

THE KEYSTONE PROFESSIONAL

Autumn 2010

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**Volunteer Appreciation
Barbeque**

**2010
Making Links Engineering
Classic Golf Tournament**

**Engineers Canada Awards Gala:
REWARDING ENGINEERING EXCELLENCE**

Association of Professional Engineers and
Geoscientists of the Province of Manitoba
www.apegm.mb.ca



THE KEYSTONE PROFESSIONAL

AUTUMN 2010

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- The Communications Committee would like to hear from you.
- Comments can be forwarded to us by email: commfeedback@apegm.mb.ca. Members are also encouraged to submit articles and photos on topics that would be of interest to the membership.
- Although the information contained in this publication is believed to be correct, no representation or warranty, expressed or implied, is made as to its accuracy and completeness. Opinions expressed are not necessarily those held by APEGM or the APEGM Council.

Front cover photo by Leif Anderson.
 Leif Anderson is an amateur photographer in Winnipeg, MB, who is slowly being pulled into the world of professional photography. He has been strongly involved in the hobby for nine years and is captivated by the depth of the craft.

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FEATURES

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John Woods, P.Eng.
President's
Message

Diverse Last Thoughts

It has been a pleasure to serve as President of APEGM this year, and I have enjoyed the opportunity to engage with so many engineers; new members, established members and those who aspire to be engineers some day. I truly believe that we have a diverse and world class membership.

I think we can feel confident that employment in our profession remains solid, in spite of the economic adjustments elsewhere. In particular, there has been some concern about engineering prospects in the USA and the possible influence on the Consulting Engineering market (and jobs) here.

In an article in the American Council of Engineering Companies' July/August magazine *Engineering Inc.*, the ACEC's Executive Committee stated that the collective mood was of cautious optimism. Most committee members seeing 2010 as flat, but at or near the bottom end of the downturn. So I do not expect that this will become a significant issue.

This did, however, get me wondering about relative levels of engineers, per capita, between the US and Canada. According to data from Statistics Canada, the U.S. Bureau of Labour Statistics and Engineers Canada, we are very close in this regard. The US having 512 engineers per 100,000 people, Canada 688; just over one half of one percent.

I have to admit that, even though I've been involved with CEM, APEGM and Engineers Canada in some fashion for almost 20 years, I've never considered how few of us do so much for modern society.

And I think this goes to show that, as a profession, we promote quality over quantity. And I think this is valid. As new technologies are developed,

new branches of engineering will emerge. PEO's recent declaration of nanotechnology as a distinct engineering discipline is a good example of "organic" growth of the profession. However, balancing this type of growth is the ongoing pressure to de-regulate segments of engineering. Engineering services from abroad will also reduce the traditional opportunities locally.

We could certainly increase the number of engineers significantly, by casting a broader net. In other words, we could (as I've heard at some meetings this year) broaden the definition of engineering so as to capture a broader range of interests and therefore attract a more diverse group of people. We could, as I've read in some industry articles, make diversity a primary focus.

I suggest that that is not what the regulation of engineering should attend to. We, as an association, should concern ourselves with our members' qualifications and upholding core engineering principals, not trying to be a

reflection of the society we serve. I realize this may not sound like the popular view. But, I will ask you to consider the numbers, the language of our trade; is it reasonable to expect that a subset of just over one half a percent of a group should necessarily reflect the whole? Fractals notwithstanding.

Over the past ten years, we have all put a significant amount of effort into making sure that the engineering profession in Manitoba is a welcoming one. Welcoming to all who have the skills, training and most importantly the interest in making engineering a career; with no regard to a person's physical aspects. And this is essential and upholds the concepts of freedom that we cherish.

Before taking a shot at me for being unenlightened, please remember two things. First, recall that I believe that engineers are born and not made, and second, de longer you verk here, de verse it gets.

Any correspondence for the current President can be sent to president@apegm.mb.ca. ■

NOTICE

Due to the resignation of Robyn Page, P.Eng., in accordance with By-Law 3.1.1.7, Council has appointed Dawn Nedohin-Macek, P.Eng., as the replacement Councillor for the remainder of her term (ending October 2011).

Reports on the operations of APEGM will be published in the Annual Report issued October 7, 2010, following the meeting of Council on September 16, 2010.

The report will be available on the APEGM website, at the Annual General Meeting on October 29, 2010, or it can be obtained by contacting 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 29, 2010.

Grant Koropatnick, P.Eng.
Secretary

Engineering Philosophy 101

“House” Building

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

On June 30, 2010, Doug Ruth, P.Eng., completed his 11-year term as Dean of the Faculty of Engineering at the University of Manitoba. His contributions to the Faculty were recognized at a reception held in the Atrium of the Engineering and Industrial Technology Centre (EITC) on June 29th.

Doug’s most obvious physical legacy is the existence of the EITC. On the 29th, speaker after speaker referred to the project as *his*. Doug preferred to identify the many persons who made specific contributions that allowed the project to come to a successful completion. And yes, there were many people who played many roles. Doug was, and continues to be, right. Building the EITC was an engineering project. Like all engineering projects it was a team effort. Like all engineering projects, it required an Engineer of Record.

Eleven years ago, the atrium in which the reception was held was a gravel parking lot. It was defined to the south by the original Engineering Building, to the east and north, by a *post war* extension and to the west by the 1967 *new* building. Today the atrium has become a focal point for public gatherings on campus and the surrounding *structures*, both new and renovated, provide offices and labs for the Faculty of Engineering and the Department of Computer Science. It is an impressive space. And notwithstanding his reluctance to accept credit, the EITC is, and will remain, a continuing reminder of *the house that*

Ruth built. But the real *house that Ruth built* is much more than a physical space.

You will get very little agreement if you define a house as *a building for human habitation*. But if you look for alternate definitions you find it also means *a building devoted to a particular activity*. In this case, the *particular activity* is delivering teaching, research and outreach responsibilities. Still further into the alternate definitions file, *house* is defined as *a legislative or deliberative assembly*. While an academic program

hardly fits into the *legislative* slot it is most definitely *deliberative*. We should not allow ourselves to be limited by singular definitions.

During the public presentation that was a part of the selection process for the Dean some eleven plus years ago, Doug said that he wanted to create an environment that would allow the Faculty of Engineering to develop the *best programs on the face of the planet*. This was the *house* he set out to build. Building his *house* required a lot of *projects*.

High on the list of *projects* was the need for modern space, and modern equipment. But even higher on the list was *friend making*; the task of reconnecting with people and organizations who would provide support, in all its many forms, for the building *project*.

In order to attract both *friends* and future students, Doug created a presentation entitled *Enablers of Civilization*. It identified impacts of

engineering in our world, both historical and current. It placed engineering in the context of a contributing, caring profession.

Within the *walls* of the Faculty, he encouraged academics to pursue their individual and collective visions. These visions were prime contributors to the building *project* because they began to shape the physical plans that would eventually end up in concrete and steel. New classes, new approaches to teaching and new directions for research all became a part of the *house* he was trying to build.

Engineers, and those we work with and for, tend to focus on the physical products that our efforts produce. Those physical products are usually a small part of a larger project. Real Engineering requires involvement beyond product delivery. The *house that Ruth built* was Real Engineering. As a profession, we must develop the courage to build *houses*.

John Ralston Saul observed that “what we become in our lives is often a matter of self perception.” Eleven years ago, Doug Ruth set out to change many perceptions. He addressed engineering in both the public eye and views of individuals within engineering. The existence of the EITC and the growth of the programs within the EITC suggest that he was, for the most part, very successful in meeting his goals. Today we have *the house that Ruth built*, both physical and functional. It was a design project, well conceived and well delivered. It is a model of a process we should all seek to emulate. The Engineer of Record, Doug Ruth, deserves our thanks. ■

“Real Engineering requires involvement beyond product delivery. The “house that Ruth built” was Real Engineering.”



Grant Koropatnick, P.Eng.
Executive
Director's Message

What Motivates You?

September feels like the beginning of the year somehow: back to school for the kids, back to routine for the parents. Fall schedules are added to the kitchen calendar, Blackberry, date book. Labour Day long weekend has come and gone and with it the fishing tackle, boat, cottage, summer fashions and footwear. We begin to think about hockey tryouts, volleyball practices, piano lessons and the coordination of work, personal and community activities.

So what motivates you to get back on track after the lazy days of summer? It doesn't just miraculously happen. Getting organized and staying organized is a deliberate act of the will. Motivating yourself to action is not always easy – especially if you're prone to procrastination. Frederick Herzberg is famous for his book "The Motivation to Work". In it he theorized that factors promoting job satisfaction would be motivators leading people to work harder.

As a professional, what motivates you? In my own professional practice there have been different motivators over the years. Let me list a few – you may recognize them. Here are some that vividly come to mind: inspiring leaders, voices from the past, fear, visions, and the Code of Ethics.

INSPIRING LEADERS

I don't know about you, but I'm motivated by an inspiring leader. During one of my recent flights I watched the movie "Invictus". It told the story of the South African Rugby Team winning the world cup of rugby through the inspiration of Nelson Mandela. Two years ago I heard Senator Barack Obama deliver a campaign speech that was very inspiring.



25" walleye caught during summer vacation

He went on to win the US Democratic Party leadership and the President's office shortly thereafter. Whether or not I support his political views or government policies, I find his words and personal story inspiring. A third person who inspires me is Paul Hewson (aka "Bono" from the rock band U2). He is more than a millionaire rock star; he is a faithful husband, father of four, generous philanthropist and one heck of a smart guy. If I could pick one person to have dinner with, it would be Bono. So what about you? Who are the inspiring leaders that motivate you?

VOICES FROM THE PAST

Sometimes a compliment (or criticism) from the past is replayed in our memories and these words serve as motivators. Words from parents, teachers, coaches and others can be powerful motivators. Such words can influence our behaviour without our conscious awareness. Identifying the source of our actions can be a puzzling question. Can you think of comments from the past that serve to motivate you? I can think of a few compliments and criticisms that have served to sharpen me and keep me sharp as I recall them from decades ago.

FEAR

The fear of a negative outcome is often all the motivation we need to take control of a situation. The fear of getting fired, financial loss, embarrassment in front of a client or co-workers is enough to keep us "on our toes." Fear is a common motivator that most of us would acknowledge plays a roll in daily life. Kept to a reasonable level, fear leading to the avoidance of problems can be healthy. But sometimes fear can overtake us and be an overwhelming force leading to paranoia and other behavioral anomalies. Are you motivated by fear? Do others see you as a person who is constantly under self-pressure; fearful that something bad is going to happen unless you take action? Be careful if this is one of your common motivators.

VISIONS

Are you motivated by a vision or a goal that you are visualizing for yourself? Building a consulting business, achieving operational goals for the department, finishing a graduate degree? What are you seeing? If you are motivated by a realistic goal – great! However, sometimes goals or visions are not realistic. In fact, they may be too idealistic and unattainable. When a goal is unrealistic and unachievable, they are called "illusions" (or something that deceives the senses or mind). Check your vision with a peer professional, mentor, trusted colleague or friend to ensure that you are not motivated by an illusion.

CODE OF ETHICS

Are you the type of person who is motivated by the simple goal of fulfilling a high calling? Doing a good job for the sake of doing a good job? I hope so.

Re: Engineering & Geoscience: Manitoba Milestones (Spring 2010)

Dear Heritage Committee,

I was disappointed to see a grievous error shown at the bottom of page 18 of the Spring 2010 Issue of the Keystone Professional. You have stated that Pointe du Bois was the first hydroelectric station on the Winnipeg River.

I thought everyone knew that the first such station was Pinawa, commissioned in 1906 and built by the Winnipeg Electric Railway Company. In fact, the success of Pinawa demonstrated to the City that a year-round plant on the Winnipeg River could be a successful endeavour, both in construction and operation. Thus, Pointe du Bois became the second plant!

Recently, on June 2008, Pinawa was dedicated by the IEEE as an IEEE Milestone. This was done at the Manitoba Electrical Museum with APEGM members in attendance.

Thank you,

- L. Ingram, P.Eng. (Ret.)

Thank you for your comments regarding the material shown in conjunction with the Heritage Committee's article on "Liquid Assets". We appreciate your feedback. In retrospect, the wording chosen for the caption on the display in the Association's reception area was not as clear as it could have been.

The Heritage Committee wrestled with how best to highlight early hydro-electric development in Manitoba during our selection of key engineering milestones for inclusion on the posters and the display panels in the APEGM office.

The committee reviewed the published information on the Pinawa project, much of it a result of your efforts, and considered how best to characterize Winnipeg River development. The committee looked at the factors and issues associated with all of the key engineering works and considered aspects of each project such as size, engineering challenges as well as date of initiation and of completion, to help distinguish the various projects, so that a summary list could be prepared to show the variety of projects that have involved engineers.

What the committee settled on was that the Minnedosa River plant was the first in the province. We then looked to add another milestone along the Winnipeg River. The Pinawa plant was the first in Manitoba that was built to run year-round. The committee also understood that the Pinawa

hydroelectric project was the first project built in eastern Manitoba, and that it was certainly key to early development of the City of Winnipeg.

The Pinawa site is on the upper reaches of the Lee River, with an 8 mile man-made intake channel that allowed utilization of a portion of inflows from the Winnipeg River to compliment the local Lee River flows. The project did not harness the full potential of the Winnipeg River flows but, rather a smaller, controlled amount. The Pinawa project did not have to deal with the significant challenges of construction and operation within a large river.

In its choice of significant projects, the committee focused on the concept of harnessing a large river, as a whole, with the Pointe du Bois project being the first to be constructed fully utilizing the main channel of the Winnipeg River.

Again, we acknowledge that the wording chosen for the caption on the display was not as clear as it should have been.

- APEGM Heritage Committee

Due to the content of communication between the Heritage Committee and Lindsay Ingram, the committee felt it important to include additional information on this topic for the audience of the Keystone Professional. Please see page 13 for a further explanation of the Pinawa Hydroelectric Power Project.

Letters to the Editor is continued on page 10

editor's note:

Your comments are always welcome by the Communications Committee through commfeedback@apegm.mb.ca.

Advertising in the Keystone Professional: Advertising will generally be limited to products and services of technical or professional interest to members of the Association. They can include: engineering, geological, or geophysical services, educational products and services supporting continuing professional education and development, employment opportunities, and financial services.

The publication is produced using full-colour process (CMYK), however, Advertisers have the option to submit black & white advertisements instead.

Would you or your company like to advertise in an upcoming issue of the Keystone Professional? More information, including our full Advertising Policy, Mechanical/General Information, and Insertion Order form can be found at www.apegm.mb.ca/KeystoneAdvertising.html or by contacting Angela Moore at amoore@apegm.mb.ca.



M.G. (Ron) Britton, P.Eng.
Thoughts On
Design

. . . and Shifting Perspectives

I have always subscribed to the theory that a book should provide the reader with more questions than answers. For me, *Citizen Engineer* (www.citizenengineer.org) meets that requirement.

Citizen Engineer was written by a pair of Sun Microsystem engineers, David Douglas and Greg Papadopoulos. In their Introduction they state, "Suddenly engineering is no longer solely concerned with finding a simple, elegant way to implement a set of design requirements."

They follow up by noting, "A successful engineer needs to be part environmentalist, part intellectual property (IP) attorney, part MBA, part diplomat - not to mention an expert in an engineering discipline, a great teammate, and a skilled communicator". Given my personal *definition* of design, they had me hooked. But it was their approach to the issues of environmental responsibility that truly got me thinking.

You may not agree with me, but I have always taken exception to the position that all of our environmental changes are directly related to human activity. Yes, we are contributors, but I'm not prepared to accept full responsibility. That being said, I'm anxious to do whatever I can to correct past oversights and develop better alternatives, assuming that old dogs can learn new tricks. In addressing this challenge, Douglas and Papadopoulos suggest, "Sometimes the best answer comes from simply looking at the problem differently."

We live in a very large country that is economically tied into a very large continent. The very nature of our society

seems to require that much of what we use must be transported long distances. In this model, environmental impacts can be decreased by improving the efficiencies of the engines in the transport vehicles, improving the aerodynamics of the rigs and minimizing grade changes on the highways and/or the tracks. If the material must be moved, these can all help.

A classic example of *long haul* requirements are fruits and vegetables. The vast majority of fruits and vegetables we consume are grown in the southern United States and beyond, frequently under irrigation. These products are harvested and placed in climate controlled trucks for shipment north. At least in the United States, the irrigation water is subsidized to support local agriculture, and fuel prices are subsidized to support the transport industry and to make the produce deliverable at an acceptable price. As well, highways, bridges and overpasses are designed and built to support the loads imposed by truck traffic. All of this puts fruits and vegetables in Canadian stores at prices that make local produce uncompetitive.

Under today's rules, being uncompetitive is a dollars and cents thing. As long as dollars and cents are the measuring stick, this situation will remain, and the trucks and trains will continue to contribute to the *environmental impact* of the system. And as long as subsidies can be provided to *adjust* the dollars and cents figures, the economic advantage of the status quo will remain.

But, what if emissions (i.e. carbon footprints) were the governing factor?

How much energy is required to provide and apply subsidized irrigation water? How much energy is required to produce and operate the transport vehicles? How much energy is required to bring the roads, bridges and overpasses up to the standard required for trucks rather than cars? Each of these energy demands leaves a *carbon footprint*. Would local, protected growing be able to compete on the basis of its *carbon footprint*?

Tracking the total *carbon footprint* of a product is certainly not a precise science. Currently it is, at best, a different way of looking at the viability of a project.

And if "...looking at the problem differently" can suggest better solutions, doesn't it make sense to add this, or something like it, to our collection of design evaluation tools? ■

In Memoriam

The Association has received, with deep regret, notification of the death of the following members:

*Thor J. Cranshaw
Kenneth W. Franklin
Kenneth Lailey
Herbert D. Ziervogel
Dennis W. Zelt*

BC Geoscientist, George R. Cavey, P.Geo., Receives 2010 Canadian Professional Geoscientist Award

Geoscientists Canada is pleased to announce the recipient of the 2010 Canadian Professional Geoscientist Award – George R. Cavey, P.Geo. of Vancouver, British Columbia.

The Canadian Professional Geoscientist Award is given to recognize the achievements of an individual, who has made an outstanding contribution to the development and practice of professional geoscience and who has advanced public recognition of the profession in Canada in his or her capacity as a registered professional geoscientist.

To be eligible for the award a nominee must meet a number of specified criteria, which include: a solid career as a professional geoscientist, an outstanding record of voluntary service to the community, and service to Geoscientists Canada or to one of the provincial or territorial professional associations that regulate geoscience in Canada.

This year's recipient, Mr. George R. Cavey, P.Geo. is an accomplished and respected professional with over 30 years of experience in mineral exploration. He is the founder and President of OreQuest Consultants Ltd. a firm that has completed and evaluated exploration projects throughout the Americas, in Africa and in Europe, and which has provided services to numerous publically listed companies in Canada and overseas. Mr. Cavey obtained his B.Sc. degree in Geology from University of British Columbia in 1976.

Mr. Cavey was an instrumental member of the Task Force to Register Professional Geoscientists in BC from 1989-1990. He went on in 1991 to serve as a founding member of APEGBC's Geoscience Committee, then on Council and on the association's Investigation Committee, where he served until 2009. Following the successful integration of geoscientists into APEGBC, he became President of Geoscientists Canada (formerly Canadian Council of Professional Geoscientists) from 2003-2004. He also served his sector extensively, assisting the Canadian Securities Administrators as a member of the Mining, Technical, Advisory and Mentoring Committee, leading up to and following the introduction of National Instrument 43-101.

In announcing the award the President of Geoscientists Canada, James Moors, P.Geo., stated, "As a BC-based geologist, I have known George Cavey for many years and I think it is very fitting that the Geoscientists Canada judges chose George as this year's award recipient. George has put an enormous amount of effort into our profession and into raising the bar of professionalism in geoscience, both at the local and national level, for many many years".

The citation for the 2010 award, which will be presented to Mr. Cavey at a later date, will read as follows: "Presented to George R. Cavey, P.Geo., "in recognition of outstanding volunteerism to the geoscience profession, its professional organizations and the exploration sector."

Nominations for this award are considered annually, although the award will not necessarily be presented each year. Further details on the award criteria and nominations process can be obtained from the Geoscientists Canada website at www.ccpge.ca.

The mission of Geoscientists Canada is to develop consistent high standards for licensure and practice of geoscience, to facilitate national and international professional mobility, and to promote recognition of Canadian geoscientists. ■

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Chantal Guay, P.Eng., M.Env.
Engineers Canada
CEO Message

Women in Leadership

I was privileged to witness a special moment during our Annual General Meeting, held in Vancouver in May, when the newest female leaders of our constituent associations and members of our Board of Directors gathered for a photo.

Kim Farwell, P.Eng. (APEGGA), Shauna Argue, FEC, P.Eng., (APEGGS), Diane Freeman, FEC, P.Eng. (PEO), and Maud Cohen, ing. (OIQ), are all presidents of their associations for 2010. Now over 90 percent of the profession's membership is represented by female leadership. We also increased representation of women on our Board of Directors when we welcomed Catherine Karakatsanis, FEC, P.Eng., past-president of PEO, and Margaret Li, FEC, P.Eng., past-president of APEGBC. These ladies will join Louise Quesnel, FIC, ing., who has represented OIQ on our Board since 2008.

These women are strong role models for current and future generations of engineers. However, there is still more to be done to ensure a vibrant and diverse engineering profession.

Nearly 50 percent of Canada's entire work force is made up of women. According to the 2009 Engineers Canada membership survey, women comprised only 10 percent of all professional engineers in Canada, up slightly from 9.5 percent in 2008. The good news is that there is now a higher proportion of women among engineers-in-training in every province and territory. Changes in the gender gap in the profession are adjusting, slightly, but we need to ensure those numbers continue to rise and that there is a plentiful pool of female engineering graduates.

This is especially true when you consider that total female enrollment in undergraduate engineering programs has declined since the early part of the decade, to 17.4 percent in 2009. This number demonstrates that we must work on encouraging and promoting engineering as a viable career path for young women.

Research has shown that the tipping point – the point at which different ways of thinking or doing something becomes commonplace – is 30 percent. I believe we need to make it our goal to bring the number of female professional engineers up to 30 percent and to show them that engineering can be a lifelong career choice.

To accomplish this, our Women in Engineering Task Force has examined the numbers of women in engineering in an effort to determine how to get more women involved and keep them in the profession. Based on Task Force recommendations, some of the strategies Engineers Canada and its constituent associations are employing to attract and retain women in engineering include: raising the profile and improving the image of the profession to help young women understand what it means to be an engineer; promoting and facilitating the availability of existing training programs that may benefit or be of interest to female engineers; promoting mentorship programs, which are very important in attracting and retaining women in engineering; and working with industry on methods to help improve the retention of female engineers in the workforce.

continued on page 17



Chantal Guay, with the newest female leaders of our constituent associations and members of our Board of Directors, taken at the Hyatt Regency Vancouver Hotel on May 29, 2010, at the Engineers Canada Awards Gala.

From left to right: Maud Cohen, ing. (OIQ); Kim Farwell, P.Eng. (APEGGA); Margaret Li, FEC, P.Eng. (Board member from APEGBC); Chantal Guay, ing., P.Eng., M.Env.; Diane Freeman, FEC, P.Eng. (PEO); Shauna Argue, FEC, P.Eng. (APEGGS); Catherine Karakatsanis, FEC, P.Eng. (Board member from PEO).

The Canadian Engineering Leadership Forum brings together representatives from:

- *Engineers Canada Association of Consulting Engineering Companies - Canada*
- *The Canadian Academy of Engineering*
- *The Canadian Federation of Engineering Students*
- *The Engineering Institute of Canada*
- *The National Council of Deans of Engineering and Applied Science*

continued from page 6, Letters to the Editor

Re: Engineering Philosophy 101: Comparing Requirements Across Borders (Summer 2010)

I thought Ron Britton's latest Engineering Philosophy 101 was deserving of a response.

In his article "Comparing Requirements across Borders", Professor Britton proposes that there are differences in expectations for graduates from engineering schools in Canada and the US. As a basis for this he points out that in Canada, graduates from CEAB accredited programs proceed through the EIT phase of their development to Professional status without further technical examinations. In the US however, grads from ABET (American Board for Engineering and Technology) approved programs must undergo further science fundamentals and technical professional examinations both before and after the EIT experience.

Ron construes this difference in the two systems as a difference in "expectations" respecting how engineering education should be delivered.

Actually the reason for the difference is very simple and has nothing to do with expectations.

In Canada at the present time, the CEAB deals with 40 engineering schools for purposes of accreditation. Each school has from one or two to several engineering programs. Generally speaking the programs at these institutions are fairly similar. In other words the curricula, physical plant, academic staff, and so forth are similar. Of course there are variations, though not substantive variations. I am cognizant of this because as a past member of the CEAB and with some continued involvement, I have visited many engineering programs across Canada and have participated in accreditation decisions on many more.

In the US, ABET deals with some 600 universities and 3000 programs. There can be a very wide variation in the quality of the engineering educational experience in the US. Thus the need for ABET requirements for National Council of Examiners exams.

In both countries, the education of the engineer proceeds from basic math and science to engineering science, engineering design, on-the-job-training, and ultimately to Professional status. In both countries the expectation is the same; that the system will produce an individual who has a foundation of knowledge and basic set of skills appropriate to a career as a Professional Engineer.

Further in his article on Engineering Philosophy, Professor Britton seems to take the position that academics are not qualified to teach engineering design because they are only interested in research and have never worked outside of an academic environment. Having interviewed many academics across the country, I cannot share this view. Most university faculty who I have met are involved in consulting, close working relationships with industry, studies on engineering

applications, or other involvement in engineering activities complimentary to their academic life.

Professor Britton uses an unfortunate analogy: "One does not learn to swim in lectures or theoretical analysis. To learn to swim you must be allowed to get in the water and thrash around." (For "swim" read "do engineering design.")

Actually, one does get prepared for swimming through instruction, before ever entering the pool, by learning about dog paddling, the basic strokes, breathing easy, and not panicking. One does not just jump in and thrash around. Over my career I have had occasion to interview and hire a few new engineering grads. Had I thought that any of these talented individuals would be "thrashing around" on the job I would not have hired them.

I suggest that engineering education is not about different expectations or about academia vs. practice or about anyone thrashing around.

Engineering education is about teaching young people to think and to solve problems. To say that "one does not learn to design in lectures" is a disservice to engineering teachers and students everywhere. In my role as a CEAB Visitor I have observed significant projects undertaken by partnerships among academics, industry, and students where no-one is thrashing around. As CEAB criteria 3.3.4.4 states: "The engineering curriculum must culminate in a significant design experience conducted under the professional responsibility of faculty licensed to practice engineering in Canada..."

- R. Foster, P.Eng.

RE: Liquid Assets: Winnipeg's Water Supply History (Summer 2010)

Just wanted to let you know that the summer 2010 Keystone was good one. With all the stuff in the mail these days, I have to admit, I don't give things a good read. But this issue, particularly the Engineers Without Borders and the Winnipeg Water Supply were very well done and of much better calibre than the usual routine stuff.

Unfortunately there was no author listed for the Shoal Lake bit! They should get a nod!

Cheers,

- N. Pokrupa, EIT

Thanks for the comments! We always appreciate getting feedback on the content of the Keystone Professional and how it relates to our readership. The author you mentioned regarding the 'Liquid Assets: Winnipeg's Water Supply History' article including the Shoal Lake information was a combination effort from the APEGM Heritage Committee. Keep your eye out for future articles from the Heritage Committee as they focus on the challenges of water supply development outside of Winnipeg in an upcoming issue of the Keystone Professional.

- Editor ■

To read the Letter to the Editor submitted by Lindsay Ingram, please see Letters to the Editor beginning on page 6.

The following excerpt was originally published in IEEE Power and Energy Magazine, Volume 5, Number 1, January/February 2007.

The Pinawa Story: A bold move into uncharted waters

L. Ingram, P.Eng.

Just over 100 years ago, on 9 June 1906, the Pinawa hydroelectric station became operational when the first 1,000-kW (1-MW) generator was placed into service. The year-round plant, owned by the Winnipeg Electric Railway Company, was located on a natural diversion channel of the Winnipeg River in Manitoba, Canada. The name Pinawa comes from “pinnowok”, the Cree Indian word for “sheltered waters.” In 1906, the population of Winnipeg was close to 100,000 and expanding rapidly and the company had about 35 streetcars in operation along with some streetlights, and a few domestic and business customers. Until then, costly electricity was being supplied by a coal-burning steam plant located in Winnipeg. Because electric streetcar transportation was the major growing load, the company decided to meet this challenge with the supply of low-cost hydroelectric power from the Winnipeg River some 65 miles to the northeast.

Pinawa had an initial rating of 14,000 kW (14 MW) and the public wondered how this enormous amount of power could possibly be used. Little did anyone dream that the hydraulic capacity within the province of Manitoba would grow to some 5 million kW (5,000 MW) by the early 1990s.

When the decision was made to develop Pinawa, very little was known about construction in the northern wilderness or the effects of frazil ice on the operation of a plant this size in extremely cold winter temperatures, which could drop to around -40 °C (where the Celsius and Fahrenheit scales meet), frazil ice crystals are created in supercooled turbulent water. These crystals remain submerged and cling to solids such as rocks or structures, causing dangerous conditions. Pinawa, the first year-round hydroelectric project in Manitoba, was revolutionary engineering venture and one of the first hydroelectric project to be developed in such a cold climate anywhere in the world. ■



Pinawa Hydroelectric Power Project, 1906.
Photo is from the IEEE Website: www.ieee.org

The following excerpt was taken from the IEEE Website: www.ieee.org

Pinawa Hydroelectric Power Project, 1906.

The Milestone Plaque, “On 9 June 1906 the Winnipeg Electric Railway Co. transmitted electric power from the Pinawa generating station on the Winnipeg River to the city of Winnipeg at 60,000 volts. It was the first year-round hydroelectric plant in Manitoba and one of the first to be developed in such a cold climate anywhere in the world.”

The legacy of Manitoba Hydro’s predecessor company, Winnipeg Electric Railway Co., was the ability to prove that rivers in Manitoba could be developed to supply low cost electricity for streetcars and emerging domestic and commercial markets. The proof was in the successful development of Pinawa in 1906. This brought about competition from the emerging municipal utility, City of Winnipeg Hydro, which later developed the second hydroelectric plant on the Winnipeg River, Pointe du Bois in 1911. The two utilities battled to keep rates lower than anywhere else in North America. In 2002, Manitoba Hydro purchased the smaller Winnipeg Hydro and electricity rates are still the lowest in North America.

Although the plant itself is conventional by the standards of the 1900s, the ability to provide solutions to construction problems in the primitive wilderness surrounding the Winnipeg River were unique at that time. In addition, the operational problems of a plant faced with frazil ice formation at the onset of each winter had to be considered and dealt with. These were met with success.

The Pinawa plant with an ultimate rating of 22 MW was the first in a series of 13 plants on the Winnipeg, Nelson, and Saskatchewan Rivers in Manitoba for a total capacity of 5000 MW. The most recent plant, Limestone with a rating of 1340 MW, was completed in 1992. There is also an undeveloped hydro potential of some 5000 MW for the future.

The Milestone plaque may be viewed at the Manitoba Electrical Museum and Education Centre, 680 Harrow St, Winnipeg, MB R3M, Canada http://www.hydro.mb.ca/corporate/history/electrical_museum.shtml

Lastly, the following articles may also be of interest:

- “The Pinawa Story”, Lindsay Ingram, IEEE Power and Energy Magazine, January/February 2007. The reader’s attention is drawn to the many photos taken during the period.
- “A Window on the Past”, Lindsay Ingram, IEEE Power and Energy Magazine, July/August 2005.
- Winnipeg, Manitoba, 60,000-Volt Hydro-Electric Plant, V.D. Moody, June 23, 1906, Electrical World, Vol.47. (Mr. Moody was a junior engineer with the New York consulting firm owned by Dr. Fred Stark Pearson which provided all required services for its completion.) ■

Volunteer Appreciation Barbeque

A. Moore



The public of Manitoba enjoys a safe, comfortable society because of the professional work done by all members, but the special role as a volunteer contributes countless hours of hard work toward the task of professional self-regulation.

For the third year, APEGM hosted a June Volunteer Appreciation Barbeque social event to show their appreciation and to connect the 300+ APEGM volunteers with one another in a social context. The 2010 theme was a "Tailgate Party" which included authentic food, entertainment, and the appearance of the two Winnipeg Blue

Bomber mascots, Buzz and Boomer.

While attendees enjoyed a time of mingling over the great food and entertainment, contestants were pulled aside to see how they measured up in the "How Good is Your Aim" game. Congratulations to the winner, Bob Romanetz, P.Eng., who took home a hand held GPS system. Multiple other door prizes, including the grand prize of a new Stainless Steel BBQ, were given away throughout the evening.

Special thanks to Myron Hrychuk and Michael Isaac from Birchwood Honda West for the display of trucks that added to the atmosphere of a real Tailgate party. Also,

to Wayne and Connie LeMay with Dexter's Mini Donuts with whom no one could get enough of the fresh mini donuts and iced cappuccinos that ended the evening off just right.

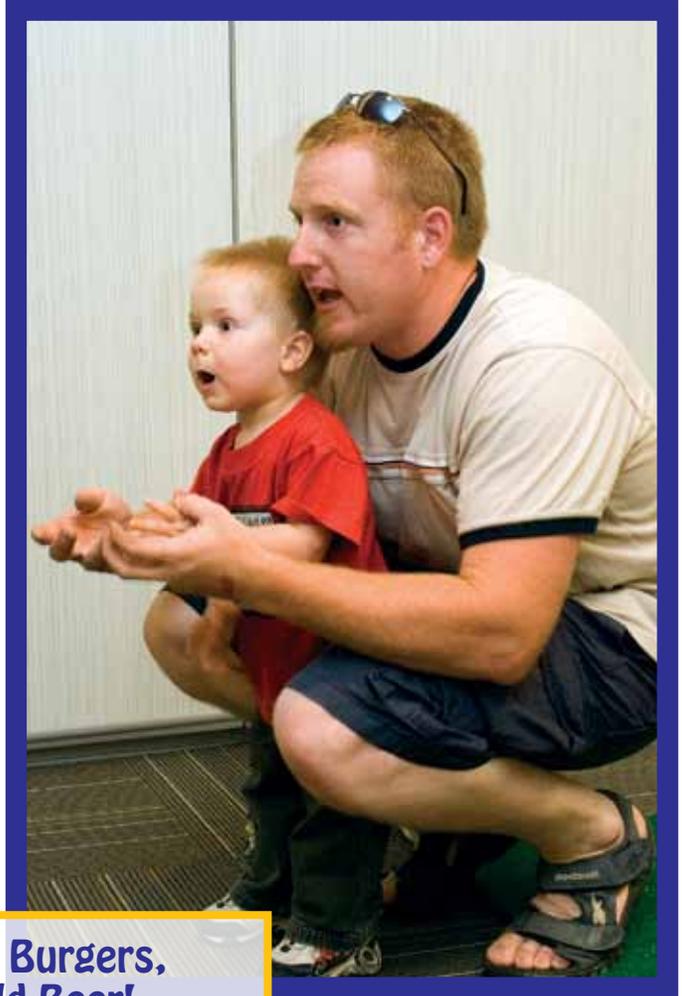
To the over 60 volunteers who attended, along with those who were unable to make it out, APEGM staff and Council once again offer their thanks for your time, dedication, and efforts that keeps APEGM running smoothly. This would not be possible without your dedicated volunteer service. ■



Above: Dexter's Mini Donut truck was a very welcome addition to the party.

Left: Mike Gregoire, P.Eng., APEGM's Professional Standards Officer, calls a penalty for Illegal Procedure.





**Hotdogs, Burgers,
And Cold Beer!
It's the biggest Party
Celebrating this past year!**

Did it go in?



Eric Loewen, winner of the "Most Team Spirit", tries his luck with "How Good Is Your Aim?"



Winnipeg Blue Bomber mascot, Boomer, mingling with guests.

2010 Making Links Engineering Classic **Golf Tournament**

A. Moore

The seventh annual Making Links Engineering Classic (MLEC) was held on June 17, 2010 at Quarry Oaks Golf Course in Steinbach, MB. The tournament is put on every year by the APEGM Sports Committee in association with the University of Manitoba. Net proceeds from the MLEC go to the education of Manitoba's future engineers at the University of Manitoba.

Over 220 registered golfers joined volunteers from APEGM and the University of Manitoba on a cool, rainy day for what was hoped to turn into a wonderful day of golf. Even though the tournament was called off due to weather after the 5th hole, this year's event was still a huge success raising over \$14,000 for the Faculty of Engineering at the University of Manitoba.

After a brief intermission of lightning, thunder, and intense rain, golfers were invited to go back out on the course for some free play until a tasty prime rib dinner was to be held early.

Speeches were made by Leo Martins from Great West Life, the major sponsor for the 2010 tournament, and by Dr. Doug Ruth, Dean of

Engineering at the University of Manitoba. Many thanks were given out on behalf of the University of Manitoba for the generous donation from the MLEC golf tournament.

The 2010 MLEC had many different hole and competition sponsors, including lunch sponsor, SNC Lavalin Inc. and golf cart sponsor, City Mix. There were also three Hole-in-One contests sponsored by Birchwood Honda West, Investors Group, and KidSport. The Chipping Contest and Par 3 Poker were sponsored by Lafarge Canada Inc.

There was also an astounding amount of prizes available to the players. In addition to the tee gift bag filled with goodies, each player received a numbered prize at random from a large selection of items ranging from power tools to home accessorizing equipment.

Since the tournament was called off, there were no winners to be announced this year. It was said by one of the attendees that "2010 was a good practice year to ensure our team will make it on a trophy in 2011." APEGM Sports Committee would like to thank all the people who came out to play, who doing so, helped support the future

of Manitoba's Engineers at the University of Manitoba and made tournament festivities possible. Hope to see you all next year on June 16, 2011. Watch for more details to come. ■





This area is in recognition of those who have endeavoured to support and fund the 2010 MLEC, without whom, we would not be able to bring you such an outstanding day of golf and networking.

Please support our Sponsors in turn, so they may continue to thrive and grow, and continue to finance this opportunity to support the future of Manitoba's Engineers at the University of Manitoba.

Major Sponsor

Great-West Life

Cart Sponsor

City Mix

Par-3 Poker Sponsor

Lafarge

Lunch Sponsor

SNC Lavalin Inc.

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Ghanaian People, Ghanaian Rice

If one farmer's son or daughter decides to study to be a doctor, and another a farmer, that is okay. What is important is that they have the opportunity to decide."

The words of Victoria Anamooh help to articulate the purpose of Engineers Without Borders' work in Ghana: providing as many as possible with the chance to lead a life of dignity and opportunity.

Victoria is an Agricultural Extension Agent with Ghana's Ministry of Food and Agriculture. The only female Extension Agent in her district, her job is to provide agricultural expertise to farmers in her country, and help them organize into groups to work together and pool their resources. A gifted speaker and a natural leader, her hard work is just as inspiring: widowed at a young age, she has raised seven children on her own, and to supplement her small salary she has cracked stones into gravel and woven baskets into the night.

In the last issue of the Keystone we wrote about EWB's work in Malawi, mapping water points and repairing existing infrastructure to improve access to safe water. EWB continues its work in Malawi, especially water and sanitation, but this issue we will look at Ghana, another of EWB's focus countries.

Rural farmers in the northern regions of Ghana face many challenges. Most are very poor, and unable to invest in their

own future by building storage bins or irrigation systems, especially if they are working alone without a supportive group. These farmers are at the mercy of unpredictable rains and fluctuating markets. Without any alternative, they must sell their crops to middle men with access to transportation and little incentive to pay a fair price. Ajaratu Alurigo is a tomato farmer in Ghana's Bukere district. "For years I have watched as people in my community struggle to find a way to sell the tomatoes they grow at a fair price," she says. "I could see that people were suffering, so I decided to do something for my community: I joined the Women in Extension Volunteers for Bukere group and now I am trained to help my community grow their produce in a better way."

EWB has developed a strong partnership with Ghana's Ministry of Food and Agriculture (MoFA) and their Extension Agents like Victoria Anamooh. The Agricultural Extension Agents have long been helping farmers to work together and overcome environmental and economic challenges, but were looking for ways to be more effective. Two years ago, EWB volunteers developed the Agriculture as a Business program, which is focused on providing business training for farmer groups to improve their harvests. The program covers topics such as long term business planning, risk and profit analysis, and monitoring and evaluation. Rather than learning dozens of rural dialects themselves, EWB volunteers have been teaching the program material to the Extension Agents, who in turn are sharing it with farmer groups. Duncan Farthing-Nichol, a volunteer from the University of Manitoba, was in Ghana this summer working on this project. As another University of Manitoba overseas volunteer put it, EWB is giving the Extension Agents bigger and better tools to do what they were already doing, which is enabling farmers to provide a stable future for their families.

In Ghana's most remote communities, markets are often unavailable for farmers to sell their harvests and earn an income. One solution may be for a group to pool its resources to buy a truck that can bring the crops into the city. However, EWB has been working with MoFA to implement other innovative solutions to market challenges. One initiative, the Eat Ghana Rice marketing campaign, promoted the importance of providing a market for local farmers to sell their harvest. The campaign consisted of billboards and a catchy radio jingle combatting the perception that imported rice was more desirable than the local varieties. It achieved impressive results: one half of the target market heard the jingle or saw a billboard, and one quarter of consumers switched to locally-produced rice.



Victoria Anamooh, Agricultural Extension Agent in Ghana's Talensi-Nabdram district

Although seemingly simple, the Eat Ghana Rice campaign has positively impacted the lives of hundreds of rice farmers and processors in Northern Ghana.

The Agriculture as a Business program and the Eat Ghana Rice campaign are only two of the ways EWB has made a difference in Ghana. Importantly, all of our work has been in partnership with Ghanaians, and owes its success to the strength and cohesion of the Ghanaian people themselves. In the words of Ajaratu, the tomato farmer, "I believe that by working together as a united people we can do anything. Someday we will be strong and our communities will prosper." ■

Local Chapter News

We are entering into our chapter's second year, after a couple more relaxing summer months that allowed many of us to enjoy the beautiful weather, and many to put in some extra quality time with their employers. This year should be at least as exciting as the first. We have already begun meeting in September, and are planning a Fair Trade Wine Tasting event later this fall.

For an update on the latest plans, visit our web page at www.winnipeg.ewb.ca and join our mailing list. If you have questions, are interested in getting involved, or would like to arrange for an EWB Lunch & Learn presentation in your workplace, you may also contact us at winnipeg@ewb.ca.

U of M students may want to check out the EWB Manitoba Student Chapter: www.umanitoba.ewb.ca.

continued from page 9, Engineers Canada CEO Message

In the end, this is not only a gender issue, but a diversity issue as well. The objective is to have an engineering workforce reflective of Canadian society. This includes the proportion of women, as well as visible minorities and Indigenous people. In order to actively engage the best minds in the profession, we need to ensure a strong core of different views and ways of thinking, which only a diverse workforce can offer. I strongly believe that increased diversity will further enhance the profile of our profession and benefit society at large. ■



Engineers Canada invites professional engineers to enter the 2011 National Scholarship Program competition.

Deadline : March 1, 2011

Manulife Financial Scholarships

Field: **Engineering**

Value: \$12,500

Criteria: Candidates must be accepted or registered in a faculty of engineering, beginning their studies no later than September 2011.

TD Insurance Meloche Monnex Scholarships

Field: **A field other than engineering.** The field of study chosen should favour the acquisition of knowledge pertinent to enhancing the performance of the candidate in the engineering profession.

Value: \$7,500

Criteria: Candidates must be accepted or registered in a faculty other than engineering, beginning their studies no later than September 2011.

TD Insurance Meloche Monnex Léopold Nadeau Scholarship

Field: **Public Policy Development.** The field of study can be engineering or another subject area.

Value: \$10,000

Criteria: Candidates must be accepted or registered at the time the scholarship is awarded (in the fall), in a master's or doctoral program that will greatly enhance their engineering expertise, abilities and potential to influence the development of public policy.

Refer to the application form for the complete list of eligibility requirements.

Application forms are available at:

www.engineerscanada.ca/e/pr_awards_2_1.cfm

To contact the National Scholarship Program at Engineers Canada email: awards@engineerscanada.ca



Engineers Canada is the business name of the Canadian Council of Professional Engineers.

*The term ENGINEERING is an official mark held by the Canadian Council of Professional Engineers.

continued from page 15, MLEC Golf Tournament

The extreme weather during the 2010 MLEC Golf Tournament resulted in some amazing photography; here's a glimpse.



\$10,000

scholarship for engineers returning to university

Build on your engineering background to make a difference in Canadian society.

Three Engineers Canada-Manulife Financial scholarships, valued at \$10,000 each, will be awarded to professional engineers returning to university for further study or research in an engineering field.

To apply for this financial assistance, you must be:

- a Canadian citizen or a permanent resident of Canada
- registered as a professional engineer in good standing with your provincial/territorial engineering association
- accepted or registered in a faculty of engineering

For complete application information, visit:
www.engineerscanada.ca/e/pr_awards_2_1.cfm

APPLICATION DEADLINE: MARCH 1, 2011



Sponsored by:



Engineers Canada is the business name of the Canadian Council of Professional Engineers



The Manufacturers Life Insurance Company

**You don't go to work
without doing up your
boots.**

Be Prepared.



Preparation Seminar for the Professional Practice Examination

Sept. 25 - 26, 2010
9:00 a.m. - 4:30 p.m.
\$250.00

APEGM Office
870 Pembina Highway
Winnipeg, MB

A light lunch of pizza and coffee will be provided.

This seminar will be of benefit to all those who are or will be required to write the APEGM Professional Practice Examination – this includes Members-in-Training as well as Academic Assessment applicants.

The seminar will be presented by Focussed Consulting, out of Ontario, who currently provides seminars for the Professional Engineers of Ontario (PEO) Professional Practice Examination. All questions regarding seminar content or registration should be addressed to Mr. Ramadoss Srinivasan at ramadoss@focussedconsulting.com.

It is advised that you purchase and review the texts for the examination well before attending the seminar – a list of study materials plus the dates of the next examination offerings is available at the APEGM website: www.apegm.mb.ca/PPE.html.

For more info, or to register, go to: www.peoexam.ca/services.aspx#APEGM.



91st Annual General Meeting Awards Dinner and Dance

FRIDAY, OCTOBER 29, 2010
THE FORT GARRY HOTEL
222 BROADWAY, WINNIPEG

OTHER AGM EVENTS

PROFESSIONAL DEVELOPMENT CONFERENCE

Professional Competence Program: A Transition to a New Paradigm

AGM BUSINESS MEETING

COMPANIONS PROGRAM

SEE ATTACHED BROCHURE FOR MORE INFORMATION AND REGISTRATION DETAILS

Engineers Canada Awards Gala:

REWARDING ENGINEERING EXCELLENCE

Canada's engineering profession celebrated the accomplishments of eight outstanding professional engineers and one engineering project during the Engineers Canada Awards gala, held on Saturday, May 29, at the Hyatt Regency Hotel in Vancouver.

"The 2010 award recipients are making a difference at home, abroad and among the stars," said Chantal Guay, ing., P.Eng., M.Env., chief executive officer of Engineers Canada. "Their extraordinary accomplishments are shaping a better tomorrow for all of us."

This year's Gold Medal Award recipient is Julie Payette, ing. The highest recognition of its kind in engineering is awarded to Ms. Payette for the difference she is making both at home and beyond earth's atmosphere. A world-renowned astronaut and computer engineer, Ms. Payette first flew in space in 1999, when she became the first Canadian to step inside the International Space Station.

She participated in the development of the Canadian Mobile Servicing System for the International Space Station; was the chief astronaut for the Canadian Space Agency from 2000 to 2007; and participated in a 15-day mission last year, where she was the prime operator of the Canadarm on the space shuttle, the Canadarm2 on the Space Station and a special-purpose Japanese arm on the Kibo module.

"We are delighted to present Julie Payette with the Gold Medal Award this year," said Dan Motyka, FEC, P.Eng., president of Engineers Canada. "Julie is another example of the exceptional Canadian engineers that are contributing not only within Canada, but who are shining on the world stage."

The other 2010 Engineers Canada Award recipients are:

- National Award for an Engineering Project or Achievement – Manitoba Hydro Place. Manitoba Hydro Place is the first of a new generation of sustainable buildings that combine time-tested environmental concepts with advanced technologies to achieve a "living building" that dynamically responds to the local climate.

Manitoba Hydro adopted an integrated design process that brought the entire design team together from the outset. The Canadian engineering team led by John Munroe, P.Eng. (AECOM Calgary); Michael Shewchuk, P.Eng. (AECOM Edmonton); Alan Aftanas, P.Eng. (AECOM Winnipeg); Barry Chamish, P.Eng. (Yolles, Toronto) and Tom Malkiewicz, P.Eng. (Crosier Kilgour, Winnipeg), along with Design Architects KPMB, Architects of Record Smith Carter and energy engineers Transsolar were key in developing and integrating ingenious concepts to make this outstanding project possible.

- Young Engineer Achievement Award – Constantin Christopoulos, PhD, P.Eng. Developing and designing high-performance earthquake-resistant systems and vibration mitigation systems for high-rise buildings is the primary focus of Professor Constantin Christopoulos' research.

While still in the early stages of his academic career, the associate professor of civil engineering at the University of Toronto already leads a large research group and has developed a number of innovative vibration controls systems

for structures that have generated four international patents and a University of Toronto spin-off company. These research and development activities have also earned him international recognition as a pioneer of a new approach to seismic design and earthquake engineering that aims to eliminate all damage to structures even after major earthquakes.

Professor Constantin has also helped Canadian and international companies implement advanced seismic resistant technologies.

- Medal for Distinction in Engineering Education – Greg J. Evans, PhD, P.Eng. A dynamic instructor, Professor Evans utilizes a variety of pedagogical techniques to ensure student learning and to mimic real-world applications knowledge. As the co-director of the Leaders of Tomorrow program, he has shown a passion for leadership education, seeking to empower engineers to play a leadership role in their profession and society at large.

As a mentor and advisor, Professor Evans has also demonstrated a consistent commitment to student development.

He has also developed "Language Across the Curriculum," a program designed to integrate communications into all facets of engineering education.

With a proven passion for developing future engineers that Ontario will need, Professor Evans has been recognized as an outstanding educator and for his contributions to the student experience.

- Award for the Support of Women in the Engineering Profession – Cristina

H. Amon, Sc.D., P.Eng. The 13th and first female dean at Canada's largest engineering school, the Faculty of Applied Science & Engineering at the University of Toronto, Cristina Amon is one of Canada's most successful and high profile engineers.

A pioneer in the development of computational fluid dynamics for formulating and solving thermal design problems subject to multidisciplinary competing constraints, Ms. Amon continues her research in nanoscale thermal transport in semiconductors and in bio-engineered devices.

Under her leadership, the faculty has created specialized mentorship programs such as Skule Sisters, which brings together female University of Toronto engineering students with female high school students interested in engineering. These and other efforts are increasing the faculty's female undergraduate enrolment and important engagement among current and future female engineering students.

- Meritorious Service Award for Professional Service – Mike V. Currie, P.Eng. Throughout his career, Mr. Currie has provided invaluable insight, energy and passion to the engineering profession and communities he serves. His leadership and outstanding achievements serve as an example to his colleagues and industry peers.

An accomplished water resources engineer with over 25 years of varied experience, Mike Currie is an expert in flood emergency response and recovery, river and creek engineering, floodplain management, hydrology and municipal

infrastructure. A member of the consulting engineering firm Kerr Wood Leidal Associates for over 20 years, Mr. Currie today serves as company president.

Mr. Currie is a past British Columbia and national president of the Canadian Water Resources Association, the current president of the Consulting Engineers of British Columbia and has served on several APEGBC committees.

- Gold Medal Student Award – Jane Chui. With her combined academic achievements and outstanding commitment to engineering and social issues, Jane Chui has demonstrated she has the creativity and intellect to apply engineering ingenuity to complex socio-technical challenges.

Ms. Chui has shown a dedication to her fellow engineering students through her involvement in the NSight Mentor Program and the Asian University for Women's Cybermentor Program. She has devoted considerable time to raise awareness of and promote mental health within the engineering community.

As a co-founder of the Citizen Engineer, a faculty-wide student club, Ms. Chui has demonstrated a commitment to bridging the gap between engineering and public policy.

- Gold Medal Student Award – Mike Klassen. A socially and environmentally conscious individual, Mike Klassen has served as a leader and role model in a number of capacities.

Among his achievements, he helped lead the creation of the University of Toronto's

new Energy Systems Engineering program that builds understanding of the interconnectedness of energy systems and how they are affected by human activity. Mr. Klassen also helped create the university's Centre for Global Engineering, serving as the only student member on the formation committee, bringing important perspective to its goals, strategies and activities.

As the co-president of the University of Toronto's Engineers Without Borders chapter, Mr. Klassen is actively involved in initiatives to increase engagement and leadership skills among its members and other students.

- Meritorious Service Award for Community Service – Jonathan C. Noble, P.Eng. A leading player in the Canadian consulting engineering industry and a Life Member of the Consulting Engineers of Nova Scotia since 2001, Jonathan Noble's community service is legendary.

In addition to mentoring young engineers for Engineers Nova Scotia for over 25 years, Mr. Noble has been dedicated to Scouts Canada for 30 years, demonstrating tireless enthusiasm for teaching young people the joys of learning about the Canadian outdoors.

True to his belief that it is important to be part of a community's political structure, Mr. Noble has volunteered many hours to assist municipal, provincial and federal politicians with their election campaigns, with door-to-door representation and with administrative support. ■



DONALD WHITMORE, P.ENG.

Donald Whitmore, P.Eng., receives Honorary Degree from the University of Manitoba

During the spring convocation ceremonies at the University of Manitoba, Mr. Donald Whitmore, P.Eng., received an Honorary Degree. Don has built an internationally recognized company, Vector Construction, and has kept that company based in Manitoba. His company specializes in the remediation of concrete structures. As steel reinforced concrete structures age, corrosion severely impacts their strength and integrity. By remediating these structures rather than replacing them, very significant capital investments are deferred while the public safety is maintained. His career as an engineer has been recognized on both the provincial and national level. In particular, Don has been named a Fellow of the Canadian Academy of Engineers, the highest recognition for an engineer in Canada.

Don's interest in structural performance made him and his company a natural champion of the ISIS Network of Centres of Excellence. Don has been involved with ISIS from the beginning

and has served as the Chair of the Board since the centre was established. ISIS is arguably the most successful of all the Networks of Centres of Excellence established by the Canadian Government. This success can be attributed in no small part to the leadership provided by Don Whitmore.

Don has also served his alma mater in a more direct manner, as a key player in fundraising for the Engineering and Information Technology Complex. Don chaired the Construction Subcommittee. He can be personally credited with raising over \$1,000,000 for the campaign. When you consider that most of these donations were in the \$5,000 to \$10,000 range, the magnitude of his achievement becomes even greater. He represented an outstanding model of how to approach the campaign, how to keep people on track, and how to develop and steward prospects.

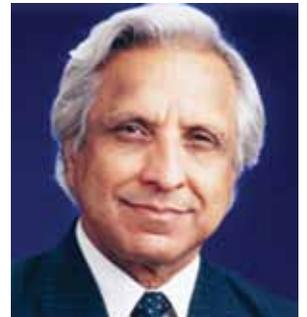
Don continues to contribute. He is a major player in developing post-ISIS activities. He was active in the Faculty of Engineering's Centennial celebrations and is currently serving as interim-Chair of the Friends of Engineering Group.

DR. AFTAB MUFTI

University of Manitoba
Engineering Professor to
Receive the Order of Canada

Dr. Aftab Mufti is known for his role in the field of civil engineering.

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for his work in researching the use of advanced composite materials and fibre-optic sensors in the construction and monitoring of bridges and other infrastructures. Dr. Mufti is also president of Intelligent Sensing for Innovative Structures (ISIS) Canada, which provides civil engineers with smarter ways to build, repair and monitor structures using high-strength, non-corroding fibre optic sensors.

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Council Reports

Thursday, May 13, 2010

A. Kempas, P.Eng.

This meeting was APEGM's first attempt to "go green." Councillors were encouraged to bring their laptops and use the wireless Internet service in the room instead of relying on paper documents. When you consider that the meeting PDF package had 244 pages, printing it for the Councillors would have certainly killed several trees. Attendance was good with Councillors Girling, Spangelo, Page, Aftanas, Reichelt, Priscu, Rychkowski, and Dresen present. Also, there were Executive Director Grant Koropatnick, President John Woods, Past President Donald Himbeault, Engineers Canada Director Dave Ennis, plus assorted note takers and helpers.

The meeting kicked off with the usual routine items: the day's agenda and the minutes from the last meeting. Next came a presentation from the University of Manitoba Engineering Society (UMES). Under the Policy Governance system used by APEGM, UMES falls under the Ownership Linkage section. UMES President Derek Neufeld and his team explained the purpose and workings of UMES to Council which, stated succinctly, was to look after students and have fun. UMES had a sizeable budget of \$150,000, and was funded by membership fees, an APEGM grant, and by sponsorship events. UMES members participated in various design competitions; UMEC, WEC, and CEC. On the fun side, UMES did frosh integration and the Red Lion, a publication well-known to university administrators. Mr. Neufeld said he would try to improve the Red Lion.

APEGM now had an enforcement officer, so Councillor Ryczkowski had a question about the status of APEGM's enforcement activities. What were the win-loss statistics? It seemed like a legitimate question and Council discussed it at length. Unfortunately, there wasn't an easy answer because enforcement was a multi-step, confidential process, and some information couldn't be shared until appeal periods had passed. While it was difficult to keep a running score sheet, the Investigation Committee was obligated to report to Council on actions taken, so the Council package contained a historical report compiled by a member of the Investigation Committee. Nearly 40 cases were reported on, some dating as far back as 2003. Of those 40, around 33 cases were dismissed (or did not warrant investigation).

APEGM's operating model is known as Policy Governance, so Council invited Susan Rogers, a Policy Governance coach, to participate in a review during the meeting. The proceedings were mainly about financial planning and budgeting. Although the review was necessary for APEGM operations, the details were dry and technical and didn't make for exciting reportage.

Council returned to business after a short break, to hear Engineers Canada (EC) Director Dave Ennis speak about the Synergy Task Force proposals which were to be voted on by EC constituent members on May 28, 2010. As far as Mr. Ennis was concerned, the train had left the station and all APEGM

could do was go along for the ride. For the first time since its inception, Engineers Canada governance would be done on a "representation by population" basis. Previously, every jurisdiction, from small to large had an equal say in governance. Under the new system, associations with more members would have more votes than those with fewer members. Mr. Ennis said to check back in five years to judge if the new process was an improvement and that President Woods was the last APEGM leader to have the same voting clout as Ontario.

Next on the agenda were the informational items. Continuous Professional Development (CPD) is always an exciting topic and Council learned that one of the possibilities for reporting CPD was an online system. It was also gratifying to learn that holding down a full-time job, by itself, might count towards CPD. Another informational item was on electronic sealing of documents. Quebec and British Columbia had adopted the Notarius[®] system, and that might be a possibility for APEGM too.

A quick visit to the Outstanding Task List, and then Council was ready to adjourn the meeting. First though was a quick plan for the next meeting: trial CPD online system, Susan Rogers would be back for another session, and revised use-of-seal guideline. The meeting couldn't end without noting that Dave Ennis had completed his tenure as Engineers Canada Director. Dave's association with APEGM went back 23 years, and though his official service was over, he was not likely to disappear anytime soon. Before adjourning, Council thanked Dave for his long and distinguished service to APEGM. ■

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Wednesday, June 16, 2010

A. Erhardt, EIT

Things got off to a slow start thanks to a lack of quorum. However, at 1:00 p.m., with enough Councillors in attendance, the meeting's agenda was approved with a minor change and things got underway.

The first major topic for discussions was Continuing Professional Development (CPD). A review was provided by Councillor Bill Girling as to where the program stands. The proposed system was explained and it was indicated that it would be presented this fall at the next annual general meeting.

The proposed system is based upon Alberta's model. The program will be initially introduced as a voluntary program, but in the long term, it will be required for all members. One thing to be highlighted will be the ease of reporting. To date, only the CPD Task Group has had access to the online reporting system. Council will also be given the opportunity to test the reporting system online via their respective APEGM online profiles.

Joining the meeting via telephone, Digvir Jayas reported in for the first time as APEGM's Engineers Canada representative. Dr. Jayas provided a summary, going over the highlights from the most recent Engineers Canada board meeting in Vancouver.

The next item for discussion was the ethical use of the engineer's seal. There has been much feedback from consultants with respect to the use of the seal. From this, a revised guideline was presented. Ultimately, it is an interim guideline as some of the by-laws that have been quoted within it are subject to revision in the near future. However, this guideline will help pave the way for an electronic seal. After much discussion, it was suggested that the revised document be reviewed once more at a round table info session of members, to ensure that the final product meets all of the requirements in advance of the Annual General Meeting.

Council was then led through another policy governance review by consultant Susan Rogers. This was a continuation of the review of executive limitation policies which began at the May Council meeting. Council completed the review and revisions of all of the executive limitation policies were done.

The APEGM Legislation Committee has reviewed several By-Laws, and recommended changes to the following:

- Council composition
- Electronic sealing
- Review of penalty proposals
- Alternate dispute resolution, and
- Online voting – changing default voting method to electronically instead of via paper.

Following discussion, a motion was passed with some minor revisions.

The Geoscientists Canada Securities Committee has contacted

continued on page 26



EPIC Educational Program Innovations Center

| Upcoming Course Schedule | Location | 2010 | | | |
|------------------------------------------------------------------------------------------------------------------------------|----------|-------|-------|-------|-----|
| Civil | | Sept | Oct | Nov | Dec |
| Stormwater Management - Design, Inspection and Operation/Maintenance of Flood, Water Quality, and Erosion Control Facilities | Regina | 28-29 | | | |
| Bidding, Evaluation, Negotiation and Contract Award - For Construction Projects | Winnipeg | | 4-5 | | |
| Total Building Commissioning, Recommissioning and Retro-Commissioning Process | Winnipeg | | 27-29 | | |
| Electrical | | Sept | Oct | Nov | Dec |
| Power System Neutral Grounding and High Voltage Substation Grounding for Industrial Plants | Regina | | | 4-5 | |
| Electrical Design Concepts for Non-Electrical Engineers (3 days) | Winnipeg | | | 30 | 2 |
| Environmental | | Sept | Oct | Nov | Dec |
| Understanding Environmental Regulations | Regina | | 18-20 | | |
| Mechanical | | Sept | Oct | Nov | Dec |
| Mechanical Engineering for Non-Mechanical Engineers | Winnipeg | | 4-8 | | |
| Fire Alarm Systems: Design, Installation, Inspection and Testing | Winnipeg | | 18-19 | | |
| Fundamentals, Sizing, Selection, and Operation of HVAC Systems | Winnipeg | | | 22-24 | |

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EPIC courses are available onsite at your location and they can be customized to suit your specific requirements. For more information, please visit www.epic-edu.com/on-site. You can also call Tim Chugh at 1-888-374-2338 ext 242, or email him at tchugh@epic-edu.com.

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continued from page 5, Executive Director's Message

The Code of Ethics for the Practice of Professional Engineering and Professional Geoscience describes the canons of our high calling. When was the last time you took a look at it? It's available online www.apegm.mb.ca/pdf/ethics00.pdf. At the end of the day, your boss may not notice the extra effort you made; your employees may not notice your trustworthy leadership; your clients may not say "thank you", but if you strive to fulfill the high calling of our Code of Ethics you can go home at night with a sense of satisfaction and personal honour that comes from achieving a high calling.

As you prepare for the "back to school" season, I hope you find the right motivation to get organized, stay organized, and fulfill your high calling as a professional engineer or professional geoscientist, and may that motivation also spill over into your personal and community activities.

Your feedback is invited and always welcomed. If you have any thoughts on anything you read in the KP, please email me at gkoropatnick@apegm.mb.ca or message me through Facebook. ■

continued from page 25, Council Reports, June 16, 2010

APEGM asking for a review of the National Instrument for reporting (NI 43101). Councillor Raymond Reichelt volunteered to review the proposed changes along with some colleagues in order to provide feedback. These potential changes would impact the mining industry and how professional geoscientists report their technical information to the security commissions across Canada.

Councillor and former President Robyn Page informed Council that she was stepping down from her position as APEGM Councillor. A suggestion was made by Ms. Page as to a potential replacement.

Council then reviewed the list of outstanding actions, and the agenda for the next meeting in September. Following the review of information items, the meeting self-assessment, and the standard Dilbert cartoon, the meeting was adjourned at 4:30 p.m. ■

APEGM is asking members to promote the **Call for Nominations** for the following APEGM awards to be presented at future Annual APEGM Awards Dinners:

- Certificate of Achievement
- Early Achievement Award
- Member-in-Training Award
- Honorary Life Membership
- Leadership Award
- Merit Award
- Outstanding Service Award

If you are aware of **Manitoba engineers or geoscientists** who are deserving of an award, please submit your completed Nomination form, available through the APEGM office or website.

Your help in this regard is pivotal to the ongoing success of the awards program, and to ensure that Manitoba's most worthy

professional engineers and geoscientists are recognized for their contributions to our professions and society.



www.apegm.mb.ca

New Acting Dean at the University of Manitoba's Faculty of Engineering: Dr. Douglas Buchanan

We are pleased to announce that at their June 22 meeting, the Board of Governors approved the appointment of Dr. Douglas Buchanan as Acting Dean, Faculty of Engineering for a term of one year effective July 1, 2010.

Dr. Buchanan is a graduate of the University of Manitoba (B.Sc. EE, 1981) received his M.Sc. at the University of Manitoba in 1982, and his PhD. from the University of Durham, England in 1986. Following his Ph.D. studies on electronic conduction in silicon-rich thin films, Dr. Buchanan spent 16 years (1986-2002) at IBM's prestigious Thomas J. Watson Research Center.

After an initial two-year post-doctoral fellowship at Thomas J. Watson Research Center, he spent three years in the CVD thin-film technology group in the IBM Microelectronics Division. Following this, and until June 2002, he was a Research Staff Member at IBM's T.J. Watson Research Center.

Dr Buchanan is a Senior-Member of the IEEE and is a member of the American Institute of Physics. He was a member of the executive committee of the IEEE Semiconductor Interface Specialists Conference between 1991 and 1997, culminating with the conference chair in 1997. He was a member of SEMATECH's Gate Stack Engineering Working Group from 1996-2000. Dr. Buchanan has received a number of awards including a Research Division Award and an Outstanding Technical Achievement Award during his tenure at IBM Research. He also received a General Manager's Teamwork Award from the Microelectronics Division.

Dr. Buchanan's current research interests include materials and devices for advanced silicon-based technologies, microfluidics systems in silicon for lab-on-a-chip applications, olfactory sensor design and integration and more recently has started to work with MEMs-based ultra-sonic transducers and sensors.

Dr Buchanan has 27 United States patents, over 65 peer-reviewed publications and over 67 conference presentations. His work has yielded numerous invited lectures at international conferences: Japan, Brazil, Russia, France, Spain, Ireland and China, to name a few. He holds the Canada Research Chair in Microelectronic Materials, and was most recently serving as Associate Dean, Research and Graduate Studies at the Faculty of Engineering at the University of Manitoba. ■



Dr. Douglas A. Buchanan, Acting Dean, Faculty of Engineering, University of Manitoba



FOUR SCHOLARSHIPS to support you on your path to greater knowledge

TD INSURANCE MELOCHE MONNEX, provider of the home and automobile insurance program endorsed by Engineers Canada, is proud to be associated with the Engineers Canada Scholarship Program by offering four scholarships for 2011.

Three TD Insurance Meloche Monnex Scholarships of \$7,500

Each scholarship will assist engineers returning to university for further study or research in a field other than engineering. The discipline should favour the acquisition of knowledge which enhances performance in the engineering profession. Candidates must be accepted or registered in a faculty other than engineering.

The TD Insurance Meloche Monnex Léopold Nadeau Scholarship of \$10,000

This scholarship will assist engineers returning to university for further study or research in the field of public policy development. The field of study chosen, whether it is engineering or another subject area, should favour the acquisition of knowledge pertinent to better serve the public interest by bringing the perspective of the engineering profession.

To be eligible, candidates must be accepted or registered at the time the scholarship is awarded in the fall of 2011, in a master's or doctoral program that will significantly enhance their engineering expertise, abilities and potential to influence the development of public policy.

APPLICATION DEADLINE: March 1, 2011

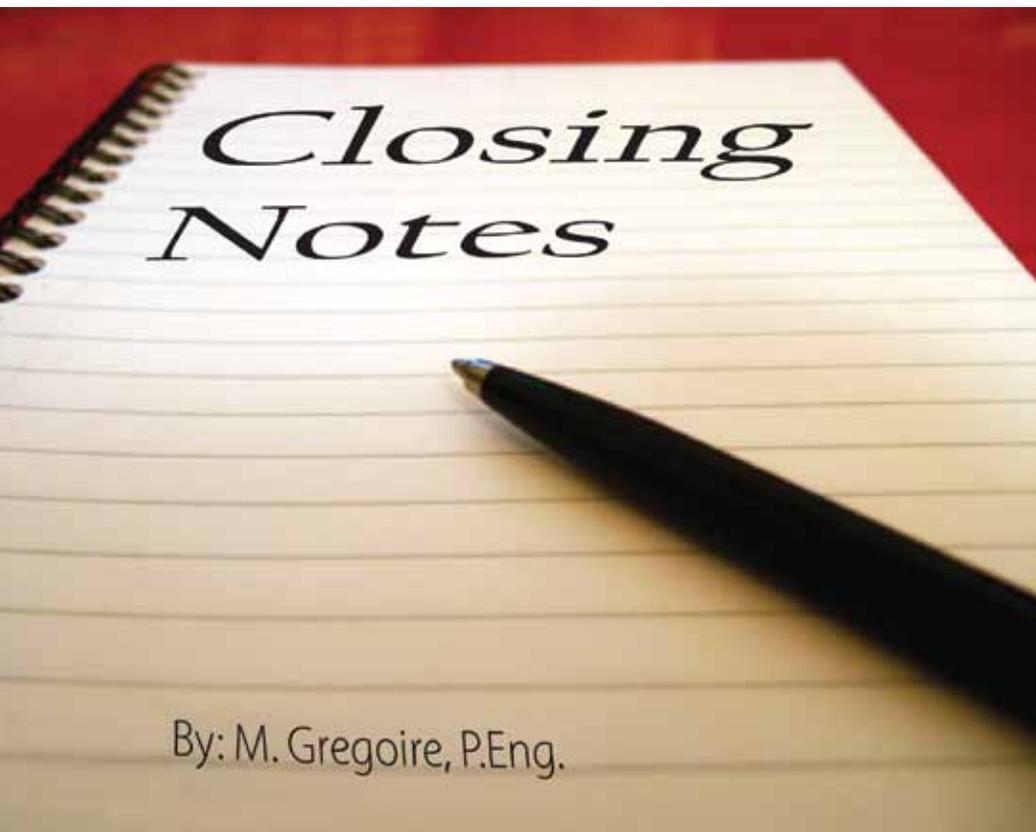
Application forms are available at: www.engineerscanada.ca or by contacting the National Scholarship Program at Engineers Canada awards@engineerscanada.ca



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Whose John Hancock Is it, Anyway?

The adoption of the Labour Mobility section of the Agreement on Internal Trade (AIT), effective April of 2009, caused professional organizations across Canada to review their processes. Most of this review occurred with respect to registration processes, as the AIT required that a professional registered in one province should receive near automatic registration in all other provinces. So, if someone has their P.Eng. status in Ontario and wants to come to Manitoba and work as a professional engineer, denial of their application is only acceptable under very discrete circumstances, such as current disciplinary action.

The effect of the AIT, which was in development for over a decade, was a coming together of engineering and geoscientific associations across the country in order to compare the methods by which they legislate the professions. Increasingly, legislators are moving toward homogeneity of the regulatory process in order to recognize the global nature of today's business realm.

To this end, Discipline and Enforcement officials from all of the engineering associations in Canada have met on an annual

basis for several years now. One of the goals of these meetings is to foster a more consistent and uniform treatment of individuals in discipline and enforcement activities.

With this current regulatory climate in mind, a task group was formed recently to revamp APEGM's Ethical Use of the Seal guideline. The entire guideline was built anew; separate from the last version, referring to the latter as required to ensure that important elements were not left out in the new version. Some changes were significant, which prompted a change of title for the guideline to Authentication of Professional Documents.

As a starting point to the process of recreating the guideline, a review of best practices from other engineering and geoscience regulators was conducted. Of the 14 regulators reviewed, only three do not have a similar guideline. The other 11 have documents ranging in length from two pages to 25 pages. The review highlighted some differences between what APEGM's guideline suggested as best practice and what was being suggested in other provinces. The member's signature was one such area.

It was already known that Manitoba and Saskatchewan differed in this area. Specifically, Saskatchewan allows a member to use a scanned copy of their signature for the purposes of authenticating documents.

Manitoba does not. The APEGM guideline explicitly states that "the professional's signature may be reproduced electronically and be used in a size that ensures it is legible". APEGM's By-Laws, by contrast, dictate that "the signed and dated image of that seal shall not be duplicated as an electronic file".

What caught the task group by surprise was that of the six regulators that address this issue specifically, five allow for the use of a scanned copy of the signature for the purposes of authenticating documents. Engineers Canada has a draft model guide for authenticating documents and it, too, allows for the use of a copy of the member's signature.

The reason that this took the task group by surprise is that a copy of a signature does not meet the purpose of signing: identification and intent. When someone signs a document, they are identifying who they are AND that they support the document in its state at the time of the signature. It is for this second reason that signatures must be unique.

The purpose stated above is obviously in the legal sense of a signature, and it is in this realm that a photocopied signature's uselessness becomes apparent. Take, for example, a scenario where a member shows up to court with a document that differs from that of someone who is taking action against them. In the scenario where the member's document has been altered, how are they to prove that the document they hold is the true original? From the view of protection of the public, what about the opposite scenario? How can someone prove that the document brought forth by a member has in fact been redrawn and reprinted in order to deceive the courts? The answer lies in the uniqueness of each individual signature.

It is for these reasons that APEGM's task group, in the end, decided to maintain a position that the process of authenticating documents must include the application of a unique signature. Unfortunately, this goes against the current trend of homogenization of the regulation of our profession, but maybe B.C. and Manitoba can convince the other provinces to change their position. Of course, implementation of electronic seals would render this debate moot. ■

Upcoming Events

The AutoLITT System

Presented by Richard Tyc, P.Eng., Vice President, Technology and Advanced Development, Monteris Medical Inc.

The prognosis of patients suffering from certain brain tumors is very poor. Treatment with surgery, combined with radiation therapy, results in an average survival of less than one year.

Laser interstitial thermal therapy (LITT) has been used as an ablative treatment for brain tumors, but has been hampered by several technical limitations. The AutoLITT® System has been developed by Monteris Medical in Winnipeg since 1999, AutoLITT has received FDA 510k clearance in 2009 and the first human clinical trial was completed last October. The first “commercial” cases are scheduled to start within weeks.

For more information, please see the APEGM website at www.apegm.mb.ca.

Date: September 15, 2010

Time:

11:30 a.m. - 1:30 p.m.

Cost:

\$20.00 Pre-Registration

\$25.00 Walk Up

\$15.00 APEGM Student Members

Location: Clarion Hotel,
1445 Portage Ave.,
Winnipeg, MB

Professional Practice Examination Seminar

This seminar will benefit those who are or will be required to write the APEGM Professional Practice Examination – including Members-in-Training and Academic Assessment applicants.

The seminar will be presented by Focussed Consulting, who provides seminars for the Professional Engineers of Ontario (PEO) Professional Practice Examination.

If you are interested in attending this seminar, please go to: www.peoexam.ca/services.aspx#APEGM. Registration is available online. All questions regarding seminar content or registration should be addressed to Mr. Ramadoss Srinivasan at ramadoss@focussedconsulting.com.

Date: September 25 - 26,
2010

Time: 9:00 a.m. - 4:30 p.m.

Cost:

\$250.00

Location: APEGM Office,
870 Pembina Highway,
Winnipeg, MB

APEGM Professional Development Conference

Professional Competence Programs: Transition to a New Paradigm

This presentation, by James T. Casey, Q.C., will provide an overview of trends with respect to professional competence programs for professionals. Questions to be examined include: Are the “old ways” of professional development good enough anymore? What are current governmental and societal expectations? Should professional competence programs be mandatory? And more.

APEGM's Next Steps

APEGM Council has been tracking national trends in Continuing Competency and formed a CPD Task Group to guide the membership with respect to a new Professional Development Program. The CPD Task group will be presenting a new on-line system for tracking professional development activities by professional members. The system, which will be accessed through APEGM's secure portal, will be demonstrated and its accompanying guideline will be discussed.

Also, please see the brochure included in this issue of the Keystone Professional or the APEGM website: www.apegm.mb.ca/AGM.html.

Date: October 29, 2010

Time: 8:30 - 11:15 a.m.

Cost:

\$85.00 Early Bird

\$125.00 Regular

Location: The Fort Garry
Hotel, 222 Broadway,
Winnipeg, MB

□ AGM Business Meeting

The Annual General Business Meeting is an opportunity for members to become directly involved in the business of the Association, vote on current matters, and acknowledge Councillors completing or just beginning their terms.

Pre-registration is required, lunch, and door prizes included.

Date: October 29, 2010
Time: 11:30 a.m. - 2:00 p.m.
Cost:

Complementary with
Registration

Location: The Fort Garry
Hotel, 222 Broadway,
Winnipeg, MB

□ AGM Awards 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, followed by entertainment and dancing with Robin Chestnut and the Tek-9 Dance Band.

Canadian Juggling Champion Robin Chestnut will present a full-scale after dinner show—a polished, professional act, complete with comedy, light-hearted entertainment, and audience interaction.

Since 1999 Tek-9 has become one of Winnipeg's Hottest Show Bands, featuring a diverse blend of popular, contemporary and retro club music.

Also, please see the brochure in this issue of the Keystone Professional or the APEGM website: www.apegm.mb.ca/AGM.html.

Date: October 29, 2010
Time: 6:00 - 11:00 p.m.

Cost:
\$50.00 Individuals
\$450.00 Table (10 tickets)

Location: The Fort Garry
Hotel, 222 Broadway,
Winnipeg, MB

□ Sharpening Your Written Communication Skills

This will be a highly interactive two days of instruction. The course leaders will provide highly interactive instruction on, and provide numerous opportunities to practice, how to identify key information and focus readers' attention on it, and plan and write email, letters, reports, and proposals. There will be exercises with individual and group practice, followed by discussion and feedback.

Counts as 14.0 Professional Development (PD) contact hours.
Optional: Textbook *Get to the Point!* for an additional \$39.95. This course fills up quickly as there are only 20 spots. Register Early!

Date: November 3 - 4, 2010
Time: 8:00 a.m. - 5:00 p.m.

Cost:
\$365.00 Registration

Location: APEGM Office,
870 Pembina Highway,
Winnipeg, MB

□ Techniques for Making Effective Oral Presentations

By the end of the course participants will be able to

1. identify an audience's primary interests, and develop a topic to satisfy the audience's needs,
2. establish an approachable, positive, yet businesslike presence,
3. organize information to keep the presentation concise yet complete, and
4. develop confidence in speaking informally or formally to an audience.

Participants will be asked to bring at least one topic with them that they can develop into a presentation. For more information, please see APEGM website at www.apegm.mb.ca or contact Jenna Tenszen at (204) 474-2736 ext. 223. Only 10 spots available.

Date: November 5, 2010
Time: 8:00 a.m. - 5:00 p.m.

Cost:
\$225.00 Registration

Location: APEGM Office,
870 Pembina Highway,
Winnipeg, MB

New Members Registered May, June, & July 2010

| | | | | | |
|---------------------|--------------------|----------------|-------------------|---------------------|-------------------|
| K. Abdel-Hadi | I. de Luna Ayala | M.M. Habib | M. Leka | G.J. Parrott | S.H. Stark |
| B.C. Adams | B.A. Dean | J.W. Hanley | M.C. Lopez de | M. Picco | J.G. Stieben |
| K.F.K. Adane | J.A. DeCoste | C.P. Hapka Jr. | Echeverria | J. Piplica | V. Suhbaatar |
| A.M.M. Ahmed | M.S. Dewairy | H.R. Hawk | K.S. Loyal | D.R. Poole | G.S. Tadros |
| H. Ali | A.E. Dingman | M.T. Hayden | W.L. Lozinski | L.I. Popescu | L. Tai |
| S. Amarakoon | S.N. Dolyniuk | A.P. Henry | A. Maapaar | M. Potapczuk | K.J. Thiessen |
| B.P. Arpin | N.A.T. Dueck | R.C. Holatko | R. Malczyk | R.P. Pound | M.A. Trachtenberg |
| I.A. Backus | D.J. Duval | O.A. Idowu | J. Mandelli | N.C. Privat | V.A. Voodi |
| N. Bashaev | S.R. Dyck | G.A. Jackson | S.D. Martin | B.R. Reimer | G.A. Wagner |
| M.H. Basri | W. El Mohtar | D.S. Jhinger | M.F. Mason | S.P. Rempel | G.R. Walker |
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| R.S. Bernard | L.M.P. Fardy | F. Jian | C.T. McClary | G.L. Riley | F.N. Wildeman |
| D.J.G. Blanchette | J.A. Faulconbridge | S.J. Johnson | J.P. McCusker | D.E. Romero- | E.B. Wilson |
| B.L. Boeholt | M. Firth | T.L. Jorgenson | H.W. McMillan | Buitrago | D.J. Wong |
| J.P. Bolyard | M. Fleury | D.W. Kantor | G.C. Medilek | S.L. Samarawickrama | W.K. Wong |
| C. Bouchard | A.G. Fogg | D. Keric | R. Minhaz | C.E. Saunders | M.G.Y. Woo |
| G.J. Bowman | R.D. Fougere | C.C. Ketchum | V.C. Mishra | K.A. Savage | L.B. Wood |
| R.C. Cameron | Y. Gao | P. Khanna | G.W. Miyasaki | M.M. Schneider | J. Yacoub |
| D.W. Celmer - Repin | J.C. Garcia Alonso | J.J. Kiezik | P.M.M. Nakoneshny | C.S. Scott | D.W. Zbaraschuk |
| P.C. Chang | M.J.V. Genik | M.S. Kohut | R.P. Newsham | R.G. Scott | L. Zhu |
| E.L. Chase | R.L. Granger | B.J. Kuehl | D.R. Northcott | A.E. Sedik | R.B. Znidarec |
| M.S.S. Chiu | K. Guo | H.J. Lahti | M.J.T. Otton | J.R. Siefken | D.R. Zotzman |
| J.J.O. Cormier | M.J. Habash | R. Leibe | I.A.R. Parkinson | D.J. Stanton | |

Licenses Enrolled May, June, & July, 2010

P.D. Galloway

Members-In-Training Enrolled May, June, & July 2010

| | | | | | |
|----------------|----------------|--------------|-----------------|---------------------|----------------|
| P. Adhikari | M.J.H. Duff | A.D. Hammond | C.M. Latiza | J.C. Perrault | S.D. Simons |
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