

# THE KEYSTONE PROFESSIONAL

Summer 2010

*Certificate of Fellowship*  
*Wine and Cheese Reception*

## APEGM'S NIGHT AT THE THEATRE APEGM Adds a Touch of Drama

**Liquid Assets: Winnipeg's Water  
Supply History**

Association of Professional Engineers and  
Geoscientists of the Province of Manitoba  
[www.apegm.mb.ca](http://www.apegm.mb.ca)



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## Summer 2010

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870 Pembina Highway, Winnipeg, Manitoba R3M 2M7

Ph. (204) 474-2736 Fax (204) 474-5960

E-Mail: [apegm@apegm.mb.ca](mailto:apegm@apegm.mb.ca)

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- The Communications Committee would like to hear from you.
- Comments can be forwarded to us through A. Moore: [amoore@apegm.mb.ca](mailto:amoore@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 ten years and is captivated by the depth of the craft.

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John Woods, P.Eng.  
President's  
Message

## SNAPSHOT FROM THE FIELD

It has been a busy few months since my last message in the Keystone, and since then I have had the pleasure of meeting with many of you. I continue to see this as my privilege. Now that I am approximately half way through my term as president, I thought it would be a good time to give you a bird's-eye view of some of the events that have taken place.

So far, the Executive Director and I have made our way west to attend the Annual General Meetings of other provincial engineering and geosciences associations, as well as meeting with Engineers Canada in Ottawa.

Most recently, we were in Moosejaw, Saskatchewan and were delighted to get a sense of the growth and optimism which abounds in Saskatchewan these days - as much in the engineering and geosciences professions as any. It is clear that this optimism has been buoyed, as much by the energy sector as it has traditionally been by the agribusiness - and that a new plateau

of GDP and commerce has clearly been reached. As we made our way to the various events, it became clear that we continue to share many values and ideals with Saskatchewan's members - I for one feel good about their success - and trust they will manage successfully.

By the way - with approximately the same number of members, spread around three major city centers and numerous smaller ones, APEGS managed to get 108 members out to their AGM (see my Article in the Winter '09 Keystone if you don't recall our attendance rate).

We clearly share a concern over the image of our professions, and recognize our greater role in influencing public policy. The concept of becoming "Trusted Advisors to Society" continues to gain interest. In recent years, Ontario has moved to formalize this concept in their creation of the Ontario Center for Engineering and Public Policy. On the OCEPP's website, the first of eight mission statement bullets

reads "... to enhance the engagement of the engineering profession in the development of public policy". Evidently, with approximately 15 times as many members, there is more opportunity for such formal initiatives. However, the sustainable funding of this initiative is not predominantly expected to be from their members.

Though here in Manitoba, we seem to have a general disinterest in politics, I still believe that it is in our best interest to be more engaged in the debates around significant public issues - from climate change to health care spending. We are working on our own initiative involving APEGM's past presidents to establish knowledgeable and unbiased positions in a timely manner. I also encourage each of you to make contact with your local MLA and MP, and extend yourself to them as a potential resource - should they need information on technical issues. If you would like some ideas on how to make this contact, or you find yourself

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## NOTICE

### Annual General Meeting

The 2010 Annual General Meeting of the Association of Professional Engineers and Geoscientists of the Province of Manitoba will be held on Friday, October 29, 2010, at the Fort Garry Hotel, 222 Broadway, Winnipeg, MB.

#### NOMINATIONS FOR ELECTION TO THE COUNCIL

Members of Council whose term of office continues for another year are:

Alan Aftanas, P.Eng.; Robyn Page, P.Eng.; Doina Priscu, P.Eng.; Bill Girling, P.Eng. (president-elect)

Members of Council whose term of office expires at the 2010 Annual General Meeting are:

Rick Lemoine, P.Geo.; Jeannette Montufar, P.Eng.; Edward Ryczkowski, P.Eng.; Don Spangelo, P.Eng.; John Woods, P.Eng. (will continue as past-president)

Those nominated for election to the FOUR PROFESSIONAL ENGINEER positions on the Council are:

Rajib Ahsan, P.Eng.; Nazim Cicek, P.Eng.; Adam Pawlikewich, P.Eng.; Roger Rempel, P.Eng.; Don Spangelo, P.Eng.

Those nominated for election to the ONE PROFESSIONAL GEOSCIENTIST position on the Council are:

Rick Lemoine, P.Geo.

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# Engineering Philosophy 101

## Comparing Requirements Across Borders

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

Recently I found myself in a discussion about the fundamentally different expectations for graduates from Faculties of Engineering in Canada and the United States. In Canada, graduates from Canadian Engineering Accreditation Board (CEAB) accredited programs are seen as being “academically qualified” to become Engineers in Training (EIT). After a minimum of four years of experience under professional supervision, EITs can receive the right to practice as a Professional Engineer (P.Eng.). In the United States, graduates from ABET, Inc., (formerly the American Board for Engineering and Technology) approved programs are seen as qualified to write a fundamentals examination (prepared by the National Council of Examiners for Engineering and Surveying, NCEES) prior to becoming EITs. After at least four years, they will write a further series of NCEES technical professional examinations prior to becoming a Professional Engineer (PE).

Clearly this summary of the two systems is less than complete, but the difference in expectations raises an important question respecting how engineering education should be delivered. Can one approach accommodate two different expectations?

If a Canadian graduate is assumed to be academically qualified, does that imply that those qualifications include an understanding of the design process beyond the scientific and mathematical tools used in design? Certainly when you look at the CEAB criteria, instruction that will deliver competence in design is one of the fundamental attributes that a program must demonstrate if it is to be accredited. There are no further technical examinations required to move from

Engineering Graduate to EIT to P.Eng.. Development beyond entry into EIT status becomes the responsibility of “the profession”.

Our American cousins, on the other hand, must demonstrate that the ABET approved program from which they graduated provided them with the fundamentals that will permit them to write the tests that they require to become registered as EITs. In general, these tests focus on Mathematics, Science and the Engineering Science as compared to applications of those skills. Some have suggested they are the rough equivalent of the fundamentals base that is typical of a third year student in Canada. Indeed, in some states, students can take these Fundamentals tests “for the record” following their third year in an engineering program.

“One does not learn to swim in lectures or theoretical analysis”

United States. Does this mean it is more important to include design experience in Canadian Engineering programs? If the answer to that question is yes, who should provide that “design” education?

On both sides of the border, academic staff tend to be PhDs who have developed careers based on research. Indeed most institutions base their promotion procedures on research productivity. Few of these individuals have ever worked outside of an academic environment and experienced the process of moving from ill defined problem, through assumption, to justification and finally detailing: that is design. Is it reasonable to expect these highly qualified people to “teach” in an area that is completely foreign to their experience?

This seems to translate to a situation where graduates in Canada are expected to be more “job ready” than graduates in the

To be fair, Engineering Professors do not typically address the same kind of abstract enquiry that Science or Mathematics Professors do. By and large Engineering research is addressed to understanding engineering problems. By and large, the Engineering profs use findings from fundamental research as input to their work. But the Engineers’ studies are based on the same “scientific methods” as those done by their colleagues in the more fundamental areas.

It is estimated that only 10 to 15% of Engineering graduates will continue to study for advanced degrees in Engineering. Put another way, 85 to 90% of those graduates will enter into careers in which they will apply “. . . a logical and systematic approach to solving problems.”<sup>1</sup>

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”. During that “thrashing around”, most of us need the assistance, encouragement and advice of someone who has mastered the art of “staying alive in the water”. Similarly one does not learn to design in lectures or by answering closed end questions from “the back of the book”. Again one must be allowed to “thrash around” under the tutelage of someone who has survived that particular “pool of sharks”.

And going back to the original question -- does the difference in graduate expectations in Canada and the United States mean that we need a difference in approach to the education of engineering students? Specifically, is the need for “design” experience, for both students and professors, more critical in Canada? ■

<sup>1</sup> Elizabeth Perry, Seize the Moment, American Society for Engineering Education Prism-Magazine, February 2010, p. 46 <Prism-Magazine.org>



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

## WHAT A GREAT YEAR!

**W**hat a great year it has been. APEGM is coming to the end of its 90th Anniversary year and there are some memories worth noting from the past year. Association life is about the people involved. In this issue, I will highlight people, stories, comments and events that have been a part of our 90th anniversary year. I hope you enjoy this retrospective.

### GRINDING GEERS FOR 100 YEARS

September 11th I attended the book launch for the Faculty of Engineering centennial book titled: Grinding Geers for 100 Years. Do you have your own copy? It is a fabulous look at the old alma mater and lists all the grads since the beginning. It is fun to leaf through the pages of photos, stories and names of all the grads. If you're a U of M grad, you've got to purchase a copy. See the link on the APEGM home page [www.apegm.mb.ca](http://www.apegm.mb.ca) to order your copy.

### AGM

It's ironic how the historical record shows that there were more members present at the first annual general meeting in 1920 (71) than were at the meeting last October 23rd (67). I'm not blaming or shaming anyone. Life in the new millennium is busier and more complex than it was in 1920. People today have more demands on their time and perhaps, it's just no longer practical to attend a business meeting to cast a vote. In 2011, the council will recommend a by-law change that will introduce online voting. Yes, online election and by-law voting can be done through the internet. APEGBC and APEGGA have already used this method to collect votes from members. Increased participation by members, despite low attendance at the meeting will be made possible through online voting.

### GALA DINNER & DANCE

What a party! The APEGM Awards Dinner & Dance kicked-off our anniversary year

featuring Manitoba's top engineers, a magic show by Anders Boulanger, and raucous dance music by the Ron Paley Dance Band. APEGGA President Jim Beckett was heard saying "I never knew Manitoba threw such great parties!" Guests enjoyed a 90th anniversary photo gallery, wine reception, scrumptious dinner, and the nostalgic Eaton's Photo Booth! A few APEGM members (who shall remain unnamed) and out-of-town guests from Alberta and Saskatchewan were the last to leave the dance floor in the wee hours of the morning. A great time was had by all! Plan to attend the 91st dinner & dance on October 29th.

### SPAGHETTI BRIDGE – WINNIPEG HARVEST

In 2010, the engineers of Manitoba partnered with Investors Group and Manitoba engineering firms to donate 10,000 pounds of pasta to Winnipeg Harvest. The goal was to make a pasta donation equal to the cumulative weight supported by all entries in the annual Spaghetti Bridge Competition (and exceed the 10,000 pound target). The goal was not surpassed (with a total load of 8,466.11 lbs), but students, parents, and teachers will try again next year. Thanks to engineering firms AECOM, Hatch, KGS, Teshmont, and Wardrop for their generous support.

### SUDOKU FEVER

Members attending "APEGM Night at the Theatre" (March 22nd) enjoyed a real treat! Sudoku Fever is the story of a young woman from Minnedosa, Manitoba who wants to study mechanical engineering after high school but encounters family opposition to her career choice. The one-act-play staged by Winnipeg theatre company New Stage Productions was written by Ron Blicq and features Julie Seroy as Regan and Ron Robinson as the crusty yet sensitive

grandfather. The play will make you laugh and cry and tells a wonderful story about family life and engineering. Sudoku Fever will be performed at the Winnipeg Fringe Festival, July 14-25, 2010. Make sure you get out to see a performance. You'll love it.

### IRON RING CEREMONY

When was the last time you attended the Iron Ring Ceremony? Oh, you went years ago to receive your ring? Well, why don't you come back and see it again? The Winnipeg Camp #8 ceremony: Ritual of the Calling of an Engineer is open to all obligated engineers and the public. At the last ceremony held (March 23rd) at the University of Manitoba, 172 candidates received their rings and took the obligation. You are invited to attend the next ceremony in November. See the info posted on the website: [www.ironring.ca](http://www.ironring.ca)

### FELLOWS OF ENGINEERS CANADA

A fancy affair took place at the Millennium Centre March 24th when 126 APEGM members were honoured with the designation "FEC" – Fellow of Engineers Canada. These dedicated members have given a minimum of 10 years volunteer service to the profession or have served in the office of a provincial president, Engineers Canada board member or national president. Members and guests were greeted by Engineers Canada CEO Chantal Guay, Ing, P.Eng. and honorees had their photo taken to mark this special occasion. Find out more on this link: [www.engineerscanada.ca/e/pr\\_fellowship.cfm#](http://www.engineerscanada.ca/e/pr_fellowship.cfm#)

### APEGM BIRTHDAY PARTY

More than 200 members dropped in at the 90th Birthday Party hosted at the APEGM office, March 25th. Members enjoyed hot snacks, cake, live jazz music, Wii golf, and many excellent displays of engineering and geoscience organized by the Heritage

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## Professional Geoscientists Obtain Funding to Facilitate Harmonization of Admissions for Registration and Licensure in Canada of Internationally-Trained Geoscientists.

**G**eoscientists Canada (Canadian Council of Professional Geoscientists), is pleased to announce \$296,000 in support funding from the Government of Canada. This funding will contribute to work to be undertaken over the next 24 months by Geoscientists Canada, in collaboration with its constituent associations – the 10 regulatory bodies that govern geoscience practice - to investigate and analyze admissions assessments processes across Canada and to seek ways to facilitate greater harmonization.

The Government of Canada funding is provided by Human Resources and Skills Development Canada as part of its Foreign Credential Recognition Program.

“Our government is committed to helping newcomers succeed in Canada,” said the Honourable Diane Finley, Minister of Human Resources and Skills Development. “Through Canada’s Economic Action Plan, our government is taking action to improve foreign credential recognition so that newcomers can maximize their talents. We are proud to support Geoscientists Canada’s project to help foreign-trained professionals join the workforce, because attracting the best international talent is vital to Canada’s long-term economic success.”

The basic objective of the project is to develop a collective understanding of how credentials are assessed when Internationally-Trained Geoscientists (“ITGs”)

are being considered for admission at any of the 10 regulatory bodies across Canada that regulate geoscientists, and to explore the development of similar assessment policies and practices.

Termed the “ITG project”, the project will comprise 4 staged phases:

1. To map and analyze how the credentials of ITG applicants are currently assessed by the 10 regulatory bodies
2. To facilitate debate and consensus building among the regulatory bodies towards developing similar policies and assessment tools
3. To undertake due diligence on a select number of geoscience regulatory bodies in other countries with the view to assessing the possibilities for entering Mutual Recognition Agreements between the regulatory bodies in Canada (collectively) and regulatory bodies in other countries.
4. To seek to establish a set of similar policies and assessment tools, agreed to among all the regulatory bodies, for the consideration of applications for professional registration from Internationally-Trained Geoscientists

Speaking about the announcement, CCPG President, Gary Vivian, P.Geol. said: “This project is very timely indeed coming as it does so soon after the recent revisions to Canada’s Agreement on Internal Trade. It will allow our member provincial bodies to increase understanding, consensus building,

and collaboration on this important matter. Potentially, this will provide some solutions that will not only reduce barriers to entry into our profession by well-trained international geoscientists and their subsequent inter-provincial mobility, but more importantly it will maintain high entry standards for the profession and increase overall protection of the Canadian public”.

Mr. Vivian went on to say “I am also delighted to announce that Geoscientists Canada has recently engaged Mr. Keith Johnson, MBA, of Toronto, as manager, part-time, for this ITG project. In addition to his other recent assignments to develop assessment tools for different regulated professions in Canada, Mr. Johnson served as the manager for the recently-completed HRSDC funded project, undertaken by the Canadian Centre for International Credentials, which resulted in the publication of the Pan-Canadian Quality Standards in International Credentials Evaluation.”

Geoscientists Canada is the national organization of the 10 provincial and territorial licensing bodies/ordre that regulate the practice of geoscience in Canada.

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. ■

### *continued from page 3, Notice to Members*

Additional nominations may be made by the membership. Nomination forms are available from the Association office. The consent of the nominee must be obtained, and the nominator and six other members must sign the nomination form. Nominations must be received in the Association office on or before Friday, September 17, 2010. Each completed nomination form must be accompanied by the nominee’s resume, a history of the nominee’s Association activities, and the nominee’s platform (not to exceed 100 words). Forms for the resume are also available from the Association office.

### BY-LAW CHANGES

By-law 17.1 prescribes that any proposal to introduce new By-laws, or to repeal or amend existing By-laws, at a duly convened meeting of the Association must, unless initiated by the Council, be signed by not fewer than six members. Proposals must be given to the secretary at least 45 days before that meeting. In this case, the date for the receipt of a proposal is Tuesday, September 14, 2010.

### RESOLUTIONS

By-law 5.1.4 prescribes that resolutions put forward at an annual general meeting must be in writing, signed by the mover and seconder, and received by the Secretary no less than 48 hours prior to the commencement of the meeting. Either the mover or the seconder must be present in person or by distance conferencing at the meeting for the resolution to be considered.

*Grant Koropatnick, P.Eng.,  
Secretary*



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

## . . . AND PRACTICING UNDER ALL PARTS OF OUR ACT

Here in Manitoba, The Engineering and Geoscientific Professions Act lists three purposes for the existence of our Association, the third of which is to “advocate where the public interest is at risk”. Further, in our Code of Ethics, Cannon 2 states that “Each practitioner shall regard the physical, economic and environmental well-being of the public as the prime responsibility in all aspects of professional engineering and professional geoscientific work”.

In the process of delivering solutions to problems, the three “constraints” mentioned in the Code are usually addressed in linear sequence. Many consider that they are in conflict. However, they are requirements under our Act so that conflict, real or imaginary, must be resolved. Conflict resolution requires one to understand the basics of all elements in the “solution” process. Understanding, in turn, begins with basic definitions.

“Physical” well-being can be reduced to assuring that the design works as intended and is safe to operate/use. It involves the efficient and effective use of materials to deliver a safe product that meets specified codes or standards. The process of accomplishing this end has long been the traditional focus of both engineering education and engineering practice. In fact, there are people who will argue that this is the fundamental goal of design, and that all else is peripheral.

“Economic” well-being often becomes fuzzy because it increasingly involves issues of both price and cost. Not that long ago, for most situations, economics boiled down to looking at the price and asking, “can we afford it?”. Once the “physical” constraints were met we traditionally applied “pay back economics” to answer the affordability question. However, both the price of owning and the cost of operating are now

being considered as a part of design. “Rules of engagement” associated with these constraint considerations are evolving at varying rates, depending on the field of application.

The problem child in this trilogy of responsibilities is “environmental” well-being. The very term “environment” has become politically charged. Like most things political, it is not well defined. Like most things political, the “facts” have been selectively, and often simplistically, applied. For special interest groups, on either side of the environmental argument, their approach has been to spread feelings of fear and/or guilt and seek out someone to blame. Not a particularly productive approach for a design engineer.

Engineers are very involved in the question of “environmental” well-being. Given that engineers design “things” that become a part of the environment, given that these “things” by their very existence cause the environment to change, given that the impact of these “things” increases with increased concentration, engineers become an easy group to “blame”. When that happens it causes us to become defensive and being defensive interferes with the creativity we should be applying as we seek a solution.

Actually, “environmental” well-being boils down to minimizing the potential negative impacts that might occur. Simply increasing the efficiency and/or effectiveness of what we design will have a positive impact on the environment. We need to accept that the oft stated goal of zero impact is unlikely, unless we have been misled in our understanding of the laws of thermodynamics. However, minimum impact should be a goal we all strive for.

In a “perfect” world (from an engineer’s perspective) decisions respecting environmental impact would be an integral

part of the design process. This is implied in our Code of Ethics, but it usually isn’t the reality of the process. Many (most?) environmental decisions are made outside of the design envelop by persons who are focused on price or philosophy. This takes the balance out of the design process and leaves the engineers the task of attempting to fix something that is broken.

If “environmental” well-being is to be addressed properly, it must be an integral element in the design process. Design compromises must revolve around environmental concerns just as much as they do around physical and economic concerns. Our profession has a history of solving environmental problems when we are allowed to make the environmental design decisions. We need to take pride in those solutions and embrace “environmental” well-being as an integral part of our design process. Surely to goodness we are more capable of making those sorts of decisions than movie stars and activists. ■

### *In Memoriam*

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

*William R. Brownlee  
Raymond E. Scouten  
Mark E. Wilkins*



Gary Vivian, P.Geo.  
Geoscientists  
Canada

## PRESIDENT'S MESSAGE

As President of CCPG - now operating under its new business name "Geoscientists Canada" - and now almost three quarters into my term, it is a pleasure to bring you an update on our recent activities and achievements. In fact, the Executive Committee decided this January that update articles like this, addressed to the members of its Constituent Associations, should come out at least twice per year; this is the first such article.

As many will know, geoscience is now a regulated profession in all jurisdictions across Canada except PEI and Yukon, and individuals must become licensed with the appropriate Constituent Association in each province or territory in which they intend to practice. Put very simply, this is the law!!

Despite being a relatively young organization, with a small budget and staff, Geoscientists Canada has been actively responding to the needs of its Constituent Associations and has also been increasing visibility of professionalism in geoscience, both across Canada and abroad.

Our new strategic plan 2010-2015 – the second such plan since our inception – was recently approved, with an implementation plan to be brought before the next Board of Directors meeting in Yellowknife, this June.

The following are some recent achievements and developments directed by Geoscientists Canada and supported by the Constituent Associations:

- The Geoscience Knowledge and Experience Requirements for Professional Registration in Canada was completed and is now published as a colour booklet, and a Memorandum of Understanding was signed between all 10 Constituent Associations concerning its use.
- Geoscientists Canada continued to expand its international relations to raise awareness abroad of Canada's robust style of governance of professional practice. Geoscientists Canada is a

regular observer at meetings of both the Association of State Boards of Geology and the American Institute of Professional Geologists in the U.S., as both ASBOG and AIPG are of our meetings. Last year Geoscientists Canada attended the AGM of the European Federation of Geologists and we recently accepted an invitation to participate in a workshop, this April, in Brazil hosted by the Canada-Brazil Chamber of Commerce on securities reporting, the QP designation and regulation of mining-related professions in Canada.

- Geoscientists Canada is entering discussions with other countries, on behalf of its Constituent Associations, to seek recognition for Canadian professional geoscientists who need to become licensed in other countries and vice versa.
- Mobility and ease of transfer for geoscientists registered within Canada had been a significant issue. With the recent revisions to the Agreement on Internal Trade, things have changed and the Constituent Associations continue to further streamline transfers for those P.Geo's who pose no risk to the public.
- Geoscientists Canada is in the design phase of an initiative to develop tools and material for use by its Constituent Associations for a National Licensure Compliance Awareness Program focused on those geoscientists practicing in different parts of Canada, who have not yet applied to become registered professionals. This program, which is in the public interest and of national importance, will alert all un-registered practitioners of their legal obligation to become registered.
- Geoscientists Canada is a founding sponsor and co-organizer of technical sessions at the GeoCanada 2010 conference – Canada's 10 yearly geoscience summit - which takes place in Calgary, May 10-14.

- Work on a collective national framework for the development of geoscience professional practice guidelines is well underway. This initiative is in direct response to requests from the Constituent Associations for Pan-Canadian collaboration on this challenging topic; and Geoscientists Canada was successful in securing federal government funding for the work. The project steering committee is made up of appointees from seven Constituent Associations - making this another truly national team. Their work is benefiting in particular from APEGBC's willingness to allow its policy document on development of new practice guidelines to be used as a key starting point for the new national framework.
- Finally, Geoscientists Canada recently commenced a major new project of collaboration with the Constituent Associations to collectively examine admissions processes and tools for the consideration of applications for licensure from Internationally Trained Geoscientists. This "ITG" project, which will run for 24 months, is funded through Human Resources and Skills Development Canada's Foreign Credential Recognition Program.

It is extremely important that we have such a vibrant, Canada-wide forum and point of focus that is CCPG - now Geoscientists Canada - for a profession like geoscience which is so global in scope and so international in all its practice and business sectors.

Our Constituent Associations provide Geoscientists Canada with strong support and invaluable input and guidance in focusing our strategic objectives. On their behalf and consistent with their mandates, we continue to place our strongest emphasis on "protection of the public interest". ■



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

## ENVIRONMENTAL STEWARDSHIP STARTS WITH YOU

As engineers, we are very aware of important local, national and global environmental issues, and we play an integral role in finding the solutions to environmental challenges. April is an important month for thinking about the impact of our engineering practices and how we can improve our environmental stewardship as Earth Week is April 19 to 25 and Earth Day is April 22. Our activities as engineers can have an impact on the planet and future generations, and we are morally responsible for creating and implementing sustainable practices and principles to govern our work.

For example, engineering principles are behind such renewable energy innovations as the electric car, solar energy, wind farms and green power. Our interest in developing technology and creating solutions that contribute to sustainable development is why engineers are researching how to create energy from waste by converting methane from biomass to usable forms of energy, and how to reduce the impact of emissions through carbon dioxide capture and storage (CCS). These innovations and many more are valuable contributions to society.

At Engineers Canada, all of our programs and initiatives are geared towards improving Canadians' quality of life, but we don't stop there. We have been gathering information and providing recommendations on the adaptation of physical infrastructure to climate change and natural disaster risks through our involvement at the national level with the Public Infrastructure Engineering Vulnerability Committee and at the international level as chair in the World Federation of Engineering Organizations' Committee on Engineering and the Environment.

We are also committed to reducing the direct and indirect environmental impacts of our day-to-day operations. To this end, one of our first steps is ensuring that our meetings, which involve stakeholders from across the country, leave as small a carbon footprint as possible. Our green meetings policy statement reads: "Engineers Canada will consider and implement, where possible, environmentally preferable features and practices at every stage of planning and delivery of its meetings, events and activities, including selection processes, acquisition of meeting supplies

and services." We have developed baseline indicators, data collection methods and a continuous improvement process in order to reduce the environmental impacts of our meetings.

As well, at the office, Engineers Canada staff members take measures to lessen their individual impact on the Earth. We have committed to minimizing our consumption of paper by printing all documents double-sided or distributing them electronically when possible. We use our own mugs and cups for beverages, and have recycling bins for paper, plastic and metal throughout the office. Many staff members also carpool, use public transit or find other sustainable ways to get to work.

While "going green" may seem like a daunting task, it is important to remember that we become more sustainable one person at a time. Everyone's contribution is important when it comes to making changes for more sustainable living. Your individual efforts can have far-reaching effects, and I encourage you to do your part to improve your own personal and professional sustainable practices. Remember, by acting locally you really do improve life globally. ■

*continued from page 5, Executive Director's Message*

Committee. Thanks to Doug Chapman, Richard Jones, Glen Cook, Al Myska, Dave Ennis and Mike Gregoire for the work done on presenting the very best of our professions in photos, artifacts, models, and interactive displays. Four lucky attendees took home a large gift basket each in the door prize draw.

### CCWESTT

APEGM was the platinum sponsor of the Canadian Coalition of Women

in Engineering, Science, Trades and Technology conference held at the Fairmont Hotel, Winnipeg, May 13-15, 2010. The line-up of speakers and events was amazing. Congratulations to local organizers Nathalie Emond, CET, Tracey Kucheravy, CET, Neemee Aquino, P.Eng., Kristina Anderson, P.Geo., Irene Mikawoz, P.Eng., Sandra Ingram, PhD. and Lindsay Melvin, P.Eng. for an excellent job! See what you missed on this link: [www.ccwestt2010.ca](http://www.ccwestt2010.ca)

I am proud of all the APEGM engineers and geoscientists who represented their

professions out in the community this year. What a great year it was! Happy 90th birthday APEGM!!!

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](mailto:gkoropatnick@apegm.mb.ca) or message me through Facebook. ■

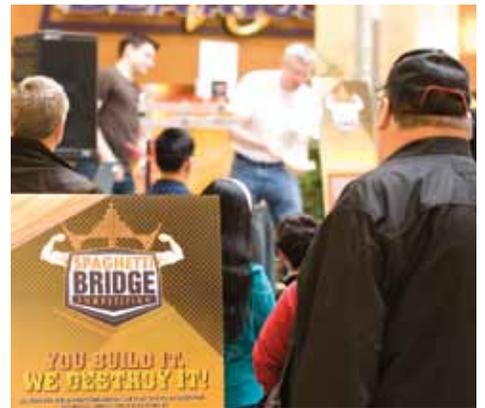
# 2010 Provincial Engineering and Geoscience Week

P. Chan, EIT



Celebrity Competition 1st Place team: Winnipeg Free Press

was held in Winnipeg at Kildonan Place from March 05-07, 2010. The event was kicked off with a celebrity bridge building competition between five teams. After judging the entries based on creativity, appearance, and the amount of weight held by each bridge, the Winnipeg Free Press came out on top (runners up include CTV,



Every year, Provincial Engineering and Geoscience Week (PEGW) is held across Canada as part of the larger National Engineering Month (March). For those of you who don't know, the main objectives of PEGW week are:

- To promote engineering and geoscience as career choices
- To celebrate Manitoba's excellence in engineering and geoscience
- To draw attention to the vital role engineering and geoscience play in the daily lives of all Manitobans

This year, one of the PEGW events

CityTV, students from the University of Manitoba's Faculty of Engineering, and HOT 103). Competitors were given a total of \$2,000 to donate towards Winnipeg Harvest.

The next day, the annual Spaghetti Bridge Building competition was held. The competition is a fun event for students, teachers, and parents to get involved in 'hands on engineering'. The bridges are built entirely using regular spaghetti and white glue. Students from Grades 1 to 12 have an opportunity to win prizes worth a total of \$1,000 for the strongest bridge. This year, the strongest bridge held an unbelievable



480lbs before load failure!

New this year, APEGM has partnered up with this year with Canada Safeway, Investors Group, and other corporate engineering supporters to make a pasta donation to Winnipeg Harvest equal to the cumulative weight supported by all entries in the Winnipeg Spaghetti Bridge Competition. After all the bridges were tested (and spaghetti pieces strewn about everywhere), a total of 8,466 lbs worth of pasta was donated to Winnipeg Harvest (a 15% improvement over the previous year). Keep up the good work!

Various children's activities were organized for the last day of PEGW. These activities present an opportunity for children and parents to explore and learn about engineering and have fun in the process!. Activities this year included building gum-drop structures, straw bridges,

and performing floating concrete experiments. Did you know concrete can float?.

APEGM would like to extend their appreciation to all the volunteers who organized and coordinated the events, staffed the various displays, and hosted the activities for PEGW. Additionally, APEGM would also like to thank the

corporate sponsors for supporting PEGW. This event would not take place without the efforts and support of these volunteers and their employers. If you are interested in participating in next year's activities, or would like to develop PEGW activities in your area of Manitoba, please contact the APEGM office. ■



Holding the cheque, Left to Right: Grant Koropatnick, P.Eng., APEGM Executive Director and Registrar; David Northcott, CEO, Winnipeg Harvest; Behind the sign: Don Spangelo, P. Eng., APEGM Councillor; All others: PEGW 2010 Volunteers

*continued from page 3, President's Message*

approached on something which is outside of your realm of experience - contact the APEGM office, and we will find a way to assist.

Further west, we also attended APEGGA's AGM. They also report continued growth and prosperity. In a recent legislative change, they have now embraced the concept of "One Act - Two Associations" through inclusion of the Technicians and Technologists under the Act. The initial reports on this are positive. This is another initiative which we could consider in the future. However, we continue to enjoy a good working relationship with CTTAM, and I am not aware of any pressing need for change here.

In February, we attended an important meeting in Ottawa for Engineers Canada. While many members may not recognize the importance of this body, I recommend that you take some time to look into it. For one thing, Engineers Canada is the entity who is responsible for the accreditation of Canada's university engineering programs. For another, they "write the book" as a guide

to what is and is not acceptable 'engineering experience' leading up to P. Eng. status. Engineers Canada is also the world's window into Canadian engineering - at least with respect to common practices and procedures. Evidently, this duty continues to grow in importance as we look abroad for engineers to satisfy our growing needs.

In the past year or so there has been a significant re-engineering of the governance of Engineers Canada, and a revisiting of the funding of its programs. This re-engineering will likely result in an increase in the contribution from each member of each association. However, I should note that currently, your personal contribution (included in your annual dues) is just over \$10. Again, I encourage you to visit the Engineers Canada website, and learn more about what they do - for us - and I am sure you will agree that it is both a worthy and necessary entity. If you have any comments or questions regarding Engineers Canada, please feel free to contact me.

In regards to Continuing Professional Development, or CPD for short, most other provinces either have a mandatory

program - or see it as inevitable. At this point, the program and requirements being developed remain 100% up to us - and as I've noted before - we must make this our solution, and not wait for some other group to define it for us.

One of the possibilities open to us is introduction of a non-practicing member category - which would have a lower requirement for CPD and probably a lower fee. This would help to ensure that members who are not directly doing engineering or managing engineers as part of their job descriptions will remain as members, and thus APEGM will not lose the benefit of the influence these people can have on society. APEGBC - who we will visit in the fall - has developed a procedure for being "re-activated" from non-practicing to practicing status, which is available on their website.

In closing, I wish to thank you again for the opportunity to represent APEGM. It has been a pleasure to meet with our members - new and existing - and to be able to re-visit my friends and colleagues across Canada on behalf of this, the greatest profession. ■



## Mapping Water, Sweeping Ice

Chrispin Damubla's job as Water and Sanitation Officer in the district of M'mbelwa, Malawi is not easy. Although he leads several water projects aimed at empowering his community to access clean water, Chrispin knows that half of his community will not have access to safe water in the coming year. M'mbelwa is not alone – in Malawi, up to 40% of all water points simply don't work.

Last issue we introduced the Winnipeg Professional Chapter of Engineers Without Borders, an organization dedicated to promoting human development and mobilizing the engineering community. However, we didn't go into much depth about what EWB is doing overseas in the African countries where we work. When you support EWB through a donation or by attending a fundraising event, such as the Curling Bonselpiel this March, where does that money go?

In Malawi, EWB is identifying and scaling-up innovative approaches to improve access to clean water. There are numerous water taps all over the country that people rely on for clean water. However, many of these are not functioning; this is a problem, and it is exacerbated because district officials have no idea which ones are not working, and which areas have the greatest need. EWB is assisting the Malawian districts to develop an inventory of water points using GPS equipment, and identifying which ones are in service. This will allow officials—like Chrispin Damubla—to manage repairs and to identify where new water taps are needed.



One of the water points people in Malawi rely on for their daily needs.

While one solution to water supply problems is to drill new wells, repairing existing infrastructure has the same end result, at a fraction (a tiny fraction) of the cost. Sometimes the repair is as simple as replacing a broken hand pump chain, but Chrispin needs to know where to send his crew. EWB has found a valuable role in making the repairs possible through reliable mapping, and thus an inventory of water points. Our goal is to decrease the number of faulty water points from 40% to 10% in the next five years.

Another exciting initiative in Malawi that our chapter supported was the "Leaders for Change" conference this April. For the majority in Malawi and neighboring Zambia, opportunities that we take for granted to gain skills and grow personally and professionally are not readily available. Building the capacity of leaders from within the countries where we work is central to EWB's approach. A group of 45 men and women from Malawi and bordering Zambia came together for 3 days to gain leadership skills, inspire one another, and build a network of talented professionals committed to helping their countries to develop. The conference began with an emphasis on personal reflection, and exploration of different leadership styles. Then the delegates moved on to development of skills such as project management, time management, computer skills, and facilitation. Another session was dedicated to articulating dreams and goals, while the final day was focused on leadership skills specific to the fields of water and sanitation and agriculture.

As well as Malawi, EWB is working in Ghana, Burkina Faso, and Zambia. In each country we have teamed up with local institutions to build programs such as Rural Infrastructure and Rural Agriculture in Ghana, and the Market Access Program in Zambia. The goal of all our overseas work is to build rural African capacity and through that capacity, enable stable long term development.

### Some Local Events Last Quarter

#### Member Learning Day

March 6, 2010

Plenty of good food and a guest appearance by EWB Canada's co-founder and co-CEO George Roter attracted a crowd to Wardrop Engineering on a Saturday morning and afternoon. George's focus was on EWB's ten-year history and evolution, leading into discussions on the challenges of development work

and the successes and failures of various development projects. In the afternoon, attendees split into two groups for interactive presentations on EWB's Advocacy and Public Outreach programs. The chapter president Ryan Sparkes closed out the day with a presentation and discussion on EWB's ongoing Water and Sanitation (WatSan) project in Malawi.

**Meeting With MP Glen Pearson**

March 17, 2010

In March, a group of EWB members from our chapter had the opportunity to meet with Canadian MP Glen Pearson, again in the board room at Wardrop Engineering. Mr. Pearson is the Liberal Critic for International Cooperation, which means that were his party in power, he would be the minister responsible for how Canada spends its foreign aid money, especially through CIDA (the Canadian International Development Agency). He spoke candidly about life as an MP, shared some of his vision for making Canada's foreign aid spending more effective, and took numerous questions from the EWB members. He also shared some suggestions about how we might be able to make our advocacy work more effective when dealing with busy politicians.

**Curling Bonspiel**

March 27, 2010

This March EWB held our first Curling Bonspiel fundraiser at the Grain Exchange Curling Club.

Sixteen teams full of engineers and their friends and family made it out to the event. Each team played four short two-end games, and the team that accumulated the most points by the end of the day was crowned champion. Players of all skill levels took to the ice from 9:30 am to 5:30 pm. While some teams exhibited more curling prowess than others, everyone left with a smile on their face. The tournament was a blast, a great success, and moreover Winnipeg's EWB Pro Chapter raised around \$1500 for future initiatives, such as the "Leaders for Change" conference in Malawi and other programs in Africa! Thanks again to all those who generously donated prizes to the event and to all those who came out and participated--hope to see you again next year!

**Upcoming Events**

Look for EWB at the CEM and APEGM golf tournaments this summer, and keep your ear to the ground for our own EWB Golf Tournament, plus many educational events, movie nights, a book club, and more!

By "keep your ear to the ground", we mean, visit our web page at [winnipeg.ewb.ca](http://winnipeg.ewb.ca) or join our mailing list. If you have questions or are interested in getting involved, you may also contact us at [winnipeg@ewb.ca](mailto:winnipeg@ewb.ca).

If you happen to be studying at the U of M, you may want to check out the Student Chapter of EWB there: [umanitoba.ewb.ca](http://umanitoba.ewb.ca). ■

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## Council Reports

Thursday, March 11, 2010

A. Erhardt, EIT

Following a brief lunch which included a review of the Engineering Legacies DVD, President John Woods called the meeting to order shortly after 12:30 p.m. It should be noted that part of the Engineering Legacies video will be displayed on the new video board in front of the APEGM building in the near future, as council is merely waiting on a permit from the city.

Due to a lack of quorum at the previous meeting, some additional items were required, including the approval of the past two meeting's minutes. Following their approval, council was led through a one hour training session on policy governance fundamentals, beginning with a discussion of potential changes to the executive limitation policies. The goal for the training session and policy review was to provide up to date policies, reflecting issues and concerns that are faced today. Over the course of the one hour session, there was much debate and a few policies were reviewed and revisions suggested.

Continuing with the agenda, a vacancy on the Nominating Committee needed to be filled. Of the five eligible councilors, Doina Priscu volunteered and along with the balance of committee members, were approved by council. Another vacancy also existed as the chair of the Disciplinary Committee had recently stepped down. Former president of Teshmont Consultants David Stregger had volunteered to chair the committee. A motion was made and passed by council approving his appointment.

The next item of discussion was the Memorandum of Understanding between APEGM and the Society of Philippine Educated Professional Engineers of Manitoba (SPEPEM). Executive Director Grant Koropatnick had contacted other Canadian engineering and geoscience societies for information as to whether this kind of relationship was commonplace. Of the nine organizations that were contacted, PEO and APEGBC replied with positive answers. President Woods suggested that instead of creating a separate group, for the sake of unity that SPEPEM could fall under the APEGM umbrella as a chapter, much like what APEGM is working on with the University of Manitoba. Following much debate over the merits of classifying SPEPEM as a chapter versus establishing an MOU, a motion was approved to contact SPEPEM and propose the idea of welcoming them as a chapter, and to ask for their feedback.

Engineers Canada is seeking feedback from its members about the Synergy Task Force Governance proposal. Background of the proposal was provided to council by President Woods, along with Engineers Canada Manitoba Director David Ennis. Some key issues in the proposal are the make up of the organization, governance, weighted votes and the financing of the organization. President Woods commented upon all that he has observed relating to Engineers Canada and the value that they provide to the profession. He suggested to council that the funding should be increased sooner rather than later before a crisis occurs. Some of the functions that Engineers Canada

provide are the Canadian Engineering Accreditation Board and the Canadian Engineering Qualification Board.

As an extension to the Engineers Canada discussions, David Ennis' term as Manitoba Director to Engineers Canada is coming to an end. Council approved the appointment of Past President Digvir Jayas to the position of Manitoba Director for a two year term, commencing in June 2010.

During Professional Engineering and Geoscience Week, the Winnipeg Free Press published an article covering a recent issue of the University of Manitoba Engineering Society's Red Lion publication. The issue stirred up many opinions in the public, and on council. While the timing of the Free Press article was of concern, many councilors felt that a deeper issue exists; that of a lack of standards at the faculty. While the issue did not directly involve APEGM, the thought was that the story has not only impacted the faculty, but the profession as well. As the discussions continued, the consensus was that this wasn't a situation where shunning or shaking a finger at UMES was the best course of action. In the end, council viewed the situation as an opportunity for APEGM to mentor young soon-to-be professionals while addressing the situation behind closed doors. A group was put together to contact the current UMES council, along with the candidates for the upcoming council election.

As the clock approached 5:00 p.m., the agenda for the next meeting was reviewed and updated. Council performed their routine self-evaluation and the meeting was adjourned shortly thereafter. ■

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## water for people

Water For People is a non-profit organization that helps people in developing countries improve quality of life by supporting the development of locally sustainable drinking water resources, sanitation facilities, and hygiene education programs. Water For People currently works in 11 countries around the world: Honduras, Guatemala, Nicaragua, the Dominican Republic, Bolivia, Peru, Ecuador, Malawi, Rwanda, Uganda, and India.



Children at a well in Mbande Village, Malawi

Their employees in-country know the culture, language, and communities they serve, and come from engineering and non-engineering backgrounds to provide the knowledge and experience required to meet the needs of the communities in which they work. They have worked in more than 40 other countries over the years, which had largely been based on special grants and funding. However, they have found that a targeted approach is more effective and efficient.

Water For People continues to help people in developing countries improve their quality of life by supporting the development of locally sustainable

drinking water resources, sanitation facilities and health and hygiene education programs. Currently in the world, 884 million people do not have access to safe drinking water and 2.5 billion are without adequate sanitation facilities. Every day, nearly 6,000 people die from water-related illnesses

with the majority being children. But the real failures are all the broken pumps, filled latrines, and solutions that aren't effective. They want to change all that. Their solution is through the implementation of programs that last, and that examine entire districts and regions rather than purely households and villages; to create solutions that last, which not only benefit the people of a region for a long period, but also benefit other volunteer and non-profit organizations so they don't have to expend time and energy going back again and again to the same location. Their vision continues to be a world where all people have access to safe drinking water and sanitation, and where no one suffers or dies from a water or sanitation-related disease.

The World Water Corps is one of Water For People's volunteer programs that gives people the opportunity to travel abroad and support the organization in a tangible way. People can share their unique skills and experience in support of the development of sustainable water resources, improved sanitation facilities, and hygiene education programs. The WWC can provide water and wastewater Professionals and EIT's the opportunity to travel abroad and support the program's work at the community level. The WWC also serves as a conduit of knowledge and skills between the developed world and the developing world. The following are the areas in which the WWC are working:

- Program Evaluation
- Monitoring
- Mapping
- Baseline

### Assessment

- Hydrology

Below is an account of a WWC volunteer who undertook work in Africa:

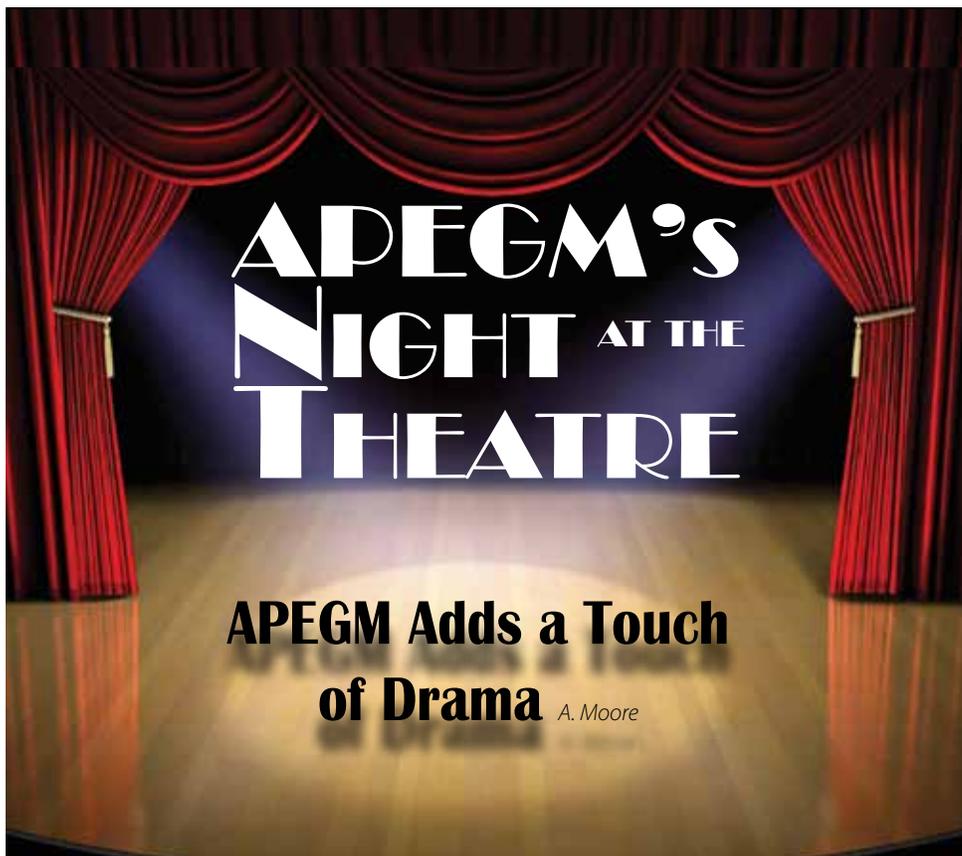
*Every morning we would meet with our local partners in the dusty parking lot of the Water For People office just outside of the town centre. After a quick briefing we would pile into our SUV's and speed off to tackle our data gathering duties for the day...*

*It was in a small village one morning that I sat with a local woman who described some of the problems associated with water fetching duties. She explained that during the dry season their local well often dried up and as a result, women would have to walk to the local river for water. Among other things, she related matter-of-factly how gathering water down at the local river often resulted in crocodile attacks. It was a shocking reminder to me of how different life was for a vast number of people living in this world.*

The WWC is not for everyone, but if you feel you have what it takes they need you! Often, days are difficult and dealing with conditions in some of the poorest areas of the world can be physically and mentally straining. However, if you are up to the challenge they guarantee an experience you will never forget. For more information regarding the World Water Corps® please see their website, [www.waterforpeople.org](http://www.waterforpeople.org) or email [abritton@waterforpeople.org](mailto:abritton@waterforpeople.org). ■



Construction of a well in Malawi



**A**PEGM's 90th Anniversary Celebrations got off to a dramatic start. The week opened at the Park Theatre on Osborne Street, with the production of two plays written and directed by a Manitoba playwright.

At the opening event on March 22, 2010, APEGM's Executive Director Grant Koropatnick described how he had decided to include the two plays: "For years we have been trying with only limited success to encourage young women to enter our profession. Then last April I happened to see the comedy *Sudoku Fever* and immediately realized it told the story far more effectively than having me stand up and talk to a group of high school students."

*Sudoku Fever* tells how Regan Warkentin, who is about to graduate from a Minnedosa High School, faces significant resistance from her mother, grandmother and aunt, all of whom feel she should enter a more traditional occupation better suited to a female teen-ager. It takes Regan's wheelchair-bound grandfather to change their views, by revealing something unique from his past.

"The reference to the Sudoku puzzles may seem bizarre," explained Ron Robinson after the show (he was the grandfather

in the play), "but there is a close and very humorous connection between the puzzles and how Regan's rather dysfunctional family lives." He also added, with a wry grin: "This is the first role I have played in which I have been able to sit throughout the performance!"

The two plays were performed by NewStage Productions, a Winnipeg amateur dramatic group that has built a solid reputation for presenting plays about people who live on the Canadian Prairies. Two years ago, their play *You Will Write, Won't You?* (the first of the two plays presented at APEGM's anniversary event) received very positive accolades from audiences at the 2008 Winnipeg Fringe Festival.

This prompted writer/director Ron Blicq to enter the play—with the same cast we saw on March 22—into the 61st Annual One-Act Play Festival hosted in May 2009 by the Guernsey Dramatic and Operatic Club in the UK.

When Blicq announced to the cast that their play had been accepted, and they would be travelling to England to perform, they were elated but came back with a suggestion: "As some of our roles are only short flashbacks in *You Will, Write, Won't*

*You?* could you write a second play that we could also take to England, so we will have more reason for travelling that distance to perform?"

This prompted him to write *Sudoku Fever*. "It was unusual," he said, "because I had to craft a script to fit six particular actors, rather than write a story and then find actors for it. In a sense it was like Pirandello's play *Six Characters in Search of an Author*."

The theme is similar in both plays, but is treated very differently. In *You Will Write...*, senior teen-ager Melissa (played by 16-year-old Megan Wilson) wants to study creative writing in Banff, but her family and boyfriend all try to persuade her to do what they feel a Prairie farm girl really should do: that is, study agriculture and stay on the farm. In *Sudoku Fever*, 17-year-old Regan (played by Julie Seroy) wants to enroll in Mechanical Engineering at the University of Manitoba, but her mother insists she should join her in her real estate business and stay at home.

*You Will Write...* takes a serious look at the conflicts Melissa faces. Although *Sudoku Fever* also takes a serious look, it is laced with humour evolving from the family's Sudoku room which is really the family bathroom lined with shelves that accommodate hundreds of Sudoku puzzle books (it's no wonder no one can ever get in there!)

The cast also was unique in that it featured three teen-agers playing key roles: Megan Wilson, Kevin Carruthers, and Julie Seroy. Megan and Kevin (who played Melissa's boyfriend Pete) commanded the stage throughout *You Will Write...*, with Megan on stage for all of the play's 45 minutes. Julie held the major role as Regan in *Sudoku Fever*.

There were also two seniors playing key roles (Evelyn Darrach and Ron Robinson), who were accompanied by Debbie Pomeransky, Betty Winterhalt, and Holly Steele in contributing roles (there were no "little" roles in either play).

Reflecting on the evening, I now realize how much of a scramble it must have been for the cast not only to change their clothing but also to become new characters in the 20-minute intermission between the two plays, and for the stage crew to set up a completely new and detailed scene.

# Cast Bios



## Megan Wilson

Megan is 17 and a grade 11 student at Sturgeon Heights Collegiate in Winnipeg. She has been acting since she was 9 years old and has held lead roles for NewStage Productions in the 2007 and 2008 Winnipeg Fringe Theatre Festivals.



## Betty Winterhalt

Betty has been acting with Fantasy Theatre for Children since 2000 and has taken part in plays such as *The Velveteen Rabbit*, *Over the Teacups*, and *The Bishop's Candlesticks*. She is a community nurse and she and husband Mike have two daughters, Morgan and Lana, who traveled with Betty for the UK productions of *You Will Write, Won't You?* and *Sudoku Fever*.



## Kevin Carruthers

Kevin is 15 and a grade 10 student at St John's-Ravenscourt School in Winnipeg. This is the fifth consecutive year that he has held lead roles in plays for NewStage Productions, and is our specialist in creating sound effects. He has been acting with Fantasy Theatre for Children since age 6.



## Debbie Pomeransky

Debbie has taken part in four previous Winnipeg Fringe Theatre Festivals (*Hu's Coming to Dinner*; *Nothing Much in Common*; *Jill's War*; and *You Will Write, Won't You?*). *Sudoku Fever* is the fourth play in which she has performed for NewStage Productions.



## Julie Seroy

Julie is a recent graduate from Churchill High School in Winnipeg. She has been acting and singing in school and amateur productions since the fourth grade and has performed in over 20 different productions. Julie appeared in the 2008 production of *You Will Write, Won't You?* at the Winnipeg Fringe Theatre Festival and in *Sudoku Fever* at the 2009 Gimli Summer Theatre Festival.



## Holly Steele

Holly is a technical writer and trainer, and owner of her own business. She has acted in a number of plays including *The Birds* by Aristophanes and *Romeo and Juliet*. In 2008 she played a key role in NewStage Productions' *The Sicilian Wine Test*, presented at the 2008 Gimli Summer Theatre.



## Ron Robinson

Ron is the former host of the *Weekend Morning Show* on CBC Radio. Now he can be heard on CKUW FM hosting *Pages—Radio for Readers*. Ron has appeared in three one-man shows at previous Winnipeg Fringes, and numerous plays for Fantasy Theatre and NewStage Productions.



## Carolyn Lutes

Carolyn has been involved with Fantasy Theatre for Children since 2000, as an actor, stage manager, accompanist, musical arranger and assistant director. She has appeared in productions such as *Cinderella*, *Charlotte's Web*, and *The Haunted Castle*. This is the third year she has stage-managed for NewStage Productions.



## Evelyn Darrach

Evelyn has been performing with Fantasy Theatre for Children since 1991. She has appeared in productions such as *Aladdin*, *Cinderella*, *Snow White*, and *Wizard of Oz*, and as a cast member in many Cabaret productions presented by students of the Fantasy Theatre School. This is her third year performing with NewStage Productions.



## Ron Blicq (Playwright and Director)

Ron started writing plays 10 years ago, following a career as a teacher of technical communication. He has written 13 plays, 8 of which have been produced in the UK and 3 at Winnipeg Fringe Festivals; 6 have won awards. This is his fourth year as a director for NewStage Productions.

What I found particularly noticeable was the comfortable way in which the eight cast members worked together to establish a realistic atmosphere. As an audience, we felt like a fly on the wall watching a series of events that we could readily relate to.

They may have been an "amateur" group of actors, but their level of professionalism was clearly evident in the performances we watched.

A second unique feature, which Grant drew to our attention following the performance, is that the writer of the two plays is well-known to many Association members as the person who in past years has suggested to them a different—and also unique—way to write reports and proposals. As Ron Blicq says: "My change of direction following my 'retirement' has proved to be just great!"

Here's a thought: Was APEGM'S March 22, 2010, dramatic evening a "first" among Canadian engineering associations? It certainly made a unique and enjoyable opening to Manitoba's anniversary week that others perhaps could emulate, working with dramatic groups in their cities. ■

## Certificate of Fellowship

### Wine and Cheese Reception

E. Hancox, P.Eng.

Perhaps you recall receiving a small purple card in the mail earlier in the year inviting you to an event to honour members receiving the Engineers Canada Certificate of Fellowship?

Rumour has it that some mistook the invitation for an advertisement of some sort and tossed it without really reading it. Others who read the fine print discovered the card from APEGM was an invitation to a Wine and Cheese event.

The March 24, 2010 Engineers Canada event was sponsored by APEGM and held at the Millennium Centre on Main. For those that have never been to the Millennium Centre, it is located at 389 Main St. (on the east side of Main, just north of Portage Avenue). The magnificent building used to be the Canadian Bank of Commerce which opened back in the early 1900's. This Stanstead granite over steel frame building with its grand Doric columns, bronze main entry doors, and a magnificent vaulted room of marble served as a wonderful venue to hold the Wine and Cheese reception.

There was an enormous spread of food and plenty of wine and spirits to go around. The caterers were constantly moving throughout the crowd serving a variety of decadent Hors D'Oeuvres.

Interestingly, this was essentially a stand-up event which beheld only a few short speeches and encouraged lots of mingling.

After about an hour of networking and visiting, APEGM President John Woods, P.Eng. stepped up to the podium to assume the master of ceremonies role. John welcomed everyone, congratulated the honourees, and then introduced CEO of Engineers Canada, Chantal Guay, P.Eng. with a short dissertation on Chantal's many accomplishments.

Chantal greeted all attendees and then provided some background on the honour:

In 2007, Engineers Canada created the Engineers Canada Fellowship to honour individuals who have given noteworthy service to the engineering profession in one of the following categories:

Engineers who have:

- Assumed office as a president of the Engineers Canada Board of Directors; or
- Assumed office as a chair of the Canadian Engineering Accreditation Board or the Canadian Engineering Qualifications Board; or
- Assumed office as president of one of Engineers Canada's constituent members; or

d. Served the engineering profession in a volunteer capacity for at least 10 years. The total length of service can be a combination of service on Engineers Canada's boards and committees and/or service as a volunteer for an Engineers Canada constituent member; or

e. Served in a senior staff capacity with Engineers Canada or a constituent member for a minimum of seven years; or,

f. Non-engineers who have met the requirements of criteria (c), (d) and/or (e) mentioned above

Chantal noted that being bestowed with this honour means that these dedicated individuals have the privilege of using the designation of "Fellow of Engineers Canada" – FEC, or of "Honorary Engineers Canada Fellow" – FEC (Hon.).

Following Chantal's kind words, John Woods introduced Alan Pollard P.Eng., board member of the APEGM Foundation.



Presentation of the Certificate of Congratulations by Engineers Canada CEO, Chantal Guay, to APEGM President, John Woods.

Alan took a few minutes to illustrate some of the good work that the APEGM Foundation has done. He then described an endowment fund the Foundation is developing to permit the ongoing promotion and support of engineering and geoscience as fields of study, to ensure that the Province will continue to have enough engineers and geoscientists in the future. Please see the APEGM website for

information on the Foundation.

John Woods spoke from the podium for the last time and explained that the entertainment for the evening was provided by Francesco Zurzolo, a civil engineering graduate from the U of M. Francesco, as we all witnessed, has a tremendous talent for playing the piano.

The Honourees Certificates of Fellowship were displayed along the still-standing marble counter that once served the former bank's daily transactions. Recipients were invited to have their photographs taken with APEGM President, John Woods and Engineers Canada CEO, Chantal Guy. Chantal and John were extremely cheerful and inviting toward each and every recipient who wanted to memorialize the event with a photo.

Many of the attendees stayed until very near the end of the event, mingling with old and new acquaintances.

Congratulations to all recipients of the Fellowship of Engineers Canada! Thank you for your dedication. ■



# APEGM's 90th Anniversary Birthday Party

*A. Erhardt, EIT*



On March 25<sup>th</sup>, APEGM offered a "Come and Go" birthday party to help celebrate their 90<sup>th</sup> anniversary. The doors opened up at 2:30 in the afternoon, and a steady stream of visitors were treated to tours of the new building, refreshments, door prizes, and birthday cake while enjoying



such entertaining engineering marvels as the Nintendo Wii and Chexx Dome Hockey. Over 250 people came through the door to share in the festivities.

The McKinley and Heritage conference rooms were transformed into an engineering timeline covering a variety of engineering feats and accomplishments with a definite Manitoban theme. From poster boards outlining major Manitoban engineering milestones, to an early model of a laptop; from Winnipeg's new garbage collection bins to a scaled down model of a Black Brandt rocket, it was an amazing walk through engineering history. ■



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.





## Winnipeg's Water Supply History

### Introduction

As a means of celebrating the role of engineering and geoscience over the 90 year history of APEGM, the Heritage Committee is writing a series of articles that link water to the economic and social development of the province. The first article 'Liquid Assets' was published in the March 2010 issue of the Keystone and described the relationship between commerce and water before the Association was formed. This article focuses on water as it relates to health and welfare within the City of Winnipeg. Both articles show the connection between key engineering works with these important aspects of our lives.

It goes without saying that a safe, clean, and abundant water supply is essential to public health and the growth of any city. The development of the City of Winnipeg's water supply is an interesting success story that continues to sparkle 90 years after it was commissioned. The slow and

meandering beginning was ultimately championed by a civil engineer turned politician. Highlights of that story are chronicled below. A subsequent article will describe some of the engineering for the water supplies in other areas of the Province.

### The Early Years to 1913

In the late 1800's and early 1900's, Winnipeg's water system was not adequate. Initially, "watermen" using oxcarts hauled untreated water from the Red and Assiniboine Rivers and delivered it by barrel.

The first water system began in 1882 when a private company, Winnipeg Water Works Co., drew water from the Assiniboine River, and then distributed the water by pipes to homes and businesses in the city core. The Company's intake and pumping facilities were on the north bank of the Assiniboine River near the present day Maryland bridge. The water was of inferior quality and the supply was not adequate.

The water was bad everywhere in Winnipeg. It smelled! It was foul-

tasting, discoloured, left rusty stains, and it was dangerous to public health. Large sections of the city and the surrounding municipalities had no clean running water. In addition, fire protection for the mainly wood buildings was inadequate resulting in unacceptable loss of life and property in addition to high insurance costs. Winnipeg could not sustain development without an improved water supply.

In 1899, the City of Winnipeg purchased the water supply for \$237,000--nearly \$4.7 million in today's dollars--and created a public water utility. The city began to use artesian wells rather than river water. Artesian Well No. 1 began flowing into the system in 1900. However, a serious fire in 1904 forced the City to pump Assiniboine River water into the mains, contaminating the system, and ultimately resulting in the 1904 typhoid epidemic.

In 1904, Winnipeg had the highest rate of typhoid deaths on the continent. Between 1904 and 1906, over 4,000 Winnipeggers contracted typhoid, and 377 of them died.



W.G. Chace, P.Eng.

## Water Supply Studies

Winnipeg experienced an economic boom during the 1890's through the 1920's. The population rose from about 25,000 in 1891 - to 50,000 in 1901 - to 156,000 in 1911 - to more than 200,000 by 1921. In the early 1900's immigrants arrived from Great Britain, Poland, Germany, Russia and Scandinavia expecting to find a prosperous city. There were many signs of growth including the first sky scraper in Western Canada (Union Bank Tower) which was built in 1903, a giant Eaton's store (1905) to provide many consumer goods, and a new Grain Exchange building opened at Portage and Main in 1906 as part of the growing agricultural business. As well, the construction of the Pinawa Hydro Electric Generating Station, which would bring plenty of

cheaper electricity to the city, was completed in 1906. At the time, there were more than 60 hotels along Main Street between the CPR and CNR stations. Water was identified early by the city leaders to be one of the keys to development.

In 1902, the city hired Rudolph Hering, a consulting engineer from New York, who recommended an additional artesian well. In 1905, a new 10 million litres per day well was dug north of the city along McPhillips Street but with the rapid population growth noted above the supply was still inadequate and the hard water was not suitable for sustained growth. Not only was water quality an issue but there was a growing need to deal with water quantity concerns for improved fire fighting purposes. In 1908, the James

Avenue Pumping Station was built along side of the Red River near the Alexander Docks to provide fire fighting support for the businesses in the 'Exchange District'. (Look for more details in a subsequent article).

In 1907, a Board of Consulting Engineers consisting of James H. Fuertes (New York), R. S. Lea, J. E. Schwitzer, and George C. Whipple were appointed by the City's Water Supply Commission to advise fully as to the selection of a permanent and adequate system of supply for sustained growth. On August 29, 1909, the Board recommended the future source be the Winnipeg River. Time moved on and nothing was done in terms of water supply and by 1911, Winnipeg's population was 156,000, and had tripled from the previous decade. To assure its future, Winnipeg needed an abundant supply of fresh, safe, water. A search was started that led to a visionary proposal. Professor Charles S. Slichter offered three options:

- Drill new water wells north of the City
- Build a pipeline to the Winnipeg River

- Build an aqueduct to Shoal Lake, a “daring” and “visionary” approach to tap a source “of exceptional softness and purity”, in a lake of “clean Laurentian granite”

## The Shoal Lake Aqueduct

Thomas Russ Deacon (another pre-association engineer in Manitoba) was born in Perth, Ontario January 3, 1865. He earned a degree in civil engineering in 1891 and became superintendent for the construction of the North Bay waterworks in Ontario. He moved to Winnipeg in 1902 and partnered with H. B. Lyall in founding Manitoba Bridge and Iron Works. Deacon was appointed to the Water Supply Commission in 1906 and campaigned vigorously for a better water supply and specifically for the Shoal Lake aqueduct. In 1912, Deacon was elected mayor on a platform of “Vote for Deacon and a real supply of water”.

On April 7, 1913, a new Board of Consulting Engineers was appointed consisting of Rudolph Hering and James H. Fuertes from New York, and Frederic P. Stearns from Boston, ‘all eminent water supply engineers’. They were to report on the best means of supplying water from Shoal Lake, together with an estimate of cost and general plan of work. The report was received August 20, 1913 and approved by Council. A money By-law for \$13,500,000 was submitted to a vote and the aqueduct won by a landslide. In spite of the costs, Winnipeggers were looking to the future and they wanted “water of good quality and lots of it”.

Mayor Deacon declared “We have just undertaken – I was elected for that purpose – the bringing in . . . a sufficient water supply of pure soft water to supply a city of one million inhabitants, which we hope to have there within the next twenty years”. In January 1914 the International Joint Commission authorized the Greater Winnipeg Water District to draw 455 million litres per day (100 million gallons) of water from Shoal Lake/Lake of the Woods. It should be noted that as of 2010, Winnipeg has not yet achieved the population predicted,

and with the addition of storage at Deacon, MB, nor has the capacity of the aqueduct been attained.

The chief engineer for the project was W. G. Chace P.Eng. Mr. Chace later became President of the Association of Professional Engineers in 1928.

The route to Shoal Lake was 137 km through wilderness with no road access.

The Greater Winnipeg Water District Railway was built along the aqueduct route to carry workers, equipment, gravel, and cement. Camps were set up along the way to house workers and stockpile materials.



Burying of railway line and aqueduct by steam shovel. Source: Manitoba branch of the American Public Works Association

For the first 129 kilometers a design patterned after ancient stone/masonry engineering was developed – an un-reinforced dish-shaped concrete floor covered with a parabolic-shaped shell. This is seen in the picture of Mr. Chace. Sections were poured in forms, coupled with copper expansion joints and manholes were installed every 1,524 m. Shoal Lake is 92 m higher than Winnipeg as shown by the profile below so the water flows by gravity. Twenty seven km from Winnipeg the aqueduct changes to a circular 2,400 mm pipe and 6 km west of Deacon, Manitoba the diameter changes to 1,520 mm. Deacon is just east of the Red River Floodway and is the location of several open reservoir cells

that provide short term storage for Winnipeg and is also the location of the recently constructed water treatment plant.

Construction of the aqueduct started May 15, 1915, and Shoal Lake water first flowed from Winnipeg taps on April 6, 1919. The aqueduct was officially opened by his Royal Highness, Edward, Prince of Wales on September 9, 1919. The total cost was \$17 million.

## Winnipeg’s Water Today

Today, the water from the Shoal Lake source is conveyed by a complex system of aqueduct, storage and treatment at Deacon, and three major covered reservoirs and pumping facilities in the city that deliver water to 170,000 residential and commercial customers through a vast network of feeder mains and water mains. Winnipeg is still licensed to take up to 455 million litres of water per day from the lake that continues to be only accessible by rail or boat.

Lift pumps have been installed at the intake to fill the aqueduct when lake levels are low. The Deacon reservoir was built in 1972 and expanded twice, the most recent in 1997. It currently stores 8,400 million litres (1,850 million gallons) the equivalent of a 28 day supply for the City of Winnipeg. It is used to supplement peak summer demands and to allow brief shutdowns of the Shoal Lake Aqueduct for repairs.

Historically, water quality was so high that the water was not treated except for the addition of chlorine for disinfectant and fluoride to assist with resisting tooth decay. However, physical and aesthetic parameters of taste, odour, and turbidity were marginal when compared to current water quality guidelines, and concentrations of disinfection by-products and lead sometimes exceeded guidelines. Bacteriological tests meet the Manitoba criteria.

Following the heightened public awareness of water quality there has been a trend toward more stringent water quality guidelines and a desire to minimize public health risks. The City of Winnipeg commissioned the most

advanced water treatment technology at Deacon in late 2009. The main focus of the treatment technologies is on waterborne protozoa such as giardia and cryptosporidium that are difficult to detect and not easily destroyed by conventional disinfection. Secondly, lower amounts of disinfection byproducts which have been identified as potential carcinogens will now be attainable. The Winnipeg Water and Waste Department provided an insert with the March, 2010 water and sewer bill "Announcing our best tap water ever! Winnipeg's new water treatment plant started up on December 9, 2009. The treatment facility is 12,000 sq. m in size (about the footprint of the MTS Centre). The water passes through six treatment stages, including filtration, ozonation, and two types of disinfection."

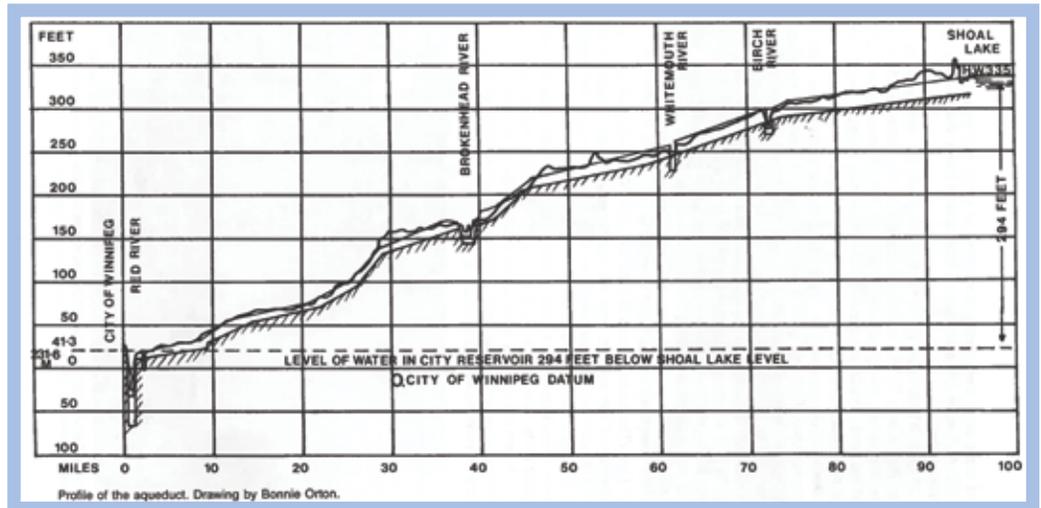
The new system is expected to supply the amount of water needed for the foreseeable future (even given that residential demand is projected to increase until about 2020) due in large part to a reduction in large industrial demand and the implementation of water conservation programs. Currently, water consumption is made

up of residential 54%, commercial 18%, industrial 10.4%, and unaccounted 17.7% (fire fighting, flushing, street cleaning, leakage etc.). The average water consumption is 400 litres per person per day compared to 480 litres per person per day before the multi-faceted Water Conservation Program began. The toilet continues to be the largest indoor water use at 32%, and accordingly has the largest potential for water savings, hence the current rebate program to encourage installation of dual flush toilets. Industrial use has

declined due to the loss of large users, notably packing plants and refineries. Increased water rates have also contributed to decreased usage.

Clearly the citizens' health has been protected with a safe, clean water supply for many years to come.

In a future article we will focus on the challenges of water supply development outside of Winnipeg. The Heritage Committee wants to hear from you on this and any other engineering or geoscience story. ■



Profile of Aqueduct from Shoal Lake to Winnipeg

## THINKING MORE INNOVATIVELY

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## World Federation of Engineering Organizations Opens Important International Professional Links

*D. Lapp, P.Eng., Manager, Professional Practice at Engineers Canada, and D. Danyluk, P.Eng., FEC, Chairman of the Committee on Engineering and the Environment*

**T**hink of the World Federation of Engineering Organizations (WFEO) as the United Nations of the engineering profession.

Formed in 1968 under the auspices of the United Nations Educational, Scientific and Cultural Organization (UNESCO), WFEO encompasses engineering organizations in more than 90 countries and about 15 million individual engineers within national and regional groups. At the international level, WFEO functions roughly as Engineers Canada does relative to our provincial and territorial associations. WFEO has linked with International Union of Technical Associations and Organizations to form an even broader grouping, the International Council for Engineering and Technology, which is designated as one of 12 NGOs formally associated with UNESCO. The Federation also retains close ties with the International Federation of Engineering Education and the International Federation of Consulting Engineers.

Within its wide mandate, WFEO provides professional leadership and guidance. Key Federation activities include facilitating engineering education and qualifications transferability, serving as a bridge-builder between developed and developing nations, as well as acting as a catalyst for business, governments and professional co-operation. A secretariat and executive director are based in Paris and an information office is located in Tunis, Tunisia. Between the biennial meetings of the General Assembly, the top decision-making body, WFEO's Executive Council meets quarterly to provide leadership and direction.

However, much legwork is done through nine WFEO standing technical committees covering:

- Technology;
- Information and Communications;
- Education and Training;

- Energy;
- Capacity Building;
- Anti-Corruption;
- Disaster Risk Management
- Women in Engineering; and
- Engineering and the Environment.

The standing committees include specialized working groups for examining specific topics and sharing information, often through international and regional conferences. In many cases, the issues parallel those of interest to provincial and territorial associations, as well as individual engineers in Canada.

The Committee on Engineering and the Environment is currently chaired by Canada with Engineers Canada and APEGGA Past-President Darrel Danyluk, P.Eng. as chair. In this capacity Darrel is also a vice-president of World Federation of Engineering Organizations and a member of the Executive Council. The committee has members from 21 countries and is implementing a strategic plan that covers five theme areas. This work will be the subject of a future article.

The World Federation of Engineering Organizations, through the Committee on Engineering and the Environment is a registered observer organization with the United Nations Framework Convention on Climate Change (UNFCCC). In December 2009, Chair Danyluk represented WFEO and Engineers Canada's Public Infrastructure Engineering Vulnerability Committee at the UNFCCC Conference of the Parties Meeting No 15 in Copenhagen. As well, the WFEO is pro-actively presenting the engineering perspective to the United Nations Commission on Sustainable Development through a committee that includes the chairs of Environment, Energy and Capacity Building together with the President.

The main activities of the Committee on Education and Training, currently chaired by Lebanon, include Education for Innovation, Education for Mobility, Education for Development and Education and Training Scenarios for Engineers by 2020. CET publishes a journal called IDEAS. Issue No. 14 was devoted to Education for Innovation and No. 15 on Education for Development both of which are available on the WFEO website. It recently produced a WFEO strategy for mobility of engineers That includes an associated position paper and draft policy, which will be published in an upcoming issue of IDEAS.

The Committee on Women in Engineering, chaired by France, was formed a year ago with its mission defined in four points: 1) developing and confirming the position of WFEO regarding the new social challenges of participation and leadership of professional women in a sustainable way; 2) offering support to increase a real comprehension of the activities to enable institutions to integrate the gender dimension in the engineering profession; 3) helping WFEO members increase the number of women engineers among their membership and in their organizations; and, 4) helping organizations worldwide attract young females interested in becoming engineering professionals. Suzelle Barrington, P.Eng., a member of the Canadian Engineering Qualifications Board is the Engineers Canada representative on this committee.

Meanwhile, the Committee on Anti-Corruption, led by Tunisia, has emphasized awareness, education and communication to provide WFEO members with the means to identify and combat corruption. This committee's work further demonstrates how engineers, through WFEO, can ally themselves with other professional initiatives. An example is the American Bar Association's World Justice Project, which supports programs such as a 2009 workshop held in Italy on business integrity management in infrastructure and procurement.

Worldwide promotion and development of effective engineering practices remains another important objective of WFEO, which makes particular effort through the Committee on Technology (chaired by India) to encourage developing countries to develop their technical capacities. The name of the Committee on Capacity Building led by the United States, points to its central objective of mentoring and guiding young engineers. A recent result of the committee's efforts is a Capacity Building Guide Book for use in developed and developing countries. Other standing committees, notably those on Information and Communications (chaired by China), and Engineering and the Environment, also have a definite international developmental focus to their work.

It all means that WFEO provides Canada's engineering professionals a window on the world as well as a doorway for the entry of new ideas.

For more information about the World Federation of Engineering Organizations check [www.wfeo.org](http://www.wfeo.org) ■

2011  
Geneva  
4-9 September  
+  
World  
Engineers'  
Convention

## World Engineers' Convention 2011 in Geneva

**September 2011 will see Geneva become the key international venue for engineers. The World Engineers' Convention 2011 (WEC 2011) seeks to encourage innovative engineering aimed at solving the problem of globally sustainable use of energy.**

How can we provide sufficient energy for everyone around the globe? How can we meet the energy needs of the world's population fairly? How can we prevent conflicts over energy? These are just a few of the burning issues to be addressed by WEC 2011.

Engineers from all over the world will get together in Geneva from 4-9 September 2011. The title of the convention, *Engineers Power the World – Facing the Global Energy Challenge*, reflects its focus on energy as one of the greatest challenges of the 21st century. It will promote sustainable use and identify future-proof solutions in the areas of mobility and transport, urban development and construction, energy conversion, logistics, renewable energy and storage, and rational end use and large consumers.

### Keynotes from All Over the World

Following on from Hanover (2000), Shanghai (2004) and Brasilia (2008), this will be the fourth WEC. More than 2000 delegates from 100 countries are expected in the host city of Geneva. The convention attracts decision-makers from all over the world: Nobuo Tanaka, Director of the International Energy Agency based in Paris, Professor Hiroshi Komiyama, President of the University of Tokyo, and Professor Chris Edward from Stanford University have already signed up as keynote speakers. "Everyone interested in thinking outside the box about energy will take inspiration from WEC 2011 in Geneva", concluded Daniel Favrat, EPFL Professor and Chair of the WEC 2011 Program Committee, speaking at the WEC 2008 closing ceremony in Brasilia. "WEC 2011 isn't just for engineers, it's also for representatives of business, government and education".

### Talkshop

The convention will provide a major opportunity to gain an overview by reviewing, discussing and sharing engineering opinion. Its broad perspective will extend beyond scientific and technical aspects to consider ways of influencing the socioeconomic and political framework. Sharing policies, technology transfer, the North-South divide and the need for creativity and entrepreneurial activities will also not be forgotten.

Alongside the energy theme, WEC 2011 also aims to raise the profile of the engineering profession. Young people should see engineering as an attractive career option. The general public needs to gain a better understanding of the importance of engineering in achieving prosperity and tackling the big challenges of the future.

One highlight of the closing ceremony of WEC 2011 in Geneva will be the passing of a resolution answering the burning energy issues. These hot topics will be considered through a process of international discussion conducted between national engineering associations, universities and other organizations.

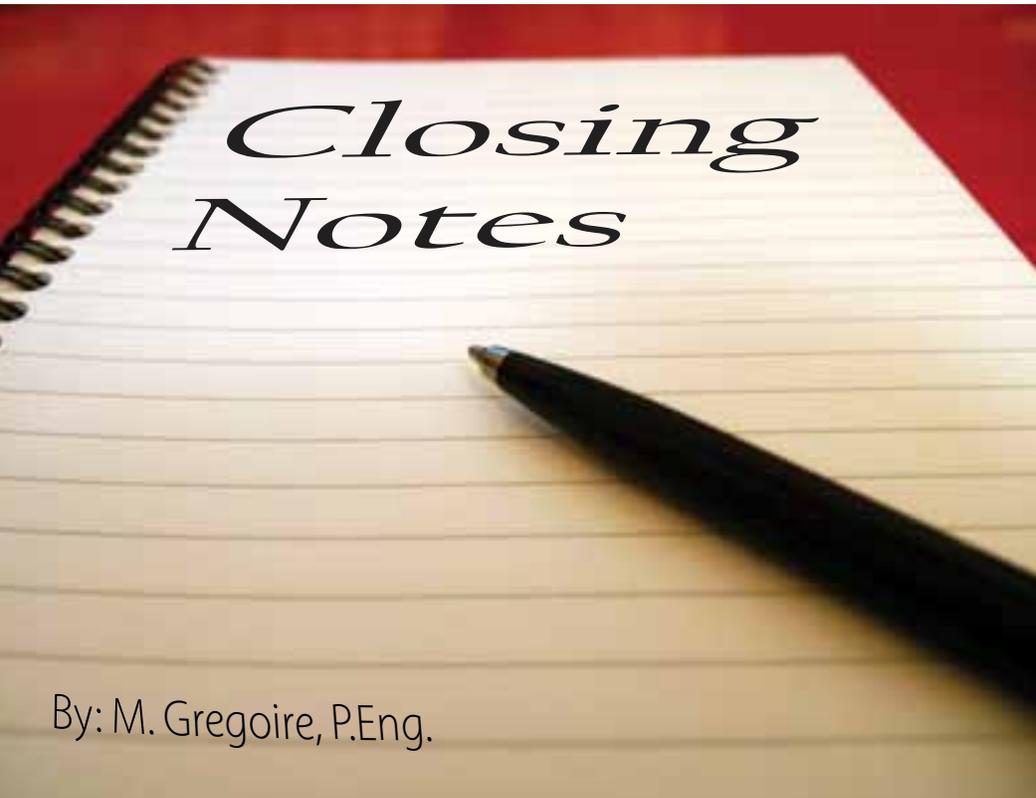
### Working with Prestigious Partners for a World-class Outcome

Switzerland was mandated to host WEC 2011 by the World Federation of Engineering Organizations (WFEO), the association of national engineering organizations from more than 90 countries, representing some 15 million engineers worldwide. The organizational aspects have been entrusted to the Swiss organizations Swiss Engineering STV, SIA, Electrosuisse and FTAL. Swiss partners include the two Federal Institutes of Technology in Zurich (ETHZ) and Lausanne (EPFL), the Swiss Academy of Engineering Sciences (SATW), Swiss universities of applied sciences, the Swiss Federal Government, and industry and business associations. International partners include UNESCO and FEANI (the European Federation of National Engineering Associations).

The Program Committee includes representatives of ETH, EPFL, the Paul Scherrer Institute, Switzerland's Federal Energy Commission, and international experts including representatives of the Association of German Engineers (VDI) and the US Alliance of Engineering Associations.

**World Engineers' Convention 2011**  
**Engineers Power the World – Facing the Global Energy Challenge**  
**4-9 September 2011**  
**International Conference Center Geneva (CICG), Switzerland**  
**info@wec2011.org, www.wec2011.org**

Supporting entities include the international organizations UNESCO and FEANI, and the World Federation of Engineering Organizations (WFEO). Organization has been entrusted to the Swiss organizations Swiss Engineering STV, SIA, Electrosuisse and FTAL.



By: M. Gregoire, P.Eng.

## *I'm Being Investigated!?*

"The Committee conducted an initial review and determined that an investigation is warranted."

The above is a bit of text that hopefully you'll never read again during your professional career. It is a sentence taken from the standard portion of a letter that is sent by the Investigation Committee to an APEGM member once an investigation is initiated. Unfortunately, about ten of you will read this in the coming year.

The main reason for bringing up this topic is that, upon receiving the investigation letter from our Executive Director, a lot of members do not fully understand the position that they're in. In order to explain this position, an understanding of the complaint process is required.

The task of reviewing complaints at APEGM is split between two committees: the Investigation Committee and the Discipline Committee. Each of these is populated by a group of volunteers; professional members of APEGM as well as lay members who are neither engineers nor geoscientists. Each group, however, serves a considerably different role.

The Investigation Committee's role can be likened to the Crown Prosecutor in Manitoba's criminal legal process. The Discipline Committee would therefore be similar in role to that of a panel of judges and is ultimately responsible for approving orders against members who have acted improperly. The Discipline Committee only reviews matters that have been forwarded to

them by the Investigation Committee.

When a complaint is received, it is sent to the Investigation Committee for review. Our By-laws stipulate that the complaint be submitted in writing and it is often accompanied by supporting documentation in the way of drawings or correspondence with the member complained against. It is based on this submission of information that the Investigation Committee must determine whether or not to investigate.

If they decide to dismiss the complaint, the complainant is notified in writing and the member is not troubled with the matter. If they decide to investigate, then both the complainant and the member complained against are notified. This is the point where the quoted text above will be read and is often misunderstood.

The decision by the Investigation Committee to investigate is not a decision regarding the matter at hand. The Investigation Committee has simply determined that the accusations, should they be proven to be true, would constitute either unskilled practice or professional misconduct. The purpose of the investigation is to determine whether or not the accusations are true.

Some members have falsely interpreted the decision to investigate as a determination of guilt. Others assume that the Investigation Committee has taken the complainant's submissions as being true and without fault. This is definitely not the case and is better

understood when reviewing the opposite scenario: dismissal without an investigation.

There are a few scenarios where the Investigation Committee can dismiss a complaint without investigating the matter. For example, if the complaint is against someone who is not a member of APEGM, then it is dismissed. If the complaint is not related to the member's role as a Professional Engineer or Professional Geoscientist, it is also dismissed. And, generally, if the complaint cannot be categorized as unskilled practice or unprofessional conduct, it is also dismissed. Otherwise, the matter is investigated.

The Investigation Committee does not determine that they believe a member to be at fault without allowing the member to submit information relating to the matter at hand. Invariably, this includes meeting with the member and will often include meetings with other individuals as well as gathering documentation from different sources. The Investigation Committee does not make decisions against a member without proper review. As such, it is always in the member's best interest to respond and cooperate with the Investigation Committee as best they can.

Even if the Investigation Committee believes that there are reasonable and probable grounds that the member was guilty of unskilled practice or unprofessional conduct, the complaint review process is only partially complete. The matter must be reviewed by the Discipline Committee before any orders are imposed on the member. This is done by one of two methods.

The first method is one where the member complained against is offered a penalty proposal by the Investigation Committee. This is similar to a plea bargain in the criminal legal process. The penalty proposal is always vetted by a representative of the Discipline Committee and only takes effect if the member agrees to it.

The second method is a full disciplinary hearing. This involves a disciplinary panel of three members who receive information from both the Investigation Committee and the member complained against. Usually it involves legal counsel and can therefore be fairly costly.

In all scenarios, both the complainant and the member complained against have the opportunity to appeal the decision.

When a member is complained against, it is never an enjoyable experience for them. As such, expedition of the matter is in their best interest and is best achieved by cooperating fully and in a timely manner with the requests of the Investigation Committee. Some members have even admitted to having learned from an investigation into their professional dealings and have made changes for the better as a result. ■

# Upcoming Events

Detach page for posting

## Manitoba Space Adventure Camp

The Manitoba Space Adventure Camp is a camp for grade 9—11 students interested in science, space, engineering—and all things exploration! Camp is held July 26–30, 2010 in the Engineering, Information and Technology Complex at the University of Manitoba.

Come and meet University of Manitoba students, leading industry experts and a real astronaut! Camp programming will focus on aerospace, physics and flight with hands on activities and exciting demos!

### What will be happening at camp?

Geo-caching with GPS receivers; space physics and rocket theory; satellite communications and amateur radio; cube satellites and nanotechnology; remote sensing; model rocket building and launch; high altitude balloon launch, tracking and recovery operations; various lab tours and demonstrations in the Faculty of Engineering; Friday BBQ; Saturday—rocket launch for higher altitude rockets (to be held outside Winnipeg) - weather dependent, friends and family invited, optional.

Payment in full is required to confirm registration. Maximum Number of participants is 35. Bursaries are available for families in need. The on-line camp prep course is required for camp participation. More information at [http://www.wiseworkshops.ca/images/pdf/MSAC\\_registration\\_brochure\\_2010.pdf](http://www.wiseworkshops.ca/images/pdf/MSAC_registration_brochure_2010.pdf)

Date: July 26 - 30, 2010

Time: 8:30 a.m. - 5:00 p.m.

Cost:

\$125.00 registration

Location: E2-229 EITC,  
University of Manitoba,  
Winnipeg, MB

## "Nine 'n' Dine Golf" Tournament

Join us for nine holes of golf and dinner, with lots of fun and prizes - all in support of the efforts of the EWB Winnipeg Professional Chapter in alleviating poverty in the developing world.

You may sign up individually or as a team. If you wish to sign up as a team, sign up online and then contact Lee at Vector Construction with your team make-up - (204) 489-6300. Register online at <https://www.ewb.ca/en/whatyoucando/winnipeg/index.html>

Date: August 7, 2010

Time:

1:30 p.m. Registration

2:30 p.m. Shotgun Start

Cost:

\$75.00 before July 14

\$85.00 after

Location: Wildewood Golf  
Club, 761 North Drive,  
Winnipeg, MB

## PST2010 Conference

PST2010 is the eighth such annual conference focusing on PST technologies. PST2010 provides a forum for researchers world-wide to unveil their latest work in privacy, security and trust and to show how this research can be used to enable innovation.

This year's theme is "Privacy, Security and Trust by Design: PbD - The Gold Standard." With the growth and ubiquity of data in today's hyper-networked world, the need for trust has become more critical than ever.

For more information, go to [www.unb.ca/pstnet/pst2010/](http://www.unb.ca/pstnet/pst2010/)

Date: August 17 - 19, 2010

Time: 8:30 a.m. - 5:30 p.m.

Cost:

\$600.00 until July 15

\$700.00 after July 15

Location: University of  
Ottawa, Ottawa, ON

### □ National Professional Practice Exam

Deadline for application September 3, 2010.

Information and the application forms are available at the APEGM web site: [www.apegm.mb.ca/pdf/Registration/MIT/PPEAppAPEGM2010.pdf](http://www.apegm.mb.ca/pdf/Registration/MIT/PPEAppAPEGM2010.pdf)

Deadline: September 3, 2010

Date: October 18, 2010

Cost:

\$130.00 Registration

### □ CCWESTT 2010 Conference

The prognosis of patients suffering from certain brain tumors is very poor. Glioblastoma Multiforme (GBM) brain tumors, for example, are the most frequent primary malignant brain tumor in adults. Treatment with surgery, to remove as much of the tumor as possible combined with radiation therapy results in a average survival of less than one year; that average is improved by about 2.5 months with concurrent chemotherapy.

Laser interstitial thermal therapy (LITT) has been used as an ablative treatment for brain tumors, but has been hampered by several technical limitations. It utilizes a low power laser via a thin optical fiber inserted into the tumor as the energy source. LITT has been investigated as a treatment of cerebral neoplasms for more than two decades, with promising, albeit technologically limited, results. The AutoLITT(r) System, developed by Monteris Medical here in Winnipeg, incorporates several technological advances to overcome these earlier deficiencies. This technology has been in development here in Winnipeg since 1999 although the idea was first conceived by Dr. Mark Torchia and others at the St. Boniface Hospital 10 years earlier. AutoLITT has received FDA 510k clearance in 2009 and the first human clinical trial was completed last October.

For more information, see the APEGM website.

Date: September 15, 2010

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

Cost:

\$20.00 Pre-registration

\$25.00 Walk-Up

\$15.00 Student Members

Location: The Clarion Polo Park, 1445 Portage Ave., Winnipeg, MB

### □ APEGM 91st Annual General Meeting & Conference

A one-day format will be offered on the Friday which includes the Professional Development Conference, AGM Business Meeting, Awards Dinner and Dance, and Companions Program.

Check the APEGM website for updates; details to follow in the Fall Issue of the Keystone Professional. Mark your calendars now!

Contact Angela Moore at 474-2736 ext. 233 or [amoore@apegm.mb.ca](mailto:amoore@apegm.mb.ca) for more information regarding sponsorship and related details.

Date: October 29, 2010

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

### Professional Practice Exam Seminar -

*APEGM is researching proposals for offering a Professional Practice Exam (PPE) seminar in September 2010. More details will be available in the September issue of the Keystone. If you think you might be interested, please send your names to Sharon Sankar, APEGM Director of Admissions, at [ssankar@apegm.mb.ca](mailto:ssankar@apegm.mb.ca). Details will be available both in the Keystone and by email shortly.*

## New Members Registered February, March, & April 2010

M.C. Abate	L. Ejdelman	B.D. Knezacek	M.S. Nicolau
S.N. Agah	J.E. Ekstrom	S.K. Kodsi	B.D. Nielsen
B. Alexeyenko	S.M. Ellickson	H.J. Kuyp	E.J. Nunn
S. Arcand	N.D. Epp	J.V. Lafrance	C.M. Poirier
D. Attarian	J.J. Eratostene	M.C.M. Lam	R. Popplewell
T.J. Bain	J.G. Esterer	R.A. Lane	S.A. Proskin
D.H. Berg	J.B. Evans	H. Lavallee	A.H. Redekopp
A.J. Bozek	N.P. Figueroa	R.A. LeCraw	S.J. Reimer
N.P. Breckon	M. Fisher	M.J. Lee	A. Reitmeier
A.R. Bromley	L.D. Frank	A.K. Letts	M.J. Rhyner
V. Bronfenbrener	J.S.S. Franko	K.K.Y. Leung	PE. Riegler
E.C.A. Brown	J.P. Friesen	W.L. Lo	R.J. Roberto
T.G.W. Brown	A.D.J. Fuga	S.D. Lockyer	M.G. Rogers
R.F. Buchsdrucker	PK. Ghosh	J.C. Lu	R.R. Ryland
V.B. Buda	B.E. Guth	T.C. MacDonald	M.M. Sefin
M.M. Bueckert	D.W. Haines	A. Machynia	B.P.D. Sellers
E.N. Cappelletto	S.A. Hayne	A. Mackin	P.R. Singh
R.J.N. Cariglia	K.D. Henshaw	M.S. Manzano	R. Swain
B.P. Carlson	V.C.Y. Ho	S.M.C. Marcoux	S.J. Taylor
R. Catto	F.M. Horgan	J.J. Marshall	B.M. Thompson
P.A. Chandonia	R.J. Hunter	W.S.F. Martin	M. Tremblay
M.I.V. Cohen	A.N.S. Islam	T.J. McGinn	P.C. Turner
D.M.M. Curial	C.O. Iyogun	R.A. Mclvor	X. Wang
R. Davoodi-Bilesavar	M.S. Janiga	C.T. McWhinnie	M.J. Wheatley
S.S. Deepak	N.K.A. Jayasekara	M. Milani-Nia	S. Yirdaw-Zeleke
R.M. Derworiz	K.S. Kalyta	A. Moosavi	P. Zhao
H.M. Desai	A. Karabeliova-Pavlova	S.B. Nemetz	F. Zhou
J. Descalzi	R.G. Kellam	J.P. Nerison	P.A. Zinck
M.D. Deziel	T. Kerkhoff	D.C. Nguyen	L. Zou

## Members-In-Training Enrolled February, March, & April 2010

V.O. Adindu	T.P. Ehnes	K. Liu	R.K. Ramrattan
S.A. Ahmed	A.O.A. El Galad	S. Liu	R.M. Sanders
J.A. Allardyce	K.L.M. Fedirchuk	P. Louden	R.E. Sauddin
R.L. Austman	S.P. Frenette	M.I. Matar	B.P. Schattner
B.C. Barroga	A.G. Froese	R.P. May	M.K. Seewald
M. Bejte	Y. Gao	J.J.K. McCombe	J. Shao
G.R.M. Bushi	N.J.S. Gilbert	E. Morales Martinez	H.T.E. Soliman
J.V. Cherwinski	M.S. Gillies	B.M. Ng'andu	A. Subramanian
S.M. Collins	H.J. Giron	I.S. Olumola-Davies	H.Y. Tang
P.M.L. Couturier	T.R. Guenther	A.R. Osachuk	A. Valdes Cruz
R. Daoud	P. Ji	K.S. Patmore	C.M. Wren
B.A. Derkach	C.N. Kao	A.A. Pfeiffer	J. Zhu
A.D. Dibs	D.J. Kelly	A. Piamsalee	F.M. Zurzolo
O.D. Duff	J.S. Kleinsasser	J.L. Ragazzi	

## Certificates of Authorization February, March, & April 2010

Advanced Tower Services (2007) Ltd.  
BBA Inc.  
Christiansen Engineering Group Ltd.  
CORE Engineering Inc.

GeoPacific Consultants Ltd.  
Mainstream Water Solutions Inc.  
Montane Geotechnical Inc.  
NCN Engineering Services Inc.

Prestige Telecom Inc.  
Walter's Inc.



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Critical Illness Insurance, Extended Health Care Insurance, Dental Care



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