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THE KEYSTONE PROFESSIONAL

APEGM The Association of Professional Engineers and Geoscientists of the Province of Manitoba

DECEMBER 2001
www.apegm.mb.ca

2001 APEGM Awards Presentations

By: J.W. Bogan, P.Eng.

The annual Awards Dinner was held on Saturday, October 13, 2001 at the Fort Garry Hotel. Mal Symonds, P.Eng., Chair of the Awards Committee, presented Honorary Life Membership Awards to Easton Lexier, P.Eng. and Glenn Morris, P.Eng. He also presented the Outstanding Service Award to Ron Britton, P.Eng.

Awards Recipients from left: Easton Lexier, P.Eng., Glenn Morris, P.Eng. and Ron Britton, P.Eng.

Honorary Life Membership

Easton Lexier, P.Eng., registered with this Association on September 18, 1951, and has been a member continuously for 50 years. He graduated from the University of Manitoba with a B.Sc. in Civil Engineering in 1948.

Easton served on the Technical Committee for two years, the Safety Committee for seven years, the Nominating Committee for one year, the Practice Standards Committee for two years, and the Investigation Committee for eleven years – of which he is still a member. This totals 23 committee-years of service.

Easton spent his entire career with GBR Architects and retired in 1997 as the President. He has been responsible for numerous institutional, educational and industrial buildings, including the Winnipeg City Hall Complex and three buildings at the University of Manitoba.

In addition to his contribution to the Association, Easton has served the profession and society in other capacities. These include: Chair, Winnipeg Building Commission; Chair, Canadian Commission on Building and Fire Codes; Member, Part 9 Standing Committee Manitoba Building Code; Member, Manitoba Chapter Canadian Construction Research Board. He is a Fellow of the Canadian Society of Civil Engineers.

Honorary Life Membership

Dr. Glenn Morris, P.Eng., registered with this Association on April 21, 1958, and has been a member continuously for 43 years. Glenn graduated from the University of Manitoba with a B.Sc. (1956) and a M.Sc. (1958) in Civil Engineering. He received his Ph.D. from the University of Illinois in 1967.

Glenn served as a member of Council from 1982 to 1983. He also served on the Executive Committee for one year, the Membership Committee for four years, the Social (now Meetings) Committee for one year, the Safety Committee for twelve years, the Board of Examiners (now the Academic Review Committee) for ten years, the Practice and Ethics Committee for two years, the Nominating Committee for one year, the Admissions Review Board (now the Registration Committee) for one year, the Publication Committee for one year and the Discipline Committee, of which he is still a member, for nine years. This makes a total of 44 committee-years of service.

In addition to his Association work, Glenn served on the Canadian Engineering Accreditation Board of the Canadian Council of Professional Engineers (CCPE) for several years and was Chair for one year.

Glenn spent his career at the Faculty of Engineering at the University of Manitoba where he guided the development of thousands of engineers in his capacity as Professor, Department Head and Associate Dean, the position from which he retired in March, 1997. Glenn was appointed Professor Emeritus in April 1997. He is a Fellow of the Canadian Society of Civil Engineers.

Glenn received the Association's Outstanding Service Award in 1982, and received the CCPE Professional Service Award in 1988.

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The Communications Committee would like to hear from you. Comments on your newsletter can be forwarded to us through the Association office. Members are also encouraged to submit articles and photos on topics that would be of interest to the membership.

Publications Mail Agreement Number 40062980

New Members Registered August, September & October 2001

M.H. Aikens	I.A.S. Elkholy	K.L.H. Mills
S.J. Baker	M.J. Harasym (AB)	N.R. Newson (SK)
G.J. Bartlett	T.R. Hillard	M.K. Pandey (SK)
R.A.J.F.Bellec	A. Hoffman (BC)	P.V. Remillard
N.S. Bhatt	W.T. Jackson	M.C. Ramsum (AB)
E. Bishara (ON)	M.M.D. Landry (QC)	M.A. Schor (ON)
P.H. Boge	C.H.C. Lee	J.V. Thomson
C.W. Carroll	H.J. Louka	M.P. Timonin
R.R.J. Chartrand (ON)	J.D. McKay	K.S. VanCamp
D.W. Cocking (BC)	G. Methot	

Licences Issued August, September & October 2001

J.E. Burson (TX)	D.R.G. Harmer (ON)	L.K. Pauls (WA)
E.E. Donahue (WA)	B.C. Larson (PA)	C.L. Wenslaw (AB)

Members-In-Training Enrolled August, September & October 2001

J.S. Betke	M.T. Hicks	E.J. Olson	R.E. Sporns
Y. Borovichkova	D.H. Inglis	M.Z. Othman	K.D. Station
R.M. Brandt	J.L. Isfeld	J. Paliwal	N.G. Stephenson
C.L. Campbell	R. Kaminski	S.P. Pantel	C.J. Stuart
R.D. Coulter	L.J. Lazareck	V.A. Peterson	C.D. Thomson
K.D. Croteau	J.L. Maizer	J.O. Pillipow	K.S. Tolton
B.J. Denny	R.J. Martens	X. Qiu	P.C. Turner
B. Flisak	R.J. McCormack	C.L. Sauve	D.M.M. Twigg
B.E. Fraser	W.M. Mikolayenko	T.M. Scatliff	R.W. Yakimishen
K.A.M. Geske	T.S. Morin	W.E. Schuhmann	
N.G. Gropp	W.S. Murison	J.L. Smaizys	

Reinstatements October 2001

D.D. Kent	B. Loewen	K.R. Zurek

Certificates of Authorization Issued Since August, 2001

Adam Stevenson & Associates Ltd.	MiTek Canada Inc.
AMEC Earth & Environmental Ltd. (MB)	P.A. Beach & Associates Ltd.
Black & McDonald Ltd.	Prairie Agricultural Machinery Institute (PAMI)
Cochrane Engineering Ltd.	Rossen Construction Services Ltd.
DEC Design Mechanical Consultants Ltd.	RSRead Consulting Inc.
G.J. Vis Enterprises Inc.	Talon Geotechnical Engineering Inc.
Golder Associates Ltd.	Teshmont Consultants Inc.
Harmer Podolak Engineering Consultants Inc.	Test Labs International Ltd.
HMS Engineering	UMA Engineering Ltd.
	Western Canada Testing Inc. (Westest)

Coming Soon

APEGM Engineering Student Dinner

January 22, 2002

Here is your chance to share your experience and provide guidance to engineering students who want to learn more about the profession.

Enjoy a great dinner, and an interesting guest speaker. EITs who attend and sponsor students may receive credit for two hours of Professional Service (half a point).

EITs can also earn Professional Service hours/points by helping to promote this event!

Contact Salman Qureshi, EIT at 775-8331 ext.3392, squreshi@bristol.ca or Trevor Bowden, P.Eng., at 831-2619, trevor.bowden@boeing.com for details.

Check out the enclosed insert for more details. Hope to see you there! ■

President's Message

M.A. Barakat, P.Eng.

I have always wondered why we need a "President's Message". In most publications it usually turns into a summary of other articles or activities described elsewhere.

In the case of the Keystone Professional, the above assumption may also be applicable. It contains reports of all the Committees, the Council, the Chapters, and staff in addition to material that is informative to the members or the public-at-large. Since the work and activities of the Association are primarily carried out by the Council, the committees and the staff, there is not much left for the President to add except in some special circumstance. Hence, I will normally keep my message short unless I have something specific to address.

On that basis then, for this edition, I would like to emphasize the very valuable contributions by the staff of the APEGM in all aspects of the Association's business. I hope that the adoption of the Policy Governance by the Council will make their contributions more apparent to the members.

So, I would like to start my term,, on behalf of the Council and all the members of the Association, by expressing our sincere gratitude and thanks for all their past, present and future contributions to our Association.

Dave Ennis, Shirley Matile, Ken Buhr, Joan Mckinley, Lorraine Dupas, Jennifer Reykdal and Shirley Bruce.

Thank you. ■

Surprise!

Following the presentations of the 2001 Outstanding Service and Honorary Life awards, Executive Director Dave Ennis made a special presentation to Joan McKinley, the Association's Administrative Officer and longest-serving staff member, in recognition of her 25 years of dedicated service to the Association.

This award came as a complete surprise to Joan who had, as usual, organized the entire meeting, but was unaware that this was to be an agenda item. But you would never have known it! With extraordinary ease, Joan launched into an extemporaneous acceptance speech worthy of an Oscar! (We believe she's found a new calling!)

Congratulations, Joan! It was a much-deserved and long-overdue award! ■

Joan McKinley receives gift from President Alan Pollard (l) and Executive Director Dave Ennis.

An Invitation to all EITs, GITs and Supervisors

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

How do you feel about the title "Engineer-in-Training"? Would you rather be called an "engineering intern"? An "articling engineer"? An "engineering graduate"? Can you think of a better title for geoscience graduates than "Geoscientist-in-Training"? Should EITs and GITs be voting members of APEGM?

These are some of the many topics being considered by your very hard-working Member-in-Training Committee which was formed in response to the needs identified at the special June, 2000, meeting.

The Committee has identified several issues and made a number of recommendations for improvement to the Association's Pre-Registration Program. The Committee members would like to apprise you of their progress, solicit your feedback on their activities, and identify any new issues that may be of concern to you.

The Committee invites and encourages you to attend a meeting at either of two venues. The first meeting will be held on Wednesday January 16, 2002, at the Masonic Conference Centre, 400 Corydon Avenue (at Osborne Street), Winnipeg. The second meeting will be held on Thursday January 24, 2002, at the Royal Oak Inn & Suites, 3130 Victoria Ave, Brandon. Both meetings will be held from 7:00 p.m. to approximately 9:00 p.m. The format will be casual, with a cash bar.

There is no charge for attending the meeting. But **please let us know if you plan to attend**, to ensure adequate seating. Please e-mail the Association office at ***apegm@apegm.mb.ca***, fax 474-5960, or call 474-2736, no later than January 11, 2002, to "register" for the Winnipeg meeting. Please e-mail Kris Kotyk, EIT, at ***kkotyk@behlen.ca***, fax 728-8049, or call 728-1188 ext. 312, no later than January 21, 2002, to "register" for the Brandon meeting.

If you are unable to attend, but have information or opinions you wish to share, please submit your comments, in writing, by January 14/January 22, 2002.

Here is your chance to "network" with, and get to meet, other EITs, GITs, and supervisors, as well as to have meaningful input to the program. We hope you'll join us! ■

2001 APEGM Awards Presentations

Continued from page 1

Outstanding Service Award

Dr. Ron Britton, P.Eng., registered with this Association on August 13, 1964, and has been a member continuously for 37 years. Ron graduated from the University of Saskatchewan with a B.Sc. in Civil Engineering in 1962. He received his M.Sc. degree in Agricultural Engineering from the University of Manitoba in 1969 and his Ph.D. from Texas A&M in 1973.

In 1995 Ron received the 3M Teaching Fellowship and the CCPE Medal for Distinction in Engineering Education.

Ron served as a member of Council from 1994 to 2000 and was President in 1999. He also served on the Executive Finance Committee for four years, the Academic Review Committee for three years, the Enforcement Committee for two years, the Legislation Committee for one year, the Nominating Committee for four years, the Employee Engineers Committee for one year, the Women in Engineering Advisory Committee for two years, the MAA/MOU Task Group for one year, the EGAIAR Joint Board for one year, the Issues Awareness Board for two years, the Meetings Committee for two years, the Research & Development Committee for three years, the Safety Committee for three years, the Law Reform Commission Subcommittee for three years, and the Public Awareness Committee for one year. This makes a total of 39 committee-years of service.

Ron's ability to give such a generous portion of his time to the Association while juggling other demanding responsibilities at the University of Manitoba is characteristic of his organizational skills, his commitment to his students and dedication to the engineering profession. ■

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

The 2001 Annual General Meeting

October 12 & 13, 2001

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

Members who live in Windsor Park are delighted when the Annual General Meeting is held at the Fort Garry Hotel – fifteen minutes door-to-door and no parking problems.

The Wine and Cheese Reception on Thursday evening was a happy experience. Wally Jackson and I serve on the Professional Development Committee, so I was delighted to see him finally receive his certificate. For the record, our Association welcomed 131 new members into our ranks between February 22, 2001, and September 20, 2001.

President Alan Pollard, P.Eng., presented the certificates to those new members who were at the Reception, and also presented Scholarships to seven recipients.

The Annual General Meeting business meeting was held on Saturday with 75 members and visitors in attendance.

The meeting began with the Call to Order and the Official Opening which included establishing that there was a quorum of members present. Following this was a "Moment of Silence for Deceased Members". This short period of remembrance becomes ever more meaningful to those of us with greying hair.

Chairman Pollard then introduced the members of the Council, the Staff, and the Chairs of Committees who were present. He also said, in effect, "Good morning" to members from Flin Flon and Thompson who appeared on the split screen thanks to teleconferencing. Introductions were concluded with President Pollard welcoming the representatives from the Ontario, Saskatchewan, Alberta, and British Columbia Associations.

There were a number of changes to our By-Laws placed before the meeting this year. The meeting became rather heated over the subject of mediation. Wisely, President Pollard called for a "break". More discussion then followed with the meeting eventually accepting the amended wording.

After the traditional Gavel Ceremony, our new President, Dr. Moe Barakat, gave a short talk. By this time in a long morning I suspect most members were happy when the "dinner-bell rang".

Following a delicious lunch, we were addressed by Dr. Billy Koen from the University of Texas at Austin. His subject was Generalisation of the Engineering Method. What delighted this aging "student" was to learn a new word that is now in my working vocabulary:

> heuristic –1. Aiding or guiding in discovery. 2. Designating an educational method by which a pupil is stimulated to make his own investigations and discoveries.

The afternoon found 28 of us at a "Round Table". Some of the topics discussed were the tragedy at Walkerton, "streamlining" the Building Code, remediation of contaminated sites, leaky condominiums, foreign-trained personnel, foreign Associations, and Certified Engineering Technicians and Technologists.

At about 16:00 I headed out to wait for Transit Tom to pick me up. I arrived at the stop opposite the Union Station just in time to see a Peace March. It had been a memorable day. ■

Our new councillors are:

Jerry W. Bogan*
Trevor J. Cornell
Kelly V. Gilmore
Marianne L. Goldsborough
Allan D. Silk

** Note: Jerry has since resigned to take up a new position in Chicago. We wish him well.*

APEGM Scholarship Recipients from left: Danny Shen, Megan Bagot, Van Ly Thi Doan, President Alan Pollard, Amanda Cloney and Sotero Abraham.

APEGM new members.

CCPE CEO's Message

Marie Lemay, ing.

Accreditation of Software Engineering Programs is Good News

When the Canadian Council of Professional Engineers (CCPE) granted accreditation to three new software engineering programs being offered in Canada this past June, our profession passed an important milestone on the road to incorporating new disciplines of engineering into our regulatory system.

The three programs, offered at McMaster University, the University of Ottawa and the University of Western Ontario, were evaluated for accreditation by CCPE's Canadian Engineering Accreditation Board (CEAB) using its existing Accreditation Criteria and Procedures. This achievement represents only the tip of the iceberg. CEAB expects to evaluate as many as 10 more software engineering programs for accreditation over the next three years.

Incorporating software engineering into our accreditation structure has proven to be a learning experience for the profession. The route we've followed has been full of twists, turns, bumps and the occasional dead-end. That was certainly the case in June of this year, when talks between the profession and the Association of Universities and Colleges of Canada (AUCC) on the appropriate use of the term "software engineering" in the undergraduate university community reached an impasse.

Just over a year ago, the Panel on Software Engineering – formed in September 1999 as part of the settlement that saw CCPE end its legal action against Memorial University of Newfoundland over the school's use of the term software engineering in the name of a computer science program – tabled its final report. It recommended the establishment of a new Software Engineering Accreditation Board (SEAB) to accredit all undergraduate software engineering programs offered in Canada; that universities should only use the name software engineering for programs for which SEAB accreditation would be sought; and that names such as software design or software science should be used to describe programs for which SEAB accreditation would not be sought.

In response to the Panel's recommendations, CEAB and the Computer Science Accreditation Council of the Canadian Information Processing Society formed a task force to consider the feasibility of joint accreditation and, if possible, develop draft SEAB Accreditation Criteria and Procedures.

Following months of hard work by the engineering profession, in March 2001 CCPE's Board of Directors determined that the resulting SEAB accreditation procedures and criteria, as amended by CEAB, could constitute the basis for an agreement with AUCC on the software engineering issue.

In June 2001, however, AUCC indicated it was unwilling to accept the profession's position, and could only support a system of joint accreditation that would allow its member universities to establish and offer software engineering programs for which SEAB accreditation would not be sought. Such a system would not resolve the software engineering issue, or alleviate the profession's concerns that the inappropriate use of the name software engineering to describe non-engineering programs could lead to student and public confusion, and ultimately threaten public safety.

The software engineering experience has been a wake-up call for the profession. It's shown us that we need to be more proactive about defining, accepting and regulating emerging technologies as disciplines of engineering, when and if it becomes clear that they have the potential to affect human health, safety, and quality of life.

That process won't be easy. CCPE's Engineering Work in Canada; (EWIC) Research Project has shown that employers in the IT and biotechnologies sectors are not fully aware of the profession's regulatory system. Some sectors place

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University News

Dr. Jim Graham, P.Eng., Dept. of Civil Engineering, was recently awarded the R.F. Legget Medal at the 54th National Canadian Geotechnical Conference in Calgary. The R.F. Legget medal is the most senior and prestigious award of the Canadian Geotechnical Society. It is presented annually to an individual who has made significant personal contributions to Geotechnique in Canada through one of many avenues, including professional service, engineering practice, or research and teaching. The award recognizes achievements made to the field of geotechnical engineering in Canada. The list of recipients includes many of the most prominent figures in Canadian geotechnology.

Dr. Emery Lajtai, P.Eng., of Civil Engineering was presented with the Thomas Roy Award to honour his outstanding contributions to the field of Engineering Geology in Canada. The Thomas Roy award is awarded annually by the Engineering Geology Division on the National Canadian Geotechnical Society. The award is named in honour of Thomas Roy who may well have been North America's first engineering geologist (Legget, 1973). The citation for the award read: "Emery Lajtai has a superior record in research and teaching. He has made considerable contribution to our understanding of fracture propagation in rocks. His work in this area is outstanding and enduring, and has inspired others to build on the strong theoretical foundation he has developed over a career spanning more than 40 years. He has also been a dedicated teacher and administrator in the Departments of Geological Engineering and Civil Engineering at the University of Manitoba".

Dr. Digvir Jayas, P.Eng. was awarded the Canadian Society for Engineering in Agricultural, Food, and Biological Systems (CSAE) John Clark Award for his outstanding contribution to research and teaching, and his nationally and internationally recognized leadership in food engineering. Digvir has served on the Editorial Board of the learned journal Canadian Agricultural Engineering and as Regional Director of CSAE for Manitoba.

Dr. Jayas was also awarded the Senior Scientist award (at the age of 43!) by Sigma Xi, the scientific research society, for his outstanding contribution to research in grain storage and drying.

Dr. Jayas is the Associate Vice-President (Research) at the University of Manitoba.

Dr. Howard Card, P.Eng., of Electrical and Computer Engineering, was recently inducted as a fellow of the Canadian Academy of Engineering (CAE). Dr. Card has made outstanding contributions to the related fields of pattern recognition, microelectronics and digital signal processing, specifically through research and development of novel hardware and software for artificial neural networks and their applications. He has demonstrated great leadership in training highly-qualified personnel, primarily undergraduate and graduate students, in these areas.

Chad Silverman, EIT, a graduate student in Electrical Engineering and an active member of this Association's MIT Committee, was recently honoured as one of the first two recipients of the University of Manitoba's Arthur Mauro Senior Student Award.

This award is for a student with a grade point average of at least 3.5 for the last three years of undergraduate study and the first year of graduate study, who has made significant contributions to the university and the community. Chad, who has already made significant contributions to APEGM, is a most deserving recipient! Congratulations, Chad! ■

Faculty of Engineering Appoints North America's First Engineer-in-Residence

Engineering students returning to classes in September had a new resource to help them along the path to becoming Professional Engineers. The Faculty of Engineering has named Malcolm (Mal) Symonds, P. Eng., as the first Engineer-in-Residence at a North American university.

"For many years, English and fine arts programs at most universities have supported Writers-in-Residence and Artists-in-Residence," explains Ron Britton, Associate Dean of Design Education. "These practising professionals have contributed to the education quality in those institutions. As the University of Manitoba's engineering programs are helping us become a leader in design-engineering education, we feel that Engineers-in-Residence will provide that important link between the classroom and the real world of the practising engineer."

Britton says the Engineer-in-Residence will provide the practical design experience both staff and students can call upon. Generally, engineering professors have extensive engineering design experience but lack practical industry and business experience, and the concept of Engineers-in-Residence will address this imbalance.

Symonds, a Professional Engineer for 24 years, and most recently the Director of Engineering Services with Bristol Aerospace, was a pilot in the Royal Canadian Navy prior to graduating from the U of M. He will provide leadership for design groups in the student technical societies such as the Society of Automotive Engineers. Faculty may draw upon his design experience for specific classroom lectures or his business acumen for redesigning laboratory projects to reflect current industrial practices.

"I intend to bring real-life engineering experiences to the students early in their education," Symonds explains. "This way they can better understand the context of the subjects they are learning and to help prepare them for the challenges of the engineering workplace."

Britton says that over the next couple of years the Faculty intends to have Engineers-In-Residence in all six engineering programs. "Having an EIR associated with each field of engineering will significantly strengthen the design engineering experience available to our students," he notes.

For more information, please call Kevin Stewart, communications officer, Faculty of Engineering, at 204-474-9034 or Mal Symonds, Engineer-in-Residence, at 204-474-9820. ■

Mal Symonds, P. Eng.

Order of Canada honours Manitoba Engineer

Ostap Hawaleshka, P.Eng. (Ret.), an industrial engineering professor emeritus at the University of Manitoba, was among five Manitobans appointed to the Order of Canada. Ostap was instrumental in founding the Science and Technology Centre in the independent Ukraine, and is widely respected for his leadership, diplomacy and negotiating skills. ■

The U of M Faculty of Engineering issues a bi-weekly e-mail newsletter of news from around the faculty. If you are interested in having your name added to the e-mail list, please contact Joanne Forster at 474-9807 or e-mail forsterj@ms.umanitoba.ca

CCPE CEO's Message

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little value on engineering licensure, and do not require it. Those attitudes suggest that a high level of commitment and much hard work will be required to bring new disciplines of engineering into our regulatory structure.

As a first step, in May 2001 the CCPE Board of Directors approved a report called "Meeting the Challenge of Continuing Relevance for the Engineering Profession." It contains five recommendations to enhance the value that employers in emerging sectors of the economy, as well as engineering students, place on engineering licensure and regulation.

The report provides a framework for CCPE to work closely with the associations/ordre so that engineering continues to thrive as a regulated profession in today's global economy. It recommends:

- that the profession, as part of the experience requirement for engineering licensure, should establish an internship program that will be a highly regarded post-graduation stage in the training and the development of a professional engineer, and help them to develop the core technical and non-technical skills today's employers are looking for;
- that CCPE should establish sector-based industry liaison councils to, among other things, advise the profession on how to enhance the value of engineering licensure for employers;
- that CCPE, the associations/ordre, and university engineering faculty should work together to build awareness of the profession and engineering licensure among engineering students;
- that CCPE should develop a description of engineering work that will excite engineering students, elicit employer support, and be accepted by practicing engineers. (The description would have no legal weight, but would help students and graduates understand the value of being licensed members of the profession);
- that, in the interests of mobility, CCPE should facilitate the streamlining of the licensure process so that applications for licensure can be considered by more than one jurisdiction at the same time, eliminating the need for engineers to submit multiple applications.

These measures can help to increase the value of the P.Eng/ing. for students, graduates and employers. However, I believe they need to be coupled with what I call "proactive enforcement." The provincial associations/ordre are right to put additional funds toward enforcement.

Educating the public, employers and decision makers about the regulatory system and laws that govern the engineering profession can only be beneficial. I strongly believe that everyone of us can, and has to, do his or her part.

It has become clear to me that the engineering profession and the meaning of the engineering license represented by the P.Eng/ing. are not well known by the public. How many people know what the letters P.Eng/ing. mean?

It is up to us to make the public aware that those letters represent a seal of quality, which provides a quality and competence assurance for the public. The license (represented by the P.Eng,/ing. after your name) means that you have successfully completed a rigorous academic program, you have the skills to practice engineering, you have the pertinent supervised experience, and you are bound by a code of ethics. And hopefully, in a not too distant future, it will also mean you have the non-technical skills industry is looking for.

Be proud to be members of this great profession. Use the letters P.Eng. or ing. after your name. Doctors and lawyers do not hesitate to use their designations to tell the public they are members of a regulated profession, why do we?

I would like to commend the initiatives of l'Ordre des ingénieurs du Québec (OIQ) and Professional Engineers Ontario (PEO), which now use the title engineer when they introduce members of the profession, for example, the "engineer Marie Lemay" or "L'ingénieure Marie Lemay."

It's a small thing, but small things can make a big difference (or go a long way)!

This is an exciting and challenging time in our history. Our challenge is to welcome engineering students into our ranks and help them play a leadership role within our profession while enhancing the value of engineering licensure for both students and employers. ■

Council Reports

Tuesday, September 12, 2001

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

COUNCIL REVISITS OLD PROBLEMS

The meeting opened with the normal routine items, adoption of an agenda and approval of the minutes of the August meeting.

Next, Council reviewed a preliminary report issued by the Canadian Council of Professional Engineers (CCPE) regarding the Certification and Specialization of engineers and geoscientists. The study tried to determine the extent of specialization and certification existing today and to identify future trends. The report surveyed other associations and government bodies to gather its data. As APEGM's representative to the CCPE, Councillor Washchyshyn said that we didn't want to move towards specialist certification, that it should be left to individuals to advertise specialties. Council received the report as information.

It was time to deal with a leftover item from a previous Council meeting. The difficult issue of company titles of those going through the EIT/MIT process came back to vex and perplex Council. The issue first arose when a prominent employer of engineers in Winnipeg asked if it was permissible to use the word "engineer" in a job title before the individual was fully registered. Executive Director Dave Ennis asked APEGM's legal counsel for advice, based on our Act. This led to counsel writing a draft policy. In essence, their opinion was that as long as an individual was clearly identified as an EIT or GIT, it was permissible to have "engineer" in the job title. The draft policy sparked a sharp difference of opinion.

Executive Director Ennis acknowledged that it was a contentious issue and that an amendment to the Act was the cleanest way to achieve a solution. He also suggested that a person should make a request to APEGM to use an "engineer" job title, that they should not be allowed to choose them arbitrarily. Councillor Washchyshyn wondered what other professions do and he said that grads are proud and keen and not happy to be identified as someone "in training". Councillor Barakat said there was also a practical reason for using a suitable title, that some people (customers) wouldn't talk to a "trainee". The sharp difference in opinion came out when Director of Admissions Shirley Matile said that the draft policy was in contravention of the Act. Some Councillors said that APEGM had a legal opinion to the contrary. Ms Matile said that another legal opinion was required and that CCPE would be concerned about this issue. Councillor Washchyshyn said he would broach the subject at the next CCPE meeting. The discussion ended with a motion to table until CCPE completed a review.

Council tackled another topic that just wouldn't die – what to do with the few members whose membership dues arrive late. Director of Admissions Shirley Matile said that the issue was one of re-instatement, and not one of late penalties. In her view, late payment caused a person to lose membership status and it was a case of how to bring them back into the fold. Other members didn't agree with her assessment and held to the concept that some form of punishment was all that was needed. Council discussed this at length. After it became clear that no consensus was emerging, Executive Director Ennis asked if Council would accept a monitoring report from him. Council accepted his offer and the discussion ended there.

While discussing the election of a Vice-President several Councillors made some interesting observations on what the future could hold for the post of APEGM president. Councillor Permut said the job was becoming more and more demanding, and that some presidential duties could be split up among the Councillors. For example, relations with outside groups was an activity which could benefit from having a person who would cultivate a long-term relationship, something a president couldn't do in just a year. In this way the duties of the president would be split up into portfolios. Councillor Permut left this concept for Council to mull over for future consideration.

Executive Director Ennis briefed Council on the status of the Certificate of Authorization bylaw change. He said that the amendment hadn't made it through the last session of the Legislature. Manitoba Justice had questions to which Mr. Ennis would draft a reply.

Near the end of the meeting Councillor Hamilton evaluated Council's performance that day. On the positive side he noted that diversity of opinion was encouraged. However, he said that Council needed to focus more on ends as they tended to digress too much. He also mentioned the length of the meeting – too long.

The meeting ended with a humorous reference to a notice under the Act which someone summarized as "the little beam shouldn't hold up the big beam" notice. Good advice for all of us. ■

Tuesday, October 10, 2001

By: J.A. Blatz, P.Eng.

PREPARING FOR THE NEW PRESIDENT

The meeting opened with a brief discussion of APEGM presidential duties in anticipation of the term of incoming President, Dr. Moe Barakat, who will need to have councillors act in his place for out-of-town travel. This will avoid current concerns over the travel schedule and time-commitments required for the APEGM presidential position which could pose a problem for Dr. Barakat. Council agreed in principle that it would be in Council's best interest to move forward on the principle that selected councillors would share the travel duties to represent the Association out-of-Province.

The next item of business surrounded the orientation process for new councillors. Currently, all new councillors undergo a training session where the governance model is explained and APEGM's structure and issues are presented to familiarize them in their new role. It was decided that the November Council meeting would be used both as a teaching session to demonstrate the governance model to new councillors and to deal with any time-critical issues on the agenda.

Discussion then turned to recognition of volunteers. The president opened the floor to ideas on how to best acknowledge the efforts of the volunteers of the various committees that serve to make APEGM function so well. A decision was made to hold an evening of recognition for all volunteers to meet councillors and enjoy a social occasion to recognize their participation in APEGM initiatives.

Considerable time was then spent discussing the assessment of foreign credentials and the qualified-persons status with regard to securities based on properties outside of Canada being marketed in Canada. This topic is of considerable concern considering the implications of fraudulent claims in regards to securities for properties located outside Canada. Council discussed the Association's role in listing expected qualifications for this act of geoscience work and it decided to wait for guidance from CCPG and CCPE regarding the stance at the national level.

Council then looked at a meeting being held by the Public Awareness Committee. Council talked about the role of the Public Awareness Committee in terms of the committee's goals. Councillors agreed that it would be best to re-visit the direction of the committee by sending members of Council to participate in committee activities. After considerable discussion, councillors agreed that the overall direction of the committee had not been well defined by Council and further work will be done to provide the Public Awareness Committee with direction as to its role in the Association.

The program for the AGM was then considered. The first order of business was to determine who would be in attendance and who would make motions from the floor regarding by-law changes and matters for the business meeting.

The next item of business was the results of the elections for new Council positions. The details of the new computer-read ballots were described in detail for the councillors. Councillor Hosang then mentioned that Council

Continued on page 13

Attention, EITs and GITs! Positive Changes are Being Made!

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

Are you having trouble meeting the Association's Professional Service requirements? Do you find it difficult to engage in engineering- or geoscientific-related volunteer activities every year? Do you think some of your community club and coaching efforts should be recognized? If so, we have good news for you!

Effective immediately, this Association's Pre-Registration Program has been modified to allow you to substitute up to 50% of the Professional Service requirement with volunteer service in the community, provided that it meets certain requirements.

The Professional Service component of the Pre-Registration Program was designed to ensure that EITs and GITs become involved, on a voluntary basis, in the regulation and advancement of their professions. We recognize, however, that volunteer opportunities in these areas can be limited. We also recognize that certain Community Service activities can be valuable to both the public and the volunteer. As a result, the Professional Service requirement has become a Volunteer Service requirement, of which up to 50% may comprise Community, rather than Professional, service.

To qualify, Community Service activities must enhance such professional, non-technical skills as communication, public speaking, organization, leadership, and management skills. The Community Service must contribute to the development of the EIT/GIT and must benefit the receiving organization. The activity must involve interaction with others, and the time spent must be volunteered. You must identify the skill(s) developed or enhanced during your reporting of the activity.

Activities which **may** qualify include:

- holding a board position and actively participating in the operation of a community club, cultural group, or religious organization
- coaching or managing a team
- organizing a cultural event
- actively participating in the operation of a community volunteer organization
- organizing or producing a community event such as a play or concert
- organizing or co-ordinating a charity event

Activities that **will not** qualify include:

- manual labour (e.g. grass-cutting or snow removal) – even if it's for a well-known organization!
- participating in a cultural, music, or art display
- canvassing for a charitable organization

Please note that the change in the program is effective as of December 1, 2001. Community service activity cannot be claimed retroactively for progress reports already submitted, but may be claimed with your next progress report – even if the activity took place prior to December 1, 2001. Please note, also, that the EIT/GIT Progress Report Form has been revised to accommodate this change.

For further information, please down-load the latest version of the Pre-Registration Program from the APEGM web-site: ***www.apegm.mb.ca***, or call the office for a hard copy. ■

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.

Manitoba Geoscientist Wins Provincial Medal

By: J.W.P. Lengyel, P.Geo.

Each year the Committee of Provincial Geologists awards the Provincial Geologists Medal to an individual or individuals who has or have produced outstanding work at one of Canada's provincial or territorial Geological Surveys. The award recognizes major contributions in the areas of geoscientific research and related developments or applications that serve to meet the mandates of the Geological Surveys.

Mark Fedikow, P.Geo.

The 2001 Provincial Geologist Medal was recently presented to Mark Fedikow, P.Geo., at the annual Mines Ministers Conference in Quebec City, September 10-12. Eric Syme accepted the award on behalf of Mark, who could not attend due to a family emergency, and later presented it to him at the Manitoba Geological Survey on September 17. The award will be also be promoted at this year's Manitoba Mines and Minerals Convention in November 2001 and at the Prospectors and Developers Association of Canada Convention in March 2002.

Mark has been a geoscientist with the Manitoba Geological Survey for over 20 years and he exemplifies many of the roles a government geoscientist provides to the public. Mark's nomination literature highlights a diverse and productive career of geochemistry-oriented research, an extensive publication record, and his recent role in designing and collaborating on an on-going regional multi-element, multi-media survey in northeastern Manitoba.

Mark's geochemistry-oriented research has included pioneering studies of rock alteration and multi-media geochemistry in support of mineral exploration and statistical analysis of regional, multi-media geochemical data sets. He is a leader in developing and promoting new techniques for mineral exploration, especially in drift-terranes, which is critical to continued exploration success in the Province. A strong mapping background has also provided Mark with the ability to place the geochemistry results in their proper geological context, and develop new mineral deposit model types such as Prairie-type microdisseminated mineralization in the Mafeking area.

Mark has written more than 150 publications, including 11 in refereed journals and special volumes, 41 technical reports, and 75 presentations in various PDAC, CIMM, GAC/MAC, and International Geochemical Symposiums. The publications are renowned for having been completed in a timely manner and in a clear and concise format that can be readily assimilated by colleagues worldwide.

Most recently, Mark has collaborated on a multi-element, multimedia geochemical and mineral indicator study throughout northeastern Manitoba. The results of the annual field programs have led to a renewed exploration activity for traditional deposits such as gold and base metals, as well as new commodities such as diamonds. Results from the indicator mineral portion of the multimedia program were directly responsible for a major diamond staking rush that included a significant portion of the 60+ exploration permits issued since the fall of 2000.

This proactive support of the mineral industry has been Mark's calling card for the 14 years that I have had the good fortune to directly or indirectly benefit from his expertise. His award is also a reflection of the dedication and high-quality service and support regularly provided by the Manitoba Geological Survey. Congratulations, Mark, on winning the 2001 Provincial Geologists Medal. ■

Facing the Extremes

By: J.A. Blatz, P.Eng.

Early December is a time when colder temperatures are beginning to take grasp in Winnipeg and the thought of another winter becomes a reality. For many, an escape to warmer climates provides temporary relief, but for Alex Man, P.Eng., a trip to the Argentinean and Chilean Andes is far from a vacation, at least in most people's eyes!

In 1999, as a member of Canadian Team True North, Alex competed in the Patagonian Discovery Channel Eco-Challenge. The race included 130 km of lake kayaking, 40 km of horseback riding, 80 km of mountaineering, and 63 km of white-water kayaking across the backbone of South America. The race is a 12-day event pitting man against nature in a multi-sport endurance competition where teams aren't given any information on the route until the day before the race. Once the maps are distributed, teams independently plan their routes knowing they have only a compass to navigate with during the race.

Team True North came in 23rd overall and was the first Canadian team to finish. Teams must complete the race to achieve an official ranking. Alex, who is an Environmental Engineer with Morrow Environmental, brought extensive racing experience to Team True North. As a past Western Canada and Provincial mountain bike champion and Canadian Ironman finisher, his physical preparedness was unquestionable. However, what is interesting to note is that his background in engineering brought considerable benefit to the team with skills in terrain-mapping and navigation. With a degree in Geological Engineering, Alex was right at home in the backyard of the Andes, navigating through varying glacial and mountain landforms.

During the race, Alex's wife Sara, received periodic updates via the race website. Teams carry a GPS unit and radio in a sealed container for safety although breaking the seal to use either device results in disqualification. Sara is looking forward to Alex's next race where a website will allow her (and their seven-month-old daughter Rebecca) to track the progress of each team in real-time. Alex is the navigator for one of the Canadian teams (five total) competing in the World Championships in Switzerland.

Alex describes the event as a warped vacation, where one gets to see some of the most beautiful and remote areas of the world. The mental and physical duress is unimaginable. However, it is clear by the excitement that Alex portrays in his re-telling of the event that the rewards of finishing far outweigh the effort expended!

Further info is available at: ***www.arworldchampionship.com*** ■

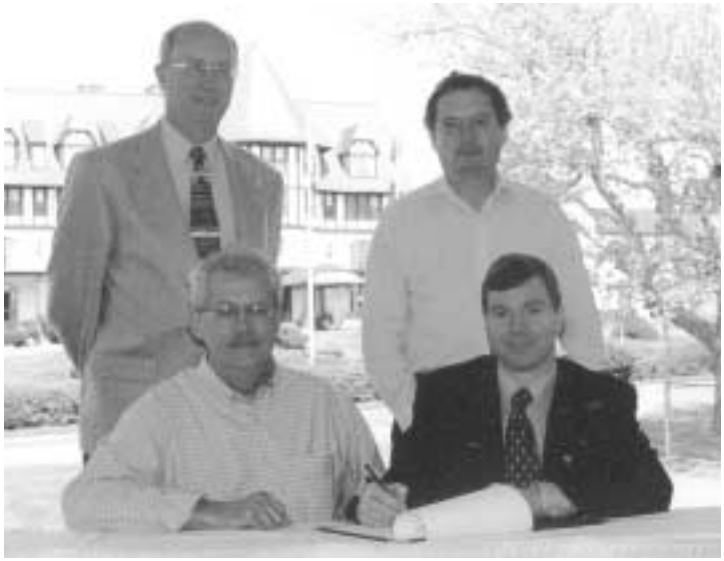
Geoscientists Reach Inter-Association Mobility Agreement

Canada's geoscience community has taken an important first step towards full professional mobility with the signing of an Inter-Association Agreement.

The agreement, approved earlier by provincial/territorial associations, gives registered geoscientists from seven jurisdictions the same kind of mobility Canadian licensed professional engineers already enjoy. The agreement provides for Nova Scotia and Ontario to sign once final legislative authority is granted. Quebec has a separate association for geoscientists and will require legislative amendments before joining the other provinces, and discussions are under way between the engineering and geoscience professions in the Yukon Territory.

The agreement gives licensed geoscientists a uniform procedure for being accepted as professionals and registered with other Canadian jurisdictions. Basically, the professionals will be accepted without any extra requirements if they are in good standing with their home associations, haven't been disciplined in the past, and have no disciplinary action pending. A notwithstanding clause, however, allows a host association to make it own judgement call: it can review the qualifications of any applicant, then reject the application or assign admission requirements.

Formal signing of the agreement took place at the Annual General Meeting of the CCPG in May, 2001. ■



Executive Director & Registrar Dave Ennis and President Alan Pollard sign the Geoscience Mobility Agreement. Back – Alan Bailes, P.Geo., Manitoba's director on the CCPG Board and Robert Matthews, P.Geo., Chair, Canadian Geoscience Standards Board.

Wondering How to Word Your Next EIT/GIT Progress Report?

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

Having trouble filling out your progress report? Finding it hard to figure out exactly how to describe your experience? Needing guidance as to what the Experience Review Committee may be looking for?

In response to a request from this Association's MIT Committee, we have put together a sample Progress Report Form. This report comprises a composite of "good answers" from various EITs and GITs. Hopefully, it will help spark some ideas as to how best to present your experience over the last six months.

Please look for it at the APEGM web-site: ***www.apegm.mb.ca.*** ■

BUILDING ON
ENGINEERING
KNOWLEDGE
CCPE NATIONAL SCHOLARSHIP PROGRAM

2002 Competition

The Canadian Council of Professional Engineers (CCPE) invites entries to the 2002 CCPE National Scholarships Program Competition. Six scholarships worth a total of $55,000 are available to worthy Canadian engineers pursuing postgraduate studies and research.

To be eligible, entrants must be licensed as professional engineers in Canada by one or more of the 12 provincial/territorial associations/ordre that regulate the practice of engineering in Canada.

The scholarships offered include:

- Three **CCPE-MANULIFE FINANCIAL** Scholarships valued at $10,000 each to provide financial assistance to engineers returning to university for further study or research **in an engineering field. Candidates must be accepted or registered in a Faculty of Engineering.**
- Two **CCPE-MELOCHE MONNEX** Scholarships of $7,500 each to support engineers returning to university for further study or research **in a field other than engineering. Candidates must be accepted or registered In a Faculty other than Engineering.** The field of study chosen should favour the acquisition of knowledge which will enhance performmance in the engineering profession.
- One **CCPE-ENCON** Scholarship of $10,000 to support an engineer returning to university for further study or research **in the field of civil engineering. Candidates must be accepted or registered in a Faculty of Engineering.**

Scholarship application forms are available from:

CCPE National Scholarship Program,
Canadian Council of Professional Engineers,
1100 -180 Elgin Street, Ottawa, Ontario, K2P 2K3
Tel - (613) 232-2474, Fax - (613) 230-5759;
E-mail - member.services@ccpe.ca
Web site - http/www.ccpe.ca

CCPE thanks ENCON Insurance Managers, Manulife Financial, and Meloche Monnex Inc. and its subsidiaries, for their support of the CCPE National Scholarship Program.

CANADIAN COUNCIL OF PROFESSIONAL ENGINEERS
CONSEIL CANADIEN DES INGÉNIEURS

Deadline for applications: April 1st, 2002

THOUGHTS ON

Design

...and of course, you can never have enough resources.

By: M.G. Britton, P.Eng.

Most of us, when told we are faced with a resource limitation, probably think in terms of either physical materials or finances. These twin "limitations" occur frequently enough to justify their automatic selection. The statements "they can't supply", or "we can't afford" are fed to most design engineers as an almost steady diet. So isn't it somewhat simplistic for Koen to conclude his definition of the Engineering Method with the constraint "... within available resources."?

At the Annual Meeting, Billy Koen posed his Ping Pong Ball problem for our consideration. It was simple enough. He just asked us to take 50 seconds and estimate the number of ping pong balls it would take to fill the room. After the time had elapsed, most of those present had an answer, but not a good answer. His point was that the exercise illustrates a very common resource limitation, time. Given enough time, everyone in the room could probably come up with a reasonably good estimate. But we had 50 seconds and we needed an answer. We were working "...within available resources."

We live in a world of numbers. We have models for simulation and programs for analysis. But the models and the programs require numbers. A shrug of the shoulders cannot be entered into a computer or a calculator. The computer-generated answers we get depend on the input we provide, and the input is often constrained by the time we have available. It can range from a "place to start" to a "reliable estimate". As the time resource expands, the accuracy of the input usually improves. Regardless, we need to make decisions to move ahead to the solution.

Time, that variable constant, isn't universally restrictive for all of us in every situation. For those at the Annual Meeting who were accustomed to working with fill volumes of one sort or another, the 50 second limit wasn't as onerous as it was for others. They likely came up with a number that was much closer to accurate than those who design DC distribution lines. The resource at question here is knowledge. The problem we were faced with wasn't beyond our capabilities, but some of us were more knowledgeable in a related area. So the time/knowledge interface came into play. But again, we were working "...within available resources."

And if individual knowledge can be a limiting resource, so can individual skill. I am fond of telling my students about a close call I had back when the world was young. I was involved in the design of a

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Petrobras P-36 Disaster – Accident or Arrogance?

By: P.H. Boge, P.Eng.

On March 15, 2001, explosions on Petrobras' P-36 offshore oil-rig killed 11 workers. Five days later, the $500 million semisubmersible platform, the largest production platform in the world, sank to the bottom of the Atlantic off the coast of Brazil. Investigation reports indicated that natural gas leaked into a column and was ignited. One of the questions that remain is whether the P-36 disaster was an accident or the result of negligence on the part of engineers.

The platform was originally built in Italy, but was later modified in Canada. It was responsible for five per cent of Brazil's oil production and was on track to double that output when the disaster struck. Members of the fire brigade attempted to control the first blast, but the second explosion resulted in their deaths. Petrobras came under fire amidst accusations over poor safety standards, and suspicions of negligence arose when the logbooks indicated there were problems on the P-36 prior to the explosions. However, according to the Petrobras Inquest Committee Conclusion, "there are no signs of malicious or deliberate omission of information."

Paulo H. Costacutra, Manager for Communication and Information Security, Exploration & Production for Petrobras, said that "the platform was built considering international accepted parameters of engineering...and that the P-36 was certified by two international entities, RINA and ABS." An unofficial Internet presentation surfaced attempting to defame Petrobras by quoting an apparent speech by an unnamed Petrobras executive. The presentation came from an unidentified source and tried to paint Petrobras as a company not concerned with engineering standards when it stated that Petrobras "successfully rejected the established constricting and negative influences of prescriptive engineering." The presentation was denied and condemned by Costacutra: "We lament that this kind of material is [on the] Internet."

In general, the practice of engineering finds itself in constant tension between safety and economics. In a world of global competition, corporations of all sizes find themselves pressed not only for solutions, but for solutions that make economic sense. Corporations are forced to make their operations profitable, otherwise employees find themselves out of work. However, engineers are not charged with the primary responsibility of being economical. We are charged with providing safe designs as economically as possible. The difference between safety and economics is a question of value and of character.

The sinking of the Titanic is an example of arrogance. The attitude of "only God can sink her" proved that arrogant engineering could sink her first. The space-shuttle Challenger is a different kind of disaster in that it was an accident and not the result of arrogance. In spite of thorough engineering, Challenger became a tomb because of an error in judgement. P-36 is not a recurrence of 'Titanic' engineering. Like Challenger, P-36 had systems in place to protect life and property. Those systems relied on the judgement of trained personnel and professional engineers, and like TWA 300, Chernobyl, and the Quebec Bridge, engineering judgement is not infallible.

While it is of little comfort to the families of the deceased workers, engineering-related disasters like P-36 remind us of the critical importance of every engineering decision. P-36 also reminds us that, in spite of our very best efforts, nature is not very forgiving of our shortcomings. We live in a world that is greater than ourselves, but as engineers we are called to pursue an on-going study of the world around us and to learn from our mistakes, our successes and each other.

Video clips of the sinking available at: ***www.uol.com.br/folha/cotidiano /plataforma.shtml*** ■

WISE Women

Prairie Conference on Women in Science and Engineering (WISE)

By: B.A.K. Danielson, P.Eng. and L.E. McFarlane, P.Eng.

Dr. Elizabeth Cannon, NSERC/Petro-Canada Chair for Women in Science and Engineering (Prairie Region) organized a conference in Calgary on October 26-27, 2001, to meet and discuss issues pertinent to women in science and engineering. Discussions centered around strategies to attract and retain women in these fields, results from current research, and new trends in professional development. Approximately 185 people attended the conference from various regions in Canada. The conference offered three streams: Personal and Professional Development, Career and Educational Development, and K-12 Programs and Research.

Highlights of the first stream were a number of presentations on the unique aspects of Women and Leadership, as well as seminars on effective communication. Participants learned ways to improve their communication effectiveness by increasing their awareness of listeners' thought-patterns and methods of processing information. The leadership discussions provided a valuable sharing of strategies from prominent women in the field, such as Ms Kathy Sendall, VP of Western Canada Development and Operations for Petro Canada, who gave the opening keynote address and was present throughout the conference.

The second stream included specific advice for women interested in an academic career, and an interesting panel-discussion on attracting and retaining women faculty to science and engineering, among many other sessions. Deans of Engineering and Science from Saskatchewan and Alberta discussed informal practices such as consideration of spousal employment, which are being used to aid in attracting women. In general, however, the panel indicated that it continues to be difficult to compete with industry in attracting PhD graduates. Recent research was presented which indicates that women are still leaving science and engineering professions at a higher rate than men. Some of the factors that influence this situation include family background, high school experiences, university experiences, the culture of science, and gender-role attitudes. In 2000, 7.2% of engineers across Canada were women. At the undergraduate level, the percentage of women studying engineering has been fairly steady for the past five years at 19-20%.

The third stream provided several presentations about programs (mainly in Alberta) that are being offered to increase the interest of K-12 students in science and engineering. Many speakers emphasized the value of hands-on activities in instilling an interest in science. The Science Alberta Foundation, for example, aims to encourage more young Albertans to enter technical careers, to develop a scientifically literate citizenry, and to foster a critical consciousness among Albertans about the contributions of science and technology to society. They carry out this mission through learning programs (for school-aged children), promotion and awareness activities, and a virtual community environment that they are currently developing as a web initiative.

We will be having a Women's Engineering Network meeting at the end of February to discuss Women in Engineering issues here in Manitoba. Look for details in the February mailing and we hope to see you there! ■

Pre-Enrollment Experience may now be Considered

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

Everyone knows that this Association's Pre-Registration Program is mandatory. Since 1995, engineering graduates have been required to be enrolled as EITs with this Association while obtaining the four years of acceptable work experience necessary for registration as professionals.

The penalty for failure to comply with this requirement was established in 1997: if you're not enrolled as an EIT, the experience simply won't count.

This Association now also regulates the practice of geoscience, and the "grandparenting" period for the consideration of geoscience experience ended in June, 2000. The Pre-Registration Program is now, therefore, also mandatory for all geoscience graduates.

This Association has heard numerous arguments both in favour of, and in opposition to, the mandatory nature of the program, and the penalties for non-compliance.

At its September 13, 2001, meeting, having spent many months deliberating both the severity of its penalties for non-compliance and the results of an appeal Hearing by the Council, the Experience Review Committee passed a resolution. This resolution will be of interest to anyone who was late in enrolling as an EIT or GIT.

Effective August 24, 2000 (the date of Council's appeal Hearing decision), any EIT or GIT who obtained work experience after graduation, but prior to enrollment with APEGM, may apply for the consideration of pre-enrollment experience. A special application form must be completed and submitted, along with the EIT/GIT dues for one year. The experience must be documented on the standard EIT/GIT Progress Report form, and must be corroborated by the supervisor on the Supervisor Progress Report form. A **maximum** of 12 months of combined pre-enrollment and pre-academic-qualification experience may be credited.

Please note that this policy is **not** intended to undermine the precepts that the Pre-Registration Program is mandatory, and that enrollment as an EIT or GIT while obtaining experience is a requirement. Both the Council and the Experience Review Committee have re-affirmed the mandatory nature of the Program.

If you believe this resolution may be of benefit to you, please obtain an application from our website: ***www.apegm.mb.ca.*** ■

October Council Report

Continued from page 8

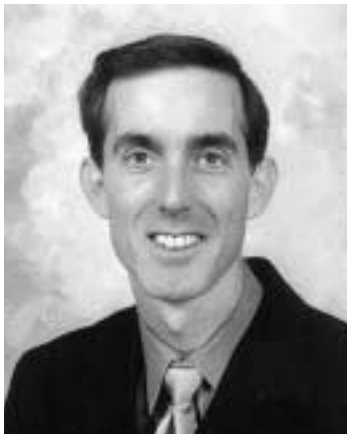
was currently one member short. Councillor Hosang then noted that the Nominating Committee needed to be provided with more nominees than positions so that the Nominating Committee could go through the proper process of making a decision regarding the position.

The meeting concluded with some final information items including a review of approved registrations and a review of members in the news. ■

University of Manitoba Appointment

Dr. Jay Doering, P.Eng., has been appointed as the Head of Civil Engineering at the University of Manitoba for a five year term. He is a registered professional engineer with 13 years experience. He joined the Faculty of Engineering in 1993.

Dr. Doering is an expert in the field of water resources and hydraulics and has won numerous awards for excellence in teaching and research including APEGM's award for early achievement. He is a national director for the Canadian Society of Civil Engineering. ■



Dr. Jay Doering, P.Eng.

Have you ever considered using the design process to develop your financial plan?

By: I.R. Mikawoz, P.Eng.

Financial independence is a goal that most people share. The only question is: how do you get there?

What you need is a plan – a "blueprint" that puts you on the road to financial independence. This article examines the first step of the design process and how it can be used to create your financial plan.

Design Process Step I: Problem Identification or Recognition of a Need

In any design process, the first step is to identify the problem or perhaps the opportunity. **In financial planning you must identify and quantify your needs, dreams or goals.**

Once you identify your goal; you must collect, summarize and prioritize all of the information that may affect or impact your goal.

For instance if one of your goals is to retire early, then you need to know how much money you require to meet your retirement needs and from where you will receive these funds. Will this income come from RSP's, company retirement plans, business proceeds, investments, insurance and/or the Canadian pension plan?

Once you determine your goal, then you need to develop your baseline. Therefore, your next step is to prepare your net-worth statement and current family cash-flow. A net-worth statement lists all you own minus what you owe. This statement represents your net-worth on a specific day.

[What I (we) own] – [What I (we) owe] = Net-Worth

In business, engineering, or geology a net-worth statement is similar to a balance sheet. Assets minus liabilities equals equity.

The cash-flow statement shows you how much money you have left after you pay for your expenditures. This statement normally covers a year. However, it can be completed for a one-month period.

[Income] – [Expenditures] = Positive or Negative Cash Flow

A cash-flow statement is similar to a budget for the project. To turn a negative cash-flow into a positive one you must decrease expenses, increase income or take out a loan.

Once you have completed your net-worth and cash-flow statements, you can perform several evaluations, including:

Liquidity/Emergency Fund Analysis:

Striking a balance between maintaining sufficient investment liquidity to provide financial flexibility and maximizing long-term investment returns.

In design terms:

How much money can I invest in this project? How much profit can I make on it? How should I manage the cash-flow for the project? How much of a contingency should I include in the budget in case things don't go as planned?

Debt-Management Review:

Exploring the potential opportunities to better manage current debt and enhance your net-worth.

In design terms:

How will the project be financed? Are there better financing rates available? Can I delay or stagger the financing? Can I invest the cash-flow?

Leverage Strategy Analysis:

Define your present risk-tolerance with respect to leveraging. If you can tolerate the risks of the stock market, you can accelerate your retirement savings by borrowing to invest. Will I borrow money against a lower mortgage-rate to risk obtaining a higher rate of return in investments or registered products?

In design terms:

What safety factor will you use in the design process? How much risk are you prepared to take? By financing this project at this rate, will I make enough of a return on my investment to make this project profitable?

Of course, we may not have the time, interest, expertise or sole-authority to do this analysis. In our profession, we understand the value of having others contribute their expertise to the design process. We routinely work with technical experts, decision-makers and stakeholders. The same is true in the financial-planning process; the technical experts (accountants, lawyers and advisors) and stakeholders contribute to the process.

In addition, you should never forget factors that can affect your goal. Some of these factors include your health, your family status (children and parents), employment, insurance, the economy and taxes. These factors must be recognized and quantified if you want a thorough and effective financial plan.

By completing your net-worth and cash-flow statements, you will have the necessary background data to establish your baseline for your goal. Also, you should understand your cash-flow situation better, your risk-tolerances and your financial health. With this first step – identifying your goal and baseline – you have started on the road to financial independence. ■

Next issue: Design Process Step II: Preliminary Ideas

Notice

Payment of 2002 Fees

Annual Dues invoices have been mailed to all members and members-in-training. If you have not received yours, please contact the APEGM office. ■

Have You Tried Becoming Licensed to Practise Engineering in Texas?

Have you made inquiries into, or application for, licensure as a Professional Engineer with the Texas State Board during the past two or three years?

If so, APEGM and CCPE would like to hear from you.

Texas is the only U.S. State Board to have ratified the North American Free Trade Agreement's Mutual Recognition Document for the provision of engineering services and the engineering profession in Canada is very interested in learning about the experiences of Canadian engineers who have become, or have applied to become, licensed with that State Board.

Please share your experiences with us. Phone, fax, e-mail, or write to Shirley Matile, P. Eng., at the APEGM office. ■

Professional Development

Genetic Engineering – Where is the Engineering in it?

By: W.T. Jackson, P.Eng.

A good question...and the answer was supplied by a respected and award-winning University of Manitoba researcher at APEGM's Professional Development breakfast meeting on Wednesday, November 7 at the Viscount Gort. The keynote speaker was Dr. Digvir Jayas, Ph.D.,P.Eng., P.Ag., who is Associate Vice-President of Research and is world-renowned for his research in grain storage.

The public is becoming more aware of genetic engineering (biotechnology), almost on a daily basis through the media. The first century of new millennium could become the century of biology as the search continues to find cures for diseases in humans, animals, and plants. The potential of the biotechnology industry is immense with the current activity in Manitoba accounting for 8 percent of the Canadian activity, and the anticipated value world-wide predicted at 1 – 3 trillion dollars by the year 2010. Dr. Jayas pointed out that there are many definitions of biotechnology including the most direct offered by the Natural Sciences and Engineering Research Council of Canada (NSERC) as "the use of plants, animals or microbes, in whole or in part, to create products or processes". Webster's definition of genetic engineering is " the directed alteration of genetic material by intervention in genetic processes". It is the alteration of genetic material that has caused the most discussion and concern about the process in the eyes of the public. Dr. Jayas used traditional plant breeding as a way to explain how advances have been made in biotechnology in plants. He illustrated that traditional breeding combines many genes at once from the same species of the donor and a commercial variety. The new variety then comprises several undesired genes. Using plant biotechnology, a single gene may be added to the new variety, and only the desired gene is transferred. In the brave new world of genetic engineering, time has become a big factor, whereby the current process for producing new varieties may take 8 to 16 years, while the new process can be completed in 3 to 8 years. Dr. Jayas quickly points out that it is a mistake to think that biotechnology consists only of genetic engineering. He said creation of alcoholic beverages, dairy products and other fermented foods took place before the Pasteur era (before 1865), and that processes responsible for penicillin, varieties of antibiotics and virus vaccines took place between 1940 and 1960.

Dr. Ron Britton, P.Eng. (r) thanks Dr. Digvir Jayas P.Eng. (l).

He highlighted the importance of genetic engineering by saying that as many as 4000 human diseases are suspected of having genetic determinant. He listed potential benefits of biotechnology including improved health care, increased options for crop production, reduced pesticide use, improved food quality, reduced costs for industrial chemicals and agricultural diversification. Of course there are issues, and there is one question that surfaces regularly: " Is eating food from transgenic crops a health hazard?" Dr. Jayas says the short answer is "No", but the potential exists when different species are involved in the transfer, and so more research is needed in an effort to ensure that other organisms are not impacted. He suggested that engineers can play a bigger role in the future of the industry, but he says engineering programs at the university level must offer more biology-related courses for all engineering disciplines and engineering programs should be developed with biology-related subjects as a major base. ■

T.W. Algeo, P. Eng. – A Tribute

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

Terry Algeo was our Association's Registrar from 1965 to 1980.

Like many men who had been raised in the Great Depression, Terry found himself overseas with the R.C.A.F. in 1941 as an electrician with the "39 RECCE Wing." It was these years that gave Terry his life-long love of aeroplanes.

Returning to Canada when the war finally came to an end, Terry obtained his degree in Electrical Engineering in 1950. His first job was with General Motors Diesel in London.

Returning to Manitoba in 1958, he worked for Pritchard Engineering and Versatile Manufacturing before joining our Association as Registrar and Managing Director. He also served for ten years as Registrar of the Manitoba Society of Certified Engineering Technicians and Technologists (MANCETT). In October, 1990, our Association awarded him an Honorary Life Membership.

Undoubtedly stemming from his early years with the Air Force, Terry obtained his pilot's licence in the late 1950s. This led him to build his own aeroplane in which he and Mrs. Algeo made many trips around the continent. He also became active in the Experimental Aircraft Association and, in later years, restored a wooden glider that may be seen at the Western Canada Aviation Museum out at the airport.

Manitoba has lost a remarkable engineer. ■

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.

Registered Engineers for Disaster Relief (REDR) Canada

RedR is an international federation of non-government and non-profit organizations that share a common mission. There are currently fully accredited RedR organizations in England, Australia and New Zealand. New organizations are forming in Canada, India and East Africa. While independent, all offices work closely together as members of RedR International, based in Geneva.

RedR organizations relieve suffering in disasters by selecting, training and providing competent and efficient personnel to humanitarian aid agencies worldwide. Members provide front-line relief agencies with technical assistance vital to restoring the everyday lives of affected communities, such as:

- rebuilding roads and bridges;
- re-establishing fresh water supplies;
- managing waste;
- restoring communications
- protecting the environment; and
- managing financial, material and human resources.

RedR's mandate:

- Development and management of a worldwide register of qualified disaster relief personnel.
- Development and delivery of formal training courses on disaster relief.
- Production of practical guides, articles and books on disaster relief.
- Building of ties with relief agencies around the world to expedite relief support.

RedR is effective because it represents a recognized, qualified and reliable resource to humanitarian organizations which:

- avoids wasteful duplication of each relief agency having to maintain its own register;
- provides significant, stand-by capacity at a fraction of the cost of employing an equivalent number of people full-time;
- provides high-quality training at minimum cost;
- ensures that key staff are available so that significant financial and material resources involved in responding to emergencies are used effectively;
- and is strongly committed to the principles of humanitarian assistance and to the practical role its members bring to disaster relief.

The Association of Consulting Engineers of Canada (ACEC) is bringing RedR to Canada. In January 2001, ACEC signed a Memorandum of Understanding with Red R International that set the stage for establishing an office for RedR in Canada. Hundreds of Canadian consulting engineers operate in 120 countries around the world – they are singularly well placed to assist. They are recognized worldwide for, among other things, their expertise in water and wastewater management, and on transportation-related issues – both matters of critical importance in the immediate aftermath of a disaster.

If you have the skills and want to become directly involved, join RedR Canada as a **Registered member** eligible for assignment. If you are interested in helping others respond to humanitarian crises, join RedR Canada as a **Supporting member**. If your company is interested in supporting RedR financially, join RedR Canada as a **Corporate member** with a donation that will help them operate in Canada.

For further information call ACEC at (613) 236-0569, e-mail ***info@redr.ca***, or visit the ACEC website at ***www.acec.ca.*** ■

Lucy Bonnett, P. Eng., C. Eng.

By: R. Menon, P.Eng.

When I received Lucy Bonnett's resume in early 1998, what stood out for me was that she was very professional. She was employed as a Chartered Engineer for 12 years with Severn Trent, one of the largest private municipal water companies. At that time we were in the process of completing negotiations for a public-private regional water system. I felt that she would be an asset to The Manitoba Water Services Board.

Lucy came to Canada from England in the fall of 1997 and started working for the Board in Brandon in April, 1998. Being a small office, there was a lot of mutual good-natured ribbing at coffee breaks. She learned quickly to say 'gas' instead of 'petrol' and 'truck' for 'lorry'. However, like many Brits, she would put an 'R' into words that had no 'R'. She would call 'drawings' 'draw-rings,' until she noticed the grin on all our faces.

Lucy enjoyed the outdoors. She was an active member of the Westman Naturalist Society. She loved to go hiking and biking through the countryside. Her source of energy was the "Kit Kat" bars that she so craved.

Lucy applied for her Professional Engineers' certificate, and through much correspondence back-and-forth, she finally got her P.Eng. before Christmas, 2000. By that time she was already diagnosed with cancer. The cancer spread very quickly and she passed away peacefully at her home in Brandon on May 14, 2001. Lucy was cremated and a small service held for her on May 18, 2001. Following the service her family scattered her ashes in the Assiniboine River.

Prior to her death, Lucy's parents came from England to be with her. They said she used her P.Eng. seal in one of the last letters she wrote them. It was probably the only time she had an opportunity to use it. In the short time we at the Board knew Lucy, we came to appreciate her as a special person and an excellent engineer. She's gone now, but will be missed by all of us. ■

Thoughts on Design

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building for an Antarctic expedition. After considering the problem of installing bolts in a Antarctic climate and/or replacing bolts that were lost, we decided to specify a frame that could be welded on site. Fortunately, before things got too far along, a supply technician advised that there were no welders, either physical or human, available at the site. A case of resource limitation that was exaggerated by the conditions under which the project would be carried out.

All designs are constrained by the resources availability. Good design recognizes and deals with all types of resource constraints as design variables. By anticipating the limitations, the end product comes much closer to solving the problem.

And it all comes back to applying the Engineering Method, "...the strategy for causing the best change in a poorly understood or uncertain situation within available resources". Now, if it was just that simple in practice... ■