The official publication of the Association of Professional Engineers and Geoscientists of the Province of Manitoba

THE KEYSTONE PROFESSIONAL

FALL 2012

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Adam Pawlikewich, P.Eng.

APEGM Conference **Ingenium 2012** and **AGM**

It has been an interesting year and I am very grateful for everyone at APEGM and all of the members with whom I have been involved over the year. As a member, then councillor and now president of APEGM, it is clear that there are a number of activities required for a successful association. Ultimately, those same foundations are required to have a successful career in engineering and geoscience. It seems very appropriate I get to announce that this year's AGM will be the beginning of a multi-day conference – Ingenium – that includes a professional development seminar dealing with topics that are central to our profession. The organizing members have decided to expand the format to more closely match what is occurring in a number of our neighboring provinces, i.e., to have a full-day event outlining some of the topics that are relevant to us as engineers and geoscientists.

Over the course of my articles this year, I have been encouraging members to participate in the profession, and attendance at Ingenium is an excellent way to begin to incorporate yourselves into the professional community. There are four presentation tracks that can be viewed over the course of the day; these include themes about the profession, the workplace, practice within the province, and, finally, your personal career.

> It becomes clear that the role of all professions within society is to ensure that the public is well served. The best way to accomplish this is to always strive for excellence within the profession, but also to give back to the profession and to the public.

As I look through the topics to be presented over the day, it strikes me that a number of these topics are common discussions around the coffeepot at the office, as well as topics of significant discussion around the Council table over the course of the year. So, please, take the time to review the topics and register for Ingenium.

If there are segments of the day that strike a chord with you, please continue the discussion over the year with other members in your circles. Get involved with APEGM in many of our other activities and speak with other professionals in other areas about the challenges and interests in the profession of engineering and geoscience. Through this discussion, we can hopefully get ourselves more in tune with the profession and the public and move into the role of valued advisors on topics of applied science/ engineering.

I began my career as an engineer thinking of the profession in terms of the job at hand. Over the course of the years, and especially this year as president, it becomes clear that the role of all professions within society is to ensure that the public is well served. The best way to accomplish this is to always strive for excellence within the profession, but also to give back to the profession and to the public.

I encourage everyone to participate in our APEGM conference: Ingenium 2012, as well as to act as an advocate for engineering as one of the core professions in our society. Thanks to all for the great year, and good luck to Dawn as president in the upcoming year.

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Grant Koropatnick, P.Eng., Executive Director & Registrar

Manitoba Moving Forward – **Ingenium 2012**

Economies around the world have been experiencing setbacks: Ireland, Greece, Spain and others. However, in Canada, we have been doing okay in the face of global downward pressure. I was on a long flight across the US in July, on my way to a professional development conference. I took along a copy of *The Economist*. If you have never picked up a copy of this magazine, I highly recommend it. It is a weekly publication that includes the latest news stories from the US, the Americas, Asia, China, Europe, the Middle East and Africa. Also included are sections covering business, finance, economics, science, technology, literature and the arts. Admittedly, I am not a voracious reader, and a weekly publication would pile up at the front door waiting for my attention. However, the July 14 edition caught my eye, as it featured the American economic recovery. It proved to be a quick study of the facts and details pertinent to the American economy and it gave me some insights into the situation south of the border.

Here in Canada, the provinces of Saskatchewan, Alberta and Newfoundland & Labrador are leading the country, but Manitoba is following closely. Check the economic indicators and you will find that we are definitely moving forward with positive numbers. The Survey of Major Economic Forecasters projects that the Manitoba gross domestic product (GDP) will grow 2.4% in both 2012 and 2013. Statistics Canada estimated that Manitoba's real GDP increased by 1.1% in 2011, following a 2.2% increase in 2010. Manitoba has the second best average annual growth over the last five years (2006-2011) at 1.9% and is ahead of Canada's 1.2%.

Now, I am not an economist, but it's clear to me that our situation is a lot better than most. Our country (and, in particular, the western region) is benefiting from high-demand natural resources, a reliable workforce and continuing investments in new technologies and innovation, brought about by engineers and geoscientists. This has become the theme of our professional development conference: *Ingenium 2012 – Moving Forward*.

New PD conference

A year ago, APEGM Communications & Event Coordinator Angela Moore and I were looking for ways to improve participation in the annual meeting. We were looking at speakers, topics, and various ideas for increasing the overall content value. It became obvious that there is vast experience among our APEGM members for delivering highly interesting, concise sessions. What if we asked members to present on their areas of expertise? Could we put together a program that would feature both local speakers and a few out-of-towners, speaking on topics relevant to all? Our conclusion was – let's give it a try! Ingenium was born.

Ingenium 2012

A full-day of professional development sessions is planned, in addition to the AGM business meeting and other events. It is called Ingenium 2012. If you Google the word 'ingenium,' you will find the Latin root word for engineering, meaning 'natural capacity or invention.' There are some fascinating speakers presenting topics on four concurrent tracks during the conference. These include (i) Moving Forward in our Profession, (ii) Moving Forward in your Workplace, (iii) Moving Forward in our Province, and (iv) Moving Forward in Your Personal Career. In addition to the plenary speaker Minister Steve Ashton, here is a sneak preview of what is coming:

- Do Engineers Really 'Rule the World?'
- Engineering Advocacy.
- Women in Engineering: Moving into the Future.
- Management, Motivation and Psychology in the Workplace.
- ABCs of PENG and PGEO.

Sign up today

APEGM wants you to attend Ingenium 2012. The goal for the conference is threefold: (1) networking with other professionals, (2) learning from speakers, and (3) connecting with your professional community. The conference is designed to be a forum where Manitoba engineering and geoscience professionals gather annually as a community to share ideas, learn the best techniques, gain insights on the latest technologies, and be inspired by others. Sign up today and tell your co-workers about Ingenium 2012.

Other events

Other events during AGM week include: New Members Luncheon and Certificate Presentation, Recognition Wine and Cheese Reception, Annual General Business Meeting, Partner Programs, and the very popular Awards Gala Dinner & Dance. Do not hesitate in purchasing your tickets – all events are expected to sell out quickly.

One more thing: remember our new slogan: *My life's work, makes life work better.*

Your feedback is invited and always welcomed. If you have any thoughts on anything you read in the *Keystone Professional,* please email me at *gkoropatnick@apegm.mb.ca*

End note

Manitoba Economic Highlights, Manitoba Finance – Economic & Fiscal Analysis Branch, published June 14, 2012.

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Catherine Karakatsanis
Appointed as Engineers Canada President

Engineers Canada is pleased to announce the election of Catherine Karakatsanis, M.E.Sc., FEC, FCAE, P.Eng., as its president for 2012-2013. Ms. Karakatsanis will lead the Engineers Canada Board, as it works with the engineering profession's constituent associations across Canada, representing over 250,000 members of the engineering profession. Engineers Canada will continue collaborating with the profession's leadership to build a stronger engineering profession and to increase Canadian's awareness of the role of engineering and engineers in society.

Ms. Karakatsanis has had a diversified career with extensive engineering and management experience. She joined the consulting engineering and management firm Morrison Hershfield in 1989; is currently the executive vice-president of the Building, Technology and Energy Global Business Unit; and has been a director on the firm's Board since 2005.

Ms. Karakatsanis obtained her undergraduate and master's degree at the University of Western Ontario. She has actively volunteered in the engineering community for over two decades, serving as president and chair of Professional Engineers Ontario and president and chair of the Ontario Society of Professional Engineers. She is currently on the Board of Engineers Without Borders, and strongly believes in the importance of engineering students and young engineers being involved in the profession. She brings her passion for ensuring that the next generation of engineers are equipped to face the engineering challenges of the future through her involvement on the Board of the Canadian Engineering Memorial Foundation and as the chair of the University of Western Ontario's Faculty of Engineering Advisory Council.

Catherine Karakatsanis will be joined by the following members of the Executive Committee:

President-Elect Jim Beckett, FEC, P.Eng. (APEGA);
Past-President Brent Smith, FEC, P.Eng. (Engineers and Geoscientists New Brunswick);
Zaki Ghavitian, FIC, ing. (OIQ);
Digvir Jayas, FEC, P.Eng. (APEGM);
Diane Freeman, FEC, P.Eng. (PEO); and
Engineers Canada's Interim Chief Executive Officer and Chief Operating Officer Marie Carter, FEC, P.Eng.

They, along with the other Board directors and advisors, will be supported by the Engineers Canada staff in Ottawa.

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Contact the Engineers Canada National Scholarship Program:
awards@engineerscanada.ca

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Engineers Canada is the business name of the Canadian Council of Professional Engineers.
*The term ENGINEERING is an offical mark held by the Canadian Council of Professional Engineers.

Engineering PHILOSOPHY 101

M.G.(Ron) Britton, P.Eng.

The Education/Practice Continuum

Engineering education in Canada operates under regulations that have been developed and are administered by the profession. Current regulations are set out in the *2011 Canadian Engineering Accreditation Board Accreditation, Criteria and Procedures*. In this document, under the heading Purpose of Accreditation, there are two definitive statements that are worth examining.

In reference to the intended purpose, the document notes that accreditation assures that graduates are "*. . . academically qualified to begin the process to be licensed as professional engineers . . .*". However, it goes further to state that: "*The engineering profession expects of its members competence in engineering as well as an understanding of the effects of engineering on society.*" Clearly, this latter note goes well beyond graduation, in that it provides a statement of the context in which academic qualifications, the specific target of the accreditation process, will ultimately be applied. It also infers that program content should go beyond technical competence.

In considering these definitive statements, there are three key words that deserve attention; 'qualified,' 'competence,' and 'understanding.'

My *Oxford Dictionary* suggests that the word 'qualify' (or 'qualified') is a verb that means, "*meet the necessary standard or conditions to be entitled to or eligible for something;*" or "*become officially recognized as a practitioner of a profession or activity, typically after study and passing examinations;*" or "*make competent or knowledgeable enough to do something.*" Essentially, if one meets specified requirement, one is 'qualified.' Becoming 'academically qualified' simply notes a specific condition that must be met.

The noun 'competence' simply means being competent. However, the adjective 'competent' presents three different possible definitions; "*having the necessary skill or knowledge to do something successfully;*" or "*satisfactory or adequate, though not outstanding;*" or "*having legal authority to deal with a particular matter.*" So, being competent requires the capacity to do the job properly, to meet minimums, and to comply with the law. Competence, in itself, does not set the bar very high.

Finally, the noun, 'understanding' relates to "*the power of abstract thought, intellect;*" or "*an individual's perception or judgement of a situation;*" or "*sympathetic awareness or tolerance.*" As a verb (understand), it means "*perceive the significance, explanation, or cause of;*" or "*interpret or view in a particular way;*" or "*infer from information received;*" or "*assume that (something) is present or is the case.*" This takes us beyond being 'good enough,' and also raises the bar of responsibility. It implies the need, and the ability, to assess the impact of a project, not just its adequacy. 'Understanding' is a measure of professionalism that takes us beyond 'competency.'

Here, in Manitoba, and in many other jurisdictions, associations have introduced, or are introducing, programs to assure the continuing competence of members. Given that 'competence' relates to specific skills, and given that technology is constantly changing, maintaining one's 'competence' really boils down to keeping current. The process is documentable and, if necessary, testable. There is an ongoing (never ending?) debate regarding the need for an association-driven program, since keeping current is a synonym for staying employable. Unfortunately, in these litigious times, the associations are being called upon to 'prove' that we, the members, are complying with the need to remain 'competent.'

The Continuing Professional Development (CPD) program is APEGM's response to the external demand for 'proof.' A Continuing Competency Committee (CCC) has been tasked with structuring and administering the CPD program, and it decided, based on legal opinions, that maintaining a record of 'update' activities would be adequate, thus the tables on the Members Website. The process is still being refined, but complying is neither onerous nor invasive. It is simply a record of what most of us do anyway.

The three key words, 'qualified,' 'competence,' and 'understanding,' taken from the CEAB document, are, in effect, foundational to our profession. Initially, we need to obtain an education that provides us with fundamental technical and analysis skills in order to become 'qualified.' We need to maintain, update, and expand upon those initial technical skills to remain 'competent' (with or without the CPD program). We also need to develop an in-depth 'understanding' of the impacts, both current and potential, of the products and systems we design.

In my view, 'competence' relates to dealing with technical/physical/operational details adequately. 'Understanding,' on the other hand, suggests a maturity of judgement well beyond technical specification.

Is it fair to suggest that 'competence' is most critical after the problem has been defined, but 'understanding' provides the breadth of view upon which go/no go decisions should be based? Is it fair to assume that 'understanding' is the key to being a true professional?

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Thoughts on Design
Is it What Engineers Do?

M.G.(Ron) Britton, P.Eng

The pending accreditation visit here on campus has drawn my attention to the recently revised 2010 Canadian Engineering Accreditation Board (CEAB) requirements for undergraduate programs. Basically, this document presents the profession's view of the educational standards necessary for entry into the profession.

Engineering education provides the foundation upon which professional careers can/will develop. Therefore, it follows that the Accreditation document provides not only a specification for the academic programs that will qualify graduates to enter our profession, but also a *Coles Notes* view of the fundamental elements of the profession we practice.

Given my biases, I had hoped to discover a new, all-encompassing definition of engineering design. However, for me, at least, in spite of the considerable effort that has been expended by members of the Board, there remains a lack of clarity regarding the definition of this fundamental engineering activity.

As noted in this column in the winter 2011 edition, the Board has defined a list of 12 Graduate Attributes they see as necessary in a proper Engineering Education program. One of the Graduate Attributes is design, which they define as: "*An ability to design solutions for complex, open-ended engineering problems and to design systems, components or processes that meet specified needs with appropriate attention to health and safety risks, applicable standards, and economic, environmental, cultural and societal considerations.*" Or, put another way, design is design, with numerous externally imposed constraints. Depending on your point of view, one could argue that the restriction to 'engineering problems' implies that the larger problems, or needs, are defined before engineers become involved. If the words 'create' or 'produce' were substituted for 'design,' the definition would at least be less circuitous and involvement in problem definition might be implied. However, as it exists, this definition boils down to producing something, probably physical, within a list of externally specified constraints, in response to a need defined by others.

About five pages later, a second definition is presented: "*Engineering design integrates mathematics, natural sciences, engineering sciences, and complementary studies in order to develop elements, systems, and processes to meet specific needs. It is a creative, iterative, and open-ended process, subject to constraints, which may be governed by standards or legislation to varying degrees depending upon the discipline. These constraints may also relate to economic, health, safety, environmental, societal or other interdisciplinary factors.*" While this suggests broader responsibilities, and adds a list of 'tools,' it really does not add much to the first definition. Creativity is acknowledged, but the implication remains that design is simply the assembly of the physical parts necessary to meet some externally defined need.

In spite of the vagaries of definition, the ability to 'design' is, in the minds of most engineers, considered to be a fundamental engineering competence. But few of us, when pressed, can suggest improvements to the CEAB definitions. Wikipedia, one of today's most referenced information sources, admits to the void when it suggests that, "No generallyaccepted definition of 'design' exists, and the term has different connotations in different fields." My Thesaurus identifies design as "the act of working out the form of something." Maybe I should just accept the Wikipedia cop out, tie my wagon to the Thesaurus definition, stop pondering abstractions and get on with the job.

The problem is determining when and where the process starts and ends. If design is simply creating solutions to technical problems posed, and constrained, by others, it becomes procedural, at best. Solutions, like answers, are question dependent.

Both CEAB definitions suggest, to me at least, that 'design' is a verb. That, at least, is encouraging. However, reluctantly, at the present time, I think *Wikipedia* has summed up our current reality. As well, reluctantly, I think that most people are willing to settle for the *Thesaurus* definition. As long as this persists, engineering will remain either an afterthought or a legal requirement for most projects.

However, I believe engineering design is something we do in a manner that is unique to our profession. I believe it should be done in response to a need, not a constrained question. I believe, in the process of design, we should at least share the responsibility of defining the problem and, thereby, influencing the solution. I believe design is not only sizing the parts of a solution, but creating the 'environment' in which those parts can function properly and effectively. I believe design should be an input from concept to renovation.

If my beliefs are to be realized, each of us must maintain a deep, current technical and theoretical knowledge of our particular field, supplemented by a breadth of understanding that facilitates cooperation with others.

Design, in its broadest creative sense, should be what engineers do, before and after, the technical details need attention.

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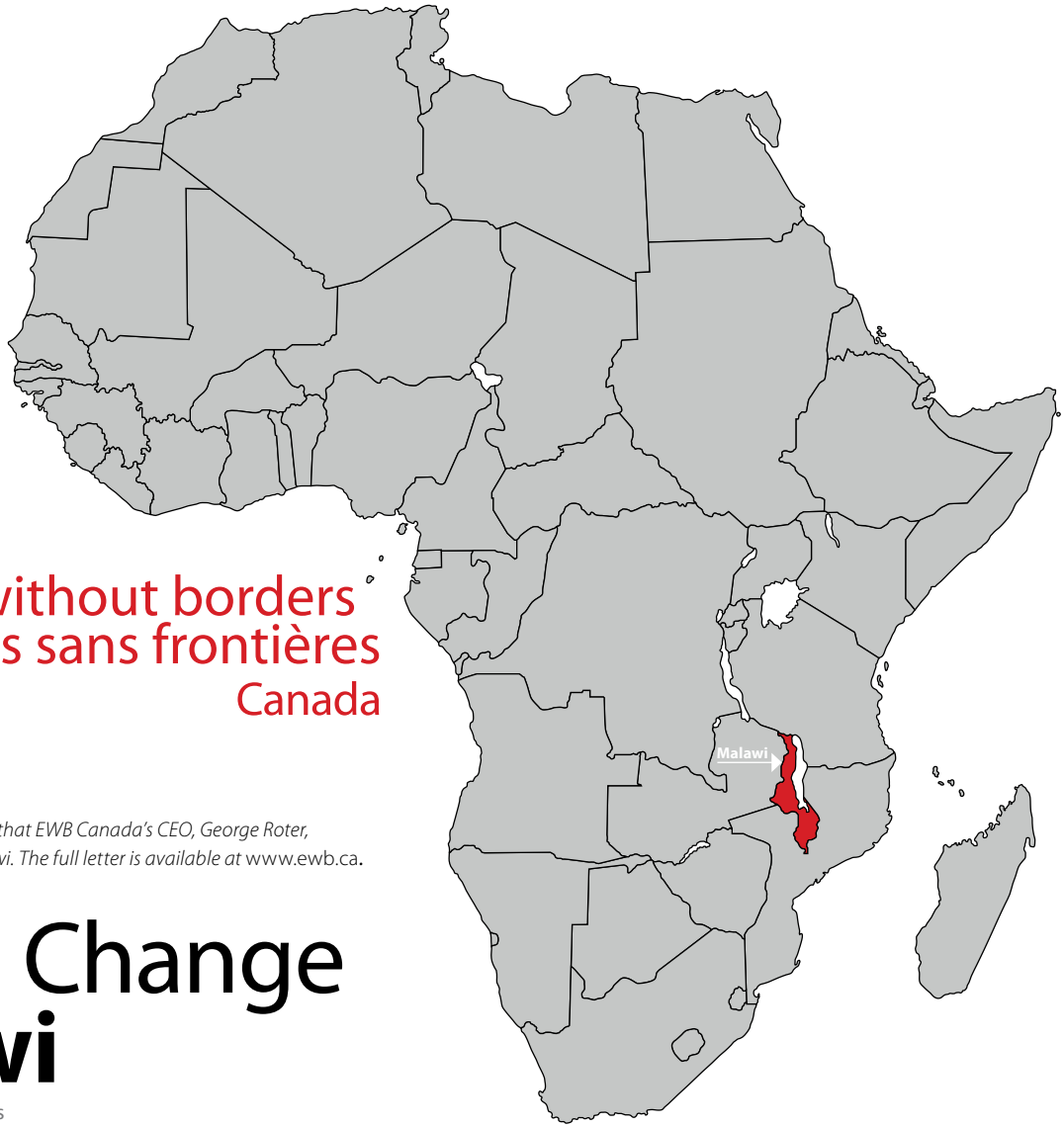

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In this issue, we will share some experiences that EWB Canada's CEO, George Roter, wrote in a letter after his recent trip to Malawi. The full letter is available at www.ewb.ca.

Systemic Change in **Malawi**

Submitted by Engineers Without Borders

My goal was to visit EWB's water and sanitation venture (WatSan for short), and to see the progress being made first hand. Over the coming week, I would spend a few days at each level of the 'the system' – village, district and national levels – spending time with government, NGOs and citizens.

I have shared a story below that is representative of what I saw, but I will ruin the ending by starting with the two biggest conclusions from my time in Malawi.

First, EWB's water and sanitation venture is having a transformative effect on the country. We have a great reputation and a lot of influence at every single level of the system. We have incredible cumulative 'wisdom' about how systemic change will happen in Malawi and are able to put it into practice.

Second, I am tremendously optimistic about the pace of change in the country, and I am ecstatic to see that it is being driven by Malawian champions in the field, at local and national governments, and within NGOs. Together, they will ultimately realize a Malawi where there is clean water and improved sanitation for all Malawians.

Experiences that Lead Me to These Conclusions

A full 24 hours after arriving, I was in a village in Chisitu repairing broken water pumps, eating corn porridge (locally called Nsima) by the light of a solar LED lantern, and taking bucket showers. All of my trips are like this, and all of our volunteers and African program staff (APS) live this way. They gain an appreciation for how rural Malawians experience water and sanitation services, and what is important to them – these are the people who we are ultimately serving.

I soon found myself on the back of water monitoring assistant Medson Bwezani's motorcycle to meet Emmanuel, an 'area mechanic' in the Chisitu area of Mulanje

click HERE to return to table of contents

district, whom we found waiting for us in the shade of a large tree.

Emmanuel is amazing. He is a jack of all trades – a welder, painter, farmer, and an area mechanic for boreholes. "Why are you an area mechanic?" I asked. "It's the right thing to do for the communities in the area," he responded, with a big smile beaming back at me.

Then off he took us to service a borehole that had been broken for about six weeks. This meant that for the past six weeks, women and girls in the village served by this water pump had to walk twice as far to gather water from another village.

Despite this borehole not being fixed, a lot was going right. There are 25 area mechanics, like Emmanuel in Mulanje, who get incredible support from water monitoring assistants like Medson. They understand the problems that the mechanics face (like communities not being willing to pay for repairs), and are working to find innovative solutions. A lot of this can be traced back to EWB's work over the past year.

Success in Mulanje, and EWB's Role

Last June, Sydney Byrns (a volunteer on our WatSan team) was working in Mulanje alongside Chrispine Songola, an amazing district water officer. District water officers are the technocratic government heads of water and sanitation in districts like Mulanje. Sydney was helping him make better decisions and manage and coordinate an enormous set of projects funded by outside donors, including a large NGO funded project to set up an area mechanic network.

EWB had been working with area mechanic networks in Malawi for a few years, and we had even partnered with the same NGO on a similar project in the nearby Zomba district. The project in Zomba was set up in a way that meant limited involvement from the district government, which is a problem – the district government is supposed to be providing services after the NGO has gone.

Mr. Songola described how he and Sydney prepared together for the initial meetings with the NGO. He was animated as he told me about his ultimatum: that the district government would not accept this project unless it was in the driver's seat. Think about that – he was ready to say "no" to the money in order to ensure it was done right. That is incredibly rare, and it was amazing to hear from Mr. Songola, a true champion for change!

After negotiations, the NGO agreed that the district would be responsible for managing the area mechanic network, including ongoing training and support, reporting, and strategic planning.

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The project is successfully underway. A total of 25 area mechanics were trained by the district government staff in December 2011, and some great innovations are already emerging, e.g., having area mechanics and local spare parts suppliers support each other's business activities.

Linking Success in Mulanje to Systemic Change

Sydney is in charge of EWB's contribution to changing how operations and maintenance is done in the entire Malawi WatSan sector – true systemic level change. So, she is using her experience and success in Mulanje to influence similar interactions with NGOs in another few districts. She is also translating these experiences and lessons to the national level.

Because of successes like Mulanje and other districts, EWB has been invited to join a national working group of leading NGOs and top-level government officials. Being part of this group will allow us to partner with government champions in order to bring field level learning and best practices to national level discussions. We will be able to advocate for the mindset and policy shifts that will result in a stronger and clearer role for district governments in operations and maintenance of rural water infrastructure.

This is not just wishful thinking. Toward the end of my week in Malawi, I put on a tie and attended successive meetings with senior government and NGO officials, hearing them say things like "we need to work with you," "come into my office anytime so that we can strategize," and "we want your experience from the field."

Conclusion: an Inspiring Trip, Remarkable Progress

You can see why I am leaving Malawi so inspired about EWB's investment in our water and sanitation venture. They are not working at the level of installing one or two, or even a hundred water pumps or latrines, nor are they going to go around district-by-district to set up 28 new area mechanic networks or to support 28 district water officers.

Instead, they are integrated at every level of the system, measuring their success in progress toward sustainable change – in the way that decisions are made and strategies are formulated country-wide. They are creating incredible change by finding human leverage points.

On this trip, I saw a glimpse of how all of this is fitting together, and having a cumulative impact that is literally changing the way things are done. There is a great deal still to do, and it may still not work (they are, after all, trying to transform an entire sector in a country of 15 million people), but I cannot help but come away with great optimism.

With optimism and support for incredible Malawian champions of change,
George Roter,
Co-founder & CEO,
Engineers Without Borders Canada

Local Chapter News

EWB Winnipeg City Network is planning to host the Western Retreat from October 19-21. This retreat is an excellent opportunity to learn about EWB in depth, develop leadership skills, and network with others interested in development and related issues.

As always, consult our webpage at *winnipeg.ewb.ca* for the latest news and events information, or the Engineers Without Borders Winnipeg City Network Facebook page.

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Dr. Price will receive the Distinguished Alumni Award from the University of Manitoba Alumni Association Inc. during the Homecoming 2012 Alumni Dinner on September 15.

Dr. Price is a leader in Manitoba's manufacturing industry, an active contributor to the U of M community, and a tireless supporter of the Faculty of Engineering. We are delighted that he is receiving this award and are very proud to call him one of our own.

Jonathan Beddoes, PEng, PhD, Professor and Dean

Please join us as we honour Dr. Price at this year's Homecoming Alumni Dinner.

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NATIONAL POST

By Peter Koven, July 20, 2012

In Mining Sector, Projects Live or Die on Word of Independent Geologists

When Barkerville Gold Mines Ltd. told investors a few weeks ago that its British Columbia-based project held the potential to cough up 90 million ounces of gold, the first reaction from industry insiders was disbelief. After all, the legendary Timmins gold camp has produced about 70 million ounces, and less than 100 million ounces are produced globally each year.

Their second reaction was more of a question: *Who the heck calculated those numbers?*

It turned out they were derived by Peter George, a veteran geologist with Geoex Ltd. The British Columbia Securities Commission (BCSC) has since intervened with many concerns about his work on Barkerville's Cow Mountain project, and the company remains a penny stock, as investors have little confidence in its stated resources. The stock spiked from 81¢ to as high as $1.67 after the report came out, but has since dropped to 77¢.

QPs are regulated and have to abide by a general set of rules, just like in accounting, law or any other profession. And, just as in other professions, they often have to exercise their personal judgment.

Aside from providing yet another reminder about the perils of investing in junior miners – especially when metal prices are floundering – Barkerville has turned the spotlight on the independent geologists who are hired by miners to analyze drilling results and confirm the metal content of their deposits. These individuals, called qualified persons or QPs, have little to no contact with investors, but have an enormous impact on whether mining projects get developed and how they are perceived in the market. They also have a lot of leeway in how they interpret data, which can sometimes lead to projections that are far too enthusiastic or – less often – too cautious.

The QP is a key cog in National Instrument 43-101, the series of mining disclosure rules that were introduced in Canada after the Bre-X scandal. The idea behind 43-101 was to improve investor confidence by forcing mining companies to meet very specific guidelines when reporting reserves and resources.

The QP provides independent verification of a company's data. A miner cannot report a 43-101-compliant resource estimate for a deposit until a QP has pored over and vouched for the drill results. The resulting technical report is one of the most crucial documents a junior mining company produces, because it has that independent seal of approval. There is no reason for QPs to be anything but honest, since they only receive a fee however the report turns out.

"When they were putting together 43-101, they looked at the experience in Australia and other places and realized that the insertion of the Qualified Person was the linchpin to this whole thing," said Greg Ho Yuen, a partner in Fasken Martineau's global mining group.

QPs are regulated and have to abide by a general set of rules, just like in accounting, law or any other profession. And, just as in other professions, they often have to exercise their personal judgment. No two mining properties are exactly the same, and some QPs are simply more aggressive than others. Two QPs could come up with different interpretations of the same data without doing anything blatantly wrong.

Sometimes, it simply comes down to the parameters a company is using. Take Endeavour Silver Corp. The Vancouver-based miner recently acquired a mine called El Cubo from AuRico Gold Inc. and this week released its own QP-approved report on the mine's reserves and resources. The decline from AuRico's numbers was startling: Silver and gold reserves plummeted by 62% and 65%, respectively, while resources fell 55% for silver and 64% for gold.

AuRico's figures weren't wrong, but Endeavour used much more conservative estimation parameters than AuRico, and focused on higher-grade material. The decline in reserves and resources was not treated as terrible news, and Endeavour's shares actually rose on Monday after the report came out. All the same, some investors were stunned by the magnitude of the drop between two independently verified resource estimates.

"We took a hard look at what we felt was mineable vis-a-vis reserves, and we also felt it very important that this operation make more money than it was. For us, that simply meant focusing on grade," chief executive Bradford Cooke said on a conference call.

Occasionally, a QP will do something far out of the ordinary, such as using overly optimistic metal price assumptions, or deriving a huge amount of reserves and resources with limited data to back up such assertions. When that happens, the company gets a call from the regulators.

The example getting the most attention these days is Barkerville. Six years ago, the indicated gold resource at Cow Mountain was

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calculated at 431,000 ounces. In late June, Mr. George calculated that there were 10.6 million ounces. He further estimated that the geological potential of the project was 65 million to 90 million ounces. If those numbers are accurate, Barkerville is sitting on one of the greatest gold finds in Canadian history.

"If you plotted these reports in terms of quality and in terms of reliability, you will find a bell curve. And this guy is above the 99th percentile in his optimism," said Henrik Thalenhorst, a veteran geologist at Strathcona Mineral Services Ltd.

This is not the first time Mr. George has been in the spotlight. In 2010, he worked on a resource estimate for Rubicon Minerals Corp. that was restated lower after regulators intervened. He also provided a bullish assessment of the Bruce Channel deposit in Ontario, which Goldcorp Inc. eventually acquired for $1.5-billion.

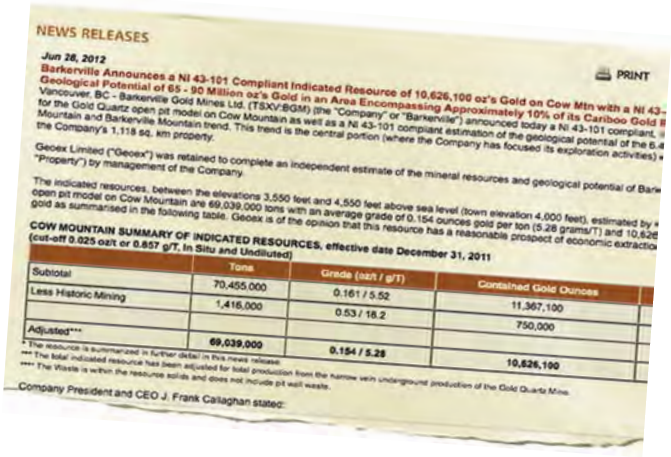
While he runs his own small firm, some miners hire QPs from large consulting firms to verify their data. These firms have their own peer-review process to analyze results and avoid anomalies. In some cases, they may use more than one estimating geologist for a 43-101 report.

Looking beyond outliers such as Barkerville, Mr. Thalenhorst worries more generally that QPs can be influenced by pressure from the mining companies, which naturally want the best possible results and may encourage people to look at data a certain way. "Particularly a younger person can be affected by that," he said.

Some QPs say they are under pressure to deliver numbers clients want.

Robert Holland, chief mining advisor at the BCSC, said the commission gets feedback from QPs who say they are under "tremendous" pressure to deliver the numbers clients want. It is an inherent conflict of interest in the system. More broadly, he thinks junior mining disclosure has become more aggressive in recent months as companies slog through a rough bear market.

"They're competing with everyone else for scarce resources. And so maybe they figure they can get an advantage by being a little more aggressive," he said.



NEWS RELEASES

Jun 28, 2012

PRINT

Barkerville Announces a NI 43-101 Compliant Indicated Resource of 10,626,100 oz's Gold on Cow Mtn with a NI 43-
Geological Potential of 65 - 90 Million oz's Gold in an Area Encompassing Approximately 10% of its Cariboo Gold B

Vancouver, BC - Barkerville Gold Mines Ltd. (TSXV:BGM) (the "Company" or "Barkerville") announced today a NI 43-101 compliant, i
for the Gold Quartz open pit model on Cow Mountain as well as a NI 43-101 compliant estimation of the geological potential of the 6.4
Mountain and Barkerville Mountain trend. This trend is the central portion (where the Company has focused its exploration activities) o
the Company's 1,118 sq. km property.

Geoex Limited ("Geoex") was retained to complete an independent estimate of the mineral resources and geological potential of Bark
"Property") by management of the Company.

The indicated resources, between the elevations 3,550 feet and 4,550 feet above sea level (town elevation 4,000 feet), estimated by
open pit model on Cow Mountain are 69,039,000 tons with an average grade of 0.154 ounces gold per ton (5.28 grams/T) and 10,626
gold as summarised in the following table. Geoex is of the opinion that this resource has a reasonable prospect of economic extraction

COW MOUNTAIN SUMMARY OF INDICATED RESOURCES, effective date December 31, 2011
(cut-off 0.025 oz/t or 0.857 g/T, In Situ and Undiluted)

	Tons	Grade (oz/t / g/T)	Contained Gold Ounces
Subtotal	70,455,000	0.161 / 5.52	11,367,100
Less Historic Mining	1,416,000	0.53 / 18.2	750,000
Adjusted***	69,039,000	0.154 / 5.28	10,626,100

* The resource is summarized in further detail in this news release.
** The total indicated resource has been adjusted for total production from the narrow vein underground production of the Gold Quartz Mine.
*** The Waste is within the resource solids and does not include pit wall waste.

Company President and CEO J. Frank Callaghan stated:

CNW Group/AuRico Gold Inc.

Of course, sometimes a QP simply gets things wrong. Mr. Thalenhorst provides a theoretical example: Imagine there is a drill intercept of 10 metres, with two metres of 5% copper and eight metres of 0.1% copper. The average grade works out to 1.08%. If a copper cut-off grade of 0.5% is used in the resource estimate, the entire 10-metre intercept might be included by utilizing the 1.08% average, even though just two metres are above the cut-off. While that seems ridiculous to even the most untrained eye, he said it is the kind of thing that sometimes happens.

If QPs do make mistakes, they are referred to their professional associations. Class-action lawyers are also on the prowl for miners that report numbers way out of line. Put together, these factors keep the system functioning reasonably well.

But, for investors, the message is obvious: QPs may be professional geologists, but their word is not the last word. Like many other aspects of 43-101, QPs build investor confidence without being any kind of perfect solution. ⊕

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Too often, engineers focus on upgrading technical skills, when greater success will come from improving 'soft' skills, such as writing persuasively, giving engaging oral presentations, and running efficient meetings. These are skills you may not have learned at university, but they are the skills that will differentiate you from the rest. These abilities will take you from crunching numbers in the back room to delivering messages to customers in the Boardroom. These are the skills that will make you an engineering professional.

In this fast-paced global world, engineering services are becoming a commodity that can be purchased when needed. This is one reason that consulting and contracting have become so prevalent in the engineering fields. Engineers can no longer only be proficient in their specific field of engineering; they also need to be able to positively contribute to making their services successful – everything from developing proposals, to presenting plans to prospective clients, to developing follow-on work.

Recent graduates can expect to change jobs eight to 10 times in their lifetime. That was not the case for many of the vice-presidents, veteran engineers or mentors currently in engineering. In today's economy, even engineers will have to 'reinvent' themselves to remain desirable and employable. Your skills, both technical and non-technical need to be current.

> "Do you have the 'professionalism' required to represent yourself and your firm?"

Here are some questions you should ask yourself:

1. Am I comfortable presenting information to a group?
2. Do I know how to write a persuasive proposal?
3. Do I fear conflict or understand how to harness it?
4. Can I multi-task and manage my time well?
5. Does technical writing come easy for me?
6. Do I look forward to meetings and know how to make them productive?
7. Can I express my ideas in a clear, concise and complete manner?
8. Can I identify different personalities in a team and work coherently with all types?
9. Do I handle stress well?
10. Can I recognize and emulate qualities of leaders?

The Center for Technical and Engineering Leadership™ (CTEL) is focused on providing engineers and technologists with the skill set they need to advance their careers. Using our proprietary Engineering Core Competency Matrix™, we assess the participant's current skill set and compare it against the identified key engineering attributes of communication, organization, innovation, inspiration, and integrity. Based on this assessment, the CTEL facilitators recommend the training session that will help fill the skill gap.

CTEL will help you to learn and develop the soft skills that are needed to ensure that you are able to succeed and to be comfortable with all aspects of providing client services. After completing a CTEL certification, you will be more poised at obtaining your goals of professionalism and respect from your colleagues and clients.

CTEL offers a four-day program where each attendee achieves a platinum certificate (attending five courses) or a gold certificate (attending eight courses) acknowledging competency in leadership areas. For more details about CTEL, visit *www.rgilearning.com* or call 866-744-3032. CTEL is Partner in Learning with RGI International, Inc. a Winnipeg-based consulting company.

No one is more invested in your career than you are, so seek out learning opportunities and be active in APEGM so you will be more valuable to your employer. When an opportunity to learn and to grow presents itself, take it!

Ingenium

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*Where **great minds** meet to form **great ideas.***

Welcome to Ingenium 2012

Greetings!

As APEGM President, it is my pleasure to welcome you to Ingenium, the Association of Professional Engineers and Geoscientists of Manitoba Conference for 2012!

This year marks the 93rd annual AGM for APEGM. The theme for our event is "Moving Forward" looking at topics of interest to engineering and geosciences professionals as a profession, at work, in their province, and in their personal careers!

We hope you enjoy the new format of the conference and the many possible tracks you can attend! Come early and listen to Minister Steve Ashton on Thursday morning, October 25!

On behalf of all the members of the Association, I would also like to thank you for joining us at our 93rd Annual General Meeting.

Yours truly,

Adam Pawlikewich, P.Eng., President - APEGM

APEGM

Event Schedule October 23-26, 2012

Tuesday, October 23
New Member's Luncheon & Certificate Presentation
St. Boniface Golf Club
11:30 a.m. - 1:30 p.m.

Wednesday, October 24
Recognition Wine & Cheese Reception
Location TBA
7:00 - 9:00 p.m.

Thursday, October 25
Professional Development Seminars
Crystal Ballroom, The Hotel Fort Garry
8:30 a.m. - 4:00 p.m.

Partners Program
Polo Park Shopping Centre
10:00 a.m. - 2:00 p.m.

Friday, October 26
Annual General Business Meeting
Crystal Ballroom, The Hotel Fort Garry
8:30 - 10:30 a.m.

Partners Program
Winnipeg Trolley Company
10:30 a.m. - 2:00 p.m.

Awards Gala Dinner and Dance
Grand Ballroom, Fort Garry Place
5:30 p.m. - 12:30 a.m.

Social Events

Tuesday, October 23
New Members Luncheon & Certificate Presentation
This luncheon is held bi-annually to recognize new members and present them with their license certificates. Attendance is by invitation and additional purchased tickets, offering new members and guests the opportunity for more intimate conversation and socializing adding to the appeal of this enjoyable and informal gathering.

Wednesday, October 24
Recognition Wine and Cheese Reception
This reception is to honour APEGM Past Presidents, new APEGM Life Members, and those receiving their new Engineers Canada FEC designation. This is a wonderful opportunity for this intimate group to gather and socialize while receiving their certificates and pins.

Thursday & Friday, October 25-26
Partners Program
The Partners Program runs during the same time as the professional development conference and the annual general business meeting, to provide activities and networking opportunities for the companions of Ingenium attendees.

Friday, October 26
Awards Gala Dinner and Dance
Fine cuisine and highly enjoyable entertainment set the stage for a first-class evening honouring member achievements and corporate contributions to the professions. Guests will be joined by representatives from government and industry on this special evening followed by an evening of great entertainment and dancing.

Annual General Business Meeting Friday, October 26

Overview
The annual general meeting of the professional members of the association shall be held in the Province of Manitoba on any date after September 10th, but prior to October 31st, in each year as council may decide. Temporary licensees, specified scope of practice licensees, members-in-training and students are entitled to attend and participate subject to restrictions in the association by-laws. Members of the public, subject to application to the registrar and the availability of space, are entitled to observe.

2012 Agenda and Reports
Crystal Ballroom, The Hotel Fort Garry
222 Broadway
Winnipeg, MB R3C 0R3
Time: 8:30 - 10:30 a.m.
Cost: Complementary, Pre-Registration Required
The Business Meeting will break for lunch and re-convene at 2:00 p.m. if needed.

Professional Development Seminars **Thursday, October 25**

Multiple track sessions are offered about how Manitoba is *'Moving Forward'* through our profession, in the workplace, in the Province, and in members' personal careers.

The popularity of this well attended event speaks to its value in supporting the professional development of APEGM members. Opening keynote from Minister Steve Ashton, Manitoba Minister of Infrastructure and Transportation.

7:45 - 8:30 am	**Registration & Continental Breakfast** – *Loggia, 7th Floor*			
8:30 - 9:15 am	**Welcome and Keynote** – *Crystal Ballroom, 7th Floor* – **Keynote Speaker: Minister Steve Ashton**			
	Track 1: Moving Forward in our Profession	Track 2: Moving Forward in the Workplace	Track 3: Moving Forward in the Province	Track 4: Moving Forward in your Personal Career
9:20 - 10:20 am	The ABC's of P.Eng. Speaker: Grant Koropatnick, P.Eng.	Management, Motivation, and Psychology in the Workplace Speaker: Chuck J. Meltzer, Ph.D.	Women in Engineering: Moving Manitoba into the Future Speaker: Lindsay Melvin, P.Eng.	Meeting Skills Speaker: Ann Christoffersen, RGI Learning
10:20 - 10:40 am	**Coffee Break & Booths** – *Mezzanine Level*			
10:40 - 11:40 am	Supervisor Guide to Registration Speaker: Sharon Sankar, P.Eng.	Moving Human Rights & Equality Forward in the Workplace Speaker: Carol Thiessen, MB Hydro	Immigration to Manitoba Speaker: Ben Rempel	Managing Conflict Speaker: Lisa Moretto, President, RGI Learning
12:00 - 1:30 am	**Lunch & Keynote** – *Crystal Ballroom, 7th Floor* – **Keynote Speaker: Catherine Klepmore**, CEO, Winnipeg Airports Authority			
1:40 - 2:40 pm	Recent Developments in CPD Speaker: Michael Gregoire, P.Eng.	Do Engineers 'Rule the World'? Should They? Speaker: Arthur Shaffer	GLACIER Aerotest Thompson Facility Speaker: Don Pereira	Communication Skills: Part 1 Speaker: Lisa Moretto, President, RGI Learning
2:40 - 3:00 am	**Coffee Break & Booths** – *Mezzanine Level*			
3:00 - 4:00 pm	Advocacy Task Force (ATF) Speaker: Roger Rempel, P.Eng.	Meeting Skills Speaker: Ann Christoffersen, RGI Learning	Winnipeg Transportation Master Plan Speaker: TBA	Communication Skills: Part 2 Speaker: Lisa Moretto, President, RGI Learning

Track 1: Moving Forward in our Profession 9:20-10:20

ABCs of P-E-N-G

Did you know that every aspect of professional practice as an engineer or geoscientist is covered by the ABCs? The Act, By-laws and Code – the ABCs! Attend this session and here an overview of the three governing documents: The Engineering & Geoscientific Professions Act of Manitoba, the APEGM By-Laws and the Code of Ethics for the Practice of Professional Engineering and Professional Geoscience. The session includes some history, a fun ethics quiz and ample time for questions and answers with the Registrar.

Presented by:
Grant Koropatnick, P.Eng.

Grant Koropatnick, P.Eng. is the Executive Director & Registrar for the Association of Professional Engineers and Geoscientists of Manitoba (APEGM). He is a graduate Civil Engineer and holds a certificate in Human Resource Management from the University of Manitoba. With more than 20 years experience, has held technical and managerial positions in human service environments including the University of Manitoba and the Pembina Trails School Division.

Track 2: Moving Forward in the Workplace 9:20-10:20

Management, Motivation and Psychology in the Workplace

Attracting, retaining and motivating employees are ongoing challenges across most industries and business sectors today. Bonuses, flex benefit packages, flex time and other staff incentives have been employed with varying success as carrots to increase performance. The problem is that, regardless of the carrot, it is the upfront work done with the employee that will have the most impact on motivation.

This session will focus on the fact that motivation is created through what occurs at the beginning of the managerial/leadership task cycle, not at the end. Carrots are more rewarding if the upfront work has been done. How is this done, what must managers do to create a desire to learn, excel, take on new responsibilities and contribute to the success of the project, the team and the organization? This session will explore best practices employed by managers that translate into employees giving their best. It takes 60% of an employee's effort to get a reasonable performance review. The other 40% is discretionary. Learn how to work with employees in a manner that they are willing to provide you with that discretionary effort.

Presented by:
Charles J. Meltzer, Ph.D.

Charles J. Meltzer, Ph.D. is president of the SynTEC-Group, an organizational development consulting firm which specializes in assisting organizations and its people create sustainable change. Dr. Meltzer is a master trainer for the Clark Wilson 360° instruments and has for over 10 years employed these tools as part of a large executive coaching practice. He also holds the rare distinction of Master Trainer in Relationship Awareness Theory, the study of understanding human motivation and how motivation translated into behaviour. Dr. Meltzer also is a certified trainer in the area of emotional intelligence (A Different Kind of Smart, Applying EQ at Work).

Track 3: Moving Forward in the Province 9:20-10:20

Women in Engineering: Moving Manitoba into the Future

Have you ever wondered why there are not more women in engineering or who is working to ensure full participation of women in our profession? This presentation will provide an overview of the current and potential future of women in engineering in Manitoba. Come and find out why increasing women in engineering is good for business and the profession. Learn about provincial and national initiatives already underway as well as strategies for incorporating diversity, while improving recruitment and retention, in your workplace.

Presented by:
Lindsay Melvin, M.Sc., P.Eng.

Lindsay Melvin earned a Bachelor of Science in Mechanical Engineering (2002) and a Master of Science in Mechanical and Industrial Engineering (2004), both from the University of Manitoba. She enjoys her career as a professional engineer with Manitoba Hydro as the Senior Market and Risk Studies Engineer in the Export Power Marketing Department. Lindsay is currently completing a Master of Business Administration (MBA) through the I.H. Asper School of Business at the University of Manitoba.

Lindsay has developed an interest in women in engineering since first joining APEGM's Committee for Increasing the Participation of Women in Engineering, formerly the Women's Action Committee, in 2005 and becoming chair in 2007. She was Co-Chair of the 13th National Biennial CCWESTT Conference held in Manitoba for the first time in May 2010. Currently, Lindsay chairs the Women in Engineering Advisory Group and is a member of the Women in Engineering Committee, both for Engineers Canada.

Track 4: Moving Forward in your Personal Career 9:20-10:20

Oh No! Not Another Meeting: Skills for Making Meetings More Productive

Who really enjoys going to meetings these days? Not many do. But why is that? In today's business settings, our calendars are filled with meetings, but instead of helping us accomplish our work, meetings usually are a waste of time. Instead of placing the responsibility solely on the chairperson, we propose that some of the issues with ineffective meetings lie with the participants.

This session provides information on how to be a productive meeting participant and how to help keep the meeting on track. It includes techniques on how to present information and how to record and write the minutes, with a review of how to facilitate a meeting.

Presented by:
Ann Christoffersen

Ann has been an RGI Consultant for 15 years and has been in the technical communication field since 1990. She has developed and delivered written and oral communication skills courses in both the US and Canada.

She holds a BS in Computer Science and Mathematics from Clarkson University and has a Masters of Science degree in Instructional and Performance Technology from Boise State University. She is a Certified Human Performance Analyst specializing in Front End Analysis, developing training programs to support major systems acquisitions.

Ann has been a technical writer for Accelerated Technology, Inc. working with programmers and customer support to develop effective user guides. As a consultant, she has worked with companies to comply with various portions of the *Americans With Disabilities Act.* She was also an outreach instructor for South Western Oregon Community College and the University of Southern Alabama teaching business writing and editing skills.

Ann teaches regularly with General Electric, APEGM, Manitoba Hydro, SaskTel, and TetraTech.

Track 1: Moving Forward in our Profession 10:40-11:40

A Supervisor's Guide to Registration

You have seen your junior employees grumble over progress reports and studying for the National Professional Practice examination and perhaps wondered what all the fuss was about.

As a supervisor, it is really important to do your part to assist your employees in achieving registration. Over the years, we have noticed that more and more supervisors are on board – something that both APEGM and the members-in-training appreciate. However, up to now, there has never been a formal presentation directed just at supervisors.

This presentation aims to unlock some of the mysteries surrounding the pre-registration process. We will look at some of the most commonly asked questions which come from both members-in-training and supervisors, but will try to focus more on the role that the supervisor needs to play.

Come with your questions, concerns and suggestions. There will be a short formal presentation, but we will allow plenty of time to hear what you have to say.

Even though this is called A Supervisor's Guide to Registration – please feel free to sign up if you are a member-in-training or academic assessment applicant, or even a potential member-in-training/ academic assessment applicant. If you can bring your supervisor, all the better.

Presented by:
Sharon Sankar, P.Eng., P.E.

Sharon Sankar has worked as the Director of Admissions for APEGM since January 2003. She, along with the rest of the Admissions staff, has been responsible for running the pre-registration program for MITs. Over the years, she has seen many interesting situations and has done her best to help bring them to a resolution.

Track 2: Moving Forward in the Workplace 10:40-11:40

Moving Human Rights & Equality Forward in the Workplace: You Be the Judge!

Do you know what constitutes reasonable accommodation? Do you know what constitutes discrimination or harassment? This interactive seminar will outline numerous situations dealing with equality and human rights law, and then provide you with the opportunity to act as the judge and render a decision. We will then compare your decision to the actual decisions rendered by the courts and tribunals.

Presented by: Carol Thiessen

Carol Thiessen is the Employment Equity Specialist at Manitoba Hydro and is primarily responsible for coordinating, reviewing and enhancing employment systems that support the education, recruitment, development and retention of employment equity designated group members. She is also responsible for building and strengthening strategic relationships that directly support Manitoba Hydro's goals and employment equity initiatives, and has conducted numerous presentations and workshops on diversity.

Carol has a Bachelor of Commerce (Honours) Degree, a Master of Public Administration, a Master of Business Administration and is a Certified Human Resources Professional. She has maintained memberships in professional associations such as the Human Resource Management Association of Manitoba (HRMAM) and Manitoba Employment Equity Practitioners Association (currently serves as co-chair). Prior to joining Manitoba Hydro, Carol had the opportunity to work in management positions within the tourism sector, manage her own businesses and work in senior management positions within non-profit organizations.

Track 3: Moving Forward in the Province 10:40-11:40

Immigration to Manitoba

Manitoba is making tremendous strides in increasing our population through immigration. Accounting for 77% of all our newcomers in 2011, the Manitoba Provincial Nominee Program (MPNP) continued to be our largest source of labour market-destined immigrants. The MPNP helped immigration grow to 15,962 arrivals in 2011 from 3,725 in 1999. This represented the most immigrants received in a single year since the start of modern record keeping in 1946.

With our partners, Manitoba provides high-quality immigration services from selection to settlement. It includes resources and supports to help Manitoba-destined immigrants with pre-arrival settlement and career planning. After arrival, it includes orientation, referral services, English as an additional language services, and support with employment and social integration.

One of our program goals is to increase labour market success for our internationally educated immigrants by helping them get their qualifications recognized so they can work in their fields sooner. To this end, Manitoba has implemented new tools to assist immigrants begin their settlement planning prior to arriving, enacted *The Fair Registration Practices in Regulated Professions Act* and funded bridging programs such as the successful IEEQ Program for internationally educated engineers.

Our overall goal is to advance our economy and our multicultural society by promoting our province as an immigration destination for skilled workers who meet local labour market needs, and by helping immigrants settle successfully.

Presented by: Ben Rempel

Ben Rempel is the Assistant Deputy Minister of Manitoba Immigration and Multiculturalism, with lead responsibility for Manitoba's 'Growing Through Immigration Strategy.' He has held the position since 2007. The Department manages an integrated continuum of program and service delivery from the promotion and recruitment of skilled workers and entrepreneurs, immigrant selection through the Manitoba Provincial Nominee Program, pre- and post-arrival economic integration supports through Manitoba START, coordination and support for a broad range of adult language training and integration services, and supports for the improved recognition of international qualifications through legislation and client navigation supports. The Growing Through Immigration Strategy has achieved record labour market growth in Manitoba, attracted investment in diverse new business ventures, and supported the successful integration of immigrant newcomers from all categories.

Mr. Rempel has an Interdisciplinary Masters Degree from the University of Manitoba, with a specialization in international migration issues.

Track 4: Moving Forward in your Personal Career 10:40-11:40

Conflict Management: How to Prevent, Contain, and Resolve

Conflict does not have to be a bad thing. Many creative solutions have been a result of differing opinions. If a team agrees 100% of the time, then someone is hiding something. This session introduces the signs and effects of conflict and presents strategies on how to turn what may feel like a negative situation, into a neutral (or possibly a positive) situation. Participants will be exposed to the Third Side concept of conflict resolution and the different roles and contributions parties bring to the situation. The Third Side is an outcome of the Global Negotiation Project at Harvard University.

Presented by: Lisa Moretto

Lisa Moretto is the president of RGI International, Inc., with offices in Winnipeg, MB and Rochester, NY. She has 19 years experience teaching business and technical communication courses for government agencies, private corporations, consulting firms and professional societies. Her courses consistently receive positive reviews. She is an engaging and interactive presenter and a frequent invited speaker at international conferences.

She has experience as an Information Developer for IBM in the US and as a Learning Products Engineer for Hewlett-Packard in the UK. Lisa holds a BS in Technical Communication from Clarkson University, Potsdam, New York, and an MS in User Interface Design from the London (England) Guildhall University.

She has co-authored four books, has presented to various industries and organizations throughout Manitoba, is an adjunct professor at the Rochester Institute for Technology.

Track 1: Moving Forward in our Profession 1:40-2:40

CPD Reporting – Recent Developments

With the initiation of APEGM's Continuing Professional Development (CPD) Program this year, members are now actively reporting their CPD using our new online system. The Continuing Competency Committee has met several times this year to fulfill their role in overseeing the new CPD Program. Come and find out about the basics and recent developments of our new CPD Program.

Presented by:
Michael Gregoire, P.Eng., B.Env. D.

As the Professional Standards Officer at APEGM, Michael provides assistance to Investigations, Discipline, Enforcement, Legislation, Standards, and the new CPD Program. Prior to taking on this role in 2008, Michael worked in the world of consulting engineering, where he provided solutions to problem buildings.

Track 2: Moving Forward in the Workplace 1:40-2:40

Do Engineers 'Rule the World'? Should They?

Every professional has an obligation to practice his or her profession competently, with due care, and in the public interest. What is special about 'Engineering ethics?' Engineers exercise a high degree of control over the technologies on which modern society depends. Does this special power carry with it special moral responsibilities?

Presented by:
Arthur Schafer

Arthur Schafer is Director of the Centre for Professional and Applied Ethics at the University of Manitoba. He is also a full professor in the Department of Philosophy and an Ethics Consultant for the Winnipeg Regional Health Authority, Department of Child Health. For 10 years, he was Head of the Section of Bio-Medical Ethics in the Faculty of Medicine of the University of Manitoba. He has also served as Visiting Scholar Green College, Oxford.

Professor Schafer has received a number of awards and honours. He is a Canadian Commonwealth Scholar, Honorary Woodrow Wilson Scholar, and a Canada Council Fellow. At the University of Manitoba, he has received the Stanton Teaching Excellence Award, the Campbell Award for University Outreach, and the University Teaching Service Award for Teaching Excellence. He has been widely published in the fields of moral, social, and political philosophy, has made numerous conference presentations in Canada and abroad, and has been a frequent guest on The Discovery Network, CBC, CTV and others.

Track 3: Moving Forward in the Province 1:40-2:40

GLACIER Aerotest Thompson Facility

The Global Aerospace Centre for Icing and Environmental Research (GLACIER) in Thompson, Manitoba was designed and built by MDS. It is a joint venture between Rolls-Royce and Pratt & Whitney, two of the world's largest aerospace engine manufacturers. GLACIER provides the world's aerospace industry with rugged, true-to-life and rigorous testing in adverse environmental conditions, with measurement and capacity for today's gas turbine engines and those of the future. The newly opened state-of-the-art GLACIER facility is designed to test the complete range of existing and future aircraft gas turbines. The centre also houses facilities for indoor preparation of engine packages, full engine measurement and control. GLACIER's data acquisition system can measure over 2,000 separate parameters at varying frequencies from steady state to dynamic characteristics.

Presented by:
Don Pereira, P.Eng (Ontario)

Don graduated from the University of Waterloo in 1985 with a Bachelor of Applied Science – Mechanical Engineering. He has a long-time passion for aviation gas turbine engines. He began his career in 1986 with the Orenda Division of Hawker Siddeley where he worked 1.5 years in J85 Technical Investigations and 2.5 years as a J85 Field Service Representative at CFB Moose Jaw. From 1990 to 1997 Don worked with Canadian Airlines in Richmond, BC as a Propulsion Performance / Test Cell Engineer. He joined MDS Aero Support in Ottawa in 1997 and worked with the Applications Engineering Department until 2010 in the roles of Senior Engineer, Department Manager and Chief Engineer. In these roles he was responsible for configuring, installing and commissioning MDS data acquisition systems at their customer's facilities world-wide. In 2010 Don joined MDS AeroTest in the role of General Manager, working at the GLACIER Cold Weather Test Facility in Thompson Manitoba. MDS AeroTest is a sister company to MDS Aero Support. In this, his present role, Don manages a team of 14 people responsible for the operation and maintenance of this world-class facility.

Track 4: Moving Forward in your Personal Career 1:40-2:40

Communication Skills (Part 1)

Too much time and money is wasted today because information is not effectively communicated. We spend our resources crafting the message or trying to decipher it. In this practical, interactive session, you will learn techniques on how to write more effective and focused communications. Specifically, Lisa will address:

- organizing the writing task;
- identifying primary information and directing readers' attention to it;
- arranging facts for maximum impact;
- writing action-getting letters and emails;
- writing direct and concise messages; and
- sharpening personal writing style to create a strong, effective presence.

In today's business environment, we cannot afford to underestimate the power of the written word.

Track 1: Moving Forward in our Profession 3:00-4:00

Advocating in the Public Interest

A big part of being a professional engineer and geoscientist is protecting the public. What do we do when an issue comes along that has a big impact on the public of Manitoba, but we're not involved? Do we get involved? What do we do? Councillor Roger Rempel, PEng will present the topic of advocacy and describe the work of the APEGM Advocacy Task Force (ATF).

Presented by: Roger Rempel, PEng, FEC, Senior Environmental Engineer, Associate - Stantec – Winnipeg, Manitoba.

Roger Rempel has over 20 years of experience in environmental assessment, quantitative risk assessment, criticality assessment, environmental systems modeling in air and water quality, and public communications. Roger was a Principal at TetrES Consultants Inc., an environmental consultancy that joined the Stantec organization in June of 2010. He has contributed to and managed multi-disciplinary study teams applied to a range of operations including municipal water and sewer infrastructure, hydroelectric power generation developments, chemical plants, manufacturing facilities and agricultural/food processing plants throughout Western Canada. Roger is an elected councilor on the APEGM council and chair of the ATF – Advocacy Task Force.

Track 4: Moving Forward in your Personal Career 3:00-4:00

Communication Skills (Part 2)

Often, a firm's leaders are promoted from within and, although they have the technical knowledge to excel, they lack an understanding of the importance of interacting with clients and team members. This session provides an overview of successful interpersonal communication skills including oral, written, and non-verbal communication skills and their impact on our interactions. Lisa will also address active listening and questioning skills.

Presented by: Lisa Moretto

Track 3: Moving Forward in the Province 3:00-4:00

City of Winnipeg Transportation Master Plan

Winnipeg and the Manitoba Capital Region are growing at a pace we have not seen in several decades. By 2031, it is projected that Winnipeg and the surrounding areas will be approaching one million people. With this growth, come the opportunity for more compact and vibrant communities and increased justification of infrastructure renewal and expansion. However this growth also presents a challenge and requires innovative and proactive transportation solutions to support Winnipeg's current and future prosperity in an economically, socially and environmentally sustainable manner.

The Winnipeg Transportation Master Plan is intended to set a strategic vision for Winnipeg over the next 20 years which is compatible with OurWinnipeg and six strategic goals established under the Sustainable Transportation Direction Strategy.

Presented by: Kenn Rosin, P.Eng. FITE

Kenn Rosin is a Special Projects Consultant, Transportation with the City of Winnipeg. Major projects he has been involved with include overseeing the development of the Transportation Master Plan for Winnipeg; developing an Active Transportation Design Guide; developing Transportation Impact Assessment guidelines; and developing terms of reference for a Pedestrian Strategy. Kenn previously spent five years as Manager of Transportation with Stantec Consulting in Winnipeg, and 30 years with the City of Winnipeg as Manager of Transportation, Transportation Planning Engineer, and Streets Planning Engineer. He has a M.Sc. (Transportation Planning) and a B.SC. (Civil Engineering) from the U of Manitoba.

Sponsorship

Benefits

Ingenium is a premier professional development opportunity for the engineering and geoscience community in Manitoba. With participants representing a cross-section of the 5,000 members who work in the province's private and public sectors, this multi-day event offers substantial value to program sponsors:

- Excellent networking and business development opportunities
- Exposure to senior decision-makers in the industry
- Association with a well-organized and productive event
- Recognition as a supporter of excellence in engineering and geoscience
- Exposure to new talent in the engineering and geoscience fields

Program sponsors will also receive a sponsor recognition package commensurate with their level of support.

Events Available for Sponsorship October 23 - 26, 2012

Tue Oct 23 New Members Luncheon

Wed Oct 24 Recognition Wine and Cheese

Thurs Oct 25 Professional Development Seminar

Thurs Oct 25 & Fri Oct 26 Partners Program

Fri Oct 26 Business Meeting and Breakfast

Fri Oct 26 Awards Gala Dinner and Dance

Sponsorship Opportunities

☐ **Platinum Level: Event Benefactor** *(only 1 available in each category)* **$2,500****

☐ New Member Luncheon ☐ Business Meeting ☐ Awards Dinner and Entertainment
☐ Recognition Wine & Cheese ☐ Professional Development Seminars ☐ AGM Dance ☐ Partners Program

- Naming rights for the sponsored event
- Name and corporate logo on all event signage
- Priority tickets (6 seats)* at Awards Gala Dinner and Dance
- 3 Conference Registrations (includes Professional Development Seminars, Annual General Meeting, Breakfasts, Lunch, and coffee breaks)
- Include a 100 word write up in conference information package for all participants
- Acknowledgement in all event material for members and guests
- Direct weblink from Company Logo on APEGM website
- Booth Opportunity
- Acknowledgement in AGM article in the Winter issue of the *Keystone Professional* and on the APEGM website
- Verbal acknowledgement at your sponsored event

☐ **Gold Level** **$1,000****

- Priority tickets (4 seats)* at Awards Gala Dinner and Dance
- 2 Conference Registrations (includes Professional Development Seminars, Annual General Meeting, Breakfasts, Lunch, and coffee breaks)
- Name and corporate logo on all event signage at both events
- Verbal acknowledgement at the Gala Dinner
- Direct weblink from Company Logo on APEGM website
- Acknowledgement in AGM article in the Winter issue of the *Keystone Professional* and on the APEGM website
- Acknowledgement in all event material for members and guests
- Booth Opportunity

☐ **Silver Level** **$650****

- 2 seats* at the Awards Gala Dinner and Dance
- 1 Conference Registration (includes Professional Development Seminars, Annual General Meeting, Breakfasts, Lunch, and coffee breaks)
- Verbal acknowledgement at the Professional Development Seminars Luncheon
- Acknowledgement in all event material for members and guests
- Direct weblink from Company Logo on APEGM website
- Acknowledgement in AGM article in the Winter issue of the *Keystone Professional* and on the APEGM website
- Acknowledgement on event signage
- Booth Opportunity

☐ **Bronze Level** **$300****

- Recognition at event
- Name on event signage
- Acknowledgement in AGM article in the Winter issue of the *Keystone Professional* and on the APEGM website

** Sponsors may donate unoccupied seats to engineering students, engineers and geoscientists-in-training, clients, or other special guests as desired.*
*** Sponsorship/Supporter amounts include GST.*

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CCWESTT 2012

With a SeaChange Comes Inspiration, Celebration and Encouragement

N. Batstone, P.Eng. and L. Melvin, M.Sc., P.Eng.

The 14th Biennial Canadian Coalition of Women in Engineering, Science, Trades and Technology (CCWESTT) Conference was held May 2-5 in Halifax, Nova Scotia. The biennial conference brings together women from diverse backgrounds to network and share stories for recruitment and retention of students, professionals and practicing women. Members from APEGM's Committee for Increasing Women In Engineering (CIPWIE) attended as representatives to participate in sharing CIPWIE's strategic direction and to collectively bring back new ideas.

The theme was 'Inspiring a SeaChange' - a theme that promoted action and unity for women across Canada. The conference highlighted great programs and personal stories that all participants could bring back to their provinces. An afternoon policy forum was also hosted prior to the conference for the first time ever. The forum was supported by the federal/provincial/territorial Status of Women Forum. It engaged industry, business, professional associations, unions, women's organizations, NGOs, educational institutions, governments, and equity groups to share and develop strategies that need to be addressed in the near future. The pictorial summaries of the plenary speakers and the policy forum discussions were an especially unique depiction of stories, advice and encouragement.

This particular CCWESTT conference had an atmosphere of inspiration and excitement. Some of the east coast's excitement was generated by speakers including Don Bureaux, President of Nova Scotia Community College; Anna Marenick, Human Resources Manager at Irving Shipbuilding; and Les Holloway, the Canadian Auto Workers (CAW) Area Director for Atlantic Canada. Marie Carter, Chief Operating Officer and Interim Chief Executive Officer of Engineers Canada reminded participants of the importance of supporting each other. Dr. Margaret-Ann Armour, Associate Dean of Science, Diversity at the University of Alberta and President of the Board of the WinSETT Centre had an interesting, public conversation with Larissa Vingilis-Jaremko, founder and President of the Canadian Association for Girls In Science (CAGIS) that included sharing an online video demonstrating tendencies towards gender bias in a store's toy aisle.

One of the conference's many highlights that buzzed the participants was Engineers Canada's new action plan for women in engineering. The plan identifies seven areas of strategic focus and includes the overarching goal of 30% females practicing engineering by 2030. Many participated in a planning session to discuss ways everyone can participate in this change. Another highlight was networking activities that promote engineering to the youth and young adults of today. From weekend camps to industry galas and leadership training, there were many excited and fuelled people ready to take the challenge and collaborate with key stakeholders. Topics covered in the Cracker Barrel sessions included diversity in the workplace as well as mentoring and outreach.

The conference closed with a delicious banquet dinner, filled with entertainment and networking opportunities. It was announced that the 15th Biennial CCWESTT Conference will be held in Regina, Saskatchewan, May 20-25, 2014. We look forward to another two years of doing our part to increase the participation of females in engineering and the opportunities to collaborate with like minds again.

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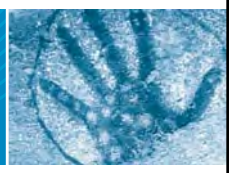

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APEGM

Notice: Availability of Reports

Reports on the operations of APEGM will be published in the Annual Report issued October 5, 2012, following the meeting of Council on September 13, 2012.

The report will be available on the APEGM website, at the Annual General Meeting on October 26, 2012, or it can be obtained by contact the Association office at *apegm@apegm.mb.ca* or by telephoning 204-474-2736.

Year-end reports from the APEGM committees will be available at the Annual General Meeting or on the APEGM website as of October 26, 2012.

Hearson Wins Rhodes Scholarship

An engineering student is the 96th Rhodes Scholar to come from the University of Manitoba. Mark Hearson, in his fifth year of a Bachelor's Degree in Civil Engineering, is a Rhodes Scholar recipient for 2012. Hearson is one of three students to receive the scholarship in the Prairie provinces. He has received leadership awards and is a public speaker and activist, in addition to his outstanding academic record. U of M is the alma mater for more Rhodes Scholars than any other university in Western Canada.

Mark Hearson is currently in his fifth and final year of a Bachelor of Science in Civil Engineering. Mark's studies have allowed him to explore working in other places, such as Victoria (British Columbia), Fredericton (New Brunswick), and San Jose (Costa Rica). Mark's interests, which he has explored through his summer employments, research grants, and extracurricular involvement, include transportation engineering, transportation planning, sustainable development, and international development. Mark is extensively involved in the transportation engineering community, both through university involvement and acting as an executive member of the University of Manitoba Institute of Transportation Engineers (ITE) Student Chapter.

Mark has also been involved within student government, as a vice-president of the University of Manitoba Engineering Society and as the student council president of his high school, Westwood Collegiate. He competes as an indoor and beach volleyball player, and he is a keen musician, with skills at the piano, guitar, and saxophone.

(Reprinted with excerpts from the Winnipeg Free Press *and* www.canadianrhodes.org)

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Upcoming Course Schedule	PDHs *	Location	2012		
Civil			**Sept**	**Oct**	**Nov**
Structural Engineering for Non-Structural Engineers	24	Winnipeg	24-27		
Construction			**Sept**	**Oct**	**Nov**
Foundations of Construction Law	12	Regina	19-20		
Avoiding Construction Overruns and the Resultant Construction Disputes	18	Winnipeg		22-24	
Electrical			**Sept**	**Oct**	**Nov**
Motors and Variable Speed Drives	12	Regina		22-23	
Fire Alarm Systems: Design, Installation, Inspection and Testing	12	Winnipeg		25-26	
		Regina			5-6
Environmental			**Sept**	**Oct**	**Nov**
Contaminated Soil and Groundwater Chemistry, Assessment and Remediation	18	Regina		3-5	
Mechanical			**Sept**	**Oct**	**Nov**
Process Piping Systems	18	Regina	19-21		
Understanding Industrial Codes, PART 1 - ASME Section 8 (Pressure Vessels) and Section 5 (Non-Destructive Examination)	12	Saskatoon		1-2	
Boilers, Boiler Controls, Combustion and Steam System Efficiency	24	Winnipeg		1-4	
Fundamentals, Sizing, Selection, and Operation of HVAC Systems	18	Winnipeg			12-14

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

Sinha Awarded Diamond Jubilee Medal

Dr. Madhav Sinha, P. Eng., was awarded the Queen Elizabeth II Diamond Jubilee Medal for his 30 years of service in the field of Total Quality Management. The award was presented on the campus of Carleton University during the 4th Canadian Quality Conference that took place in Ottawa from June 27-29.

Dr. Sinha is a long-time Manitoba professional engineer who has spearheaded many unique initiatives for promoting and elevating the quality profession as an important part of Canadian society. Dr. Sinha also won an APEGM leadership award and is president of the Canadian Society for Quality, a Winnipeg-based organization.

The Queen Elizabeth II Diamond Jubilee Medal is being presented to 60,000 Canadians during the diamond jubilee year. Canadians from all walks of life are being recognized for significant contributions and achievements. For this national honour, medals are allocated to partner organizations that, in turn, nominate candidates from their community or organization.

Save the Date! Mark Your 2013 Calendars!

The Committee for Increasing the Participation of Women in Engineering (CIPWIE) is leading the organization of a professional development conference which will celebrate and encourage women in Science, Engineering, Technology, and Trades. The one-day conference will be held May 10, 2013 in Winnipeg. If you are interested in volunteering on the conference organization committee please contact the APEGM Volunteer Coordinator, Diana VanderAa at *volunteer@apegm.mb.ca*

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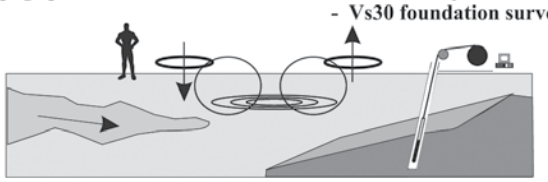

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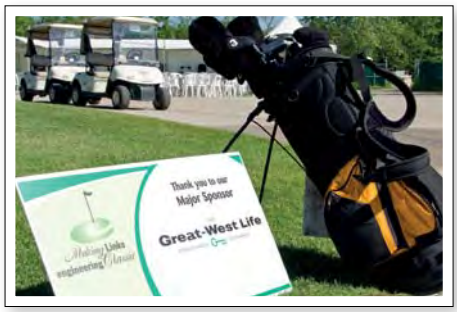

Great big thank you to our Major Sponsor, Great West Life.

Players enjoyed viewing SAE's 2012 vehicles at the course.

MLEC Committee Chair Roger Petursson and Major Sponsor representative Leo Martins presenting the donation cheque to Faculty of Engineering representative Doug Buchanan.

2012 MLEC third place team from Lavergne Draward and Associates: Julien Lavergne, Brad Draward, Bill Craplewe, and Rob McDonald.

2012 MLEC second place team from Dillon Consulting: Dave Krahn, Lance Vigfussion, Dwight Gibson, and Bruce McPhail.

2012 MLEC first place team from Inland Aggregates: Mike Smith, Randy Pitz, Derek Light, and Dave Lane.

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Good Character

An emerging trend in professional regulation is the evaluation of applicants and members for good character. Most members are not aware of the term, let alone its application for professional engineers in Manitoba. But APEGM has, in fact, had to deal with this issue several times over the last couple of years.

One area where APEGM has been faced with applying this concept is in registration. Our *Manual of Admissions* sets the criteria for membership and includes the requirement that applicants be of good character. This has historically been established through reference letters and a reliance on supervisor reports. Up until recently, though, no applicant had been denied registration based on this requirement.

In a way, I am getting ahead of myself by not yet defining good character for you. However, it is the elusiveness of a definition that makes the application of this principle difficult. Although it may be easy, in some cases, to identify the lack of good character, it is difficult to declare someone to be 'of good character.'

It is this elusiveness that prompted Engineers Canada's Canadian Engineering Qualifications Board (CEQB) to form a Good Character Task Group. I am a member of that group and we have been working on finalizing a model guideline that can be used by constituent associations like APEGM. The first task, of course, was tackling a definition.

What our group determined was that good character cannot be defined succinctly in the manner one would find in a dictionary. The driving reason behind this is that behaviour that would constitute good character (or the lack thereof) in one society at a given point in history will differ from another time or society. One only needs to consider a simple example to understand the fluid nature of the concept of good character.

In the early 20th Century, it would have been normal for a company's human resources practices to favour a male over a female when promoting employees in a traditionally male-oriented profession like engineering. Approximately 75 years later, in the same society, discrimination based on the gender of an employee is a human rights violation. It is also a clear example of behaviour that would be considered proof of a lack of good character. It is through examples, then, that good character is best defined and is how our task group has decided to format the upcoming model guideline.

"Our *Manual of Admissions* sets the criteria for membership and includes the requirement that applicants be of good character."

As I mentioned, it is often easier to determine a lack of good character than it is to declare that someone is of good character. Common examples of behaviour that would constitute a lack of good character are those where the applicant or member has been dishonest. It is also through these examples where we can see the progression of challenges that good character creates.

Obviously, telling your children the Tooth Fairy story would not constitute a lack of good character. At the other end of the dishonesty spectrum, lying on your application form about previous disciplinary history would definitely be an example of a lack of good character. Somewhere in the middle, the evaluation becomes less clear; what about a falsified application form where the applicant claims that he or she misunderstood the question? In situations such as this, APEGM's committees have the difficult task of making a judgement call.

These judgement calls on good character may be difficult, but they are important. Maintaining a roster that does not include individuals lacking in good character helps to ensure that the public is not harmed by relying on the professional behaviour expected of an engineer or geoscientist. It also helps to ensure that the public's confidence in our professions is held high.

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