

Professional Engineer



Celebrity Topple-a-Tug Challenge

By: B. Thomson, Appointed Councillor

National Engineering Week was launched on March 4 this year at Polo Park Shopping Centre with our annual Celebrity Challenge.

Our challenge this year was to design a high-capacity barge using aluminum foil, toothpicks and transparent tape. The winning design was the barge that floated the most pennies. Our fearless judges this year were Ron Britton, P.Eng., from the Department of Biosystems Engineering (and APEGM President), and Doug Ruth, P.Eng., – Associate Dean of Engineering.

Our government team, representing the Ministry of Labour, was ably captained by The Honourable Mike Radcliffe, Minister of Labour, with him were Brad Kirbyson, Dan Robinson, and Doug McLandress.

Our media team comprised Klaudine Gervais, Managing Editor Canadian Publishers, Diana Swain, CBC Television News, and Barbara Lee Edwards of CKY Television News.

There was some concern that there were four members of the government team and only three members of the media – but since there were two “anchors” on the media team it was assumed

there was some previous nautical knowledge. (It is the writer’s opinion that the fact that the media team consisted of three women more than evened the odds.)

Both teams came with ideas and plans for their boats and held conferences before the start of the competition. It was an obvious team effort as each design group conferred and put forward their particular engineering expertise. There was a ten-minute-design time limit in place, but each team was so efficient that they finished well under the allotted time.

The tension mounted as it came time for the loading process. The Government team loaded their boat first. The 43rd penny caused a modern-day Titanic accident. Then the Media started loading their boat. Forty-seven pennies! However, Dr. Ruth declared that the true count for the Media was 46 pennies as one of the 47 coins was an American penny.



The Media Team.

The real winners this evening were Winnipeg Harvest to whom the media donated their \$500 first prize, and the Variety Club – recipients of the \$250 second prize from the government team.

The Image Enhancement Committee would like to thank the very busy members of both teams who came out and supported National Engineering Week. It is very much appreciated. □



National Engineering Week

First APEGM/CTTAM Awards Night

By: B. Stimpson, P.Eng.

February 24th at the Wildewood Club marked a significant moment in a “made in Manitoba” process for the two Associations – APEGM and The Certified Technicians and Technologists Association of Manitoba (CTTAM) – to work cooperatively for the protection of the public and the economic welfare of Manitoba. In addition to the formal events of the evening, it was also an occasion to recall the history that made the evening possible.

Mal Symonds, P.Eng., a Past-President of APEGM, opened the evening’s proceedings with a brief account of the events and significant contributors leading to the signing of a Memorandum

of Understanding between the two Associations. Early mistrust and issues that were “hot buttons” were handled adroitly through the leadership of Barry MacBride, P.Eng., and mutual trust grew. Participants in the discussions agreed in their desire to remain self-regulating associations. Furthermore, it was recognized that engineering involves technicians, technologists and engineers, and that the dividing line between these three categories is constantly shifting. Nonetheless, a long-term goal is to better define the members of the engineering team. The agreement to support each other’s new Acts was a major step without which this event would not have been taking

place. “CTTAM’s support of us showed (to the government) that we had our act together,” Mal Symonds quipped. Both Association’s Acts require the establishment of a Joint Board.

Deputy Minister of Labour for the Province of Manitoba, Tom Farrell, came to the podium to express his congratulations to the two Associations and to note that self-empowerment of organizations is the path for the future.

Larry Drebniski (CTTAM President) and Ron Britton (APEGM President) addressed members and guests following the formal signing of the terms of reference for the Joint Board. Larry shared the early history of APEM and CTTAM when the Associations shared the same facilities before CTTAM moved out to seek “an independent life”. Likening this stage to that of a teenager

Continued on page 2



April 1999

Published by the Association of Professional Engineers and Geoscientists of the Province of Manitoba
850A Pembina Highway, Winnipeg, Manitoba R3M 2M7
Ph. (204) 474-2736 Fax (204) 474-5960
E-Mail: apegm@apegm.mb.ca

APEGM COUNCIL

M.G. Britton, P.Eng., President
A.E. Ball, P.Eng.; E. Eddy, Ph.D., B.P.T., M.C.P.A., M.C.S.P.; R.J. Eschenwecker, P.Eng.; L.R. Ferchoff, P.Eng.; J.R. Hosang, P.Eng.; J.M. MacLeod, P.Eng.; R.N. Matthews; A.J. Poetker, P.Eng.; A.J. Pollard, P.Eng.; L. Quinn; S.H. Rizkalla, P.Eng.; C.S. Roberts, P.Eng.; B. Thomson, R.N.; P. Washchysyn, P.Eng., Past-President

APEGM STAFF

D.A. Ennis, P. Eng., Exec. Director and Registrar
S.M. Matile, P. Eng., Director of Admissions
K.A. Buhr, P. Eng., Manager, Administration
J.C. McKinley, Administrative Officer
D. Bilodeau, Admissions Co-ordinator
E. Ryan, Accounting & Membership
L. Dupas, Receptionist/Secretary
K.D. Birrell, Administrative Secretary

COMMUNICATIONS COMMITTEE

B. Stimpson, P.Eng., Chair; M. Baril, P.Eng.; J.A. Blatz, EIT; J.W. Bogan, P.Eng.; V.L. Dutton, P. Eng. (Ret.); A.N. Kempman, P.Eng. (Ret); M.W. Morrison, EIT; J.E. Nordstrom, EIT

CORRESPONDENTS

P. Yamada, P. Eng., Thompson
S. Trivett, P. Eng., Brandon

The Communications Committee would like to hear from you. Comments on your newsletter can be forwarded to us through the Association office or e-mailed directly to the Chair at stimpson@cc.umanitoba.ca. Members are also encouraged to submit articles and photos on engineering or business 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 the APEGM or the APEGM Council.



WE HAVE LOST CONTACT. MAY WE HAVE AN ADDRESS?

P.B. Farley
C.E. Locke
T.K. Mak

J.C. Priest
H.G. Wiber

First APEGM/CTTAM Awards Night

Continued from page 1

leaving home, he said dialogue and mutual respect have now brought the Associations back "full circle". Ron expressed his pleasure at having the opportunity to see the relationship between APEGM and CTTAM grow and noted that Manitoba is the only province in Canada where the two Associations have made a commitment to work together.

Mal Symonds also made the announcement that David Kennedy has been appointed the Chair of the Joint Board by the Minister of Labour.

The final formal event of the evening was the announcement of the recipient of the first APEGM/CTTAM Engineering Team Award for outstanding contributions of a person/persons or organization to the Manitoba economy. A joint APEGM/CTTAM Committee recommended to both Associations that Barry MacBride, M.Sc., M.B.A., P.Eng., should be granted this honour "in recognition of his outstanding contribution to enhancing the engineering team and its contribution to the public interest of Manitoba". In particular, his development of a process for identifying "hot spots" and facilitating discussion of positive aspects of our Associations during the negotiations had been of salient importance.

In accepting the award, Barry MacBride commented in a humorous vein, "Only engineers could come up with a team award and then give it to an individual." In that light, he expressed his



Barry MacBride, P.Eng., recipient of the first APEGM/CTTAM Engineering Team Award

appreciation for all the individuals who had worked with him along the way.

Barry is currently the Director of the Water and Waste Department for the City of Winnipeg, and oversees an annual operating annual budget of \$170 million and a capital budget of \$39 million. Prior to his appointment as Director, he worked for 17 years with the Department in various positions in Engineering, Laboratory Services and Operations, and for eight years as an engineering consultant in Winnipeg. He is currently working on transforming the Department into a competitive customer-focused, business-driven public utility and is a Director of the Canadian Water and Wastewater Association as well as a member of a number of professional and technical associations. □

NEW MEMBERS REGISTERED JANUARY & FEBRUARY 1999

D.M. Aasberg	M.R. Maier
T.H. Akkurt (AB)	P.D. Maksimovich
B.B. Anderson (AB)	R.M. Marko
J.C. Bewsky	F.K.C. McCullagh
C.M. Bock	P.M. Nahirney (SK)
K.M. Boucher	J.M. Nilsen
P.W. Bowen (ON)	L.A. Penner
G.S. Cherkas	R.S. Pentland (SK)
R.P.K. Chung (BC)	G.E. Perron
A.P. Damjanovic	D.E. Rodway (BC)
B.J. Diak	S.W. Roper
K.L. Dolhun	D.C. Rourke
W.C. Flather	M.A. Salomon
D.W. Glover (AB)	P.L. Stoute
D.H. Graupner	B.D. Timmerman
J.K. Grieder (AB)	R.J. Tkach
S.L. Grief	H. Vallee
B.S. Henney (BC)	G.D. Verniest
R.J.J. Hermann	M.G. Ward
M.S. Jastrzebski	B.J. Wiebe
C.M. Javra	C.E. Wright
P. Kozicki (SK)	S. Xu
K.V. Landgraff	

EITs ENROLLED JANUARY & FEBRUARY 1999

J.A. Abel	D.J. Kroeker
R.J. Bilan	J.L. LaFrance
M.C. Britton	S.N. Mukhi
T.N. Crilly	T.K. Ooi
D.J. Danielson	R.K. Parbhakar
J.S. Gilmore	J.P. Pelletier
R.A. Goodman	C.P. Senkow
P.A. Hachkowski	M.K. Stocki
M.D. Hewko	T.B.V. Thadani
K.H. Hill	T.K.M. Veitch
B.J. Humphrys	S.M. Waplak
T.A. Janz	B.D. Wilcox
A.I. Jittu	

LICENCES ISSUED JANUARY & FEBRUARY 1999

D.D. Benoy (MN)	G.V. Nagel (MN)
G.A. Cuthbertson (ON)	G.E. Peeler (TX)
F. Deslauriers (PQ)	J.A. Axelson (MN)
A.T. Erickson (ON)	P. Guo (ON)
T.W. Hedberg (MN)	D. Mordhorst (BC)
D.A. Jonasson (AB)	T.H. Woolhouse (ON)
P.B. Kulkarni (TX)	

RESIGNATIONS AT DECEMBER 31, 1998

(Omitted in Feb. Issue)

V.R. Chettiar
B.C. Jorowski
Donald A. Kilgour

T. Loo
D.B. Rooks

REINSTATEMENTS JANUARY & FEBRUARY 1999

R.W. Bruynson	R.E. Derksen
M.C. Crooks	A.F. Sultan

President's Message

Ron Britton,
P.Eng.



Should We Care What is Happening in Newfoundland?

On February 25, after almost three years of unsuccessful negotiations with Memorial University's administration, the Association of Professional Engineers and Geoscientists of Newfoundland (APEGN) reluctantly withdrew its consent for accreditation evaluations at that university. Is this just another case of turf wars, or does it go deeper than that?

First, a brief history. In 1997, the Faculty of Computer Science at Memorial University introduced a program called Software Engineering. The program was introduced under the objection of the Faculty of Engineering, the Association of Professional Engineers and Geoscientists of Newfoundland, and the Canadian Council of Professional Engineers. Their objection was based on the fact that the new program, while it is called "Engineering", was (and is) a software development program. Graduates will not qualify as EITs, and the program does not meet any of the criteria for accreditation.

So how does this tempest on the Rock affect us, or does it? If you are a P.Geo., the answer is it doesn't — just yet. Right now this is an engineering issue with future implications for geoscientists.

While the professional Acts under which we practise engineering across Canada vary in detail,

they all have a common requirement that the members of the profession regulate those who practise engineering and/or who represent themselves to the public as Engineers. Some think of this as little more than a "right to title" and suggest it is a trivial concern. But, if anyone can call him/herself an engineer, how can members of the general public distinguish between those who are, and those who are not, qualified? How do they distinguish who is, and who is not, working under the constraints of a Code of Ethics? How do they determine who has the appropriate academic qualifications and experience background to respond to their technical needs? From the perspective of presenting our members to the public as qualified professionals, semantics becomes important.

"...IF ANYONE CAN CALL HIM/HERSELF AN ENGINEER, HOW CAN MEMBERS OF THE GENERAL PUBLIC DISTINGUISH BETWEEN THOSE WHO ARE, AND THOSE WHO ARE NOT, QUALIFIED?"

Former students who suffered through some of my classes will probably recall my reference to a statement attributed to J.C. Penny of US retailing fame. His philosophy was stated as "I have no quarrel with those who will sell for less. They, better than anyone, know the value of their products." This "after the fact" assessment of quality may work in retailing, but it provides a shaky foundation upon which to select engineering services. The provincial and territorial governments have given our professions the right, and responsibility, to regulate (control) the practice of engineering and geoscience in an attempt to provide a more reliable basis for these public judgements.

Each of us has the right to practice our profession by virtue of our membership in our provincial or territorial Association. This membership also imposes on each of us the individual and

collective responsibility of making certain that the public is protected, both physically and financially, from those who would misrepresent their qualifications. Over the years, successive Councils have taken steps on our behalf to make this process less onerous and more transparent. Included in these actions was the creation of the Canadian Engineering Accreditation Board (CEAB). A geosciences equivalent is now under development.

CEAB is a creation of the Engineering profession. It is financed by all Canadian Associations (professional engineers) with the express purpose of defining, from the profession's perspective, the minimum acceptable academic qualifications of engineering graduates. Many of you may recall heated discussions about the possibility that our programs here in Manitoba could lose their accreditation because of financial and physical difficulties being experienced on campus. From the perspective of the university, accreditation is very important because graduates from an accredited program are academically qualified for admission to any and all provincial and territorial Associations in Canada and the United States. Accredited programs are marketable. Graduates from non-accredited programs must prove, and reprove, their fundamental academic qualifications. If an engineering program loses its accreditation it will cease to exist.

So, accredited engineering degree-programs provide graduates with a quick route into EIT

Continued on page 10

Notice Under the Discipline By-law

This is notice that on 27 January, 1999, G. M. Fagerstrom, P. Eng., was reprimanded following a Hearing and a conviction on a charge of unprofessional conduct in the practice of engineering, in accordance with Section 43.5.7 of the By-Laws of the Association of Professional Engineers and Geoscientists of the Province of Manitoba.

The conviction is based upon his failure to meet the standards expected of a professional engineer by undertaking to provide engineering services for which he did not possess the training, ability and experience necessary to fulfill the requirements of the work undertaken, in contravention of Canon 2.a of the Professional Engineers Code of Ethics and by his failure to ensure that drawings and specifications which he prepared in support of a Building Permit Application were in compliance with the Manitoba Building Code, thereby failing to satisfy the engineering needs of his client in a professional manner in contravention of Canon 1.c of the Professional Engineers Code of Ethics.

Publication of this Notice is made under the authority provided in Section 50 of The Engineering and Geoscientific Professions Act and the Association's Discipline By-Law.

David A. Ennis, P. Eng.
Executive Director & Registrar

□

ATTENTION GOLFERS!

APEGM Annual Spring Golf Tournament

Date: Wednesday, June 12, 1999

Place: Quarry Oaks Golf Course

Mark Your Calendar!

(See Enclosure)

CCPE President's Message

Dan Levert,
P.Eng., L.L.B.



The Canadian Engineers' Awards

Our Canadian Engineers' Awards may not be as glitzy or notorious as the Academy Awards but, hoopla aside, the contributions our winners make to society deserve equal or greater billing.

Presented annually by the Canadian Council of Professional Engineers (CCPE) at a star-studded awards gala, the Canadian Engineers' Awards recognize Canada's outstanding engineers, teams of engineers, and engineering projects. It's one of the few nights of the year when our engineers and our profession are in the spotlight. To date, however, the spotlight cast by the Canadian Engineers' Awards has not shone as brightly as it could outside of the engineering profession or even, at times, within it.

This is unfortunate. Our research suggests that the public is not fully aware of engineering's importance to Canada's economic and social well-being, and has a limited understanding of what engineers actually do. Similar research indicates that many engineers perceive that the members of the public hold them in less regard than other professionals and are largely uninformed about engineering's contribution to their daily lives.

As a profession, and as individual engineers, we should take every opportunity at our disposal to enhance the public's recognition and understanding of engineering. In the same way that National Engineering Week is an opportunity to celebrate Canada's rich engineering heritage and remind Canadians of the role engineering plays in their daily lives, the Canadian Engineers' Awards are an opportunity to blow our own horn.

To this end, the communications goal CCPE has set for the 1999 Canadian Engineers' Awards is: "To enhance public awareness of the Canadian Engineers' Awards, and promote greater public understanding of the engineering profession and the role of engineers in creating a better, safer society for Canadians". We are also hoping to build greater recognition for the awards within the engineering profession, as well as among engineering students, business and industry leaders, and employers.

CCPE is currently developing a poster and a magazine advertisement to promote the Canadian Engineers' Awards. We will distribute the poster to engineering faculties across the country, as well as to other engineering organizations and our constituent associations/ordres. The poster will

also be available to engineers and engineering firms wishing to display it.

In conjunction with the poster and advertisement, CCPE is initiating a media relations campaign to gain increased editorial coverage of the Canadian Engineers' Awards in local, provincial and national newspapers. Although it may be overly optimistic to think that our Canadian Engineers' Awards could one day rival the Academy Awards in popularity, if we generate the level of excitement and anticipation they deserve, they could become front-page news.

The National Award for Exceptional Engineering Achievement will bring a new dimension to the Canadian Engineers' Awards this year, which should also garner both media and public interest.

The Canadian Engineers' Awards are an opportunity for us to recognize our peers, and for engineering to increase the public's recognition

and understanding of our profession. Let's make the most of it. On June 19, join with me in toasting the winners of the: **National Award For Exceptional Engineering Achievement** for an outstanding engineering project or achievement in which Canadian engineers were involved; **Gold Medal Award** for exceptional individual achievement and distinction in a field of engineering; **Young Engineer Achievement Award** for outstanding contribution in a field of engineering by an engineer 35 years of age or younger; **Professional Service Award** for outstanding contribution to a professional, consulting or technical engineering association or society in Canada; **Community Service Award** for exemplary voluntary contribution to a community organization or humanitarian endeavour; and **Medal for Distinction in Engineering Education** for exemplary contribution to engineering teaching at a Canadian University. □

Meet Your New Councillor: Rob Matthews, P.Geo.(AB.)

By: S.M. Matile, P. Eng.

One of APEGM's first two geoscientist Councillors, Rob Matthews feels "more like a senator than an MP", because his position was appointed, rather than elected. However, Rob was already known to the Association through his volunteer work with the Canadian Geosciences Standards Board, and he was one of the first geoscientists to volunteer to serve on an APEGM committee. We are quite sure that, had there been an election for the position, Rob would have been a shoo-in.

A native of Winnipeg, Rob graduated from the University of Manitoba with a B. Sc. (1972) and an M. Sc. (1978) in geology, and a Certificate of Education (1977). Having obtained all of this education, he worked variously as a geologist, an educator, and a hydrogeologist in Ghana, Calgary, Edmonton, and Swaziland, before returning to Winnipeg in 1990. It was in Ghana that he met Cynthia, his wife of 20 years, and in Edmonton

that their two children, now ten and 13, were born.

Since returning to Winnipeg, Rob has worked exclusively in the consulting field as a hydrogeologist, having come home to open an office for O'Connor Associates, and being currently employed by Stantec Consultants Ltd. He was registered as a Professional Geologist with the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA) in 1981.

Rob describes his appointment to the APEGM Council as an "accident – the result of some miscommunication". Because he did not actively seek the position, he has no particular agenda – at least, not yet! He wants to study the Association, first, and understand how it got to where it is, before attempting to make any changes. However, he is pleased and proud to have been appointed, and sees his appointment as an opportunity for personal and professional development. He is already serving the Council well, both through his keen and active interest in the issues affecting the Association, and his work with the ad-hoc geoscientist admissions "committee".

Not surprisingly, Rob's top priority is the registration of geoscientists – a process that commenced, in part, in January of this year. Rob recognizes the value of registration to both the geoscientists and the public, and he is anxious to share his views in this area with the geoscience community. He is disappointed that more geoscientists were not involved in the amalgamation process, a situation he hopes to redress by encouraging the increased participation of geoscientists in ongoing Association activities.

Once the academic admissions criteria have been finalized and the registration process is in full swing, Rob looks forward to turning his



Councillor Rob Matthews

Continued on page 11



National Engineering Week

National Engineering Week '99: An Evening of Recognition

By: B. Stimpson, P.Eng.

Every year APEGM hosts "An Evening of Recognition" to award individuals for outstanding achievements. Once again, this year's event on March 3rd at the Niakwa Country Club, Winnipeg, underlined the outstanding talent, skills and economic development the profession brings to the Province of Manitoba. Citations for the awards were read by Don Osman, with his customary touch of humour, while the awards were presented by APEGM's President, Ron Britton.

One other particularly noteworthy event was the formal recognition of the first P.Geo registered under the new Act, Mr. Dan Bosowec.

1999 Early Achievement Award: John (Jay) R.C. Doering, P.Eng.

Dr. John Doering, known to his colleagues as "Jay", came to the Province of Manitoba in 1993 to join the Department of Civil and Geological Engineering at the University of Manitoba, where he is currently an Associate Professor and Associate Head of the Department. In this short time, he has won two undergraduate teaching awards, received the Rh Award for Outstanding Contributions to Scholarship and Research in the Applied Sciences, developed nine courses, and attracted over one million dollars in research support. The latter funding has been instrumental in establishing the Hydraulics Research & Testing Facility to which he recently added an ice research laboratory. Other achievements include innovative applications of acoustic technology for



Early Achievement Award Recipient
Jay Doering.

sediment transport research, performance testing of low-head turbines, and his involvement both technically and in the media as a member of The Task Force that advised the Manitoba Department of Water Resources during the Red River "Flood of the Century" in 1997.

Prior to coming to the University of Manitoba, Jay completed a Bachelor of Science Degree in Civil Engineering from Queens University (First-Class Honours, 1984), a Ph.D. in Physical

Oceanography from Dalhousie University (1988), and undertook post-doctoral studies under a Visiting Fellowship Program at the Canada Centre for Inland Waters in Burlington, Ontario.

1999 Merit Award: Howard C. Card, P.Eng.

Since 1980 Dr. Howard Card has been a faculty member in Engineering at the University of Manitoba where he obtained his B.Sc. and M.Sc. degrees in 1968 and 1969, respectively. He received his Ph.D. from the University of Manchester, England, in 1971 under an Athlone Fellowship, and is currently a Professor in the Department of Electrical and Computer Engineering and a Distinguished Professor of the University.



Merit Award Recipient Howard Card.

Dr. Card's career is replete with significant scholarly and pioneering achievements. In his Ph.D. research he developed a model for quantum-mechanical tunneling in semiconductor devices with applications to photovoltaic solar cells, light emitting diodes, and high speed integrated circuits. Later, while a post-doctoral fellow at the University of Manchester (1971-74) working for Mullard Labs (later Philips), he developed new non-volatile memory technology. In conjunction with Ferranti, this work resulted in devices similar to present-day EEPROMS. Subsequent career moves to the University of Waterloo (Assistant Professor, 1974) and to Columbia University (Associate Professor, 1975-1980), where he also worked with researchers at IBM's Watson Research Centre and Bell Laboratories, saw him developing CAD models for integrated circuit design, photovoltaic energy conversion, optical communications, microchip design and biological modeling. His current interests include the application of neural network models to adaptive pattern recognition and mobile robots, and the investigation of general relationships between



APEGM's first P.Geo., Dan Bosowec with President Ron Britton.

Continued on page 6



National Engineering Week

An Evening of Recognition

Continued from page 5

biology, physics, and computation. These achievements have led to numerous awards.

As well as being an outstanding researcher, Howard Card is an exemplary teacher, a fact that has been recognized by conferring upon him the Stanton Award of Excellence in Teaching and the UMFA-UTS Award, both at the University of Manitoba.

1999 Certificate of Engineering Achievement: InfoMagnetics Technologies Corporation

In recognition of engineering excellence in, and major contributions to, the concept, design, and implementation of an engineering work, the 1999 Certificate of Engineering Achievement was awarded to InfoMagnetics Technologies Corporation (IMT) for the Briefcase, Deployable Antenna for EHF Satellite Communication (Pico-terminal Antenna). This antenna is the first of its kind in the world for satellite applications in the Ka-band. While the satellites currently operating on the Ka-band are experimental, the next generation of satellites, scheduled for 2001, will have additional transponder capacity in the Ka-band which will considerably expand the ability to provide broadcast services for multimedia content through two-way asymmetric, high-speed transmission. A dramatic increase in demand for these services is anticipated as the year 2001 approaches.

The Pico-terminal Antenna was designed and developed for the European Space Agency under specifications that presented major challenges. As a result of IMT's success in developing this device, the company (established in Winnipeg in

1991 by Moe Barakat, current C.E.O.) has become a recognized world leader in Ka-band antenna technology for Ka-band RF satellite communications terminals.

According to Dr. Barakat, the firm's success on the antenna project is due to the excellent collaboration and contributions by Professor L. Shafai, P.Eng., Department of Electrical and Computer Engineering, University of Manitoba, and Mr. G.S. Pizey, P.Eng., Design Engineer, Industrial Technology Centre, Winnipeg. Their part in the development of this technology was recognized personally by Dr. Barakat at the awards ceremony and by their receipt of framed certificates from APEGM.

1999 Leadership Award: Ernest Armitt, P.Eng.

An elegant suspension bridge, 153' span, 4' wide (foot traffic only but accessible by all-terrain vehicles in the event of an emergency), now extends across the Grassy River at a point approximately 400 meters downstream from Pisew Falls near Thompson, Manitoba. The bridge connects with picnic areas and 12 kms of new hiking trails which provide access to Kwastichewan Falls, Manitoba's highest, and were previously only reachable by canoe. Ernest Armitt, a member of the Rotary Club of Thompson since 1990 and its President in 1997-98, played a major leadership



Chantal Carley (l) presents CEMF Award to Colleen Flather.

role in the vision, design and construction of the Pisew Falls Suspension Bridge, thus enhancing recreational facilities and tourism in the region.

After assuring the Rotary Club executive of the technical feasibility of the project, he assembled a group of men and women with various talents to execute the project. While INCO, where Ernest had been Chief Engineer, rallied behind his vision and provided the major support by donating engineering resources and materials, more than 600 hours of engineering time were volunteered. In particular, Helena Tsoi, P.Eng., was the primary designer of the bridge and contributed significant volunteer hours. Inspired by Ernest's enthusiasm, long time Rotarian Don Johnson took on a major role as project co-ordinator.

Photographs of the bridge were on display at the awards ceremony. The simple beauty of the structure and the natural beauty of the area make the Pisew Falls Suspension Bridge a "must visit" for anyone travelling or touring in northern Manitoba.

1998 Canadian Engineering Memorial Foundation: 1998 Engineering Students Project Award:

Women in Science and Engineering Access Program, University of Manitoba

Chantelle Carley, P.Eng., Board Member, Canadian Engineering Memorial Foundation (CEMF), travelled from Calgary to present the 1998 Engineering Students Project Award (ESPA) to the Women in Science and Engineering Program, University of Manitoba.

In her presentation, Ms. Carley outlined the history of CEMF which was founded in 1989 in memory of the victims of the tragedy at L'École Polytechnique, Montreal. The ESP Award was originally created to encourage women of all ages to consider engineering as a viable career option



Certificate of Engineering Achievement Award winners Mo Barakat (l), Gord Pizey and Lotfollah Shafai.

Continued on next page



National Engineering Week

and, more generally, to increase awareness of engineering. In 1998, the award was changed to focus more specifically on the challenge of encouraging female high-school students to consider engineering, and was also expanded to include one award for each of the five Canadian regions, rather than one national award.

To be eligible for the award, a project must be led by engineering students, must include programming to encourage senior high school students to continue their studies in science and mathematics and to inform and excite them about engineering, and must demonstrate innovation, originality and success.

In most cases, the University of Manitoba's Access Program in Science and Engineering far exceeded these criteria. Beginning in 1990, female engineering and science students have made presentations to approximately 20,000 high school students every year. Special attention

has been given to capable students who are "at risk" due to economic circumstances, to the Adolescent Parents' Program, and to the Girl Guides of Canada.

The efforts and commitment of the students involved in the program have been rewarded by

an increase of approximately 0.5% per year in female enrollment in the Faculty of Engineering.

Ms. Colleen Flather accepted the award on behalf of all the students at the University of Manitoba who have contributed to the program's success. □



New Members.

Spaghetti Bridge Building Contest

By: S.A. Mailey, P.Eng.

On Saturday, March 6, 1999, the fifth annual Spaghetti Bridge Competition was held at Polo Park Shopping Centre as part of National Engineering Week activities. The competition was open to students from grades one to twelve with cash prizes awarded in each grade, and a grand prize of \$120. The goal was to build a bridge from spaghetti and white glue spanning 300 mm and weighing no more than 350 grams. The bridges were all tested to see which could hold the highest load.

The event was an overwhelming success with hundreds of anxious onlookers and lots of cheering from the students. There were 98 entries with

great results all day. A bridge built by Paul Everton, a grade 11 student at College Louis Riel, set a new record of 152.2 kg. Congratulations to our grand prize winner! Students and teachers were already talking about next year.

The event organizers, Glenn Penner, P.Eng., Don Spangelo, P.Eng., and Shane Mailey, P.Eng., would like to thank volunteers Trevor Giesbrecht, Dave Klassen, Anousch Mathew, Kevin Gawne, Ameen Subramaniam, Adele Poulin, and Daniel Gillich for making the day a great success. Special thanks to Joe Begin, P.Eng., of the Industrial Technology Centre, for his time and effort and use of their testing equipment. □





National Engineering Week

National Engineering Week Activities

By: R.H. Bernhardt, P.Eng.

National Engineering Week within Manitoba began on Saturday, February 27, with a special screening of the IMAX film "Mysteries of Egypt". Once again, the screening was open to APEGM members and their families. The presentation was well attended, and ticket sales were quite brisk.

The next event occurred on Wednesday evening, with a new members reception at Niakwa Country Club. At this reception, the Association also recognized the recipients of the APEGM awards and marked the presentation of a Canadian Memorial Foundation Award to the Women in Science and Engineering Access Program at the University of Manitoba.

Later that evening, volunteers from a variety of different groups converged upon Polo Park Mall to set up their displays. This year, the groups included:

- APEGM
- University of Manitoba Faculty of Engineering
- Society of Automotive Engineers-Student Branch
- American Concrete Institute featuring their Concrete Kits for Kids program
- Robot Games (on Saturday and Sunday)

In an attempt to give the display area a different look, and to build interest in the contests that are put on at Polo Park, the display area was located in Centre Court this year, as opposed to the Sear's Court end of the mall. The display area was staffed by representatives from the Association and also from the SAE.

During the remainder of the week, a variety of competitions were held at Centre Court. On Thursday evening, the third annual celebrity competition featured two teams attempting to build a boat out of aluminum foil and toothpicks. One team was made up of individuals from the Province of Manitoba Department of Labour, including the Minister, Mike Radcliffe. Their opposition was a team made up of members from the media, including CBC's Diana Swain and CKY's Barbara Lee Edwards. This year's competition broke the tie that had existed between the media and politician teams as, in the past two years, both teams had registered victories. Team members, judges and spectators all had a good time with the

winning media team donating their \$500 prize to Winnipeg Harvest. The political team donated their \$250 prize to Variety.

On Friday, the winners of the second annual Mir In Motion contest were announced and the Straw Tower Building contest was run. This contest challenges mall patrons to build a tower out of soda straws and masking tape. Everyone who tried won a prize.

On Saturday, National Engineering Week's main attraction was again held at Centre Court. The Spaghetti Bridge competition continues to attract a substantial turnout of students and builds interest in the profession amongst young people. The Straw Tower contest was run concurrently in an attempt to leverage the interest generated by the Spaghetti Bridge competition.

On Sunday, the Whisser contest was held. Because of the common background between the Whisser and the Robot Games, representatives from the Games were present to showcase their robots to the public gathered to watch the Whisser.

As always, the success of National Engineering Week hinges entirely on the participation of volunteers. Some individuals who deserve mention for their efforts this year include:

APEGM councillor Bonnie Thomson and Kristin Huminuk, E.I.T. for their organization of the celebrity competition. This will probably be Bonnie's last year associated with the celebrity competition as her term on Council expires. The Image Enhancement committee owes a huge thank-you to Bonnie for her efforts on the celebrity competition over the past three years; to Michelle Rheault, E.I.T., for her work in arranging the IMAX presentation, and also for her efforts in organizing volunteers for the display area and competitions at Polo Park; to Darin Schuster, P.Eng. for his efforts in organizing the Straw Tower contest; to Brian Trenholm, P.Eng., and the Saint Boniface General Hospital, for the recurring loan of a backdrop which forms the centrepiece of the display area; and to Shane Mailey, P.Eng., Glen Penner, P.Eng., and Don Spangelo, P.Eng., for their continued efforts with the Spaghetti Bridge competition; APEGM councillor Alan Pollard, P.Eng., for his work with the Whisser contest; and Dan Prowse, P.Eng., and Ani Gole, P.Eng. for their work on the "MIR in Motion" contest.





National Engineering Week



Engineers in the News

By: M.E. Baril, P.Eng.

Lieutenant Governor's Medal awarded to Larry Whitney

On November 19, 1998, **Larry Whitney, P.Eng.**, received the 1998 *Lieutenant Governor's Medal for Excellence in Public Administration in Manitoba* from the Institute of Public Administration of Canada. The award was established in 1987 to recognize "public sector practitioners whose careers exhibit the highest standard of excellence, dedication and accomplishment". According to Jon Singleton, Chair of the Selection Committee, "The criteria used to evaluate nominees included the commitment to the public service and ethics; community service; evidence of sustained contribution to the public over a period of time; and evidence of excellence in providing service to the public".

Mr. Whitney began his career with the provincial government in 1969, and is currently the manager of Water Development and Planning within the Water Resources Branch of Natural Resources. He gained significant recognition as the Provincial Flood Liaison Officer with the provincial government during the "Flood of the Century" in 1997, appearing for televised news conferences twice a day during the peak of the flood. Over his career, Mr. Whitney has served on, or chaired, committees of international, national, interprovincial and local advisory boards and commissions. He was also responsible for rewriting the provincial legislation on water rights.

APEGM congratulates Mr. Whitney on his national recognition and the furtherance of the reputation for excellence provided by Professional Engineers in the Province of Manitoba. □

Meet Your New Councillor: Lawrence R. Ferchoff

By: M. Morrison, EIT

Lawrence Ferchoff is one of the newly elected councillors who started their terms in November, 1998. Lawrence also serves as Council representative on the Enforcement and Discipline Committees. Prior to being elected to Council, he served on the Awards Committee, and before that on the Salary Research Committee.

One of Lawrence's priorities on Council is to enhance the stature and value of the profession within society by improved understanding and appreciation of the engineer's role, its impact on public protection and the benefit to society. A second priority is to demonstrating the importance of experience, responsibility and account-

ability as well as improving the understanding between client engineers and those in service industry practise. Along with promoting the value and importance of the Association to the membership, Lawrence is also interested in the improved mobility of Manitoba's engineers to practise in the US. Finally, he encourages recognition of some of the emerging disciplines of engineering, particularly those in Information Technology, to bring a greater degree of professionalism to this rapidly growing field.

Lawrence has spent all of his 26 year career in the consulting engineering field, primarily with Wardrop Engineering, where he is currently a Managing Director. His areas of expertise are systems electrical engineering, automation technology, process instrumentation and control, power distribution and generation, and project management. When reflecting on his years at Wardrop the words that arise are 'excitement, challenge and opportunity', but the main characteristic is variety, not only in engineering projects but also the people whom he has met and worked with. Lawrence has been involved in design and project management of electrical and automation systems in many sectors from heavy industry (pulp and paper, mining and mineral processing), military and aerospace, public works, and energy (power, natural gas, transmissions) and he says that his work has never been anything but exciting. Some of his more notable projects include the City of Winnipeg wastewater treatment plants, Manitoba Hydro diesel and hydroelectric generating stations, the NORAD North Warning System and AECL Underground Research Laboratory. In his current role as General Manager of Wardrop Technologies, Lawrence oversees the application of the latest information technology for optimal business and engineering solutions and the deliv-



Councillor Lawrence Ferchoff.

President's Message

Continued from page 3

status in an Association. They also provide the profession with control over the type of education future engineers will receive. And that takes us back to Newfoundland.

Because the accreditation process is a profession based process, any accreditation visit must be approved by the local Association. APEGN have decided that they have no choice but to withdraw permission for an accreditation visit. The administration at Memorial have apparently decided accreditation is nothing more than an academic ploy used by Deans of Engineering (and other professions) to extract extra funding every few years. APEGN have suggested they are wrong. And unfortunately the real engineering programs are now at risk. Hopefully the situation will resolve itself. The ability of our profession to govern itself will be profoundly affected by the outcome of this dispute. □

ery of Wardrop's services in meeting the Year 2000 challenge.

Lawrence was born and raised in Beausejour, Manitoba, graduating from Beausejour Collegiate (now Edward Schreyer Secondary School). He now lives in Birds Hill with his wife Pat and their two sons Joel (15) and Jay (13). Lawrence is involved in community service, including his recent work as United Way Engineering Profession Campaign Chair (for fund-raising from the consulting industry). Lawrence was also actively involved in the local section of IEEE, and was a founder of the Winnipeg chapter of the Management and Communication Society of IEEE. Lawrence is also a Senior Member of the Instrument Society of America.

Lawrence attended the University of Manitoba, where he graduated in 1973 with a B.Sc., Electrical Engineering, and the Gold Medal. The words of a professor 25 years ago, 'You don't have it so tough (regarding school workload). You will come to look on this time as the best years of your life', was a lesson realized at his 25-year class reunion held recently.

Whether you consider him a very capable engineer, an established family man, or a contributor to the profession and community, I think you would agree that Lawrence is a welcome new Councillor and we look forward to his continued contribution to APEGM in his new role. □

Arbour Day, 1999

By: V.L. Dutton, P.Eng. (Ret.)

In an earlier issue, Members who are graduates of the U of M were invited to the University on Saturday May 1 to do a 'good turn' by doing some cleaning up around the Engineering Building. This aging Scouter had forgotten about unions. Appropriately, Scouts Canada will be doing their annual planting of Trees For Canada on Arbour Day. Why not contact a cub pack in your community and give them a hand?

Something New from the U



The Undergraduate Option in Environmental Engineering is Growing

By: Dr. D.M. McCartney, P.Eng.

The Environmental Engineering Option offered in the Civil Engineering Degree Program has now been expanded to include the Biosystems Engineering Degree Program. "What Option?", you say. I'm glad you asked. In September 1997, the first students entered the Environmental Option in the Civil Engineering degree Program at the University of Manitoba. They will be graduating in May 2000 (hint, hint...hiring opportunity). The Option, however, was not available to Biosystems Engineering students. The Option is now available to students in both the Biosystems Engineering and the Civil Engineering Programs. How's that for value-added! In either Program, the students would enter the Option after completing their second year of studies.

Here are some answers to the most frequently asked questions about the Option:

Why have an Option in Environmental Engineering?

The demand for environmental engineers in Manitoba and Canada has increased dramatically in the past decade. New sustainable development policies and a strong environmental industry worth eleven billion dollars annually to the Canadian economy ensure this demand will continue. The Option in Environmental Engineering within the two academic units of Biosystems Engineering and Civil & Geological Engineering is in response to the changing needs of society and it provides an opportunity for students to be exposed to more environmental-engineering-related courses.

Who will be able to take the Option in Environmental Engineering?

The Option is available to students registered in the Biosystems Engineering or Civil Engineering Programs at the University of Manitoba. A student would be required to complete 60 credit hours (equivalent to completing second year of a four year program) towards either a Biosystems Engineering or a Civil Engineering Degree. The student may then elect to enter the Option in Environmental Engineering. It would also be possible for individuals who have completed a degree in one of the two academic units to register (as a special student) and complete the Option requirements.

How will students who successfully complete the Option be recognized?

Successful completion of the Option will be indicated on graduates' transcripts.



Why is the Option available in both the Biosystems & Civil Programs?

The Biosystems Engineering degree, formerly known as the Agricultural Engineering degree, has always emphasized various subject areas related to environmental engineering in its undergraduate and postgraduate programs. Design of systems to grow plants and raise animals under controlled environmental conditions, to conserve soil and water during agricultural production, and to use manure in an effective manner are some of the examples where Biosystems Engineering has had a strong interest. The Civil Engineering degree has always emphasized consideration of environmental factors during the Civil Engineering design process. Design of systems to provide healthy drinking water supplies, to mitigate the impacts of wastewater discharges, to manage solid wastes in a sustainable manner, to protect earth's water, soil, and air resources are some of the examples where Civil Engineering has had a strong interest.

What sort of material is covered in the Environmental Engineering Option?

There are two core courses in the Option: (1) Environmental Engineering Analysis covers risk assessment, mass balances, reaction kinetics, colloidal dispersions, and reactor design; and (2) Environmental Engineering Design introduces the students to design principles for water, air, and solid systems, which are then applied to various types of small design projects. Two other courses included in the Option are Environmental

Assessment and Environmental Ethics. In addition to these four courses the students taking the Option towards a Biosystems Engineering Degree must also complete: General Microbiology, Principles of Plant and Animal Physiology, Principles of Ecology, and Biosystems for

Engineers; and select three from: Drainage System Design, Irrigation System Design, Air Pollution Systems, Controlled Production Systems, and Manure Management. The students taking the Option towards a Civil Engineering Degree must also complete: Geology for Engineers, Introduction to Environmental Engineering (environmental chemistry and environmental engineering problem solving), Hydrology, Groundwater Hydrology, and Remediation of Contaminated Land; and also select two from: Air Pollution Systems, Hazardous Waste Treatment, Environmental Systems, Groundwater Contamination, Watershed Processes, Chemical Analysis of Soils, and Biosystems for Engineers.

How do I get more information about the Environmental Option?

You can contact either the Department of Biosystems Engineering (474-6033) or the Department of Civil & Geological Engineering (474-9220).

Remember to mark it on your calendar! Students in the current Option will be graduating in May 2000. The first graduates from the new Option will be available in May 2002. Something "New from the U" for you in the new Millennium. And who said engineers had no rhythm? □

Meet Your New Councillor: Rob Matthews, P.Geo.(AB.)

Continued from page 4

attention to the issue of governance. He has long been interested in economics and business affairs, and believes in the concept of having an arm's-length Board of Directors serving as the watchdog over management in the business community. He is interested in learning more about the (Carver) governance model the association is considering adopting, and seeing how it applies in both the profit and non-profit sectors.

Rob enjoys cross-country skiing and reading – and although he finds that consulting really inhibits his participation in the latter, he is currently digesting a "best-seller" on Risk Management. Although Rob's career has taken him to many corners of the globe, and the prospects for hydrogeologists may be better elsewhere, Rob's wife is comfortable in Winnipeg – she prefers it to Alberta – so it looks as if the Matthews' are here to stay – at least, for a while. APEGM will be much the richer for it. □

Council Reports

Tuesday, January 12, 1999

By: A. N. Kempan, P.Eng. (Ret.)

AT WHICH COUNCIL PONDERES THE FUTURE OF PROFESSIONAL DEVELOPMENT

Even though nearly two months had elapsed since the Annual General Meeting, this Council meeting still carried the lingering ghost of the ill-fated Mandatory Professional Development Program (MPDP). Like yesterday's cigar, a feeling of defeat and doubt hung in the air. Much of the meeting time was devoted to pondering future directions for the MPDP. The MPDP was passed at the Annual General Meeting by 55-45 vote, but the mail-in ratification vote went 893-339 against.

Throughout Council's deliberations, there remained a commitment to the main issue – the process the APEGM should follow to create an effective new program, and one which would also be palatable to the membership. Two schools of thought emerged, those who felt a new initiative should begin immediately, in order to capitalize on the gains made by the old proposal, and those who felt a cooling-off period was necessary to allow the membership to regain their equilibrium.

As part of the deliberation process, Council reviewed correspondence from several prominent MPDP "dissidents". One communication suggested that the Association was run by an elite out of touch with the membership since the proposal passed at the Annual General Meeting, but failed with the membership at large. Councillor Washchyshyn was moved to remark that perhaps the people who voted for it were best informed about the program, and that's why they were more responsive to its introduction.

The debate followed a free-flowing and wide-ranging path, but in time several motions were passed by Council. A Task Force will be appointed by Council to shepherd a new, improved Professional Development Program (PDP). The Task Force will report to Council on June 30, 1999, on the way forward. They will engage in a consultative process with the membership and will bring forward a discussion paper for the 1999 Annual General Meeting. There will not be a vote at that time. Part of the process will

involve a random external survey of the membership to obtain information and opinions on what would constitute an acceptable PDP. An upper limit on the cost of such a survey was specified.

The Task Force will be chaired by the very capable Councillor Ralph Eschenwecker who is authorized to recruit, draft, or cajole members to the Task Force.

In spite of the pre-eminence of the MPDP issue there were other items on the agenda. Council received from the Communications Committee a suggestion for a new name for our venerable publication. The name "Keystone Times" hit Council like the perfume from a hog barn. Some councillors objected to "Keystone" and others objected to "Times", but almost all objected to "Keystone Times". On a positive note, Council passed a motion that will allow our publication, whatever it may be called, to accept unsolicited paid advertising.

In preparation for the entry of our geological brethren into the APEGM Council reviewed a document from Shirley Matile, Director of Admissions, on the work experience requirements for geoscientists. Council passed a motion that accepted the amended definition of "Acceptable Geoscientific Work Experience" be used by APEGM in registering geoscientists at all experience levels.

No meeting passes without some discussion of our relationship with the architecture profession. This time Council pondered a resolution from the MAA asking that the Joint Board, which was set up to resolve jurisdictional issues, be dissolved and replaced, in time, with a new body. The APEGM is not in agreement with their proposal.

Council dealt with an item on the appeal of the Provincial Court's decision on the prosecution of J.D. Denoon, P.Eng., by the MAA. These deliberations were held in camera, so no information is available for publication. Council showed that engineers have a heart when they waived membership dues for a P. Eng. with very severe health problems which precludes him from active employment for the time being.

Finally, Council discussed a policy regarding what background information should be included with by-law ballots. Should we include with the ballot an official position by the APEGM on the proposed legislation? If such information is permitted, should those opposing be allowed a voice? How much type space should be allowed for position? Council decided the correct course of action was to create a task group under the leadership of Councillor Carol Roberts. □

Tuesday, February 9, 1999

By: A.N. Kempan, P.Eng. (Ret.)

AT WHICH COUNCIL RESEMBLES A PERRY MASON EPISODE

It seemed this meeting would be a speedy affair because the meeting package was the thinnest I'd seen in a long time. True to expectations, it was the first time I've seen the Councillors marking time, as the meeting moved too quickly. Guests were to appear before Council at set times, but the agenda items were disappearing so rapidly that a time gap developed between meeting and guests.

Engineers are known for their ingenuity, and this meeting had its share of innovation when one Council member, Dr. Louise Quinn, attended via teleconference. Others in bodily attendance were Councillors MacLeod, Poetker, Eschenwecker, Matthews, Ferchoff, Rizkalla, Hosang and Lay-Councillors Thompson and Eddy, and President Britton, and Executive Director Ennis. This cast was reinforced at times with the largest contingent of lawyers ever to grace a Council meeting.

Executive Director Dave Ennis led off with his report and with items dealt with by the Executive Committee at its last meeting. Chief among these was the situation with the Manitoba Association of Architects and the Joint Board of engineers and architects. APEGM has revised the terms of reference for the Joint Board in the hopes that this will keep the agreement alive. The Manitoba Association of Architects has met with the Minister of Consumer & Corporate Affairs and discussed cancellation of the Memorandum of Understanding which created the Joint Board.

Don't write an obituary for professional development at APEGM just yet. Councillor Eschenwecker showed that it was alive, and, if not well, at least there was a heartbeat. Mr. Eschenwecker presented Council with a draft copy of Terms of Reference for APEGM Professional Development. This paper laid out the process for a new PD program. Full-time team members are Christine Bell, P. Eng., Ian McKay, P. Eng., Meaghan O'Laughlin, P. Eng., Robert Parsons, P. Eng., and David Strong, EIT, with more players to follow.

Next, the Councillors dealt with several discipline issues involving APEGM members. APEGM's lawyer, Mr. Doug Abra, spoke to Council about a certain member found guilty of professional misconduct who was now appealing the penalty, which was a period of suspension and a fine. The disciplined P. Eng. was asking for a stay of the penalty while he appealed. His contention was that his practice would be disrupted during the appeal period, and that in the end he might be exonerated and would have served an undeserved penalty. Mr. Abra advised that stays are usually granted in these circumstances and that conditions may be imposed on the member's practice by the Council during the appeal period. The disciplinary action was originally brought about by the member's work on the design of a coffer dam. Mr. Abra went on to say that, in general, any penalty imposed on any member must be within that member's ability to pay.

The legal process shifted into high gear when the disciplined member's lawyer joined the Council meeting in person, while the Investigation Committee's lawyer participated via speaker phone.

The disciplined member's lawyer then formally asked Council to stay the decision of the Investigation Committee until the member's appeal was filed. The member agreed to have his drawings approved by other staff until

Professional Development

Performance Contracting

By: M.E. Baril, P.Eng.

On Tuesday, February 16, 1999 Mr. Robert McDowall, P. Eng., gave a talk on Energy Performance Contracting as part of the PD breakfast seminar series. My interpretation of the title of his talk had me expecting something along the lines of contracts with performance specifications. The talk instead was in regards to awarding contracts based on contractor/consultants promising cost savings through the performance of their proposed energy saving measures. The savings for a stipulated length of time, or to an agreed upon amount, would be forwarded to the contractor/consultant to cover the capital cost of the project. This procedure allows the client to proceed with a utilities-saving project without the usual large outlay of money up front, prior to any actual benefits from the work. The terms of the agreement, whether the contractor/consultant or a lending institution puts forward the money, is negotiated by all involved parties, after each has performed a thorough review of all their associated risks and benefits.

The majority of the talk used the recent performance contract reached between the University of Manitoba and MCW Consultants Ltd. as an example. This contract enabled the University to have numerous upgrading projects completed without having to produce the up-front funding. Upgrades included air-conditioning con-

trols, toilets, and almost every light in the University – about 87,000 lamps. The changes were chosen to maximize savings but keep the financing term down to ten years. The extent of the upgrades was helped by Power Smart incentives from Manitoba Hydro. Once the cost of the retrofits has been paid off, the University is looking forward to the estimated \$1,900,000 annual utility bill savings.

Mr. McDowall was one of the individuals with the University who researched the possibility of using the performance contract model to allow the University to pursue the energy savings project to be performed “off balance sheet”. This was a requirement because the University could not get funding for a project of this nature through other sources at its disposal. Mr. McDowall walked us through the process used by the University to research the performance contract model, evaluate the model in terms of risks vs.

rewards to the University, and obtain the approval of the Provincial Auditor to proceed with the project.

Mr. McDowall’s conclusion to the presentation was to summarize the broad scope of the actual contract (liabilities, financing arrangements, etc.), and the progress of the construction and savings to date. He left us with an overview of the benefits of investigating the energy performance contract model as a financing option for projects. □



Dave McKibbin (l) of the PD Committee thanks Speaker Robert McDowall.

Update on Kelsey Chapter Activities

By: D. Harfield, P.Eng.

At the time of writing, we are preparing for Engineering Week activities at the Otineka Mall, The Pas, during the first week of March. This is our opportunity to present to the community the purpose of our professional association, our contribution to society, and attract prospective engineering and geoscience students. With the aid of materials sent to us from the APEGM and APEGs offices, and a display booth from Intelligent Sensing for Innovative Structures (ISIS), we intend to hold a “straw tower” contest for students in a promotional setting. Many of our members are contributing their time, skills and enthusiasm to make this event successful.

In keeping with the desire of our local members to maintain their professional development, we were pleased to have a panel presentation on Personal and Professional Development in Northern Manitoba on February 11. Mr. Richard Hinton, President of Keewatin Community College, described their regular and new programs for working professionals. Chief among these are the new Keewatin School of Management courses, which are accredited with the

University of Winnipeg and lead towards a University of Winnipeg credit certificate. In addition to providing a complete college education, Keewatin Community College has redefined its role as acting as the “host” for a variety of credit

and new credit courses, and programs from other educational institutions, including the southern Manitoba universities. Ms. Connie Pringle, Director of Operations for Inter-Universities

Continued on page 14



Kelsey Chapter of APEGM and APEGs: (from left) Brian Kurczaba, Vice Chair; Don Harfield, Chair; Firoz Ara, Member at Large; Ted Hewitt, Member at Large; Jennifer Reagan, Secretary and John MacLeod, Past Chair. Missing: Thomas Meier, Treasurer and Ken Pawliuk, Member at Large.

Meet Your New Councillor: Dr. Louise Quinn

By: B. Stimpson, P.Eng.

Dr. Louise Quinn, Chair, Geology Department, Brandon University, is one of two geoscientists (the other being Rob Matthews) appointed to APEGM Council for a period of two years, after which time geoscientific representation will be decided by the normal process of mail-in ballot. Her willingness to take on this extra commitment ultimately derives from her conviction that the designation P.Geo. (and P. Geoph. in some provinces) "will become the benchmark by which the qualified status of a geoscientist will be assessed". In her Department, professional registration has become an important issue for students, and alumni have also encouraged the Department to take an active interest in the movement towards professional registration. For several years the Department has reviewed its geology curriculum against the various syllabi published by provincial associations that already register geoscientists.

Louise believes that the need for professional registration has been heightened in the light (or dark?) of the Bre-X debacle and is a necessary step in restoring public confidence in the geoscientist. New areas, such as the environmental geosciences, also need some scrutiny as the degree-content varies widely from school to school.

Scotland, a country of rich and diverse geology, is the land of Louise's Glasgow birth. She was awarded B.A. (Hons) and M.A. degrees from King's College, Cambridge University, England, and came to Canada in 1981 to pursue an M.Sc. and then a Ph.D. degree at Memorial University, Newfoundland. In 1988, while still at work on her Ph.D., she accepted a teaching position at the University of Saskatchewan. One year later she joined Brandon University and is now an Associate Professor and Chair, having completed her Ph.D. in 1993. Her specialty is Clastic Sedimentology.

Her busy academic career leaves only time to look after her two cats and a dog, with occasional forays into the movies and the Internet.

Her goals on Council are to represent the Association outside Winnipeg to geoscientists and to encourage as many as possible to obtain registration, as well as to contribute to a smooth transition of geoscientists into APEGM. Welcome aboard! □

Kelsey Chapter Update

Continued from page 13

North (IUN), described their programs of interest to professionals. IUN is a consortium of the three Manitoba universities (University of Manitoba, University of Winnipeg, and University of Brandon) which has a mandate to deliver university credit courses to those living north of the 53rd parallel in Manitoba. Their program focuses on courses with face-to-face instruction with instructors who travel to the northern communities on a weekly or bi-weekly basis. Mr. Don Marlow, Campus Manitoba (formerly known as First Year Distance Education or FYDE) Co-ordinator, described their programs which are delivered through information technology based systems. Employing the capabilities of the internet, students and teachers have control over

course content, class co-ordination, multimedia interaction, student verification and web browsing. Where required, additional equipment and supplies are coordinated through local educational institutions. Day to day student support in the community, including study skill assistance, program information services, administration support and logistical support of course delivery, is provided local by the Campus Manitoba Co-ordinator.

These three educational outlets provide complementary programs in a co-operative environment. They are eager to work with local industry and businesses to develop programs and courses to meet the increasing educational needs in our communities.

Upcoming meetings and events for the Kelsey Chapter include:

- April 15 – a presentation and optional tour of the paper-making process at Tolko Manitoba in The Pas by Peter Schueler, P. Eng.
- May 20 – an overview of Ducks Unlimited and a presentation of the Repair of the Bracken Dam by Messrs. Larry Leavens and Robin Reader at Caribou Lodge in Cranberry Portage.
- June 11/12 – a presentation and an underground tour of the Hudson Bay Mining and Smelting (HBMS) Trout Lake Mine in Flin Flon.

We are starting to line up guest speakers for the 1999/2000 year and encourage your input. Please contact Brian Kurczaba, P. Eng. at (204) 687-2166 or Don Harfield, P. Eng. at (204) 623-8620 with your ideas or comments.

Come on out to the next meeting and bring an associate – they will thank you for it! □

Salary Theorem

The "Salary Theorem" states that "Engineers and scientists can never earn as much as business executives and sales people".

This theorem can now be supported by a mathematical equation based on the following postulates:

Postulate 1: Knowledge is Power

Postulate 2: Time is Money

As every engineer knows:

Power = Work/Time

Since:

Knowledge = Power

Time = Money

Knowledge = Work/Money

Solving for Money, we get:

Money = Work/Knowledge

Thus, as Knowledge approaches zero, Money approaches infinity, regardless of the amount of work done.

Conclusion:

The less you know, the more you make. □

News From Other Associations

By: A.N. Kempan, P.Eng.

The APEPEI Newsletter (Association of Professional Engineers of Prince Edward Island) in its January 1999 edition states that the membership adopted a Professional Development Program at their annual meeting in Summerside, PEI, last November.

The article goes on to say that the adoption of the program demonstrates to the public and engineers that they are responsible by supporting professional competence throughout their career. APEPEI's Professional Development Committee put together a pilot group comprising a broad cross-section of the membership, including industry, academic, consulting, government, utilities, and all Council members to evaluate the program prior to its passage.

As a result of a unanimous vote at the General Meeting, the Professional Development Program is mandatory for all APEPEI members effective January 1, 1999. □

Engineers in the News

By: S.M. Matile, P. Eng.

Alv Dyregrov, P. Eng. was recently elected as a Fellow of the Engineering Institute of Canada for his exceptional contributions to engineering in Canada.

Congratulations, Alv! □

APEGM VISION

APEGM is the leader and a facilitator of the process that ensures excellence in engineering, geoscience and applied technology for the public of Manitoba.



Professional Development

Ethics and Professionalism in Today's Competitive Environment

By: W. Jackson, EIT

Ethics and professionalism was the theme for the eight speakers who addressed the APEGM Engineering and Geoscience Management Seminar at the Masonic Temple on Wednesday, January 27. About 70 people, the majority of whom were professional engineers and geoscientists, as well as EITs, attended the day-long event.

The keynote speaker was Roger Boisjoly, P.E., ethics lecturer and forensic engineer, and a former senior scientist at Morton Thiokol on the Space Shuttle program. He has 27 years experience in the U.S. Aerospace Industry and he related that experience with emphasis on "Ethical Professionalism vs. Safe Quality Products". Roger Boisjoly said the overemphasis on excessive short-term profits, at the expense of professionalism, business ethics and safe quality products puts all subordinates at risk. Pointing out that it is the major focus of management to rush a product to production, he said it's the wrong focus because it always costs more to fix problems in production versus development. Engineers in particular, he said, must make tough decisions because defective product designs can cause serious injury. Roger Boisjoly worked for several companies where he came into conflict with management and senior engineers because of his stand on ethical principles. His attempt to stop the launch of the ill-fated Space Shuttle "Challenger" has been well publicized and documented. Many of his experiences involved the approval of various products, household and otherwise, and the pressure to sign the approval



Keynote Speaker Roger Boisjoly, P.E.

when he knew the design was faulty. He said his policy has been that if his wife and children were at risk using a certain product, then he could not sign the approval. During his presentation, he gave several examples of faulty design including an oven door hinge which allowed the stove to tip over, defective trigger lock-on switches on small hand-held power tools, extension ladder design faults and an unstable stepstool. In his closing words of advice, he said engineers and geoscientists should focus on ethics issues for the benefit of all members, avoid the "business as usual"

trap, and resolve to use the Golden Rule when a decision is required.

Steven Raber, L.L.B., of the law firm Fillmore Riley, related the importance of confidentiality agreements and trade secrets for professional engineers and geoscientists working with clients and employees.

Ron Ade, L.L.B. of Fillmore Riley, addressed the issue of copyright protection.

Dr. Michael Williams, A.P.T.I.C. of ADE & Company spoke about reading patents and demonstrated methods of searching for Patent Databases on the Internet.

Dr. Kris Dick, P.Eng. of The University of Manitoba presented his experiences in engineering ethics in a slide show of his work in Sierra Leone, pointing out the importance of understanding the various cultural and religious beliefs of people in a foreign country.

Robert Hook, L.L.B. of Fillmore Riley spoke on the legal issues raised by the seminar's keynote speaker.

Prof. A. Johnson, P.Eng. (Ret.) provided details of "Ethics and Professionalism" and used the "Code of Ethics for Engineers" brochure available for those at the seminar to stress the fundamental canons and the canons of conduct for professional engineers and geoscientists.

Prof. Hamid Munin, P.Eng. from the Department of Geology at Brandon University addressed the challenges that mining and mineral exploration presents for professionals who must observe ethical standards while working in a remote environment, not only physically, but socially and on a political level as well.

The seminar was organized by the Professional Development Committee of APEGM. □



Letters To The Editor

Dear Sir:

A short article appearing on page 6 of the February 1999 issue of the *Manitoba Professional Engineer* was brought to my attention by one of our members who is also a member of your Association.

The article refers to the comments made that by holding your Management Seminars at the Masonic Memorial Temple, APEGM is excluding (some) members and guests from the event because it is a "religious centre".

No doubt it is the designation of the building as "Temple" that lead your member to the assumption

that it is a religious centre; however, that simply is not true.

Freemasonry is not a religion; it is a Fraternity. In fact, it is the oldest and largest Fraternity in the world. The designation "Temple" applied to the building in which Freemasons meet is an indication of the antiquity of the Fraternity, as the word is derived from the Latin "templum", meaning a ceremonial place.

I can assure you that your members need not feel compromised in any way on the basis of religion or religious beliefs while enjoying the fine facilities available in this building for meetings, seminars, banquets and a variety of social functions.

Sincerely,

R.T. Crossley, Grand Secretary

Re: Your request for comments on the MPDP dilemma: *The Manitoba Professional Engineer*, February 1999

The APEGM cannot be all things to all engineers, all of the time. Three points strike me as worthy of consideration:

1. In the third column of page 6, you ask: "Should we assume that professionals who do not come before the Investigation Committee are practising competently?" This question could be answered with a longstanding principle of western democratic justice: An individual is innocent until proven guilty.

Similarly in this case, the professional is deemed competent until proven incompetent.

2. The APEGM accepts membership and registration almost exclusively on the basis of education, training, experience, and record.

Continued on page 16

Grains of Sand and Drifts of Snow

Summarized by: V.L. Dutton, P.Eng. (Ret.), from the Quebec Association's PLAN, December 1998

To mark the end of this millennium, visitors to Quebec City will watch the last grains of sand run down through a huge hour-glass at precisely midnight give or take six seconds. Located in front of the Museum in the Lower Town, this "egg-timer" is 5.2 m high, 3 m in diameter, and has an empty weight of 4600 kg.

Verre Imagination, of Longueuil, cast the four sections of glass having a thickness of 20 millimetres. This glass is protected by a shell of lexan. There are various devices to keep the sand warm and dry, to warn Security of intruders, etc.

Somehow, sand is fed into the device 180 times daily so visitors always see sand flowing through the glass. The timer was started last December 15 and will run all of 1999, of course.

Next December 22 will be when the design team check things out for the last time. Then, if all goes as planned, the upper shell will be completely empty "au dernier tic-tac de l'année 1999".



While the "hour-glass" engineers were busy in Quebec City, another team was equally busy in Montreal. This group was coming up with a new roof for the Olympic Stadium, the old one of Kevlar having become too costly to maintain any longer.

At this point, a bit of French for those who don't work with the language every day seems appropriate. Le déroulement means the action of unwinding but it also has the figurative meaning of development. The verb, dérouler, means to unwind or unroll while the reflexive verb, se dérouler, means to take place. With the sense of motion that this verb implies, the French idiom is "like a train out of hell" where we would say "like a bat out of hell".

With this bit of an explanation, the lead-in to the article, *A spider's web*, tells us that "Next January, the Olympic Stadium will have a new roof. Its conception and erection will have taken place like a train out of hell in less than 18 months, thanks to the method of 'just-in-time'."

While we will have to wait until the end of the year to see if the designers of the Quebec City "hour glass" got things right, the news on January 18, 1999 told the world that the designing of spider webs is a bit trickier than it would appear to be. As the spokesman I heard on CBC-1 implied (but did not say), the lawyers will be ending the millennium on a high note while the long-suffering Quebec taxpayers must be wondering if their problems with ice and snow will ever come to an end. □

APEGM'S Newest Staff Member: Kelly Birrell

By: B. Stimpson, P.Eng.

When I met Kelly Birrell on February 9, her new computer was being coaxed into behaving properly and so, while this recalcitrant device was getting the attention it deserved, I took the opportunity to talk with her for this article.

Kelly began working with APEGM in September 1998 as Administrative Secretary. In addition to the normal secretarial tasks, she also looks after several APEGM Committee's, most notably the Investigation Committee. In this capacity, she is responsible for ensuring that meeting notices and records are available and distributed in timely fashion.

Kelly is a Winnipegger and graduated from Herzing Business College in 1995. Her first position was working for a Trustee in Bankruptcy. After about two years she moved on to employment in a Business Centre and then to a Chartered Accountant before seeing the light and coming to APEGM. She really enjoys the environment and the staff she works with at APEGM.

When I asked Kelly what her other interests and hobbies were she laughed. It was clear that

raising her 5-year old son, Jordan, and having a full-time job does not leave her with much spare time. She did admit to getting away in the summer to fish near Kenora. Good fishing, Kelly, and welcome aboard! □



February Council Meeting

Continued from page 12

the appeal, when the work involved coffer dams or shoring. The disciplined member also indicated that he reserved the right to appeal his finding of guilt.

President Britton then declared that the Council would delegate its authority to a committee of Councillors to hear the member's appeal as provided for under our Act. The meeting entered an "in camera" phase lasting forty minutes and, while the stay was granted, further information is available for publication.

After the in camera session was complete Council turned to the issues surrounding the Joint Board created to foster cooperation with the architecture community, its Terms of Reference, and the Memorandum of Agreement.

A guest, Mr. Don Spangelo, P. Eng., spoke to Council regarding the bylaw change process. Don presented a matrix which evaluated different methods of change against factors such as administrative efficiency, flexibility, participation, cost, etc. Under this rating system, "discussion and voting at AGM only with proxy votes" emerged the winner. Council moved to hold this item until the PD process unfolds.

Lastly, Council pondered the latest proposal from the Communications Committee which suggested the name "The Professional View" for our newsletter. Council was unimpressed with this moniker and started to mull over alternatives with the word "Keystone" in it. President Britton came to the rescue with his customary insight when he realized that finding a name for our publication was not a wise expenditure of time by Council.

Therefore, the Communications Committee was charged with finding a name and Council would stand behind its choice. It was acknowledged that any selection would have its share of critics and that was just a fact of life. On that note the meeting ended at 4:30 PM. □

Letters to the Editor

Continued from page 15

These are already accepted measures of competence.

If formal education and training appears to be outdated, perhaps continuous on-the-job experience and a positive record are sufficient to show that competence has been maintained.

A person's history can be a reasonable measure of competence, if attention is paid to the actual dates and continuity of such history.

Does an engineer who has built sound and reliable structures for a life-time need to prove his/her competence? I think not!

3. Perhaps the APEGM should move more in the direction of becoming a forum for discussion and publication of matters which could prevent incompetence. Some of this is being done already within the pages of *The Manitoba Professional Engineer*.

Expansion on this front could be an important move towards keeping professionals better informed on the problems that can surprise the unwary and uninformed.

Sincerely,

L.C. Kilburn, P.Eng. □