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EDGE

ISSUE 144, MAY/JUNE 2013

2013 Annual Meeting

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It is an honour to have the opportunity to serve as the president of APEGS.

Following in the footsteps of Shawna Argue, I am pleased to be the second University of Regina graduate to hold this office.

I look forward to the challenges of the office and to representing your interests to the best of my ability.

Participating on Executive Committee and Council has provided me the opportunity to renew volunteer working relationships with old friends and to creating some new ones. I have learned much from the three Past Presidents that I have had the privilege to work with; Shawna Argue, P.Eng., FEC, Peter Jackson, P.Eng., FEC, and Leon Botham, P.Eng. I will endeavour to uphold the standards that you have maintained and created for the organization. You have all upheld the office with dignity, professionalism, diligence and humour. I am proud to call you my friends.

One of the values that I have observed within APEGS and that I admire is that we are not afraid to advocate for what we believe is right and in line with the statutory objects of our association. At times this position may be out of favour with other constituent organizations or stakeholders, but I believe that it creates debate amongst the professions and inevitably strengthens the professions as a whole.

The 83rd Annual Meeting was held from May 2 – 4, 2013 in Regina, and I would like to congratulate and thank all of the volunteers and staff for the thought, time and effort in conducting another excellent program of events. The theme of the Annual Meeting was "Lives and Careers, A Balanced Approach." The track sessions and keynote speaker supported this theme and made attendees evaluate the balance in the approach to their career and life.

Balancing our professional responsibilities, goals, ambitions and personal life can be a daunting challenge. I have had the opportunity to discuss these challenges with friends, colleagues and staff over a number of years. It is not a coincidence that some of the most conflicted individuals are the high achievers who truly care about their work, want to do the best job that they can, and have great ambitions. They feel guilt about either not spending sufficient or quality time with their families or not putting the extra effort into their job assignments.

Robert J. Sawyer in his keynote address commented that work and life are not separate, but that work comprises a large part of our life. We should therefore try to make our work as enjoyable as possible while providing value to our employers.

Immediate Past-President Leon Botham, P.Eng., FEC and President Dwayne Gelowitz, P.Eng., FEC

Individuals who continue to struggle with the balance between their work and personal lives can develop issues with depression and anxiety which can be counterproductive to both. The best way to address these issues is to discuss them with someone that you trust. For our young members, seek the wisdom of someone you value as a mentor and inquire about how they have achieved the balance in their lives. Finding the appropriate balance will make your job less stressful and more enjoyable and in the long run make you a more valuable employee. Mentors, give freely of your time to provide the value of your wisdom to our younger members.

Over the upcoming year, I am looking forward to working with staff, Council and all of the many volunteers to manage the affairs of our professions. Your time contributes greatly to the success of our organization and the growth and prosperity of our professions.

I want to thank my employer, Stantec, Rory Picklyk, colleagues and staff for permitting me the opportunity to volunteer with APEGS on behalf of our great professions.

And lastly I want to thank my family, Donna, Bryn, Alyssa and Brianna, for the support they have shown me over the years while I have pursued participation in the many organizations that I have had the privilege to work with. Donna will be taking time out of her career and interests to travel with me and support me at events during the upcoming year. Thank you.

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

Better Engineering Starts at Home

BY MARTIN CHARLTON COMMUNICATIONS

About 17 years ago, Jason Praski, P.Eng. proposed to Sheri (Dauk) Praski, P.Eng., FEC, on a hill just outside Saskatoon. It was the first and biggest commitment they made in that area but it wasn't the last one.

A few years later, after they had started a family, the Praskis bought a piece of land in the area of their engagement and launched an ambitious plan to build a home that balanced environmental sustainability, cost-effectiveness and comfort.

"We always wanted to use our engineering skills to improve the environment around us. Our early engineering careers enabled that to some extent, but we needed to do more," says Sheri.

What was their motivation?

"To do things better. Whether you are environmental or not, the term 'non-renewable' speaks for itself – why waste these resources when we can be comfortable with less? Our kids are also a big part of our motivation. Although my husband has always had a passion for alternative energy, it wasn't until our children came along that we started to get serious about the kinds of choices we were making and the effect those would have on their future. We felt that as engineers we had a duty to play a leadership role in sustainable practices," Sheri says.

Their goal was to create an acreage home that would look and function like any other modern bungalow, that would demand no significant lifestyle changes from its owners but that would minimize use of power, heat and water.

"We wanted our house to look and feel like a regular home and have all environmental features justified by cost savings so that they would have appeal to any homeowner, not just to those who are passionate about the environment," Sheri says.

The first challenge the Praskis faced was finding someone to build the house.

"A lot of contractors wouldn't even consider it. They had the attitude 'this is the way we've always done it and that's the best way to do.' Eventually we found a couple of contractors who were willing to take a chance on a different approach," Sheri says.

Features of the Praski House

- 1,650 ft2 bungalow with walkout basement (3300 ft2 living space)
- Uses approximately 4600 kwh/year, 2000 m3 natural gas/year, and 23,000 gallons water/year – about two-thirds less than a comparable conventional home
- Double-wall constructions 2 - 2x4 with thermal break
- New solar pv system expected to produce as much electricity as consumed.
- Blown-in recycled insulation
- Rigid insulation on exterior around floor joists, plates and some windows which provides insulation anywhere that there would be low "r" value due to wood
- Rigid insulation under the basement slab
- Rigid insulation around basement
- Triple pane, argon filled windows throughout – low e coating on the east and west windows
- Minimized north windows (only one small window) and put attached garage on the north side
- Maximized south windows
- Added material to south walls where solar will enter to provide additional thermal mass during winter months
- Enough overhang on south side to cut off high summer sun and prevent warming of the house during warmer months (and maximize solar gain during the winter months)
- Ground cooling system
- R 80 insulation in ceiling
- Energy-efficient appliances
- High-efficiency furnace
- Cfl lighting throughout
- Low water-use fixtures throughout
- Cellular (insulating) shades on main level
- Clotheslines in laundry room

The house took about six months to complete and includes an impressive list of energy-saving features (see sidebar, Features of the Praski House). A construction list that long begs a certain question: how much did this all cost?

"Zero. That's the short answer. The long-term savings are so significant that, really, those extra features are paying us to have them in there. The long answer is that this house cost about $10,000 more ($25,000 more if you include the solar panels which were added last year) to build than a comparable home but the payoff period for each feature is between one and fifteen years with the energy savings factored in. But they will all save energy for the life of the house," Sheri says.

Over the past seven years that they've lived in the house, the Praskis estimate that they have spent two-thirds less on energy and water than in a conventional home of the same size.

Their solar panels, installed last year, have a 25-year warranty and are hooked into SaskPower's net metering system which allows the Praskis to earn credits when they feed their excess power into the grid during sunny periods and then draw on those credits during cloudy times. Although they won't know for sure until the system marks its first anniversary in June, the Praskis believe they are on track to have put more power into the grid than they've drawn over the past year.

"We had previously cooled our home with insulation and a ground cooling system but that wasn't always totally effective on the hottest days. Now that we're producing more electricity than we're (using), we added a conventional air conditioning system without feeling too concerned about it," Sheri says.

Part of the Praskis' motivation - a view from their house of Saskatoon smog.

The Praskis do many other things to keep their ecological footprint low. They own a pair of hybrid cars and take advantage of their acreage lifestyle to grow a lot of their own food. While this has become a lifestyle commitment for their family, Sheri emphasizes that you don't need to be an environmental devotee to take advantage of smart energy choices.

"I had one colleague tell me 'I can't afford that environmental stuff' (sadly, he is an engineer). I think that's incredibly short-sighted. It may be a small cost up front but it pays for itself and then keeps paying."

Also, you don't need to build a whole new house to take advantage of energy savings, Sheri says. Just adding a foot or two of extra insulation in your attic can cut heating and cooling costs dramatically.

According to Praski, prospective homeowners today have many more options than when she and Jason built their house.

"There is now much more energy and environmental consciousness among home builders. There are some standard designs available and builders routinely build 'Energy Star homes' now if you're interested in building a low-footprint, high energy-efficiency house."

For engineers thinking of taking the plunge into sustainable construction, Praski has some simple advice.

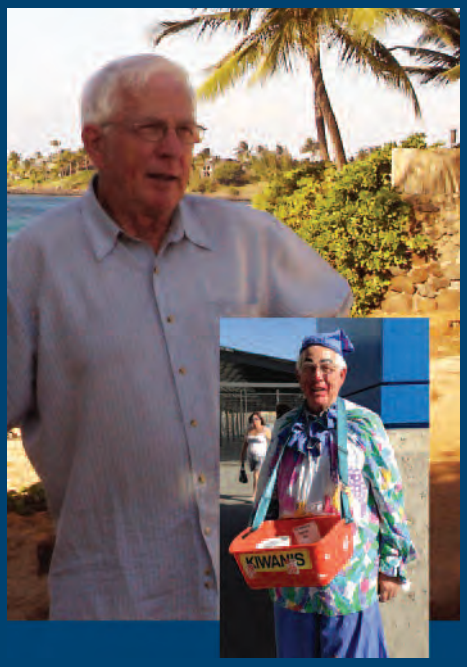
"Don't be scared. And if someone doesn't agree, ask them why not.

Our current APEGS ad campaign is 'We See More' and that's very true. As engineers, we know how to do the calculations.

We know how to determine the life-cycle costs.

We are in a perfect position to prove that sustainable construction is practical and cost-effective."

Member Profile



This month *The Professional Edge* chats with Jerry Helfrich, P.Eng., FEC, a semi-retired electrical engineer based in Saskatoon.

Tell us about your personal and professional background.

I was born and raised in Leader, Saskatchewan. I spent several years on a farm but went to school in town. After that, I took electrical engineering at the University of Saskatchewan.

Why did you choose to go into engineering?

I think it was because I knew so little about it and wanted to learn more. As a farm kid, I wasn't really sure what my career options were. My high school teacher steered me in the direction of engineering. I didn't know much about it but decided to explore.

What was your biggest challenge in college?

Passing exams! Like a lot of engineering students, I was top of my class in grade 12 but struggled to keep up in university. In Leader, we had the same problem faced by many rural schools: we didn't have the equipment to deliver many course options so as rural students we were at a disadvantage in college.

What was your first job after college?

There weren't many opportunities in Saskatchewan in 1962 so I went to work in the oil patch in Alberta. I worked in wireline logging in the field in Alberta and then ended up with a construction company in Edmonton. Then I went to work for a consulting engineering company, Angus Butler Ltd., that sent me back to work in their Saskatoon office. I ended up owning the company. I sold the company to Associated Engineering in 2001 and supposedly retired in 2005 but I'm still working for them. Last week I worked one hour.

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

My greatest accomplishment is not a project but people. Over the years, I've had the privilege to serve as a mentor to many of our staff members. It has been a pleasure to train young engineers and then watch them accomplish their goals. That's what's given me the greatest reward and what has given me a reason to get up and go to work every day.

The teams I've worked on have achieved some pretty big things – like building two hospitals in Saskatoon – but the credit goes to the team for achieving those things. I'm just proud to have had the opportunity to contribute to those teams.

What are your interests outside of work?

I have invested a lot of my time into community service through the Kiwanis organization. At one point, I was the Western Canada Governor for the Kiwanis and I'm still quite active in the organization.

What are your favourite books?

I enjoy books about developing societies. I worked in southern Africa for a while so I've maintained an interest in the people of the region and their struggles.

What sort of work did you do in Africa?

We undertook a couple of projects in Namibia and Botswana. In Namibia, we tried to introduce steel-stud houses as opposed to

their traditional sun-dried brick homes. We believed the steel stud technology would create a better local industry so we built a demonstration house using local contractors to try to teach them how to use the technology.

In Botswana, we tried to introduce landscape architecture to the country. We sent a landscape architect out to serve as a consultant. The people really warmed to it and used his talents extensively to beautify their businesses and homes.

What is your favourite vacation spot?

We have a condo in Maui where we go regularly. We enjoy the familiarity of Hawaii compared to some other hot vacations spots like Mexico. The traffic rules are the same, the language is the same – it's totally relaxing because you don't need to adjust to anything. It's just like vacationing in Canada, only hotter.

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

For both my life and my career, I would say that my children have had the greatest influence on me.

In terms of my career specifically, I'd say Percy Butler, P.Eng. – the "Butler" from Angus Butler Ltd. He was an eternal optimist who worked through a problem no matter what. I'm also grateful to Bernard Michel. He went on to head Areva and Cameco but back when he was mining Manager for Cluff Mining he took a chance on a small Saskatchewan consulting engineering firm. Without that support, I don't think Angus Butler would have succeeded as it did.

APEGS Election Results 2013

Voting for the APEGS elections was completed on April 29, 2013. A total of 1,766 votes were cast electronically and 38 were cast by mail, representing 18.5 per cent of the 9,770 total ballots sent out. There were no spoiled ballots.

Results of the Council elections (2013 -2014) are as follows:

President ..... Dwayne Gelowitz, P.Eng., FEC
President-Elect ..... Andrew Loken, P.Eng., FEC
Vice-President ..... Margaret Anne Hodges, P.Eng., FEC

The Councillor positions are for a three-year term ending at the 2016 APEGS Annual Meeting.

Councillor, Group I (Civil) ..... Dave Kent, P.Eng., FEC
Councillor, Group III (Electrical & Engineering Physics) ..... Ian Sloman, P.Eng.
Councillor, Group IV (Geological, Mining, Petro., Geophysics & Geoscientists) . John Unrau, P.Geo.
Group VII (Environmental) ..... Stormy Holmes, P.Eng., FEC

The Government of Saskatchewan by order in council has made the following appointments:

Public Appointee..... Dwayne Entner
Public Appointee ..... Gerry Hertz

LEFT: Immediate Past-President Leon Botham, P.Eng., FEC and President Dwayne Gelowitz, P.Eng., FEC.

We See More

Evolution of the APEGS Public Awareness Campaign

Engineers and geoscientists sometimes have a tough time at cocktail parties. "Often when I'm at a reception people will ask me what I do. As soon as I say 'I'm an engineer' you can see their eyes start to glaze over," says Bob Berry, P.Eng. chair of the APEGS Communications and Public Relations (CPR) Committee.

This lack of public interest in the professions is not just a matter of professional vanity. Without adequate awareness of the professions, the public may fail to respect and value them properly. In 2012, the CPR Committee decided to launch a major revamp of the association's annual public awareness campaign to try to address this gap.

APEGS Council invited Martin Charlton Communications (long-time publishers of *The Professional Edge* magazine) to develop a proposal for the project. After months of preparation – including extensive consultation with both Council and the CPR committee – APEGS and Martin Charlton launched the 'We See More' multimedia campaign.

Lyle Hewitt, Director of Message for Martin Charlton, joined Berry in a track session that explored APEGS new communications strategy. Hewitt described the components of the three-year campaign which include TV ad buys in March and September, a billboard campaign and an internet video advertising.

Polling

The main focus of the track session was on the benchmark polling done in advance of the awareness campaign.

"This is something APEGS hasn't done before but which is essential to a long-term campaign. We went into the field to test public opinion before the start of the Year One campaign. We will go back at regular intervals to see how we're doing so that we can make adjustments to the campaign as necessary," Hewitt said.

The polling was conducted by Insightrix Research from Saskatoon, a firm whose clients include Cameco, the Roughriders and a number of Crown Corporations.

Insightrix assisted Martin Charlton and the CPR Committee in developing a series of questions that fit APEGS' objectives and budget. The results were divided out across a range of demographic factors including age, income, education level, gender and ethnic background.

The poll, conducted in early February 2013, surveyed 801 random-sample participants. The survey asked five questions:

Question 1

Have you ever heard of an organization that goes by the abbreviation of APEGS?

The brand awareness of APEGS scored extremely low, averaging only 11 per cent across all demographic groups. To make matters worse, brand awareness is lowest among two of the groups that APEGS has, in the past, most wanted to target – namely women and First Nations people.

Question 2

Thinking exclusively about engineers, what are some activities you think engineers participate in?

Civil engineers were the big "winners" in this question. Most respondents associated engineers with building, designing and other construction-related activities. The many other branches of engineering were largely unknown to respondents.

Question 3

Thinking exclusively about geoscientists, what are some activities you think geoscientists participate in?

This was the most peculiar response of the survey. Members of the public overwhelmingly (roughly 96 per cent) associated geoscientists with "research". Few respondents could name any other activity associated with the profession. Hewitt's theory is that participants responded exclusively to the word "scientists" in the professional title and otherwise had no specific knowledge of what most geoscientists actually do.

Question 4

Next we'd like you to thinking specifically about the work that engineers and geoscientists perform. How much of an impact does their work have on your daily life?

Engineers scored well on this question with approximately

78 per cent responding that engineers have either moderate or high impact on their daily lives. Geoscientists rated lower with 57 per cent recognizing a moderate to high impact.

Question 5

How well respected would you say each of the professions is in society?

This question delivered the best news for the professions and gave results consistent with other results across Canada. Over 85 per cent felt that engineers were well respected and 67 per cent felt that way about geoscientists.

"The engineer number is very high – probably one of the highest respect levels of any profession. Geoscientists likewise meet with approval from over two-thirds of respondents – even though most people don't seem to know what they do!" Hewitt said.

Lessons Learned

Hewitt described some of the conclusions Martin Charlton has drawn from the polling:

- Public respect for engineers and geoscientists is already extremely high.
- People only vaguely understand the importance of engineers and geoscientists to their lives but don't understand the specifics.
- In the case of engineers, the public has a very narrow understanding of their work. In the case of geoscientists, they don't really know anything.

Going forward with the awareness campaign, these lessons will be applied in a number of ways:

- Advertising will give some emphasis to the resource sector and its connection to the province's prosperity in an effort to raise awareness of the role of geoscientists.
- Attention will also be given to a wider variety of functions in which engineers are involved.
- Additional efforts would be given to emphasize the association's brand.

Berry invited members of the association to continue to participate in the association's public awareness campaign by providing comments to the APEGS office or by volunteering with the Communications and Public Relations Committee.

K-12 Committee

There are few people in Saskatchewan quite so good at getting people excited about science as Dean Elliot. A veteran classroom teacher, Elliot is the science curriculum consultant for the provincial Ministry of Education. He is also an active member of the APEGS K-12 Committee and one of the inaugural recipients of the Friend of the Professions Award.

Elliot's work with the government has a direct effect on the professions. The quality of science education that students receive in high school affects their preparation for and interest in studying engineering and geoscience, which in turn affects the quality of graduates coming from Saskatchewan universities.

Elliot outlined some trends in science knowledge in Saskatchewan and some of the new approaches the ministry is undertaking.

Under the current system, the province sets the general curriculum standards but allows school divisions flexibility to make local choices. This has led to some innovative career-oriented local science programs such as a helicopter repair program in some northern schools.

Statistics show a steady number of students enrolled in the sciences in general over the past decade but with significant declines in some areas such as computer science. The highest area of study is physics.

"As a physics teacher, I'd like to think this is because of all the great physics teachers out there. Unfortunately, that's not the case. It's because rural schools are limited in the courses they can offer and physics is the easiest science course for them to offer," Elliot said.

The new curriculum will seek to increase the interest, relevance and career aspects of science for students. It will do so by putting course material into a set of contexts, including:

- Technical problem solving – more emphasis on using science to achieve practical outcomes, such as designing, building and refining prototype machines. This would include a greater emphasis on engineering aspects of science.

- Science, technology, society and the environment (STSE) decision making – more emphasis on the interaction of science with public issues and day-to-day life.
- Cultural perspectives – inclusion of other cultural views on science such as First Nations.

The last context has proven a challenging and rewarding exploration for Elliot.

"In areas such as environmental studies, adding a First Nations perspective is easy. In other cases, it's more challenging. As one elder told me, cellular biology isn't something their culture talks about so it's difficult to include their perspective on it."

But in some cases, finding the cross-cultural perspectives is simply a matter of being a little more open-minded.

"If a First Nations elder told you 'the rocks talk to me", you might be tempted to dismiss it as superstition. If a trained geologist said the same thing, you'd be more likely to accept it as professional instinct and judgment."

The new curriculum will also use a new streaming system through the high school grades. Grade 10 students start with a very general Science 10 course, after which they can choose in grade 11 to begin to specialize in classes such as Physical Science 20 or Life Science 20. In Grade 12, they can refine further, based on their prerequisites.

The grade 11 classes introduce a strong career component to help students make better choices for their grade 12 and, ultimately, university courses. It is at this stage, Elliot says, that it becomes more important to get organizations like APEGS involved in talking to students.

"The tricky part is how best to do that. Just having guest speakers isn't always the best way. Some APEGS members are great at it but other members shouldn't be standing in front of a classroom any more than I should be building bridges," said Elliot.

An innovative program developed at Walter Murray Collegiate in Saskatoon assigned students in a Communications Media class to go out and interview local engineers about why chose their profession. Students not only learned about the technology of film making but many also came away thinking about going into the profession.

APEGS provided financial assistance to the Walter Murray documentary which was shown both at the track session and at the Awards Banquet.

Public Private Partnerships (P3s)

By now, most people know that P3 stands for public-private partnerships, an infrastructure development model that involves contracting out the building, operation and maintenance of a public asset to private partners. The abbreviation could, however, stand for another alliteration: push-me – pull-me publicity. The P3 model has attracted a great deal of interest from engineers and policy planners across Saskatchewan while at the same time generating significant public controversy.

Dorian Wandzura, P.Eng., deputy city manager and chief operating officer for the City of Regina, gave Annual Meeting attendees his perspective on P3s. Wandzura is responsible for a broad range of city services including roadways, transportation and waterworks. It is his division that is planning to upgrade Regina's wastewater treatment plant using a P3 model.

Wandzura started by addressing what he sees as one of the most common myths about P3s.

"It is not a form of privatization. Ownership stays firmly with the public under this model," Wandzura said.

The main benefit to P3s, according to Wandzura, is their wide-ranging ability to control risk.

"Public projects are notorious for going over budget. In a P3, you can negotiate a fixed price. Likewise, any variations in operating and maintenance costs can be managed through a fixed price contract."

Despite what some critics have suggested, there is no risk of standards being compromised in a P3 since quality benchmarks can be built into a contract and are subject to inspections.

"And if the private partner doesn't deliver what's in the contract, you don't pay them."

Likewise, Wandzura believes P3s are better at maintaining the condition of assets and developing innovation.

"Governments are not good at planning for the long term. They are not good at 30-year contracts. A common situation is that, when an infrastructure asset is built, the politicians will come in, get their pictures taken and have a big ribbon cutting. But five years later when the asset needs funding for maintenance or upgrading, it gets put on the back burner."

"Governments are not good at life-cycle funding. P3s eliminate that weakness by taking the politics out of asset management and locking down an enforceable and funded life-cycle plan for an asset from the outset."

P3s depend on an elaborate organizational structure involving complex relationships among the government, private partners, subcontractors and financing mechanisms. Typically, the private part of the agreement is not assigned to one of the existing contractor companies (of which there may be many working on the project) but to a special purpose company created exclusively to manage the project.

"That way, there is just one neck to grab if the government has a concern about the delivery of the project."

Despite their advantages, P3s face hurdles with public acceptance, as Wandzura is all too aware. The City of Regina is preparing to upgrade its wastewater treatment plant at an estimated cost of $224 million to meet the new federal and provincial effluent regulations. The P3 delivery model was approved by city council but almost immediately met with fierce opposition in the form of an advertising and petition campaign led by the public employees union.

"Many of these objections are ideological in nature. Opponents tend to pick some bad examples where P3s have not worked out, and there have been some."

Wandzura's view of the P3 model is pragmatic.

"They are not a panacea. They are not free money. They are not always the right way to do things. They have to be examined on a case-by-case basis. But where they make sense, they can be an excellent way for a city to control costs, manage risks, promote innovation and ensure life-cycle funding."

P3s are gaining momentum in Canada. There are currently 185 P3 projects in Canada, and more every year. The federal government is supporting the use of P3s through the P3 Canada Fund which can provide up to 25 per cent of eligible costs for P3 projects.

PROFESSIONAL DEVELOPMENT LUNCH KEYNOTE SPEAKER


Robert J. Sawyer

Canadian science fiction author and futurist Robert J. Sawyer has an impressive list of consulting clients that includes NASA, Motorola and the US Defense Advanced Research Projects Agency.

It's easy to see why.

Sawyer's speaking style can best be described as a one-man brainstorming session.

Sawyer's exploration of the Annual Meeting theme – work/life balance – covered territory that included everything from evolutionary biology to futuristic technology. But he began his talk with an insight from his personal life. His brother had worked hard to achieve success in online film making and was proud to have won an Emmy for his work. Yet, when Sawyer's brother was diagnosed with terminal lung cancer, the first decision he made was to leave the work he loved and retire.

Sawyer sees this as part of a trend. Unlike workers in the 1950s and 1960s, today's professionals no longer define themselves by their work. He pointed to a recent example of Nicole Winstanley, a publishing executive who was offered the presidency of Penguin Canada. She refused to take the job unless Penguin allowed her to take a maternity leave before taking the job. Penguin accepted.

Similarly, Shell Oil – part of an industry not usually known for soft-heartedness – became concerned that its executives were working too hard. The company commissioned a documentary of interviews with their executives' own children, who universally said the thing they wanted most in the world was to spend more time with their parents.

Sawyer noted that these recent trends fly in the face of our biological programming. The DNA coding of all living things is to acquire as much as possible at all costs.

"Darwin's principle has been called survival of the fittest but many people interpret it only as 'survival of the nastiest.' And for most of our evolutionary history, that's exactly what it meant," Sawyer said.

Technology has already put a dent in that mindset.

"As soon as we started inventing weapons, we had to start thinking in ways that animals did not. We couldn't just acquire things mindlessly. We had to stop and think about the consequences."

Sawyer sees this continuing in the future as the work of engineers and other scientists takes us further down the road to an economy of abundance.

"Even though our DNA tells us to keep getting more and more stuff, our modern experience shows otherwise. Studies have shown that money does, in fact, buy happiness up to a point – up to a household income of about $70,000 a year. Then it plateaus for a while and eventually having too much money starts to make you unhappy."

In this paradigm of plenty, Sawyer contends that survival of the fittest will no longer mean survival of the greediest and nastiest but rather will mean those who achieve better balance among the various aspects of their lives.

This could result in significant changes in the workplace.

"For centuries, the employer-employee relationship has been like a parent-child relationship. The two would stay together for a long time. The role of the employee was to obey. The role of the employer was to provide."

Even now, this model is disappearing as work relationships shrink to just a few years or even just a few months. This emerging model may be expanding, thanks to continuing improvements in telecommuting technology. This, Sawyer believes, will lead people to cease to neatly compartmentalize their lives but rather integrate their home life into work and vice versa. Once again, he pointed to experiences in his own life.

"As a professional writer, I work at home. I keep an office there for tax purposes but I don't use it. I work in the living room. I switch back and forth between my home life and my work life as I need to."

Sawyer believes that everyone in the workforce should push back against requirements to move out of home to do work by insisting on more telecommuting and online work options.

"Engineers and geoscientists, as knowledge professionals, are in a good position to do this. You are not like someone at Wal-Mart who can be easily replaced. You are much better positioned to write your own ticket and set the terms for how you would like to see your employment evolve."

Awards Nominations

Do you know a professional engineer or geoscientist who should be considered for an award? Do you know about an engineering or geoscience project that deserves recognition?

The Awards Committee is seeking nominations for the annual APEGS awards as well as for a range of other provincial and national awards.

For more information contact:
APEGS office at: 1-800-500-9547
Fax: (306) 525-0851
or Email: apegs@apegs.sk.ca.

2012 APEGS Salary Survey Summary Results

The Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) contacted a total of 4,710 Professional Engineers, Professional Geoscientists, Engineers-in-Training, Geoscientists-in-Training and Licensees living in Saskatchewan. A total of 1,757 members completed the survey, representing a 37.3 per cent response rate. Of those, 1,716 were employed full-time and used in the analysis. Surveys were completed from mid-February to late March 2013 and salaries reported were as at December 31, 2012. Insightrix Research Inc. compiled and tabulated all results. The detailed report from Insightrix can be found on the APEGS website at **www.apegs.sk.ca**

The main goals of the survey are:

- to provide information to all members regarding monetary compensation for different levels of responsibility and advanced degrees;
- to provide information to employers to assist them in establishing appropriate pay levels for recent graduates and ensuring competitive compensation packages for experienced professionals; and
- to give students, career counsellors and other interested persons information on employment, including salaries, in the engineering and geoscience professions in Saskatchewan.

Annual Salary by Final Year of Graduation (B.Sc.)

	COUNT	MEAN	5	25	MEDIAN	75	95	%
Prior to 1976	47	$145,668	$113,249	$126,256	$140,186	$163,186	$188,004	2.8%
1977	12	$127,535	$67,000	$107,500	$128,500	$157,500	$200,000	.7%
1978	17	$148,246	$83,781	$107,000	$130,000	$184,000	$255,000	1.0%
1979	17	$148,829	$90,000	$118,000	$145,000	$165,000	$245,000	1.0%
1980	20	$121,122	$40,105	$119,000	$125,302	$136,000	$156,563	1.2%
1981	10	$144,621	$90,000	$128,412	$150,000	$165,000	$180,000	0.6%
1982	20	$130,654	$97,000	$104,182	$119,400	$149,000	$197,500	1.2%
1983	16	$161,173	$102,000	$135,000	$150,000	$180,000	$280,000	1.0%
1984	20	$137,450	$83,000	$105,000	$128,000	$160,000	$211,500	1.2%
1985	21	$139,298	$93,400	$100,000	$120,000	$150,500	$205,000	1.3%
1986	26	$135,440	$95,000	$104,000	$127,000	$156,000	$205,000	1.5%
1987	31	$128,363	$84,000	$114,000	$126,500	$143,000	$185,000	1.8%
1988	19	$126,724	$100,000	$114,000	$121,000	$134,648	$170,000	1.1%
1989	23	$117,300	$80,000	$86,000	$120,000	$130,000	$160,000	1.4%
1990	22	$119,160	$72,000	$85,200	$118,159	$150,000	$181,600	1.3%
1991	16	$125,404	$85,000	$100,300	$125,580	$145,500	$195,000	1.0%
1992	14	$106,531	$65,000	$96,000	$122,192	$128,000	$160,000	0.8%
1993	17	$121,960	$71,000	$103,000	$125,000	$135,000	$185,000	1.0%
1994	29	$129,830	$82,722	$103,000	$128,000	$154,000	$180,000	1.7%
1995	30	$117,972	$81,000	$91,000	$112,500	$150,000	$170,000	1.8%
1996	41	$118,081	$75,000	$97,000	$120,000	$135,500	$168,000	2.4%
1997	45	$114,082	$70,000	$90,000	$110,000	$128,410	$180,000	2.7%
1998	34	$112,492	$64,100	$89,000	$110,000	$126,000	$200,000	2.0%
1999	42	$104,515	$70,000	$82,500	$100,000	$115,000	$148,000	2.5%
2000	51	$105,706	$72,000	$89,500	$104,220	$120,000	$134,400	3.0%
2001	67	$104,681	$78,000	$92,000	$101,000	$114,396	$146,000	4.0%
2002	55	$103,250	$74,000	$92,000	$100,000	$114,000	$135,000	3.3%
2003	59	$98,041	$60,000	$87,000	$95,000	$110,000	$143,000	3.5%
2004	65	$94,306	$65,500	$78,500	$90,000	$101,000	$138,000	3.9%
2005	72	$92,314	$57,000	$81,750	$90,683	$103,000	$120,000	4.3%
2006	72	$89,720	$62,000	$76,500	$87,183	$96,757	$132,200	4.3%
2007	94	$82,707	$58,000	$72,000	$81,000	$92,000	$114,000	5.6%
2008	113	$79,085	$60,000	$71,000	$78,000	$85,000	$103,000	6.7%
2009	115	$75,503	$60,000	$67,000	$72,000	$81,000	$95,233	6.8%
2010	112	$69,203	$54,080	$61,825	$67,950	$75,138	$85,000	6.7%
2011	123	$65,751	$53,000	$60,000	$63,000	$72,000	$86,500	7.3%
2012	93	$61,881	$48,000	$57,200	$60,000	$65,000	$80,640	5.5%
	1680							**100%**

Annual Salary by Designation

DESIGNATION	COUNT	MEAN	5	25	MEDIAN	75	95	%
P.Eng.	971	$113,674	$73,000	$90,000	$105,000	$128,412	$180,000	56.6%
P.Geo.	76	$120,662	$81,500	$95,000	$110,300	$147,500	$180,000	4.4%
P.Eng. and P.Geo	14	$148,852	$83,982	$128,000	$152,500	$165,000	$260,000	.8%
Engineering Licencee	5	NA	NA	NA	NA	NA	NA	.3%
Engineer-in-Training	616	$70,480	$52,000	$60,000	$67,781	$78,910	$95,233	35.9%
Geoscience Licencee	1	NA	NA	NA	NA	NA	NA	0.1
Geoscientist-in-Training	33	$78,937	$60,000	$68,000	$78,000	$85,000	$110,000	1.9
	1716							**100%**

*NA=Not available due to reporting rules

Annual Salary by Discipline

DISCIPLINE	COUNT	MEAN	5	25	MEDIAN	75	95	%
Agriculture & Forestry	39	$88,094	$60,000	$67,000	$84,000	$106,000	$137,000	2.3%
Chemical, Ceramic & Metallurgical	81	$105,423	$60,144	$79,000	$90,000	$125,000	$180,000	4.7%
Civil	352	$92,139	$57,400	$68,320	$81,822	$107,125	$165,000	20.5%
Electrical & Engineering Physics	283	$99,768	$58,000	$73,000	$95,233	$115,000	$158,000	16.5%
Environmental	110	$91,827	$55,000	$70,000	$90,988	$103,500	$145,000	6.4%
Geological, Mining, Petroleum Engineering	150	$102,922	$60,000	$75,000	$94,700	$125,000	$178,000	8.7%
Geosciences, Geology	98	$108,019	$62,000	$81,500	$100,250	$130,000	$171,000	5.7%
Mechanical & Industrial	419	$95,820	$55,000	$71,556	$88,608	$115,000	$160,000	24.4%
Software Engineering	30	$92,879	$55,000	$64,350	$82,500	$106,000	$169,000	1.7%
Other	154	$107,251	$55,000	$77,000	$98,000	$129,000	$200,000	9.0%
	1716							**100%**

Annual Salary by Function

FUNCTION	COUNT	MEAN	5	25	MEDIAN	75	95	%
Corporate Management	120	$146,971	$92,097	$116,800	$132,686	$165,000	$252,500	7.0%
Design	432	$83,547	$53,000	$63,300	$77,464	$95,000	$135,000	25.2%
Exploration	57	$100,322	$60,000	$79,550	$87,000	$118,000	$173,610	3.3%
Inspection/Quality Control/Resident Services	33	$68,948	$56,000	$60,000	$62,400	$75,500	$104,166	1.9%
Marketing/Sales	16	$82,920	$53,040	$61,800	$78,000	$107,008	$125,000	0.9%
Operating or Maintenance	136	$97,785	$60,000	$82,750	$93,950	$112,400	$143,000	7.9%
Project Administration	65	$89,398	$60,000	$69,735	$85,200	$108,198	$132,200	3.8%
Project or Operations Management	614	$103,484	$60,000	$77,000	$95,000	$121,000	$171,000	35.8%
Regulatory Approvals and/or Enforcement	55	$92,281	$60,000	$71,000	$90,000	$104,000	$129,000	3.2%
Research/Planning	118	$88,069	$52,000	$65,000	$87,445	$103,000	$140,250	6.9%
Teaching	27	$121,087	$74,000	$102,000	$121,383	$145,000	$160,000	1.6%
Other	43	$87,998	$52,000	$64,000	$84,000	$99,000	$148,000	2.5%
	1716							**100%**

Annual Salary by Industry

INDUSTRY	COUNT	MEAN	5	25	MEDIAN	75	95	%
Agriculture and Forestry	8	$82,845	$62,976	$67,500	$77,391	$97,500	$115,000	0.5%
Consulting	502	$93,183	$56,500	$65,000	$83,000	$110,000	$176,000	29.3%
Educational Services	57	$109,342	$52,000	$82,000	$106,905	$140,000	$169,000	3.3%
Manufacturing Durables	161	$84,643	$51,000	$64,500	$77,170	$100,000	$140,000	9.4%
Manufacturing Non-Durables	43	$104,774	$64,000	$85,000	$96,000	$122,500	$150,000	2.5%
Procurement and Construction	119	$93,756	$57,200	$66,000	$78,719	$104,680	$197,600	6.9%
Resource Industry Oil & Gas	62	$99,416	$60,000	$77,200	$88,250	$115,000	$160,000	3.6%
Resource Industry without Oil & Gas	304	$111,597	$71,000	$84,550	$101,500	$133,500	$170,000	17.7%
Service For Profit	20	$81,119	$47,828	$58,000	$73,500	$96,000	$165,000	1.2%
Service Not For Profit	134	$92,967	$57,077	$72,000	$90,000	$107,000	$155,000	7.8%
Utilities	242	$103,519	$62,000	$82,000	$99,716	$120,000	$164,000	14.1%
Other	64	$94,300	$55,000	$69,000	$90,000	$116,000	$145,000	3.7%
	1716							**100%**

Annual Salary by Degrees

DEGREES	COUNT	MEAN	5	25	MEDIAN	75	95	%
Bachelor's/academically qualified	1195	$95,251	$57,348	$69,700	$86,500	$110,000	$165,000	69.6%
Between Bachelor & Master's Degree	180	$100,707	$58,000	$76,900	$93,500	$120,000	$154,500	10.5%
Master's Degree	240	$103,986	$56,000	$81,000	$93,883	$122,000	$172,305	14.0%
Between Master's & Doctorate	35	$102,808	$18,000	$73,345	$92,000	$130,000	$180,000	2.0%
Doctorate Degree	66	$116,850	$66,187	$96,000	$120,000	$140,250	$160,000	3.8%
	1716							**100%**

Annual Salary by Experience

YEARS OF EXPERIENCE	COUNT	MEAN	5	25	MEDIAN	75	95	%
<1 year	94	$63,209	$43,656	$56,500	$60,000	$70,000	$85,219	5.5%
1 year	50	$66,894	$53,762	$58,240	$62,500	$72,000	$90,000	2.9%
1.5 years	108	$68,087	$52,000	$60,000	$65,000	$74,400	$89,400	6.3%
2 years	105	$69,882	$55,000	$60,000	$65,700	$75,000	$97,860	6.1%
3 years	127	$74,852	$60,000	$65,000	$70,128	$80,000	$103,000	7.4%
4 years	105	$78,020	$59,000	$70,000	$76,000	$83,500	$100,000	6.1%
5 years	133	$86,422	$65,690	$75,000	$85,000	$94,000	$115,000	7.8%
6 years	90	$91,205	$65,046	$78,200	$88,588	$104,000	$120,000	5.2%
7-8 years	151	$94,962	$66,000	$82,000	$92,088	$103,000	$130,000	8.8%
9-10 years	115	$102,982	$75,000	$90,000	$98,000	$114,000	$143,000	6.7%
11-12 years	119	$106,895	$71,556	$90,000	$104,000	$117,000	$155,000	6.9%
13-14 years	65	$115,203	$79,514	$96,000	$110,000	$129,000	$171,000	3.8%
15-17 years	104	$121,965	$84,240	$99,800	$120,892	$138,250	$180,000	6.1%
18-20 years	55	$124,523	$74,400	$100,224	$120,000	$151,000	$180,000	3.2%
21-24 years	80	$126,096	$81,000	$106,500	$124,417	$145,000	$179,500	4.7%
25+ years	215	$143,390	$85,000	$113,500	$135,000	$165,000	$234,000	12.5%
	1716							**100%**

Annual Salary by Sector

SECTOR	COUNT	MEAN	5	25	MEDIAN	75	95	%
Public Sector	527	$100,579	$60,000	$78,216	$96,000	$118,000	$160,000	31.0%
Private Sector	1175	$96,712	$57,000	$70,000	$87,000	$115,000	$170,000	69.0%
	1702							**100%**

Total Salary

SALARY	COUNT	MEAN	5	25	MEDIAN	75	95	%
Base Salary	1716	$98,030	$57,200	$72,000	$90,000	$115,000	$167,000	100%
Salary including bonus	1716	$113,010	$60,000	$78,163	$99,028	$132,150	$212,000	100%

Salary Changes - Full-Time Positions

YEAR	MEDIAN SALARY	% INCREASE	AVERAGE SALARY	% INCREASE
1987	$48,000		$49,269	
1989	$50,928	6.10%	$62,887	27.60%
1991	$54,110	6.20%	$57,578	-8.40%
1993	$54,480	0.70%	$56,703	-1.50%
1995	$56,400	3.50%	$59,142	4.30%
1997	$60,000	6.40%	$62,266	5.30%
1999	$62,500	4.20%	$65,401	5.00%
2001	$66,000	5.60%	$68,877	5.30%
2003	$68,800	4.20%	$71,210	3.40%
2005	$71,008	3.20%	$73,607	3.40%
2007	$74,000	4.20%	$77,374	5.10%
2008	$76,352	3.20%	$83,025	7.30%
2009	$80,000	4.80%	$86,908	4.70%
2010	$82,950	3.70%	$91,548	5.30%
2011	$84,224	1.54%	$91,154	-0.40%
2012	$89,472	6.23%	$96,219	5.56%
2013	$90,000	0.59%	$98,030	1.88%

Regression Analysis

Stepwise linear regression was used to find the best model for estimating salaries. The formula produced explains over 60% of the variance in salary (61.4%). Any model explaining at least 50% of the variance in the dependent variable can be considered an effective model. Refer to the "Classification Rating Guide" which can be found on www.apegs.sk.ca, to determine the values for each factor.

FACTOR	B (COEFFICIENT)	BETA (RELATIVE IMPORTANCE)
Duties (A)	416	0.047
Recommendations, Decisions and Commitments (D)	171	0.274
Experience (E)	315	0.322
Leadership Authority (L)	148	0.113
Supervision Scope (S)	428	0.122
Receipt of professional designation	9,906	0.128
(Constant)	**49,248**	

Formula for expected salary (SE) without bonus:
SE = 49248 + 416 x (A) + 171 x (D) + 315 x (E) + 148 x (L) + 428 x (S)
Add 9,906 if you have acquired professional status within your field (P.Eng. or P.Geo.)

2013 Award Winners

Ken From, P.Eng., FEC

The Brian Eckel Distinguished Service Award

The Distinguished Service Award was created in 1978 and renamed the Brian Eckel Distinguished Service Award in 2004 to recognize the contributions of the late Brian Eckel, P.Eng., P.Geo. to society, the professions and the Association. This award recognizes outstanding contributions to the community, the Association and technical and learned organizations. It honours distinctive and outstanding achievements in professional and technical fields. This award is an honour given only to those who truly exemplify the best standards in engineering and geoscience in Saskatchewan.

Brian Eckel, P.Eng., P.Geo. graduated from the University of Saskatchewan with a B.Sc. in Civil Engineering (great distinction) in 1982 and with an M.Sc. in Geotechnical Engineering in 1985.

He was involved in many economic and infrastructure projects in Western Canada throughout his career. Brian was an active volunteer, serving in a wide variety of capacities with APEGS, including serving as president in 2001-02. He also served the broader engineering and geoscience community, including the Consulting Engineers of Saskatchewan, the Saskatoon Geotechnical Society, the University of Saskatchewan's College of Engineering and a variety of technical and learned societies. He was a member and executive member of the Saskatoon North Rotary Club and made numerous presentations to professional and community organizations.

Brian was dedicated to his family and enjoyed hunting, fishing, curling and cycling. He was the victim of a boating accident less than a month after taking over as APEGS past president.

This year's recipient of the Brian Eckel Distinguished Service Award is Ken From, P.Eng., FEC.

Ken From's career has ranged from the private to the public sector and back again. He graduated with a degree in mechanical engineering from the University of Saskatchewan in 1979. After a brief stint in private consulting, he moved over to the public sector and served the people of the province while at SaskEnergy, tackling both technical and business challenges in a variety of senior and leadership roles, retiring in 2007 as senior vice-president.

After leaving SaskEnergy, Ken was involved in the private sector in junior oil companies which gave him the opportunity to broaden his skills and work with young engineers and geoscientists.

In 2010, Ken became CEO of the Technical Safety Authority of Saskatchewan. He brought both his technical and business experience to this organization which is responsible for public safety related to common everyday equipment such as elevators, escalators and boilers.

Ken has made significant contributions to the profession of engineering in Saskatchewan, serving as president of APEGS in 2003-2004. Passionate about the profession and recognizing that engineers need to take a leadership role with respect to public policy and economic advancement, Ken jumped at the opportunity to represent APEGS at the national level as a director for Engineers Canada, representing APEGS for a total of six years. For his work, Ken was the inaugural Saskatchewan recipient of the Fellow of Engineers Canada designation.

Engineers love to build things, and Ken's fascination with building things began early in life as an enthusiastic member of a model rocket club in Regina. The youngest of nine children, Ken credits his austere upbringing for his work ethic, his sense of duty and his understanding of the importance of education.

Ken has two children - Michelle, a computer science graduate from the University of Alberta, and Richard who recently received his master's degree in geology from the University of Saskatchewan. This past November, Ken became a new grandfather to grandson Oryn.

The Exceptional Engineering/Geoscience Project Award

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

This year the award recognizes Consumers' Co-operative Refineries Ltd. Section V Expansion Project and Associated Revamps.

In 2008, Federated Co-operatives Limited (FCL) announced a major expansion to its Co-op Refinery Complex. The Section V expansion and associated revamps led to over $2.7 billion in new investment into the refinery's infrastructure.

The Section V expansion involved building five new processing units, 14 additional storage tanks, a new cooling tower and electrical substation as well as new firewater, flare, plant and instrument systems.

All of this required construction on a massive scale, including 49,000 cubic yards of concrete, 5,050 tons of structural steel and 480,000 lineal feet of pipe. At peak construction, there were over 4,000 contractor employees working on the project, including roughly 425 engineers.

The revamp portion of the project included modifications to eight existing process units. The revamps were the most challenging and demanding of all work undertaken on the project. They involved working around live operating process units, creating significant daily safety and logistics challenges.

The project was completed on October 17, 2012. The project allows the refinery to process 30 per cent more crude oil per day in the immediate term, with plans for continued capital investments that will see capacity increase by 45 per cent. The expansion also created roughly 100 new full-time jobs at the refinery.

The Section V expansion was a tremendous engineering achievement for FCL. Its completion will position the refinery for continued growth in the Western Canadian petroleum fuels market.

The Environmental Excellence Award

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

This year the award recognizes the City of Yorkton's Logan Green Water Management System.

The City of Yorkton's new $33 million Logan Green Water Management System is the largest municipal project in the city's history.

It incorporates the latest technology in water treatment plus innovative, green ways to handle the backwash water generated from regular flushing of the filters in the treatment system.

At maximum capacity, the new plant can treat 22 000 cubic metres (22 million litres) of water per day. The 1 100 cubic metres (1.1 million litres) of backwash water produced daily will be treated through a series of settling ponds to purify it, before recharging the natural aquifer.

The Yorkton system is one of only two municipal water treatment systems in Canada to incorporate settlement ponds, wetlands and natural aquifer recharge. The process is simple, virtually maintenance-free and environmentally friendly. It also provides the community with a space full of native plants, wildlife and fish.

Capital cost was approximately one-third that of the estimated cost for a conventional backwash water treatment system. Since the process removes the need for clarifiers and additional chemicals for treatment, operational costs are expected to be very low.

Approximately $3 million was saved on infrastructure alone. Operational savings in treatment and maintenance costs over the life of the plant are expected to total roughly $6.3 million.

Cameron S. McNaughton, Ph.D., P.Eng.

The Promising Member Award

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

This year the award recognizes Cameron S. McNaughton, Ph.D., P.Eng.

Cameron holds a bachelor's degree in Environmental Engineering from the University of Waterloo as well as a master's and Ph.D. in Oceanography from the University of Hawai`i.

Cameron focused his early career on air pollution and earned a position as a NASA Earth System Science Fellow. He has logged more than 720 hours as a flight scientist aboard NASA and National Science Foundation research aircraft.

Passionate about preserving Earth's integrity, Cameron has authored or co-authored over 35 publications, peer reviewed many scientific articles, and published his photography in several scientific journals. In 2012, he served as a Science Definition Team member for NASA's PACE satellite.

In recognition of his work, he has received three NASA Group Achievement Awards. He has also been recognized by the International Board for the Antarctic Treaty Summit. In 2008, he was selected as an astronaut candidate with the Canadian Space Agency.

Cameron returned to Saskatchewan in 2011 to join Golder Associates Ltd. As leader of the Saskatchewan air quality team at Golder, he guides a team of scientists who design and implement air quality and greenhouse gas monitoring programs.

Cameron is a member of the American Geophysical Union and the Association of Polar Early Career Scientists. He is a Fellow with the prestigious Explorers Club.

In his spare time Cameron is an outdoor enthusiast who enjoys hiking, camping, surfing and free-diving with his family. He and his wife Lianne have three sons.

Timothy A.G. Jansen, P.Eng., FEC

The McCannel Award

The McCannel Award was established in 1983 to honour service to APEGS and to the profession as a whole.

The McCannel Award is named for Roy McCannel, a founding member of the Association.

This year, the McCannel Award recognizes Timothy A.G. Jansen, P.Eng., FEC.

Tim Jansen began his career in water resources at a very young age. When he was born, the bridge between the hospital and his family's home had been washed out so he had to be brought home by boat. Adding to Tim's water destiny, the washed-out bridge crossed Jansen Lake, named after his grandfather.

This began a life-long romance – again quite literally, since his childhood home was on a farm near Romance, SK.

Since graduating from agricultural engineering at the University of Saskatchewan in 1980, Tim has worked in the public service. His employers have included Saskatchewan Agriculture, Saskatchewan Environment and SaskWater. He has held progressively more senior positions at SaskWater's Weyburn and Moose Jaw offices.

In October 2010, Tim accepted the position of senior project manager, major projects with SaskWater. In this position, he is overseeing the water supply systems to three major potash projects.

Tim has been active in the engineering profession, including serving on APEGS Council, on the Strategic Planning Committee, as the liaison councillor for the Connection and Involvement Committee and as a past president of the Moose Jaw Engineering Society. He recently was honoured with the designation of Fellow from Engineers Canada for his exceptional contributions to the profession in Canada.

Tim is president-elect of Western Canada Water.

Tim's wife, Dr. Lynn Jansen, is the associate dean of Nursing at the University of Saskatchewan. They have four adult children, of whom two are engineers and one is a nurse.

Norm Beug, P.Eng.

Outstanding Achievement Award

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

This year's recipient is a distinguished member of our association, Norm Beug, P.Eng.

A native of Saskatchewan, Norm earned his bachelor's degree in Mechanical Engineering from the University of Saskatchewan in 1974.

Norm is based in Regina and is the former senior vice-president, potash operations for the Mosaic Company. He had overall responsibility for the potash business unit's six mining operations in Canada and the USA. Under Norm's leadership the Potash Business Unit launched a $6 billion expansion campaign to add in excess of five million tonnes of production capacity in the Saskatchewan operations.

Since June 2011, Norm has been semi-retired, but continues to serve as a senior advisor to Mosaic.

In addition to his busy professional life, Norm has always been an active member of his community and his profession. He is chairperson of the Canadian Fertilizer Institute, a board member of Tourism Saskatchewan and a recent member of the Regina Symphony Orchestra board and the board for the Hospitals of Regina Foundation, as well as being the past honorary chair of the Saskatchewan Roughriders Centennial Advisory Committee.

Norm is also past president of the Saskatchewan Mining Association, and the past chair of the Saskatchewan Potash Producers Association.

In 2002, Norm was named as one of the 10 most influential businessmen in Saskatchewan. In 2005, he was honoured with a Centennial Medal from the Government of Saskatchewan.

Norm and his wife Jocelyn Souliere have three children.

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.

This year, APEGS is pleased to present the Friend of the Professions Award to two non-members: Lyle Benko and Dean Elliot.

Lyle Benko

Lyle Benko is a semi-retired educator who has been involved with the education sector for the past 40 years. For 25 years, he served at every level with Regina Catholic Schools, including K-12 classroom teacher, administrator, and curriculum program services supervisor.

He is currently president of L*A*M*B* Environmental and Educational Consulting (Inc.) which works in the area of sustainability and climate change issues. He also serves as a faculty associate and sessional lecturer with the Faculty of Education at the University of Regina.

His interest and expertise in education for sustainable development and climate change has given him opportunities to speak at the UN (New York), UNESCO (Quebec), International UNU Conference (Bonn, Germany), World Environmental Education Congress (Montreal) and the World RCE Conference (Curitiba, Brazil).

Lyle has generously contributed his time and energy to APEGS as an active member of the K-12 Committee.

Dean Elliot

Dean Elliott has over 12 years experience as a science teacher with the Saskatoon Public School Division and two years as the school division's technology consultant. Today he is the science consultant for the Saskatchewan Ministry of Education, a post he has held since 2003. In this role, he is primarily responsible for all K-12 science curriculum development.

He is a past president of the Saskatchewan Science Teachers' Society, a recipient of the Canadian Association of Physicists Teacher of the Year Award, the Association for Media and Technology in Education in Canada FuturEd Award, and the Premier's Award for Excellence in Public Service.

Dean has also been an asset to APEGS as an active member of the K-12 Committee.

APEGS View

The Gerry Zoerb Award

The Gerry Zoerb award is handed out each year to recognize the member achieving the highest mark in the Principles of Professional Practice exam.

In 2012, 314 members-in-training wrote the exam. Victor O. Olorunda received the highest mark of 93.5 per cent.

In Memoriam – Annual Meeting Ceremony

"It was in their care, through all the ages, to take the buffet and cushion the shock.

It was in their care that the gears engaged and the switches locked.

They said to the mountains, be ye removed; and to the lesser floods, be dry.

Under their rods were the rocks reproved. They were not afraid of that which is high."

John Dudar, P.Eng.
John MacPherson, P.Eng.
James Wilson, P.Eng.
Theodore Cherewyk, P.Eng.
Paul Riemer, P.Eng.
Donald McCann, P.Eng.
Anthony Banks, P.Eng.
Douglas Ruse, P.Eng.
Arnold Vossen, P.Eng.
John Syrnyk, P.Eng.
Larry Cleven, P.Eng.
Hendrik Koopman, P.Eng.
Robert Bennetto, P.Eng.
George Grass, P.Eng.
Matvey Glozman, P.Eng.
Andrew Kyle, P.Eng.
Sam Wong, P.Eng.
John Richert, P.Eng.
James Sadler, P.Eng.

Council Notes

April 11 and 12, 2013, Delta Bessborough, Saskatoon, SK

17 of 19 Councillors present

- Council approved the audit report and audited financial statements for 2012.
- Council approved an increase in the annual discipline and enforcement reserve to $400,000 from $200,000.
- Council endorsed the current regulatory framework of licensure of Professional Engineers and Professional Geoscientists in Canada and does not support the concept of unlicensed incidental practice as there is no evidence that it enhances safeguarding the public or protecting of the environment, or is in the public interest.
- The English language competence requirement has been moved to the professional member application stage of the registration process.
- The Governance Board recommended that an engineering or geoscience licensee receive credit for experience gained as a licensee towards registration as a professional engineer or professional geoscientist if the work experience is in the discipline of the bachelor level program of study obtained. Council endorsed amending Experience Guideline 1 and the Licensee Member Guide to Applicants.
- The following were approved for Life Membership: Hrayr Agnerian, P.Geo.; Kris R. Nanan, P.Eng.; Gary R. Pasloske, P.Eng., P.Geo.; A. Carl Shiels, P.Eng.; George Spark, P.Eng.; Boen Tan, P.Geo.; and Donald S. Taylor, P.Eng.
- Council appointed Renee Chevalier, Engineer-in-Training as Chair of the Connection and Involvement Committee for a two-year term.
- Council approved the university awards policy for entrance bursaries and undergraduate scholarships as recommended by the Education Board.
- Council appointed James Gates, P.Eng. as Chair of the Investigation Committee for a two-year term.
- The annual Council orientation and meeting is scheduled for June 13-14 in Moose Jaw.

Use of Professional Seals

BY CHRIS WIMMER, P.ENG., FEC, APEGS DIRECTOR OF PROFESSIONAL STANDARDS

A professional's seal is a representation that the work has been performed by or under the supervision of the professional and that the professional is taking responsibility for the work. The seal is a solemn confirmation from the professional that the document can be relied upon and used by others for the purposes intended. Seals are an instrument for quality control and are as applicable to documents produced for use "in house" by a professional's employer as they are to documents produced for an outside client. There is nothing within *The Engineering and Geoscience Professions Act* or Bylaws that exempts the sealing of documents prepared by a Professional Engineer or Professional Geoscientist for internal use, be it a government department, Crown corporation, mine or other industrial facility.

When a consulting service is involved, the term "approving engineer/geoscientist" shall refer to the professional who declared their intention to provide consulting services and has been granted a "licence for permission to consult" by this Association. If the consulting service is provided through a partnership, association of persons, or corporation, that entity must have a Certificate of Authorization and must also apply its Certificate of Authorization seal. The appropriate approving engineer/geoscientist must date and sign the Certificate of Authorization seal. All seals are to be applied to documents in accordance with *The Engineering and Geoscience Professions Act* and Bylaws.

The Association does issue a seal for Engineers-In-Training and Geoscientists-In-Training. At the "in-training" level, persons do not have professional status and they cannot take professional responsibility for the work. However, the Association encourages the use of seals by persons at the in-training level to identify their work.

Original seals may be reproduced by any means to generate an impression, including procedures that use information technologies (an electronic version of the seal). The impression must correspond in all respects to the original seal to preserve its characteristics except that of size. The size must be large enough that the elements of the seal are legible. Similarly, a professional's signature may be reproduced electronically and be used in a size that ensures it is legible.

The Engineering and Geoscience Professions Act states that every licensee shall sign and seal, in accordance with the Bylaws, all final drawings, specifications, plans, reports, and other documents relating to the practice of professional engineering or the practice of professional geoscience that he or she issues. Seals shall be acquired from the Association and be of the form set out in the Bylaws. Seals are to be affixed in a prominent location and signed and dated. Members or licensees are reminded that they must at all times ensure that their seal remains under their direct control.

Traditionally, a professional would apply a "wet" seal to a document and then sign and date the document, thus creating an authenticated original. Copies of that document, even if they contain the image of the seal, signature and date, are only copies. In the electronic world, an electronic document becomes an authenticated original only after the professional embeds a digital signature into the document. It is important to understand that the image of the seal, signature and date, differs from the form of security known as a "digital signature," which is an encrypted alphanumeric data set used as personal electronic identification information. The professional is permanently associated with the document by attachment of the digital signature. This is not an electronic copy of a handwritten signature obtained by scanning or electronic pen. A digital signature is intended to have the same legal force and distinguishing effect as the use of a signature affixed by hand. Only documents that have been signed and dated by hand, or that contain a "digital signature" are authenticated originals.

A Professional Engineer or Professional Geoscientist licensed in Saskatchewan must be responsible for all professional engineering and professional geoscience work respectively that is undertaken in Saskatchewan, or for projects located in Saskatchewan. The scope of engineering and geoscience can be determined by referring to the definitions of the practice of professional engineering and the practice of professional geoscience contained in section 2 of *The Engineering and Geoscience Professions Act*.


Association of Professional Engineers & Geoscientists of Saskatchewan

CERTIFICATE OF AUTHORIZATION
John DXX Inc.
Number C000

Permission to Consult held by:

Discipline	Sk. Reg. No.	Signature

Given the importance of a professional's seal, it should not be used indiscriminately.

The seal is intended for application on documents produced in connection with rendering professional engineering or professional geoscience service. The seal is not, and should not be considered, a certification mark or warranty, or be confused with a corporate business seal.

The mere fact that a document is issued by a professional is insufficient grounds to warrant application of the seal. "Record" or "as-built" drawings should not be sealed. Such drawings are largely produced by or based on information provided by others. It is impractical and inherently risky for a professional to attest to the accuracy of "record" documents by applying a signature and seal.

Professionals must never apply a seal to any document that is unchecked or not complete for the purposes it is intended.

Professionals must never allow another person to apply their seal on their behalf.

Any apparent convenience of pre-sealing title blocks or schedules, or providing others with permission to apply their seal is dramatically outweighed by grave liability and professional conduct consequences.

Sealing, signing and dating (collectively referred to as "authentication") of professional documents is a requirement of *The Engineering and Geoscience Professions Act* and Bylaws. Authentication of documents is indicative of a professional's involvement and the professional's acceptance of responsibility for the work contained in the document.

For further information on the use of professional seals, please refer to APEGS guide "Authentication of Documents - Use of Professional Seals." Copies are available from the APEGS office or from the APEGS website, **www.apegs.sk.ca.**

2013 Annual Meeting Photo Gallery

TOP LEFT: Dwayne Gelowitz, P.Eng., FEC, Deb Rolfes and Leon Botham, P.Eng., FEC.

ABOVE: Engineers Canada Past-President Brent Smith, FEC, P.Eng. and Leon Botham, P.Eng., FEC.

TOP RIGHT: Dwayne Gelowitz, P.Eng., FEC, Monte Gorchinski, Deb Rolfes and Leon Botham, P.Eng., FEC.

RIGHT CENTRE: Linda Eckel and Ken From, P.Eng., FEC.

BOTTOM RIGHT: Professor Denard Lynch, P.Eng., Victor Olorunda, Engineer-In-Training and Gerry Zoerb, P.Eng., FEC.

TOP LEFT: George Sharpe, Geoscience Licensee and Public Appointee Gerry Hertz.

LEFT CENTRE: Dennis Paddock, P.Eng., FEC, FCSSE, FCAE and Lyle Jones, P.Eng., FEC.

ABOVE: John Styles, P.Eng. and Bruce Lotts, P.Eng., P.Geo. (Background Mark Wittrup, P.Eng., P.Geo.).

TOP RIGHT: Erin Poworski, APEGS Administration Assistant and David MacDougall, P.Geo.

RIGHT CENTRE: The extremely pregnant Angela Foster, APEGS Administration Assistant.

BOTTOM RIGHT: Tim Jansen, P.Eng., FEC and his wife Dr. Lynn Jansen.

News Beyond Our Borders

cjme.ca

Budgets Favour Construction

In March, the Alberta and federal governments released budgets for the coming year.

While the Alberta government cut spending in many areas, including health care and education, infrastructure spending remained robust. The Alberta government is borrowing funds to maintain its Municipal Sustainability Initiative, which supports infrastructure development across the province. In 2013 the initiative will provide about $900 million for communities, including about $254 million for Calgary and $170 million for Edmonton.

It's a similar story for federal funding for municipal infrastructure. Using funds from gas taxes, the Community Improvement Fund will provide $21.8 billion over the next decade. Previously, municipalities got $2 billion per year from the federal gas tax fund but were asking for an annual increase of three per cent; under the new budget, the fund grows by two per cent a year.

Municipalities may not mind the drop in the annual increase, given that the feds have also created a new pool of money. The Building Canada Fund will provide $14 billion over the next decade to support infrastructure projects at the national, regional and local levels.

Source: Association of Professional Engineers and Geoscientists of Alberta

Engineering Firm Named "Top Green Employer"

ISL Engineering and Land Services took the top spot as Canada's greenest employer, according to the Green 30 list released by Aon Hewitt.

Of the employers on the list, 83 per cent of employees have a positive perception of their employer's eco-friendly efforts. Employers are evaluated on environmental strategies and activities and their efforts to consider long-term social, environmental and economic impacts when making business decisions.

The Green 30 are more likely to implement practices and programs to support and reinforce their commitment to environmental stewardship. Eighty-five per cent of the strategies and activities at these organizations are environmentally responsible and work to minimize the impact of their products and services on the environment.

The list was compiled by Aon Hewitt based on employee opinion data collected as part of the annual Best Employers in Canada study and Best Small and Medium Employers study. Over 190,000 employees and 2,500 leaders in 280 organizations participated in the 2013 edition of these studies.

ISL Engineering and Land Services is an Edmonton-based nation-wide engineering consulting firm.

Source: Canadian HR Reporter

Hadfields Ends Successful Mission

Astronaut Chris Hadfield, P.Eng. recorded the first music video from space. In a high-flying, perfectly pitched first, Canadian astronaut Chris Hadfield bowed out of orbit with a music video: his own custom version of David Bowie's "Space Oddity".

Hadfield's memorable farewell was posted just before his departure from the International Space Station Monday night, as he concluded a five-month mission where his use of multimedia tools earned him an international audience.

Hadfield, an engineer and former test pilot from Milton, Ont., became the first Canadian in charge of a spacecraft.

The BBC's science editor called Hadfield, who had done more than anyone to raise the profile of the space station, "the most famous astronaut since Neil Armstrong and Yuri Gagarin."

Once Hadfield lands, it will be at least three years before the next Canadian astronaut visits the space station.

Source: Canadian Press

Electrical and Computer Engineering Project Proposals sought by UBC

UBC Electrical and Computer Engineering is seeking project proposals from industry and other organizations for its new Capstone Design Project courses. The projects can be general projects in electrical and computer engineering, or more specialized: software engineering, energy, biomedical devices, and microsystems. Senior students in teams of four to six will work on the proposed projects. Each team is supervised by a faculty member acting as the technical director and assisting or pointing the students to appropriate technical expertise.

UBC is requesting project proposals from industry groups that are willing to act as clients for the student teams. This involves regular interaction with the team, much like a firm doing subcontract design work. The students provide approximately 1,000 person-hours of beginners' time on each project and are required to build a working prototype by the end of the project. Each team receives some financial and material resources and access to the UBC department workshops; but the best and most successful projects will be those in which the client invests additional resources.

Project work will run from September 2013 to mid- April 2014.

Source: Association of Professional Engineers and Geoscientists of British Columbia

Waterloo Top Engineering School in Canada

The University of Waterloo's Faculty of Engineering is the best Canadian engineering school, according to a recent survey by Business Insider, a respected US-based website.

Of the 723 respondents to the survey, 91 per cent reported having a computer science, engineering or equivalent degree. Most engineers who responded were research scientists, mobile developers or mechanical engineers. Most respondents said the two most important criteria that went into choosing an engineering school were the skills and knowledge that they acquired in school and the brand value of the school.

"Waterloo has the largest engineering school in Canada, and our students and faculty are among the best and most innovative in the world," said Feridun Hamdullahpur, president & vice-chancellor of Waterloo. "It is an honour for us to be considered the leader in Canada, and ranked highly among the world's best engineering schools."

The same survey placed Waterloo Engineering 29th in the world. The other Canadian engineering schools to make the list of the world's top 50 engineering schools were the University of Toronto at 35th place, and the University of Ottawa ranked 44th.

According to the survey, the top engineering school in the world is the California Institute of Technology, followed by the Massachusetts Institute of Technology and Stanford University.

Source: University of Waterloo

Job Market Still Gleams For Engineers - But Less So For New Grads

A new report released by Randstad Engineering and Engineers Canada predicts economic growth will create an additional 16,000 jobs for engineers across Canada by 2020. The job market for engineers in the West will be the strongest, particularly in Alberta and BC.

The trend was evident in Alberta during the last year, as employers continued to struggle to find engineers with five -to- 10 years of experience or specialized skills. But ironically, new graduates are having trouble finding jobs, despite the demand. The report suggests accelerating on-the-job training for new engineers, along with adapting engineering programs to better meet the needs of industry.

Source: Association of Professional Engineers and Geoscientists of Alberta

Brushing Up On Solar

A young German – and aspiring engineer – is being hailed for inventing a robot to clean solar panels cost-effectively. Called Solarbrush, the bot removes sand and dust from panels in a different way than traditional cleaners do, SolarNovus Today reports.

Solarbrush does what its name suggests — it brushes deposits until they all fall away. Other robots suck up the dust or use water and detergent, and they're more expensive to operate. Solar panels that aren't cleaned properly lose up to 35 per cent of their efficiency due to accumulated grit. This is a particularly severe problem in deserts.

Ridha Azaiz was just 13 when he developed his prototype. And now the world is taking notice. Solarbrush won the 2013 Berlin Hardware Award and was featured recently at the World Future Energy Summit in Abu Dhabi.

Source: Association of Professional Engineers and Geoscientists of Alberta

News From the Field

www.thestarphoenix.com

Saskatchewan's growth led by engineering, geoscience sectors

Regina Leader-Post - Saskatchewan's economy as measured by real gross domestic product (GDP) grew by 2.2 per cent in 2012, following a five-per-cent increase in 2011, Statistics Canada reported.

"Record oil and gas production more than offset declines in non-metallic mineral mining (which includes potash mining)," the federal agency said. "Manufacturing output advanced 9.2 per cent with increases in machinery, wood products, chemicals and transportation equipment manufacturing."

Population growth fuelled demand for many goods and services, the agency noted.

"Construction of residential buildings and non-residential structures such as schools, health care facilities and shopping malls increased. Services also grew, including retail trade, financial services, education, architectural and engineering services and accommodation and food services."

Safety a concern for construction industry

Global News - Saskatchewan doesn't have a very good track record when it comes to work safety. In 2012, there were 60 workplace fatalities in Saskatchewan. Fourteen of those were in the construction industry. In light of these latest statistics, the government said it is stepping up efforts to reduce workplace injuries and deaths.

The Ministry of Labour announced plans to increase the number of occupational health and safety workers and has made amendments to occupational health and safety legislation which will increase penalties.

However, education still remains the most vital component, especially as the construction industry continues to grow.

SMA equips supervisors with safety skills

Saskatoon StarPhoenix - Good just wasn't good enough for the Saskatchewan Mining Association when it came to safety.

In 2008 the executive of the SMA asked its Safety Committee to work on an action plan that would improve the safety record of the industry.

They wanted to go from "good" to "great." After taking a long look at mining operations in the province and asking some hard questions, it became obvious the SMA should assist with the development of workforce safety skills and pursue a curriculum for supervisory training.

The curriculum designed by the SMA Safety Committee includes fundamental roles of supervision and promotes safety accountability for supervisors in the mining environment.

The SMA found that despite the wide variety of mining operations involved, the same issues seemed to be happening at different sites, and it was useful to put a lot of heads together to solve the issues.

The training elements focus on basic skills and leadership qualities like motivation, performance, occupational health and safety laws, communication, problem solving and conflict management.

SMA has found that the three days of the introductory training session are not enough to address the topics. The SMA asked Supervisors indicated they would like more time spent on safety legislation, time management and conflict resolution.

Now in 2013, the SMA is making plans to launch the second level of this supervisor training.

MINING

www.leaderpost.com

Potash mine project gets environmental approval

Regina Leader-Post - The Saskatchewan Ministry of Environment has issued environmental assessment (EA) approval for Western Potash Corp.'s proposed Milestone solution potash mine, including the use of City of Regina treated effluent as the industrial water source for the project, the Vancouver-based company announced.

EA approval is the culmination of three years of work carried out by Golder Associates and Canada North Environmental Services in collaboration with Western's professional staff and community stakeholders.

EA approval allows Western Potash to advance the Milestone project to permitting and construction which, subject to financing, is anticipated to commence in mid-2013. Utility providers will be responsible for permitting of power, gas and telecommunications facilities.

A feasibility study for the Milestone project was completed in December 2012, confirming that the ore body's size and grade could support potash solution mining for more than 40 years at full production of 2.8 million tonnes per year. Western also signed an agreement with the City of Regina last year securing the long-term source of process water for the proposed potash solution mine, about 30 km southeast of Regina.

Under the agreement, the company will have access to 60,000 cubic metres per day of treated effluent for the first six years and 42,240 cubic metres for the remaining 39 years, sufficient to supply process water for the entire life of the mine.

The agreement will be worth more than $200 million to the city throughout its 45-year term. The company will also fund the construction of the pipeline and associated infrastructure to deliver the treated effluent water to the mine site.

The Milestone mine could begin construction in 2013 or 2014 and become operational in 2016. The $2.8-billion project could employ up to 1,500 during construction phases and create 300 to 350 permanent jobs at the mine.

K+S delays potash plant start

Business Week - K+S AG, Europe's largest potash maker, delayed the starting date of a new plant in Saskatchewan by about six months as spending on the project will exceed targets by 26 per cent.

The budget for developing the site was increased to $4.1 billion from the C$3.25 billion announced in November 2011. As a result, operations will start in mid-2016 rather than at the end of 2015, the company said.

"The new plant will be the main source for distributing to the emerging regions in Asia and South America, and as well to North America," the company said in a statement.

K+S is placing what it calls the Legacy Project in Saskatchewan at the heart of plans to expand globally as ore grades decline in older German mines.

The higher costs, which stem from infrastructure investment, plant component modifications and higher material and labour costs, will be funded partly by new debt, K+S said today. The Legacy Project will still achieve 2 million tons of production capacity by the end of 2017, it said.

SRC offers new mining analysis service

Saskatoon StarPhoenix - Mining companies have a new tool at their disposal after the Saskatchewan Research Council (SRC) announced a new mineralogical analysis service.

SRC has invested $1.4 million in its Quantitative Evaluation of Minerals by Scanning Electron Microscopy (QEMSCAN) service, the first of its kind in Saskatchewan.

"QEMSCAN is a sophisticated electron microscope capable of advanced electron spectroscopy that enables scientists to determine the bulk mineralogy and liberation characteristics of various types of ore samples," said Craig Murray, SRC's vice-president of mining and minerals. "It can be applied to uranium, potash, base metals, gold, rare earth minerals, coal and other ores as well."

QEMSCAN service is a way to provide precise quantitative

mineralogical analyses, which are essential for proving resource deposits that lead to mine development.

"We anticipate the majority of users will be companies that are developing the mine and the processing," Murray said. "So they have already done the exploration work, they know the ore is in the ground and they want to determine the best way to process it. This is a good first step in developing those processes."

The QEMSCAN service will complement the current testing services of SRC's Advanced Microanalysis Centre and Mineral Processing Pilot Plant.

BHP set to approve Jansen

Sydney Daily Herald - BHP Billiton's freeze on approving new projects is set to thaw after June 30, with a Saskatchewan potash project likely to be among those considered first.

The Jansen potash project has been under development for several years and is expected to cost more than $10 billion to build when approved.

It was one of several megaprojects that were expected to get the go-ahead from the BHP board in 2012, but fell victim to the company's promise to freeze approvals on expensive growth projects until at least June 30, 2013.

Speaking at a Bloomberg conference in Sydney this Wednesday, BHP's chief financial officer, Graham Kerr, indicated the freeze would not extend into next financial year, and that Jansen may be one of the first to be approved.

The company has continued to work on Jansen despite the approvals freeze, and has most recently been building the construction and service shafts for the underground mine.

Shore Gold's environmental impact comments

RAPAPORT - Shore Gold Inc. delivered its responses, along with supporting documents, to questions posed by the Canadian Environmental Assessment Agency and Saskatchewan's Ministry of Environment regarding the explorer's revised environmental impact statement on its Star-Orion South diamond project.

The original draft impact statement was submitted in December 2010, based upon the Star-Orion's pre-feasibility study. It generated 802 comments and information requests from federal and provincial agencies and Aboriginal groups.

Fourteen reports, which include 319 pages of information, accompanied the responses to the federal agencies. Included in these reports was an updated water management strategy for the Star-Orion diamond project.

Shore Gold's senior vice-president of exploration, George Read, P.Geo., said, "The completion of these responses is another step towards a fully compliant and permitted project. Simultaneous to the ongoing completion of project approval and permitting, Shore Gold is in pursuit of development capital on a number of fronts."

K+S donates to mining skills program

Saskatoon StarPhoenix - K+S is giving $121,800 to the Saskatchewan Institute of Applied Science & Technology to support the mining engineering technology program, create scholarships for students in several mining programs and help provide student networking opportunities in Moose Jaw and Saskatoon.

The mining engineering technology program, which was developed specifically for Saskatchewan's mining industry and will graduate its first class in 2014, received a boost from K+S Potash Canada.

The two-year mining engineering technology program was started in September 2012 and covers areas such as safety, communications, mathematics, mining ventilation, mechanics, mining methods and geophysical data analysis.

UNIVERSITIES AND RESEARCH

U of S engineers receive heath research grants

CTV Saskatoon - Two engineering researchers from the University of Saskatchewan have been awarded $100,000 each, courtesy Grand Challenges Canada. This grant money was awarded with the hope of making their innovations in the health care field a reality, especially in the developing world.

The ideas that were awarded include a low-cost piece of medical equipment which can pre-diagnose heart disease with portable sensors and a laptop computer. Developer

Anh Dinh, P.Eng. from the College of Engineering said his device will deliver the data available at a doctor's office at a fraction of the cost.

Also from the College of Engineering, Khan Wahid, P.Eng. is working on a video endoscopy capsule that should improve a physician's ability to diagnose such digestive disorders as Crohn's disease, as well as diseases like colon cancer.

Grand Challenges Canada is funded by the federal government, and awards grants to individuals from around the world that pursue imaginative ideas to deal with health problems in low- and middle-income countries, as well as in Canada.

Keeping the faith in carbon capture and storage

The Globe and Mail - Alberta and Saskatchewan remain committed to CCS projects despite setbacks and doubts about the technology.

Once touted a major answer to oil sands carbon emissions, carbon capture and storage (CCS) technology has seen setbacks in Canada and around the world that have prompted alarms about its potential to make a difference in the battle against climate change.

But in Alberta and Saskatchewan, governments remain committed to CCS projects, which they believe will allow their provinces to continue their reliance on a fossil fuel economy while dramatically reducing greenhouse gas emissions.

Alberta remains committed to almost $1.3-billion worth of government spending for the two remaining private sector projects, including a carbon dioxide trunk line that will become the "Trans-Canada Highway" for carbon.

The stakes couldn't be higher for Alberta, which has had to wage a public relations war against charges it is a "dirty" oil producer.

Saskatchewan is pioneering its own CCS project at a coal-fired power plant at Boundary Dam, confident that success will allow continued reliance on coal deposits that could last 300 years.

Carbon capture and storage technology involves collecting greenhouse gas emissions from a large stationary source, such as a power plant, followed by transport via pipeline for injection into a deep underground geological formation – burying emissions for hundreds or thousands of years.

The International Energy Agency (IEA) says CCS is required to help forestall climate change, given that the world will not wean itself off coal and oil any time soon. Last month, the agency noted the development of the technology has slowed to a crawl, except in Canada.

Alberta saw two of four planned projects cancelled this year and last, including TransAlta Corp.'s Pioneer project and the Swan Hills Synfuels LP synthetic gas plant. In both cases, the companies said the economics of the projects no longer made sense.

The CCS technology being built at the retooled Boundary Dam coal unit near Estevan, will have the potential to capture one million tonnes of CO_2 per year, or 90 per cent of the plant's emissions.

Construction is proceeding, according to SaskPower. The power company has stated in the past that the plant should begin commercial production early in 2014. The company has expressed confidence that carbon capture technology will allow the province to depend on its indigenous coal supply for power, while reducing emissions well below that of a comparable natural-gas-fired unit.

BUILDING & INFRASTRUCTURE

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Saskatchewan budget increases capital spending

Journal of Commerce - The 2013 Saskatchewan budget is preparing for continued growth in the province by providing support for apprentices and increasing public sector investment in basic infrastructure such as highways, roads, schools and affordable housing.

The budget provides a total of $847.5 million for schools, hospitals, highways and other basic infrastructure projects.The 2013 budget includes $576 million for building and maintaining provincial roadways, with $280.8 million for new highway construction.

Of that, $68.6 million is going to major, multi-year projects such as the Estevan truck bypass, passing lanes on Highway 10 and the west Regina bypass.

Another $168.1 million is tagged for repairs and upgrades including grading and paving the Dalmeny access road and upgrading Highway 22 from Southey to Earl Gray.

Sask building permits hit record $270M in March

Regina Leader-Post and Canadian Press - Building permit values in the province surpassed $270 million in March, up 22.6 per cent from March 2012, the third highest percentage increase among the provinces, Statistics Canada said.

Saskatchewan saw higher construction intentions for multi-family dwellings as well as institutional and industrial buildings, the federal agency said. Non-residential building permits totalled $130 million, up 32.7 per cent year over year, while residential permits were up 14.5 per cent to $140 million over the same period.

On a month-over-month basis, building permits were up by 26.6 per cent from February (seasonally adjusted).

In March, the total value of permits was up in 16 of the 34 census metropolitan areas.

Saskatoon saw the third largest increase in value of building permits in March, behind Toronto and Edmonton. The value of permits in Saskatoon was up for the third consecutive month in March, mostly because of institutional and industrial buildings. In Regina, the total value of permits was up 36.6 per cent to $78.8 million in March from $57.7 million in February.

URANIUM & NUCLEAR

www.devrandhawa.com

Emerging uranium district in Patterson Lake region

Uranium Investing News - The potential for the next McArthur River or Cigar Lake uranium discovery has ignited a competitive staking rush outside the southern boundary of Saskatchewan's prolific Athabasca Basin. In recent weeks, the Patterson Lake region has been the target of a land package grab that has seen several juniors and individuals staking claims following a series of excellent drill results on the Patterson Lake South (PLS) property reported by 50/50 joint venture partners Alpha Minerals and Fission Energy.

The Patterson Lake region hosts two significant geological elements that make it an attractive area for uranium exploration. The Patterson Lake Conductor Corridor runs up through Hook Lake, a joint venture project between Purepoint Uranium, Cameco and Areva. The Dirksen Corridor is a fertile series of conductors that head from the Forest Lake area on the PLS ground through to the Purepoint JV ground to what's known as the Dirksen showing.

Cameco awaits ruling on Cigar Lake uranium mine

Canadian Press - Cameco is waiting for a ruling from the Canadian Nuclear Safety Commission on its applications to restart uranium mining operations at Cigar Lake, the world's second argest high-grade uranium deposit, and to renew its license for the decommissioned Beaverlodge mine and mill site. Cameco's construction licence for the northern Saskatchewan uranium mine ends in late 2013.

At a hearing on April 4 in Saskatoon, the Canadian Nuclear Association (CNA) discussed Cameco's mining and relicensing applications. Cameco's performance on jobs, safety, and environmental protection were cited as reasons to renew its licences.

Canada, India nuke pact worth billions to Sask.

Saskatoon StarPhoenix - Saskatchewan companies now have the green light to sell uranium to India.

The Canadian Nuclear Safety Commission and India's Department of Atomic Energy have finalized an agreement originally announced last November.

The agreement will allow Canadian companies to export controlled nuclear materials, equipment and technology for peaceful purposes to India under the safeguards applied by the International Atomic Energy Agency.

Until now, Canadian companies have been unable to ship Canadian uranium to India.

This agreement follows a similar deal with China.

India is the fourth-largest energy consumer in the world and is expected to triple its electricity supply within the next 25 years. To fill this need, India has 12 new reactors to be commissioned by 2021.

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Calendar of Events

www.thebraininjane.com

Canadian Academy of Engineering - 2013 Annual Meeting
June 20 - 21, 2013
Montreal, QC

Association of Consulting Engineering Companies – Canada Summit
Lake Louise, AB
June 20-22, 2013
www.acec.ca

Conference for Interdisciplinary Engineering
July 7-10, 2013
Saskatoon, SK.
www.csbe-scgab.ca/saskatoon2013

IPCC 2013 - Beyond Borders: Communicating Globally
July 15-17, 2013
Vancouver, BC
www.pcs.ieee.org/ipcc2013

Shaping the Future Energy Industry
July 21-25, 2013
Vancouver, BC
www.pes-gm.org/2013

World Mining Congress and Expo
August 11-15, 2013
Montreal, QC
www.wmc-expo2013.org

Fall Professional Practice Exam Registration Deadline
August 16, 2013
www.apegs.sk.ca

33rd Annual Conference of the Canadian Healthcare Engineering Society
September 22-24, 2013
Niagara Falls ON
www.ches.org/en/conferences-events/2013-national-conference.html

Geoscience for Discovery: Society for Economic Geologists
September 24-27, 2013
Whistler, BC
www.seg2013.org

Geoscience for Sustainability
September 29-October 03, 2013
Montreal QC
www.geomontreal2013.ca

4th Canadian Young Geotechnical Engineers and Geoscientists Conference
October 03-06, 2013
Mont Tremblant, QC
www.cygegc2013.ca

2013 Canadian Dam Association Annual Conference and Exhibition
October 5-10, 2013
Montréal, QC
www.cda.ca

Canadian Design-Build Institute Conference
October 16-18, 2013
Saskatoon, SK
cdbi.org/events

Saskatchewan Innovation Week 2013
October 21, 2013 - October 26, 2013
Province-wide
www.saskinnovationweek.ca

PUBLICATION MAIL REGISTRATION NUMBER: 40034203