THE PROFESSIONAL

EDGE

ISSUE 151 JULY/AUGUST 2014

Women in Science and Technology

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POSTMASTER

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APEGS, #300 - 4581 Parliament Avenue, Regina SK S4W 0G3

Submission Deadlines

SEPTEMBER/OCTOBER: September 1, 2014 **NOVEMBER/DECEMBER:** November 1, 2014

Subscription Rates*

Members and Licensees - Free. Others in Saskatchewan - $12/year. Elsewhere - $20/year.

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President's Report

APEGS President Andrew Loken, P.Eng., FEC

STEM, CCWESTT and other acronyms

Science, technology, engineering and math (STEM) are the courses and careers that we want girls and women to choose in greater numbers. The Canadian Coalition of Women in Engineering, Science, Trades and Technology (CCWESTT) is one of the organizations trying to figure out how to make that happen.

In May, CCWESTT held its biennial conference in Regina and many members of APEGS helped to organize it. APEGS was a sponsor, bringing 10 teachers to learn about encouraging and helping girls in STEM courses.

Sponsorship and organizational assistance to the early planning of the CCWESTT conference was a natural fit for APEGS. Along with the other owners of Engineers Canada, we are part of an initiative called "30 by 30" which aims to have 30 per cent of entrants to the engineering profession be females by the year 2030. Currently we are far below that number. On average our engineering colleges achieve around 20 per cent female enrolment and sometimes slightly better than that at graduation. Within geoscience, we recently found out that we are achieving around 20 per cent female participation nationally.

Considering that our society is just about equally divided between males and females in just about every age group, it is a natural question as to why we have so few female members in our professions and in our colleges. For many decades this has been a cause for concern and study throughout North America. To date I don't know that we have come up with any good solutions but we have identified some of the likely root causes.

Some potential factors that affect female participation in our professions:

- K to 12 education opportunities and choices
- Historical male dominance which may lead teachers, parents and students to believe that engineering and geoscience are male professions
- Lack of "critical mass" of female professors, mentors and role models in our professions
- Family needs, career satisfaction, advancement opportunities and other factors causing women to leave the professions early

It is probably ego on my part to think that almost anyone can find a satisfying career in engineering or geoscience. Perhaps there are good logical reasons why a larger percentage of women either do not choose our professions or leave early, but there is some science behind my belief. There are many countries and societies in the world where females make up a good percentage of STEM and even here in North America female participation in certain disciplines such as process engineering and environmental engineering is much higher than 20 per cent.

Even though we haven't figured out all of the causes and solutions yet, I am encouraged by those examples that there will come a time when everyone will view engineering and geoscience careers as

President Andrew Loken's nieces participating in the children's science program at the recent APEGS Annual Meeting in Saskatoon.

serious choices and will base their decisions on aptitude, interest and real (not perceived) capabilities.

In the next issue we will be looking at Aboriginal participation in our professions and there are some similar themes to those mentioned in this article. In both cases I feel that we could be missing out on some great professionals who could bring different ideas and solutions that could lead to the safer and more prosperous society that we are constantly striving for.

Canadian Coalition of Women in Engineering, Science, Trades and Technology

BY MARTIN CHARLTON COMMUNICATIONS
PHOTOGRAPHY BY STEPHEN RUTHERFORD, SASKATOON

Saskatchewan has a long road ahead of it when considering gender diversity in science professions. APEGS has signed on to Engineers Canada's "30 by 30" goal – to have at least 30 per cent female engineers by 2030. Currently less than 10 per cent of Saskatchewan registered engineers are female, and the story is much the same in geoscience.

As part of the continuing work to recruit more female members, a volunteer team recently helped stage the 2014 conference of the Canadian Coalition of Women in Engineering, Science, Trades and Technology.

The conference drew over 250 delegates representing every province and territory in Canada.

"Our host committee began working on this conference in 2011. We did face a few challenges along the way but our local community, industry and academic partners demonstrated how amazing Saskatchewan is. APEGS signed on early as the organizational host and provided not only space and teleconference facilities, but also financial support to create and deliver the first-ever teachers' program," said committee chair Dena McMartin, P.Eng.

McMartin sees many benefits flowing from the conference.

> "An engaged and interested community of women and men has been established who are committed to working on promoting women in engineering, sciences, trades, and technology."

"We were able to showcase Saskatchewan talent, skills, volunteerism and warmth through our conference program, special events and activities, and demonstrated our commitment to helping others less fortunate. Throughout the conference, we offered a wide array of opportunities for discussion, debate, inspiration and networking."

The planning is already under way for the next CCWESTT conference in 2016 in Ottawa.

In this issue, *The Professional Edge* is pleased to feature highlights of the speakers and track sessions from CCWESTT 2014.

Managing Life Transitions in the Modern Workplace

BY MARTIN CHARLTON COMMUNICATIONS

According to Jessica Vandenberghe, P.Eng., treating people fairly is something that should come naturally to engineers and geoscientists.

"Part of the vision for our professions is that engineers and geoscientists conduct themselves with integrity, honesty, fairness and objectivity in their professional activities. Those are values that we should be extending to everyone," said Vandenberghe, the Director of Outreach and Product Services for the Association of Professional Engineers and Geoscientists of Alberta (APEGA).

But while many employers may have good intentions, not all workplaces are inclusive, Vandenberghe says. Co-workers may be discriminatory. Supervisors, managers and leaders may be biased. Physical working conditions may not be suitable. Fair policies may not be in place.

How can well-meaning employers ensure that they have solid, non-discriminatory policies? The Women in APEGA Committee is helping out with its Managing Transitions document that provides employers with a manual of best practices for managing leaves of absence. These policies, Vandenberghe emphasizes, benefit the employer as well as the employee.

"Managing career transitions is crucial for retention of skilled and valued talent, especially when it comes to managing maternity or paternal leave. Experience has shown that without forethought, rejoining an organization or re-entering the workforce can be frustrating, especially when expectations are not managed."

The Business Case: It's Not the 1950s Anymore

Vandenberghe notes that, in the past, most engineers and geoscientists had stay-at-home partners who took on the major caregiver role of young children – and so their careers were not significantly affected.

But today these partners typically have full-time careers as well. How can a busy professional strike a balance between being a full-time engineer or geoscientist and a part-time parent? Increasingly both female and male professionals are taking parental leaves for at least the early months of a child's life.

"From a business perspective, when you choose to go on leave, your company will temporarily lose a valuable employee. This is clearly a business risk that needs to be managed properly."

Planning and reducing the risk of losing valuable employees is about mitigating the risks by planning ahead to ensure the business continues uninterrupted.

"It is a fact that your projects will continue while a person is on leave, business will proceed, but the off and on ramping needs to be done properly. For those of you who are supervisors and upper management, I hope you let your employees know, when they are going on leave, how valued they are. You want to retain these knowledgeable, experienced, skilled and talented people."

"If you prefer to see it in numbers, take a look at the stats: to train a permanent replacement for an entry level position costs an average of 40 per cent of their salary. For

a mid-level person with a lot of knowledge, it can cost up to 150 per cent of their salary. Once you move up to the very specialized senior level, you are looking at spending up to 400 per cent of their annual salary to train and integrate a new employee. So it just makes business sense to polish up your maternity and paternity leave policies to ensure retention."

By the Spirit, Not By the Book

A common problem Vandenberghe sees is that companies establish parental leave policies to meet the minimum legal standards. To get serious about retention, employers need to be prepared to go beyond the bare minimums.

Some of the policies Vandenberghe recommends include:

Protect the position – create a legal obligation so that people are assured that their job or an equivalent will be there when they return from leave.

Manager coaching – set up professional development for supervisors to ensure they interact properly – and with empathy – with people going on leave.

Check into insurance and health coverage – if there are gaps for people on leave, consider providing the on-leave employee further financial assistance.

Professional dues – will the company still pay these while the person is on leave?

Establish a leave liaison – establish (and train) someone to act as a peer contact for the person on leave.

Access to company email – with some companies, this becomes a tricky question of corporate security when dealing with someone not officially in the workplace. Vandenberghe recommends establishing an understanding of two-way responsibility.

"It is up to upper management to ensure there is a route available for this person to stay connected. And it is up to the person to clearly state that they will abide by confidentiality and privacy regulations."

Access to company resources and activities – this can cover a broad range of ways to keep the person on leave in touch with their profession and the company, such as subscriptions to company newsletters, participation in corporate volunteer activities and access to in-house training and other professional development.

Many Happy Returns

While the employer checklist for what to do while the employee is away may seem daunting, the truly tricky part is managing how they return.

Vandenberghe stresses that a good leave policy must include an "on-ramping" program to ensure a smooth transition from home life back to work.

"When the time comes for the employee to return, it's important to ensure that flexible hours are negotiable. These are, after all, people who are going to be making new child care arrangements. The company may wish to consider creating a child care facility or reimbursing employees for that cost. Flexible hours may also mean having a conversation about job sharing for a period of time."

As well, employers must be sensitive to the fact that returning employees are inevitably going to be a little rusty. Vandenberghe recommends assigning a mentor and providing training and orientation, very similar to starting a new employee.

This begs an important question: if you have to treat the old employee essentially like a new employee, why go through the bother of retraining?

"The advantage is that this person already knows the corporate culture. Getting them up to speed should be quite fast compared to training a brand new junior person."

Employers could also consider establishing a support group.

"These days, we see engineering and geoscience companies establishing all sorts of resource groups for employees such as groups for women, groups for internationally educated professionals. Why not a group for professionals with families?"

Some Final Tips

The topic of managing career transitions can be complex and APEGA's documentation on best practices is extensive. While it's hard to absorb all the information in one sitting, Vandenberghe has a few final points to get employers and employees headed in the right direction.

First, she urges companies to get their policies written down, include them in all employee manuals and communicate them clearly so everyone has clear expectations.

Second, establish the right mindset. Think of the on-leave employee as being on sabbatical and therefore still a part of your business team.

Above all, do what comes naturally to engineers and geoscientists – plan ahead and follow through.

"In a nutshell, make sure you don't penalize career transitions but also make sure you set clear expectations."

For more information on APEGA's Managing Transitions document, visit ***www.apega.ca/members/Women***

Investing in Mentoring

BY MARTIN CHARLTON COMMUNICATIONS

The old saying "what goes around, comes around" has been taken to heart by Victoria Stinson and Meagan Gilbert, Ph.D. candidates at the University of Saskatchewan.

"Meagan and I have always wished for more opportunities to be mentored in science during our undergraduate, master's, and Ph.D. programs. We were lucky that we each had one female professor so we at least had a role model, unlike many schools in Canada," said Stinson.

Stinson is seeking her doctorate in geology and Gilbert in geology with a specialty in palaeontology. As Ph.D. candidates, they now have the opportunity to hire student assistants in the lab and for field work. They have used this opportunity to hire students from groups which are under-represented in the sciences.

Who Benefits Most From Mentoring?

As Stinson and Gilbert see it, using grades to choose an assistant is probably the least useful benchmark for hiring. They maintain that graduate students should be hiring and mentoring assistants who might otherwise face discrimination on sex, age, race, creed, sexual orientation, ability and other potential social or socio-economic constraints.

"I was never given the opportunity to work with a graduate student as an undergrad but I had mentors during summer fieldwork. A couple of my mentors were women, some francophone, and some of colour, which was ideal as I had to deal with blatant sexism and racism from supervisors in every summer field job I ever had," said Stinson.

While Stinson and Gilbert pay attention to academic success to some extent when hiring students, they base their decisions primarily on who would benefit the most by having an opportunity to work in science.

"I have had nothing but positive experiences with my field assistants, like Keith who was a mature student from a remote rural area working on his second career. Other assistants who stand out to me include Alex who had a young family, Katia who was coping with recent injuries and Glecaria, a person of colour."

Quality and Quantity

Although in mentoring – as in many things - quality is better than quantity, Stinson and Gilbert note that their assistants got plenty of both.

"The total amount of time spent together during a field season is typically around 2,000 hours. Assistants in a laboratory spend 1,500-4,000 hours together. The significant time spent together provides a natural opportunity for mentorship between graduate and undergraduate students in the scientific and engineering disciplines."

"Mentorship between graduate students and undergraduate assistants could improve the academic successes of science and engineering students and should therefore be made a priority."

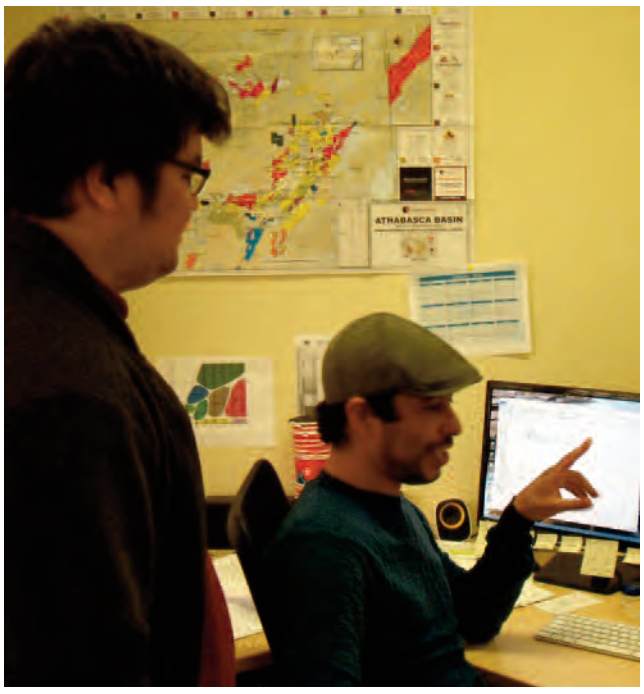
Throughout the field season or academic year, the graduate student mentors the undergraduate assistant on academic knowledge, common practices and networking. As well, mentors can provide essential advice on the social and personal side of academic life: coping with stress, self-doubt, social restrictions, the career-family balance and discrimination.

"The undergraduate student's needs should be respected and considered during the mentoring process. The graduate students should reflect on their own experiences during their undergraduate degree and allow that to guide practical and social knowledge gaps the undergraduate student may face."

She Or He Could Be Your Future Boss

Stinson and Gilbert admit that there are some obvious risks that can arise from the long hours of mentorship.

"Mentorships can eventually turn into many forms of relationship, but should remain a professional relationship while the student assistant is in your employment. Undergraduate students can blossom into potential colleagues and friends in the future. I don't understand why even the least altruistic person would not take advantage of undergraduate mentorships. You could be developing a relationship with a future graduate student, colleagues, or even a future boss!"



Next Steps

Stinson and Gilbert recommend further research in graduate-undergraduate mentorship to establish the needs of science and engineering undergraduate students, particularly those who participate as field or laboratory assistants. They feel that emphasis in future research should focus on participation of under-represented students in science and engineering and how it relates to enrolment, degree completion and future successes.

How Much Are You Worth?

Salary Negotiation for the Woman Professional

BY: JENNIFER PELLETIER, REBEKAH PARKER, & ELIZABETH CROFT

Salary negotiation is intimidating and can be a particular challenge in professions where there are many unique qualifications and requirements. Employers face the task of finding an employee who is a good fit for their organizations and new employees seek a job package that supports their goals and lifestyle.

A successful hire requires a strong pool of candidates, careful consideration free of bias, and fair negotiation of a starting salary. In engineering, women have traditionally faced additional challenges in this process and there are still gender-based differences in compensation. Salary negotiation can reduce this gap.

What to Know as an Employer

Implicit Biases – Engineers and scientists like to believe all of their decisions are unbiased but in reality we all have implicit biases. Implicit bias refers to the assumptions and conclusions we jump to without thinking. Our implicit biases can directly contradict what we actively state we value. They have a significant impact on how we judge others and the decisions we make.

The sway of our implicit biases was made clear in a recent study. Professors were asked to evaluate a candidate for a lab manager job. Male candidates were consistently offered the job more often, at higher salaries, despite the resumés being identical.

The first step to avoiding implicit biases in your hiring is to be aware they exist, and to be aware of what your personal biases are. https://implicit.harvard.edu/implicit/ is a free tool you can use to become more aware of your biases.

Gendered Language and the Application Process – Subtle factors change who applies for a position. Three main factors affect an individual's decision to apply: identification with the job, reward preference (financial, intellectual, schedule flexibility and so on) and expectation of application success. Showcase information that effects these factors to broaden your candidate pool.

The language you use in a job description matters: gendered language in job descriptions has no impact on men but may dissuade women from applying. This effect was subconscious, even when the gendered words were pointed out. Examples of gendered language include:

Feminine Language	Masculine Language
Excellence in the market	**Dominance** in the market
Understand markets to establish appropriate selling prices	**Analyze** markets to determine appropriate selling prices
Committed to providing	**Determined to deliver**

Avoiding gendered language gives you a broader application pool and a better opportunity to hire someone who will succeed in the position.

What to Know as an Employee

Knowing what you are worth matters – and you are worth more than you think. In BC, new graduates are given the opportunity to learn about salary negotiation before graduation. As a result the industry sector starting salaries in BC are now roughly the same for everyone, based on the responsibility level of the job.

When you are preparing for an interview consider what kind of job you are looking for. Some aspects to think about include:

- Job technical and skill requirement (Is this what I want to do?)
- Compensation, work-life balance (What benefits does the job offer?)
- Expectations for availability and travel (How do current employees handle family demands?)
- Working relationships and workplace climate (Will there be people like me?).

These considerations are universally helpful, regardless of gender, but are particularly important to women and young workers.

The Salary Negotiation: Know Your Value

Before negotiation, review compensation surveys, look at similar job advertisements and refer to benchmark employment descriptions to figure out before the interview what salary range the position fits into. If possible, find out what salary level the organization offers for the position you are applying to.

During your interview and contract meeting, focus on what makes you valuable to the employer. Ask questions including how the organization's compensation levels compare to the industry average, how pay increases are determined (merit-based or scale-based) and how the employer measures performance.

Whoever Gives the First Price Loses

The company's decision to hire you is the big one and usually will not be affected by reasonable salary negotiation. Often future salary increases are a percentage of your starting salary, which makes negotiation essential for securing a fairly compensated position.

Consider these three aspects during your negotiations: comparison to your peers, the total package and the final contract. Compare yourself fairly with your peers, using your network to learn what others are offered in comparable jobs. Being "too cheap" reduces your value as an employee.

When it is time to talk numbers remember that whoever names the salary first loses. If you state the first amount, they will negotiate you down. If they state the first amount, you get to negotiate them up.

When you receive a job offer, look at the whole package and consider:

- Prior work terms
- Geography, hours and sector
- Bonuses, profit sharing, overtime
- RRSP and benefit premiums
- Vacation and flexible work.

Before you sign any contract, review it and take a few days to consider it. Make sure the process for review and advancement is clearly understood. Your first review should be within six months.

And Remember…

To be successful in the job hunt and salary negotiation, you need to do your homework and know your value, network with peers and seek out mentorship and prepare for your promotion. Annual check-ins with your supervisor are highly recommended. Keep your resume updated.

Dr. Croft is the chair and Ms. Pelletier and Ms. Parker are staff members of the NSERC Chair for Women in Science and Engineering, (BC & Yukon Region). For more information and resources, visit ***http://wwest.ca***

Member Profile

This month *The Professional Edge* chats with Lindsay Bedard, P.Eng., Senior Electrical Engineer with ENGCOMP in Saskatoon.

Tell us about your personal and professional background.

I moved around a bit. I was born and raised in Niagara Falls, Ontario, and also spent a couple of years in London, ON. I moved with my mom to Victoria, BC right before grade 12, and then studied electrical engineering at the University of Victoria. After that, I moved around some more but I've been here in Saskatoon for the past six years.

What was it like growing up in a famous tourist destination like Niagara Falls?

It is very much a typical city. It was a good, safe place to grow up, but it's pretty much a one-horse town. If you don't work in tourism, there isn't much there for you.

Why did you choose to go into engineering?

You probably hear the same answer from a lot of people: math and science were my favourite subjects in high school. I considered getting a degree in math but was advised that I would make more money if I went into engineering. So, that's what I put on my college application and haven't looked back. I definitely think it was the right decision now, regardless of the pay cheque.

What was your biggest challenge in college?

Like most engineers, I'd have to say the workload in engineering was the top challenge. It didn't leave much time for a social life. I was really lucky, though, that I didn't have to worry too much about financing my education. My parents helped me with my first year, and after that, I was able to pay for my education using the money I made on my co-op terms. I was working every other semester, and saved as much as I could for tuition.

What was your first job after college?

On the day I convocated, I got a job offer from AMEC in Oakville, ON so I moved again. I worked on the DeBeers Victor project on the design team for Ontario's first diamond mine. After a couple of years in the office, I was sent to site in northern Ontario for 10 months during construction.It was a fantastic experience and I learned a lot. When my time there came to an end, I asked my manager to find me a new assignment that would challenge me like that. He sent me out to PCS Lanigan to be on the commissioning team for the Phase I Rehabilitation project, which is what brought me to Saskatchewan for the first time.

First time? You moved again after that?

Yes, I did a short stint in AMEC's Vancouver office before coming back here. With all of these moves, I've gotten very good at packing over the years.

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

I would say landing my current position at ENGCOMP. They hired me in December 2011 to help build and to lead the Electrical and Instrumentation department. It has proven to be a great career move.

What are your interests outside of work?

I like to generally stay active, and over the years, I've competed in a couple sprint triathlons, which feature the typical swim-bike-run combination but over shorter courses. I also ran one of the legs of the Sinister 7 ultra-marathon relay in Alberta a few years ago; my leg was at night in pitch dark in the wilderness, so that was a bit scary.

I'm also active in my community and in my profession. I'm a director and the networking coordinator for the Saskatchewan chapter of Women in Mining/Women in Nuclear. I've also led sessions at the UofS's Discover Engineering conference to teach grade 8 girls about this profession. The topic of women in engineering is one about which I'm passionate which is why I started a scholarship for a female engineering student at the UofS.

I also recently bought a house in Montgomery, so yard work is keeping me busy. I'm really enjoying my first summer in my home.

Why do you think that not as many girls study engineering?

I think it just comes down to lack of exposure in the formative years. If you had said "engineering" to me when I was in grade 10, I wouldn't have had a clue what that meant, what it involved or what the career options were. I'd really like to get involved with the APEGS K-12 committee in the future, to help present these options to young people.

Have you ever met anyone famous?

In May, I was a panelist at the CCWESTT conference in Regina where I met Hayley Wickenheiser. It was very exciting to meet her so soon after Canada's big win in Sochi.

What is your favourite vacation spot?

I like warm destinations but I try to mix it up and don't like to go to the same place twice. But with family in both BC and Ontario, I also spend a lot of my vacation time in Canada.

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

My parents have definitely been the greatest influence on both my life and career. They always told me when I was young that I could be anything I wanted to be when I grew up, and that if I worked hard, I would write my own ticket. They have definitely been my biggest supporters so I'm forever in their debt. Professionally, I've had a lot of great supervisors, managers and mentors since I started my career in 2005. Each has taught and helped me out in many ways. I hope to someday have the same impact on other young professionals coming into this industry.

APEGS View

We've Moved!

APEGS is pleased to announce the opening of its new offices:

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www.apegs.ca

In Memoriam

Douglas B. Hopkins, P.Eng.

Dr. Douglas G. Vandenberghe, P.Eng., FEC

Arthur J. Pankratz, P.Eng.

COUNCIL NOTES

June 13, 2014 - Temple Gardens Mineral Spa, Moose Jaw, SK

18 of 19 Councillors present

- Council appointed Dwayne Gelowitz, P.Eng., FEC to chair a task group to study the demographics of the professions. The Chair's first duties will be to secure members for the task group, develop the terms of reference and a budget for the task group and obtain Council's approval of the task group members, terms of reference and budget.
- Council appointed John Pearson, P.Geo. as the APEGS Director to Geoscientists Canada for a three-year term.
- The Governance Board appointed Jonathan Hromek, P.Eng. to the Experience Review Committee for a three-year term and Hamid Soleymani, P.Eng. to the Academic Review Committee for a three year term.
- Council approved the removal of the high school educational option for Engineering Licensee and Geoscience Licensee applications after the 2014 calendar year and that Engineering Licensee and Geoscience Licensee approvals for inter-association mobility applicants be approved via the Registrar's Acceptance List.
- The following were granted Life Member Status; Arends, Jack W., P.Geo., Berbenetz, Nicolas M., P.Eng., Fernet, Ronald F., P.Eng., Hubka, Lawrence W., P.Eng., Kwong, Philip P.F., P.Eng., Mazur, Kenneth G., P.Eng. and Pask, Glen S., P.Eng.
- Margaret Anne Hodges, P.Eng., FEC provided Council with a presentation on the CCWESTT conference held in Regina May 22 through 24, 2014.
- Tara Zrymiak reported on the results from the 2014 Annual Meeting survey.
- The Connection and Involvement Committee reported on the Volunteer Day planned for Saturday September 6, 2014 in Moose Jaw.
- Council revised the sponsorship of the 2014 NCWiE conference (National Conference on Women in Engineering) to silver level in the amount of $5,000.
- Council reviewed its planning document, the ROCK.doc (Renew, Organize, Clarify, and Kick Off), and scheduled one day of APEGS planning sessions for September 5, 2014 in Moose Jaw.
- The next Council meeting is scheduled for October 9 and 10, 2014 in Regina.

GEOSCIENTISTS GÉOSCIENTIFIQUES CANADA

Paul Rennick P.Geo., takes office as Geoscientists Canada President

On June 7 at the 17th Annual Meeting of Geoscientists Canada, Paul Rennick, P.Geo., took office as president for 2014 - 2015.

Rennick resides in Fredericton, New Brunswick, where he is employed by the Ministry of Energy and Mines as its Manager, Promotion and Information Services. He is a graduate of the University of New Brunswick (B.Sc. - Geology).

His professional career includes serving as project geologist on various mineral exploration projects in Central and Atlantic Canada with the mining industry, and then as manager, GIS section, with the New Brunswick Geological Survey.

Rennick previously represented New Brunswick on the board of directors (2007 - 2012) of Geoscientists Canada and also served as treasurer (2009 - 2012). In June 2013, upon being elected president elect, he rejoined the board of directors of Geoscientists Canada and joined the Executive Committee.

In fulfilling his duties as president, together with colleagues on the Executive Committee, Rennick will be focusing his attention on the concluding work directed at a new strategic framework for the organization moving forward.

Geoscientists Canada is the national organization of the 10 provincial and territorial licensing bodies/ordre that regulate the practice of geoscience in Canada. The geoscience profession, which is made up of many specialized practice disciplines, currently comprises over 13,000 licensed professionals and Geoscientists - in - Training across Canada.

engineerscanada

Paul Amyotte Appointed as Engineers Canada President

On May 23, Engineers Canada announced the appointment of Paul Amyotte, FEC, P.Eng., as its president for the 2014–2015 term.

Amyotte is a Professor of Chemical Engineering and the C.D. Howe Chair in Engineering at Dalhousie University in Halifax . He studied Chemical Engineering, obtaining his B.Eng. from the Royal Military College of Canada, his M.Sc. (Eng.) from Queen's University, and his Ph.D. from the Technical University of Nova Scotia.

Amyotte's research and practice interests are in industrial safety and loss management, particularly in the areas of process safety and inherently safer design. He is an expert in the prevention and mitigation of dust explosions, and is the editor of the Journal of Loss Prevention in the Process Industries. He is the author of three books and has published or presented over 300 research and educational papers.

He served asEngineers Nova Scotia's president in 2008–2009 and has represented the association on the Engineers Canada Board since 2010. He is also a member and past-president of the Canadian Society for Chemical Engineering, and is a member of the American Institute of Chemical Engineers.

He is Co-Chair of the Materials and Chemical Engineering Evaluation Group of the Natural Sciences and Engineering Research Council of Canada, and is a Fellow of the Chemical Institute of Canada, the Engineering Institute of Canada, Engineers Canada, and the Canadian Academy of Engineering.

Engineers Canada is the national organization of the 12 provincial and territorial associations that regulate the practice of engineering in Canada and license the country's 2 70 ,000 members of the engineering profession.

APEGS Recognizes the Top

Engineering and Geoscience Graduates

Every year, the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) recognizes engineering and geoscience graduates at the University of Regina and University of Saskatchewan for outstanding academic achievements and leadership. Meet the next generation of innovation.

Congratulations 2014 Gold Medal Recipients!

Kale Colville is the 2014 APEGS Gold Medal recipient for Engineering at the University of Saskatchewan.

Kale Colville grew up in Beaver Creek, SK and graduated from Clavet Composite School in 2009. He began his post-secondary education at the University of Saskatchewan, studying engineering physics. He later developed a keen interest in theoretical physics and math, and pursued a degree in mathematical physics. Throughout his undergraduate career, Kale has won three NSERC Undergraduate Student Research Awards, which allowed him to do research in various fields including atmospheric physics, mathematics and black hole physics. This year, Kale is also the Most Outstanding Graduate in mathematical physics. After graduating from the University of Saskatchewan, Kale will be attending the Perimeter Scholars International master's program at the Perimeter Institute in Waterloo, Ontario. Upon completion of this program Kale plans to pursue a Ph.D. in physics, and would like to enter a career in academia.

Matthew Dipple is the APEGS Gold Medal Award recipient for Engineering from the University of Regina.

In addition to his outstanding academic performance in the Environmental Systems Engineering Program, Matthew has set himself apart as an extremely active and dedicated volunteer. Matthew graduates with great distinction with an average of 91.71 per cent. Matthew was the recipient of numerous scholarships and academic awards throughout his studies. Matthew dedicated considerable time as a member and eventually chapter president of the Alpha Sigma Nu Jesuit Honour Society, Campion Chapter. He served on the U of R Executive Council, was the Environmental Coordinator for the Campion College Students' Union and was a garden volunteer for the U of R Greenpatch. He has served as a soup kitchen volunteer at the Marian Centre Regina, was a volunteer/participant in the Madonna House Apostolate, and was a needle exchange volunteer for the AIDS Program South Saskatchewan. Matthew was also a camp counsellor at Ignite Summer Camp from 2009 to 2011. His career interests are in the areas of efficient building and infrastructure energy systems and sustainable prairie agriculture.

Elysia Dawn Schuurmans is the APEGS Gold Medal Award recipient in Geoscience at the University of Regina.

Elysia is graduating with a Bachelor of Science degree in Geology. She graduates with great distinction and is in the Science Faculty's Dean's List. Her grade point average is 85, the highest average achieved in this discipline this year. Her academic excellence has been recognized by many awards not only from the University of Regina but also from other industries and geological societies. Besides her busy academic and research life, Ms. Schuurmans actively participated in fundraising activities, set up social events and helped establish the first University of Regina Paleontology Club. She has also been also an active and enthusiastic member of the D.M. Kent Club, the Geology Student Society. Elysia plans to continue her education by pursuing a master's degree at the Department of Geology in the University of Regina.

Aidan Vooght is the 2014 APEGS Gold Medal recipient for Geology at the University of Saskatchewan.

Aidan Vooght, born in Pietermaritzburg, South Africa, is graduating from the University of Saskatchewan with a Bachelor of Science (Honours) in Geology. During his four years at the U of S, he received the Mineralogical Association of Canada Award for academic excellence in mineralogy-petrology-geochemistry-economic geology, the APEGS Book Prize and the Ore Gangue Memorial Award. He has spent the past three summers working in exploration and mining including rare earth exploration, potash mining and uranium exploration and mining. He is currently considering furthering his education through postgraduate studies or pursuing work abroad to gain additional travel experience.

Call for Award Nominations

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

If you know of a professional engineer or professional geoscientist who should be considered for an award, or an exceptional engineering or geoscience project that should receive an award, the committee would like you to nominate that member or project. There are seven APEGS awards: the **Exceptional Engineering/Geoscience Project Award**, the **Environmental Excellence Award,** the **Friend of the Professions Service Award**, the **Promising Member Award**, the **McCannel Award**, the **Brian Eckel Distinguished Service Award**, and the **Outstanding Achievement Award**. Criteria for each of the awards are contained in the nomination form that appears on the next page.

In addition to the APEGS Awards, the Awards Committee nominates APEGS members for awards presented by both Engineers Canada and Geoscientists Canada. Nominations for awards must be received by November 30 to provide time for the Awards Committee to review and consider the nominations for the annual APEGS Awards and to prepare nomination packages for provincial and national awards. The Awards Committee will develop and maintain a list of nominees for consideration for the various awards.

Nomination form on following page.

Please send nominations to:

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

Nominations for APEGS Awards

Do you know an individual or a group who should be considered for an award?

I would like to nominate: .....

In the following category: .....

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

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

Friend of the Professions Service Award *(available to anyone who is not a member of APEGS)*
Recognizes contributions by an individual or a group in the support and promotion of the professions (100%). Examples of activities include: documentation of the history of the professions; comprehensive media coverage of an outstanding engineering or geoscience achievement; long-time service on an APEGS committee or other form of contribution to the success of activities promoting the professions to the public.

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

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

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

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

I am nominating this person / project because (25 words or less):

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Other references (professional and community service related) to contact include:

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Submitted by:

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Association of Consulting Engineering Companies - Saskatchewan

(ACEC-SK) AGM and Golf Tournament

Standing Room only at ACEC-SK 2013-14 AGM

The Harbor Golf Club and Resort Tournament Building in Elbow SK was filled to capacity May 30th for ACEC-SK's Annual General Meeting.

Members heard about initiatives and activities undertaken by the Association over the past year. ACEC-SK board Chair, sector and member committees and executive director outlined the progress the Association made over the last 12 months.

Chair Jason Gasmo, P.Eng. led a discussion from the floor about a number of industry opportunities and challenges, including such things as recent public client changes to procurement and an increased expectation that the consulting engineering industry assume more risk. Contract language was top of mind for everyone, and the association reported its meetings to date with various government stakeholders to make them aware of the consequences to the industry of this change in direction with contract language.

The board was recognized for the volunteer time and effort necessary to be stewards for these and other industry challenges.

ACEC-SK Tournament Winners - Lowest Score 62 - Stantec Consulting Ltd Team 5. L to R: Jordan Hovdebo, Junior Technologist, Eric Langevin, P.Eng., Andrew Koschinsky, A. Sc.T. and Derek Scott, P.Eng.

ACEC-SK would like to acknowledge and thank this year's major Golf Tournament sponsors for their support.

Their generous contributions ensure the continued success of this annual event.

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IMAGINiT Technologies for assistance with the VIP carts

ASSOCIATION OF CONSULTING ENGINEERING COMPANIES | SK

Leadership Stays the Course

Jason Gasmo, P.Eng.

Following the May 30, 2014 Annual General Meeting, the Association of Consulting Engineering Companies (ACEC-SK) is pleased to announced that Jason Gasmo, P.Eng. has accepted the responsibilities of ACEC-SK Chair for a second term. Vice Chair Stormy Holmes, P.Eng. and Past Chair Mel Leu, P.Eng. have agreed to remain in their roles on the board for another year, while Jeff Halliday, P.Eng. takes on the secretary - treasurer responsibilities.

Also remaining on the board are directors Paul Walsh, P.Eng., Terry Frank, P.Eng. and Tim Magus, P.Eng. Additional contributors are Chelsey Bartlett, Engineer-In-Training, young professionals liaison; Jason Mewis, P. Eng., ACEC-Canada liaison; Tara Zrymiak, P. Eng., APEGS liaison; and Shane Baillargeon, associate member liaison.

According to ACEC-SK Executive Director Bev MacLeod, the continuity of the board going into 2014-15 year ensures the Association will continue to reach its objectives. "A year ago, we developed an aggressive strategic plan and the leaders around our board table have actively participated in the implementation process. It is apparent that they are prepared to stay on to see the project through to completion," said MacLeod. "We look forward to the benefits for our members as well as our association in the coming months."

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

For more information, contact:

Jason Gasmo, ACEC-SK Chair
306.721.7611 / jason_gasmo@clifton.ca

Beverly MacLeod, ACEC-SK Executive Director
306.359.3338 / bmacleod@acec-sk.ca

News Beyond Our Borders

http://en.wikipedia.org/

Engineers say flood mitigation project costs not justifiable

Calgary Herald - A pair of proposed upstream mitigation projects to protect homes and businesses along the Elbow River from flooding probably don't make financial sense, say the province's engineering experts.

While a case can likely be made for spending upwards of $200 million on flood defences for vulnerable communities in Calgary along the river's course, a new report by AMEC Environment and Infrastructure says the Alberta government should conduct a "robusteconomic appraisal" before agreeing to spend any money.

"This is important for both major infrastructure projects where the investment is potentially in the hundreds of millions of dollars and local schemes costing much less," the report said.

AMEC estimates it would cost about $240 million to engineer and build a proposed dry dam at McLean Creek on the Elbow River that would protect Calgary from a flood with a per cent probability.

But the company's engineers says the estimated present value of the 50-metre-high project west of Bragg Creek is about $291 million after maintenance of the massive earthen berm is included.

The report says preliminary estimates show the dam would only save $6 in damages for every $10 spent on building and maintaining it over its century-long life.

To strike the right balance, the engineers said more time is needed to survey past and future flood damages and prepare more accurate cost-benefit appraisals of both upstream projects and a proposed diversion tunnel beneath Calgary.

In the meantime, and because there is no guarantee with any mitigation measure, the government should "communicate to the public that flood risk can only be reduced, not eliminated."

Quebec engineers' image improving

Ordre des ingénieurs du Québec - A recent Ipsos survey conducted for the Ordre des ingénieurs du Québec (OIQ) shows that public opinion on engineers stabilized last year, with a favourable rating of 72 per cent. This is a significant change from 2012 when only 66 per cent of Quebeckers perceived engineers as competent but still considerably lower than the 87 per cent public confidence level measured before the Charbonneau Commission began hearing testimony in 2011.

"We have to be pleased about these results, which are generally positive. The many initiatives taken by the OIQ to uphold its commitment to the public have certainly helped to stabilize popular perceptions. Nevertheless, there is still much to do if we are to regain the level of confidence we enjoyed earlier in the 2000s. That is why the OIQ and its members must continue to make major efforts to achieve that," explained Isabelle Tremblay, Eng., OIQ vice-president and vice-president of finance and treasurer.

Interprovincial trade deal next on Ottawa's agenda

Globe and Mail - After signing trade deals with South Korea and the European Union, the federal government is turning its attention to dismantling the protectionist barriers that exist between provinces and cost the Canadian economy as much as $49-billion annually.

The federal Industry Minister recently did a cross-country speaking tour Tuesday to drum up support among consumers, businesses and provincial politicians for efforts to overhaul the 20-year-old Agreement on Internal Trade.

Interprovincial trade barriers thwart Canadians and companies when they try to do business outside their home province or territory. They inhibit sales of wine, block workers from freely crossing provincial boundaries and restrict who can bid for government contracts, among other things.

The minister said he would like to see a revised internal agreement that is premised on the idea that all internal trade should move freely with only exceptions to this rule being listed.

"Rather than saying this particular product or this particular kind of labour or resource can freely move around the country, I think the default position should be [to] liberalize all trade within Canada."

www.ddinews.gov.in

NASA launches carbon-tracking satellite

IEEE Spectrum - It's been a rough birthing process for NASA's Orbiting Carbon Observatory (OCO) satellite program, which promises global tracking of carbon dioxide entering and leaving the atmosphere at ground level. Five years ago the first OCO fell into the Antarctic Ocean and sank, trapped inside the nose cone of a Taurus XL launch vehicle that failed to separate during launch. The angst deepened when NASA's Jet Propulsion Laboratory (JPL) scrubbed a first attempt to launch a twin of the lost $280-million satellite, OCO-2, after sensors spotted trouble with the launch pad's water-flood vibration-damping system less than a minute before ignition.

But OCO's troubles are now history after NASA successfully launched the satellite from Vandenberg Air Force Base in California on July 2.

OCO-2's contribution will be better intelligence on natural sources and sinks for CO_2.

"Scientists currently don't know exactly where and how Earth's oceans and plants have absorbed more than half the carbon dioxide that human activities have emitted into our atmosphere since the beginning of the industrial era," said David Crisp, OCO-2 science team leader.

OCO-2 will collect more than 100,000 measurements of CO_2 concentrations per day beginning in early 2015. It will also monitor plant growth and health by tracking fluorescence given off by plants as they photosynthesize and take up carbon dioxide.

Genomic tools offer vision of a cleaner mining industry

Vancouver Sun - A few key microbes are on the verge of becoming key players in BC's mining industry. Engineering professor Sue Baldwin has spent much of the past 15 years farming various combinations of anaerobic bacteria that have the ability to consume or remove heavy metals from mine tailings.

Tailings are ground up rock and chemical pollutants left over from the extraction of metals from ore. Baldwin has her toes in the water of several important cleanup projects, including the Teck Resources smelter near Trail, the Imperial Metals Mount Polley Mine and analysis of the selenium-contaminated run off from coal mine waste in the Elk Valley.

Imperial Metals has been operating a 450-litre-a-minute anaerobic biological reactor at Mount Polley since 2009, according to project engineer Luke Moger. The researchers are working to find the optimal environment and combination of microbes in which sulphate-reducing bacteria mitigate acid mine drainage and metal pollution by consuming sulphates in the tailings pond and water that has come in contact with waste rock. This creates sulphides that react with metals in the water to form harmless solids.

The project, now in its second three-year phase, is a partnership between Imperial Metals, Baldwin's lab at the University of BC, and Genome BC, which directs funding to research on the application of genomics in sectors such as health care, forestry and mining, including some of Baldwin's work.

Genomics — the analysis of the complete genetic blueprint of living things — makes it possible to identify individual bacteria or combinations of bacteria that have desirable characteristics, such as the ability to remove metals held in solution.

Genomics is also driving exciting advances in extraction, the process of removing tiny amounts of valuable metal from large amounts of rock.

Bacteria have the potential to extract metals from much lower grade ore or extract metal more completely, potentially without the toxic chemicals necessary in many widely used extraction processes.

News From The Field

UNIVERSITIES AND RESEARCH

http://cjme.com

Ernie Barber, P.Ag., P.Eng.

Ernie Barber named interim provost at University of Saskatchewan

Saskatoon StarPhoenix - Ernie Barber, P.Ag., P.Eng., current managing director of the university's Global Institute for Food Security and a former University of Saskatchewan acting provost, took on the role of interim provost and vice-president academic for the University of Saskatchewan effective July 1.

"It's unsettling to everybody when you have two of your senior leaders change so abruptly," Barber said, adding that he is "not at all reticent" to join the new leadership team.

"I have every confidence that as a team we will be okay and the university will be okay," he said.

Barber, an agricultural engineering professor, has also served as dean of engineering and of agriculture and bioresources at the U of S.

Innocorps Research wins top prize

Saskatoon StarPhoenix - Innocorps Research, a mobile water treatment system for oil service companies, came away with the $50,000 top prize at the Tech Venture Challenge put on by the University of Saskatchewan's Industry Liaison Office (ILO) business plan competition.

"This is really a game changer for us," said Innocorps's Aarya Shahsavar, Engineer-in-Training, who co-founded the company with Alexander Chan and Dawson James.

Innocorps's mobile water treatment system is meant to reduce makeup, hauling and disposal costs in unconventional oil and gas operations by recycling water on site.

"Everyone at the ILO has been very helpful, setting us up and putting us in contact with the right people," Shahsavar said. "And we need to do more of this in Canada and Saskatchewan. Everyone we competed against had great ideas."

http://saskoildirectory.ca/

Saskatchewan R & D spending spotty

Saskatoon StarPhoenix - Is Saskatchewan doing enough innovation and value-added manufacturing and processing? Are we investing enough in research and development (R&D)? Is the province building an economy for the 21st century. These are some of the questions raised by a Johnson-Shoyama Graduate School of Public Policy study released at the Conference Board of Canada's Saskatchewan Forum this week in Regina.

It turns out we aren't doing enough innovation and R&D compared with other jurisdictions and we are more dependent on resource extraction and commodity production than other provinces, even our Prairie neighbours.

But it also turns out that Saskatchewan's economic engines – namely agriculture and extractive industries like mining and oil and gas – are big users and developers of technology and innovation.

Of course, Saskatchewan companies and producers do invest in R&D. Look at zero-till seeding in agriculture, enhanced oil recovery techniques, like horizontal drilling and hydraulic fracturing in the oil and gas sector, solution mining in potash and remote mining technology in the uranium industry. However, the study suggests these investments lag behind other jurisdictions.

New oil sands research chair at U of S

U of S news release - University of Saskatchewan geoscientist Matt Lindsay will help Canada's oil sands industry make sustainable mine closure decisions through a new $1.4-million industrial research chair funded jointly by the federal Natural Sciences and Engineering Research Council (NSERC) and Syncrude.

Over the next five years, Lindsay and a team of students will study byproducts of oil sands mining and processing – such as sand, treated fluid fine tailings and petroleum coke – and analyze changes to these materials after they are used to form reclaimed landscapes.

"Certain materials might behave quite differently when stored under deep soil or water cover as compared to storing them on the land surface," said Lindsay, an assistant professor in the Department of Geological Sciences at the U of S College of Arts and Science.

NSERC and Syncrude, one of the world's largest oil sands producers, will each contribute almost $700,000 for the new Industrial Research Chair in Mine Closure Geochemistry.

Six graduate students and six undergraduate students will receive advanced training through the chair, which involves collecting samples from sites around Syncrude's Mildred Lake facility near Fort McMurray, AB. The samples will be analyzed at U of S facilities, including the Canadian Light Source synchrotron.

University of Regina research grants

U of R news release - Eleven researchers at the University of Regina have received federal funding of $445,350 from the Natural Sciences and Engineering Research Council of Canada (NSERC).

The largest grant - $129,350 - has been awarded to Dr. Dena McMartin, P.Eng. in Engineering and Applied Science to study watershed impacts related to agricultural water and climate extremes.

"What we want to determine is how agricultural water management can be more deliberately managed and linked with climate impacts, regional industrial water needs and management, particularly in Saskatchewan's growth economy, and both animal and human health," explains McMartin.

Funding announced for other projects at the University of Regina include looking at enhanced oil recovery, processes for carbon dioxide capture and separation, and computer animation.

MINING

http://www.paherald.sk.ca/

Public comment opens for diamond project

Rapaport - The Canadian Environmental Assessment Agency opened the period for public comment on the comprehensive study for the proposed Star-Orion south diamond mine project in Saskatchewan. Following this comment period, the Minister of the Environment will weigh the report and all comments from the public and Aboriginal groups before issuing an environmental assessment decision.

The Star-Orion South feasibility study revealed probable mine life of 20 years. Shore Gold estimates total capital cost of $2.5 billion over the life of the mine and an initial capital cost payback period of 5.3 years.

Aecon awarded key mining contracts

Canada News Wire - Aecon Group Inc. announced that it has been awarded approximately $100 million in key mining contracts, to be booked in the second quarter of 2014.

Among them was a contract by K+S Potash Canada for work on its Legacy mining project in Saskatchewan for early cavern development which involves mechanical, electrical, piping and instrumentation work. This work is expected to be complete in the last quarter of 2014.

potashworks.com

Temporary community being built near Bethune

Global News – A new community is being built about an hour west of Regina, but it's only temporary.

K+S Potash is building a camp near Bethune large enough to house 1,470 construction workers developing the new Legacy Project mine.

So far, 360 workers are staying at the facility with the remainder of the rooms expected to be completed and occupied by the end of the year.

"Seventeen hundred workers travelling every day by their own cars would be really dangerous and expensive for roadwork maintenance," said Dr. Ulrich Lamp, president and CEO of K+S Potash Canada.

Each room has its own private bathroom, TV and Internet connection.

However, after the mine is built, the small community will likely be torn down or sold.

The George Gordon First Nation is one of the groups operating the Legacy camp.

"To see a company like K+S step forward and be a part of First Nation involvement in the mining sector . . . the mining sector has been around for many years and we have not been involved," said Hugh Pratt, councillor for the First Nation.

ENERGY

A look into clean coal future at Estevan Energy Expo

Estevan Mercury - At Estevan's Energy Expo, Max Ball, P.Eng., manager of the SaskPower clean coal project, said that with enhanced oil recovery capabilities added to the mix, there was a definite economic model and argument to be made for the carbon dioxide capture project. This is the project that is nearing the completion stage on Unit 3 at the nearby Boundary Dam Power Station.

The fact the official launching of the clean coal project is four months behind schedule was not necessarily a point of concern. Ball noted that the whole program has been planned over an 84 month period, so the delay near the end has not contributed significantly to the $1.35 billion costs for the deal which will be launched by this fall.

He pointed out the concept of developing a post-combustion process to capture noxious substances has been on SaskPower's books for more than 35 years.

Ball said the carbon dioxide gas will be used as an agent to recover more oil from Estevan-area fields that would otherwise be abandoned but which now will be tagged for rejuvenation and increased investment.

Ball said the idea of using the gas to enhance oil recovery was not new as it had been utilized successfully in Texas as far back as the 1980s.

After an unrealistically optimistic initial experiment with carbon capture at the Shand Power Plant, Ball said SaskPower and partners sat down and worked out more concrete numbers and scenarios to come up with a more realistic plan.

This investment in first generation technology was taken carefully, Ball said, but what will emerge will be a completely new Unit 3 at Boundary Dam, capable of capturing all noxious gases while providing about 110 megawatts of electrical power.

"It will be the cleanest coal-fired power plant in the world," said Ball.

Half of the capital cost of the project is attributed to the carbon dioxide capture process while the other half is being spent on the complete overhaul of Unit 3.

He said he expected SaskPower will have come up with a scheme and some initial investment details by the end of 2016 that will allow them to launch a realistic plan by 2017.

US eyes SaskPower clean coal project

Richmond Times-Dispatch - The dream of stripping carbon dioxide from coal – a potential boon for the struggling coal industry – took on new importance last week when the Obama administration proposed, for the first time, regulations requiring power plants to cut carbon emissions.

SaskPower plans this year to operate the world's first large, commercial coal-burning unit that removes the bulk of its carbon emissions.

Whether the technology is affordable is another question. The Boundary Dam project has cost more than $1.2 billion, including a $220 million federal subsidy from Canada.

A new power plant burning natural gas, which releases about half the carbon of coal, can cost significantly less.

At its 1 300-megawatt Mountaineer Power Plant at New Haven, West Virginia, American Electric Power operated the first carbon capture and storage project at an existing coal-fuelled power station.

The Mountaineer facility captured more than 50,000 metric tons of carbon dioxide and stored more than 37,000 metric tons of the gas, according to AEP, the parent company of Appalachian Power, which serves about 500,000 electricity customers in western Virginia.

One of the nation's biggest emitters of carbon dioxide, the power company discontinued the facility's operation in May 2011, saying it had "achieved the objectives that we expected to achieve".

The project's total cost would have been $668 million. "It was one of those things we couldn't take to the next level," said an Appalachian Power spokesman. "It was just economically unfeasible to continue.

Nonetheless, said John Smatlak, vice- president for technical services, for Virginia power company Dominion Generation's "carbon capture is a promising technology, and I believe it's important to the future of coal."

Michael Livermore, an associate professor at the University of Virginia School of Law, an expert in environmental law and cost-benefit analysis, is skeptical. He states that if people say they know when carbon capturing will become economically attractive, or what it will look like in 10 to 20 years, "I think they are just fooling themselves."

OIL AND GAS

Petroleum Technology Research Centre

Regina Leader-Post - Despite having no background in research, former APEGS president Ken From, P.Eng., FEC, FGC (hon.) is, in many respects, uniquely qualified to be the CEO of the Petroleum Technology Research Centre (PTRC) in Regina, a post he took up in January of this year.

"What I can bring to the PTRC is the view of (research) activities from the oil company's perspective," From said.

In fact, From sees his job as pushing the PTRC into doing more and more applied research for the private sector.

From said his background in the public sector also helps him understand how government functions, which is critically important when running a publicly funded research institution.

From's appointment coincides with the winding down of several research projects and the need to develop new clients and new business for the PTRC.

"It's an opportunity for a refocus, a regeneration and a rebranding (of PTRC) as well," From said. "We want to continue to provide more for industry, but not forget our roots."

From sees his approach to the job as going "back to the future" and returning the PTRC to its original industry-driven focus.

"The approach is going to be more applied research. We would like to do more field research and we want to ensure that the research is driven by industry."

URANIUM AND NUCLEAR

http://mi-group.ca/

Sask. residents have positive nuclear power views

CKOM - Despite its highly controversial status, opinions of nuclear power haven't had a meltdown in Saskatchewan, according to a new survey.

The Nuclear Policy Research Initiative at the University of Saskatchewan found 50.3 per cent of 1,355 adults surveyed had a positive impression of nuclear power (compared to 22.9 per cent negative) and four out of 10 thought the benefits outweighed the risks (compared to three out of 10 who thought risks outweighed benefits).

In addition, 56 per cent judged nuclear power as environmentally clean, though they were evenly split on whether it is safe for human health. One in 10 respondents either didn't know or chose not to answer.

Seventy-seven per cent support continued uranium mining in Saskatchewan, while 74 per cent support nuclear medicine.

Where respondents began to waver was on nuclear waste storage. Fifty-six per cent of respondents didn't think waste should be stored in Saskatchewan and 70 per cent opposed storage in their community.

Women, Aboriginals and respondents with lower education levels were more likely to have overall negative feelings towards nuclear power. Men were more likely to be supportive of nuclear power.

Cameco withdraws application for uranium mine

The Canadian Press - Cameco Corporation has withdrawn its application to build and operate a new underground uranium mine in northern Saskatchewan.

The mining company says in a statement on its website that it has also asked the Canadian Nuclear Safety Commission to postpone a hearing scheduled next month into a licence application for the Millennium Mine project.

Cameco cites poor economic conditions in world uranium markets.

The mine would have been located about 600 kilometres north of Saskatoon and was estimated to contain more than 50 million pounds of uranium.

The mine faced opposition from the English River First Nation, but the band dropped a lawsuit last year after accepting a $600-million deal to support wages, contracts and other payments for the band, whose members were expected to work in the mine.

At the time, English River Vice-Chief Marie Black said the deal would help the Dene band become more self-sufficient and less reliant on the federal Department of Aboriginal Affairs and Northern Development.

The Canadian Nuclear Safety Commission says Cameco can still ask for the commission to consider its licence application at a later date, and that the public would be invited to take part.

CORRECTION NOTICE:

On page 26 of the May/June 2014 issue of *The Professional Edge*, the Exceptional Engineering / Geoscience Project Award attribution should read "This year the award recognizes WSP (formerly Genivar) for the Campbell Collegiate underpinning project."

Attention Students:

16 Engineering and Geoscience Scholarships Available

The Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) is pleased to announce 16 annual scholarships to be awarded in the Fall of 2014 at the University of Saskatchewan and the University of Regina.

Entrance Bursaries

These bursaries are aimed at encouraging and assisting high school graduates entering the study of engineering or geoscience. These bursaries are particularly aimed at Aboriginal students who are under-represented in the professions.

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

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

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

Undergraduate Scholarships

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

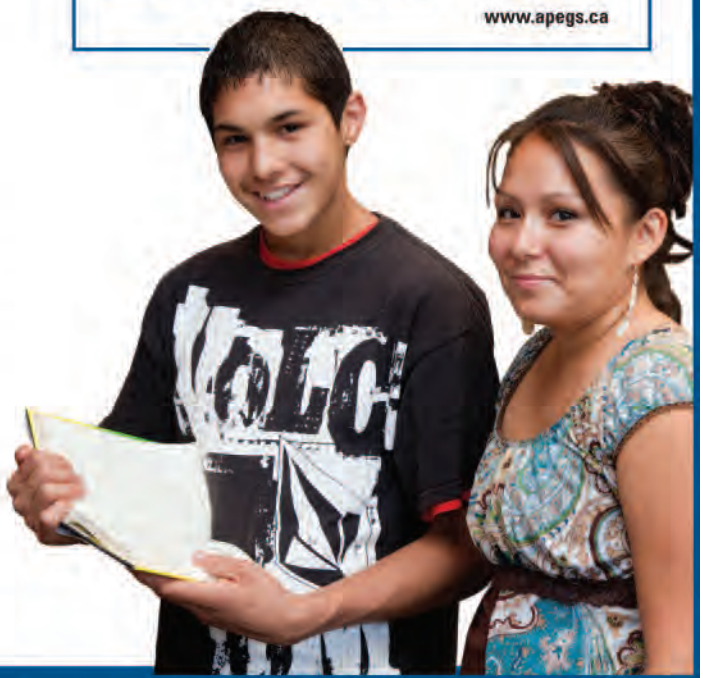
Six scholarships of $1,875 (three for each university) for current students of any field of engineering.

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

Member Grants

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

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



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

The Saskatchewan Science Centre is looking for YOU!

We inspire children every day. Now it's your turn.

Our mission is to ***ignite scientific curiosity and innovation in Saskatchewan communities***. We provide interactive exhibits and a place for children and adults to explore, play, and learn.

As part of our ***Innovators in the Schools*** series, we bring motivated and engaging people involved in science, innovation, and technology together with groups of school children. These speakers will entertain and educate the students about the amazing work that they do and what it's REALLY like to work in science related fields. The children will ask questions like "Why did you become an engineer?" and "What exactly do you do every day?" We need professionals to talk to these children and share their experiences.

Don't be shy. Future generations of Professional Engineers and Geoscientists are in schools right now, and they want to know more about the interesting careers that are available to them when they grow up.

You don't need to be famous. All you need is a passion for what you do and a willingness to share that passion with the future of our province. Can you get a group of kids excited about a future in engineering or geosciences?

For more information, please contact **Kim Mack** at **306-791-7920** or email **kmack@sasksciencecentre.com**.

INNOVATORS IN THE SCHOOLS
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Real science. Real fun!

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Calendar of Events

www.skyscrapercity.com

The New Age of Document Management and Control
August 25, 2014 - Edmonton, AB
August 27, 2014 – Calgary, AB
www.apega.ca/Events/pd.html

2nd Annual Manitoba Building Expo
September 10, 2014, Winnipeg, MB
www.manitobabuildingexpo.com

OCEANS 2014: Oceanic Engineering Society Conference
September 14-19, 2014, St. John's, NL
www.ieee.org/conferences_events/conferences

Infrastructure Asset Management: A Strategic Approach Toward Sustainability
September 22-23, 2014, Winnipeg, MB
www.epic-edu.com/courses.asp

Western Canada Water 2014 Annual Conference and Exhibition
September 22-26, 2014, Regina, SK
www.wcwwa.ca/events/

2014 Canadian Utilities IT & Telecom Conference
September 24-26, 2014, Calgary, AB
www.utccanada.org/sites/ac2014

Warming of the North 2014 Conference
September 28-30, 2014, Ottawa, ON
www.umanitoba.ca/faculties/management/ti/2772.html

Environment of Excellence: Conference of the Canadian Healthcare Engineering Society
September 28-30, 2014, Saint John, NB
www.ches.org/conferences-and-events

GeoRegina: 2014 Canadian Geotechnical Society Annual Conference
September 28-October 1, 2014, Regina, SK
www.georegina2014.ca

Prosperity Through Process Advancements
Metallurgy and Materials Society of CIM
September 28-October 1, 2014, Vancouver, BC
web.cim.org/COM2014/conference

A Balance of Changing Priorities: 2014 Canadian Dam Association Annual Conference and Exhibition
October 4-9, 2014, Banff, AB
www.cda.ca

Negotiating Effectively Seminar
October 15-16, 2014, Winnipeg, MB
stevcon.com/seminars/negotiating-effectively

Tunnelling in a Resource Driven World: Tunnelling Association of Canada 2014 Annual Conference
October 26-28, 2014, Vancouver, BC
www.tac2014.ca

16th Canadian National Conference on Drinking Water
October 26-29, 2014, Gatineau, QC
www.cwwa.ca

Buildings for Tomorrow: Canadian Conference on Building Science and Technology
October 28-31, 2014, Toronto, ON
obec.on.ca/CCBST2014/NEWS

PUBLICATION MAIL REGISTRATION NUMBER: 40034203