winnipeg, MB
www.meia.mb.ca

International Conference on Water Management Modeling
February 25, 2015, Toronto, ON
www.chiwater.com/Training/Conferences/conferencetoronto.asp

Economic Evaluation and Investment Decision Methods, Goodman School of Mines
February 25-27, 2015, Toronto, ON
www.laurentian.ca/goodmanschoolofmines/academics/executive-programs/

The Warming of the North: Implications for Arctic Transportation, Supply Chain Management and Economic Development
March 1-3, 2015, Ottawa, ON
www.umanitoba.ca/faculties/management/ti/2772.html

APEGS Law and Ethics Seminar
April 10 -11, 2015, Saskatoon SK
www.apegs.ca/Portal/Pages/Professional-Practice-Exam

APEGS Annual Meeting
April 30-May 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

Preparing for Future Challenges to Canada's Water Resources, 68th CWRA National Conference
June 2-4, 2015, Winnipeg, MB
www.cwra.org/en/events-news

A Climate of Change
Western Canada Water 2015 Annual Conference
September 15-18, 2015, Winnipeg, MB
www.wcwwa.ca/events

Canadian Dam Association 2015 Annual Conference
October 3-8, 2015, Mississauga, ON
www.imis100ca1.ca/cda

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