Publications Mail Agreement No. 40053012

ISSUE 135 / SUMMER 2007
NUMÉRO 135 / ÉTÉ 2007

NEW BRUNSWICK ENGENUITY

THE SOURCE OF ENGINEERING AND GEOSCIENCE NEWS IN NEW BRUNSWICK
LA SOURCE D'INFORMATION EN INGÉNIERIE ET GÉOSCIENCE DU NOUVEAU-BRUNSWICK

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Fredericton names water treatment plant after Bill Barrett, P.Eng.

L to R: Fredericton Mayor, Brad Woodside; APEGNB member Bill Barrett, P.Eng.; Fredericton Councillor, Tony Whalen, P.Eng.

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APEGNB
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*Association des **ingénieurs** et **géoscientifiques** du Nouveau-Brunswick*

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NEW BRUNSWICK
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PUBLISHED BY:
The Association of Professional Engineers and Geoscientists of New Brunswick
183 Hanwell Road, Fredericton, New Brunswick, Canada E3B 2R2
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Engenuity is published three times per year: spring, summer and fall/winter.
Deadlines for copy are February 15, May 15 and September 15 respectively.
Advertising space is available on a first-come, first-served basis. **For rates and mechanical specifications**, please call Michelle Richard, Advertising Sales, 506-451-9625.

APEGNB Summer Office Hours

Please be advised that the APEGNB office will be closed on Fridays during the months of July and August.

PRESIDENT'S MESSAGE

David Crandall, P.Eng.

Hello from beautiful Banff, Alberta!

I just attended the May 24 to 26 Annual Meeting for Engineers Canada (the new business name of the Canadian Council of Professional Engineers) in Winnipeg, Manitoba. I am now heading to Kananaskis, Alberta for the Annual Meeting of the Canadian Council of Professional Geoscientists being held June 1st and 2nd. I'm taking a few minutes from my travels to provide you with an update on the work being done by APEGNB Council these past few months.

2nd Annual MLA Reception

The MLA Reception was held on March 28 and was attended by **Premier Shawn Graham**, 15 Cabinet Ministers, 21 MLAs, four deputy ministers, five representatives from the Premier's office, one executive assistant, and two representatives from the Consulting Engineers of New Brunswick. Also in attendance were 14 members from APEGNB Council and three APEGNB staff.

APEGNB used this opportunity to raise the issue of **Limitation of Liability** as well as remind MLAs of the critical role our members play in helping the Province achieve self-sufficiency.

Iron Ring Ceremonies

I had the privilege of speaking at the Camp 7 (UNB) and Camp 19 (Université de Moncton) Iron Ring ceremonies in April. It is gratifying to see over 200 young engineering students complete their undergraduate education and receive their Iron Ring. I reminded the graduates that their Iron Ring signifies the first step towards becoming a professional engineer. Hopefully, we'll welcome the majority of the graduates as members-in-training with our Association.

Annual Meetings

In April, I attended the annual meeting of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA). Their association continues to experience incredible growth and will reach 50,000 members this year. An international roundtable was held with individuals from provincial associations and a number of U.S. State Boards that were in attendance. Discussions centered around common concerns including mobility between Canada and the United States.

It pays to be on your best behaviour at these events. At the APEGGA Awards Gala, which was attended by over 1200 people, a lady approached me and asked if I was "the Dave Crandall from Moncton." Somewhat in disbelief, I replied "yes". She said "I'm Dianne, you taught me how to tie my shoes in kindergarten". It is indeed a small world.

The Engineers Canada Annual Meeting in Winnipeg was an excellent opportunity for the presidents and executive directors of the provincial and territorial associations to discuss mutual issues of concern. During the Engineers Canada Board Meeting, **Brent Smith**, P.Eng., was installed as APEGNB's Engineers Canada Director for the next three years.

The highlight of the AGM was the Awards Gala where **Hollis Cole**, P.Eng., received the Meritorious Service Award for Professional Service and UNB student, **Alex Gomez**, was presented the Gold Medal Student Award. Congratulations to both of these individuals.

Congratulations are also in order for our own **Bruce Broster**, P.Geo., who was elected President-Elect of CCPG at their annual meeting in Alberta. During the same event, **Dwight Ball**, P.Geo., received CCPG's highest honour, the Canadian Professional Geoscientist Award.

It certainly is wonderful to see APEGNB's members recognized for their achievements at a national level.

Branch Events

Back at home in New Brunswick, **Andrew McLeod** and I attended the annual meetings for our Moncton and Northwestern Branches.

I know the new Branch executive and councils are planning a number of technical and social events throughout the year for members to attend. I encourage everyone to take advantage of these events and help support the outreach efforts of their Branch. You'll meet plenty of people, have some fun and learn a few things along the way!

APEGNB Office Building Grand Opening

The contracts have been awarded for the landscaping, curbs, sidewalk and paving for APEGNB's new office on Hanwell Road in Fredericton. By the time you receive this issue of *Engenuity*, all the work should be completed.

Everyone is invited to the official Grand Opening on September 13 from 4 to 6 pm. Drop by, see your new headquarters and enjoy some refreshments!

NBSCETT and Limited Licensure

The Limited Licensure Task Force, chaired by Brent Smith, P.Eng, presented their report at APEGNB's Annual Meeting in February. The report was then sent to our Legislative Committee to develop the changes required in the Act and Bylaws for limited licensure of technologists. These changes must receive approval from the membership before APEGNB requests an Act change from the Government of New Brunswick.

Have a great summer and I hope to meet some of you at your Branch events!

MÉSSAGE DU PRÉSIDENT

David Crandall, ing.

Salutations de la magnifique région de Banff (Alberta)!

J'arrive de l'assemblée annuelle d'Ingénieurs Canada (nouveau nom commercial du Conseil canadien des ingénieurs) qui s'est déroulée du 24 au 26 mai à Winnipeg (Manitoba). Avant de me rendre me rendre à Kananaskis (Alberta) pour assister à l'assemblée annuelle du Conseil canadien des géoscientifiques professionnels qui aura lieu les 1er et 2 juin, je prends quelques minutes pour vous mettre au courant des activités du Conseil de l'AIGNB des derniers mois.

2e réception annuelle des députés

À la réception des députés qui a eu lieu le 28 mars, on a accueilli le **premier ministre Shawn Graham**, 15 ministres, 21 députés, quatre sous-ministres, cinq représentants du cabinet du premier ministre, un adjoint exécutif, et deux représentants de l'organisme Ingénieurs-conseils du Nouveau-Brunswick. Quatorze membres du conseil de l'AIGNB et trois membres de son personnel y étaient également.

L'AIGNB a profité de l'occasion pour aborder le dossier de la **limitation de la responsabilité** et rappeler aux députés le rôle essentiel que jouent nos membres dans la quête de l'autosuffisance de la province.

Cérémonies de remise des anneaux de fer

J'ai eu le privilège de m'adresser aux participants du Camp 7 (UNB) et du Camp 19 (Université de Moncton) lors des cérémonies de remise des anneaux de fer en avril dernier. J'ai trouvé très encourageant de voir plus de 200 jeunes étudiants en ingénierie qui terminent leur formation universitaire et reçoivent leur anneau de fer. J'ai rappelé aux diplômés que leur anneau de fer représente la première étape en vue de devenir ingénieurs immatriculés. Nous espérons accueillir la plupart des diplômés au rang des membres stagiaires de notre association.

Assemblées annuelles

En avril, j'ai assisté à l'assemblée annuelle de la *Association of Professional Engineers, Geologists, and Geophysicists of Alberta* (APEGGA). La croissance incroyable de cette association se poursuit, et le nombre de ses membres devrait grimper à 50 000 cette année. Une table ronde internationale regroupant des représentants d'associations provinciales et de plusieurs *State Boards* des États-Unis a eu lieu pour discuter essentiellement des préoccupations communes, dont la mobilité entre le Canada et les États-Unis.

Mieux vaut bien se comporter à ce genre d'événement, car on ne sait jamais qui on peut y rencontrer. À la cérémonie de remise des prix de l'APEGGA, qui accueillait au-delà de 1200 personnes, une dame m'a approché et m'a demandé si j'étais bel et bien le « Dave Crandall de Moncton ». Avec étonnement, je lui ai répondu « oui ». Et elle s'est alors présentée, disant « Je suis Dianne, tu m'as montré comment lacer mes souliers à la maternelle. » En effet, le monde est petit!

L'assemblée annuelle d'Ingénieurs Canada offre aux présidents et directeurs généraux des associations provinciales et territoriales une excellente occasion de discuter de questions d'intérêt mutuel. Durant la réunion du conseil d'administration d'Ingénieurs Canada, **Brent Smith**, ing., a été nommé directeur d'Ingénieurs Canada représentant l'AIGNB pour les trois prochaines années.

Le fait saillant de l'AGA a été la cérémonie de remise de prix où l'on a décerné à **Hollis Cole**, ing., la Distinction pour services méritoires – Service professionnel, et à **Alex Gomez**, étudiant à l'UNB, la Médaille d'or des étudiants en génie. Félicitations aux deux lauréats.

Nous devons également féliciter notre **Bruce Broster**, géosc., qui a été élu président du CCPG à son assemblée annuelle en Alberta. À l'occasion de cette assemblée, **Dwight Ball**, géosc., s'est vu décerner la plus haute distinction de la CCPG, le prix Géoscientifique professionnel du Canada.

C'est merveilleux que l'on reconnaisse les accomplissements des membres de l'AIGNB à l'échelle nationale.

Activités des sections

Chez nous au Nouveau-Brunswick, j'ai accompagné **Andrew McLeod** aux assemblées annuelles de nos sections de Moncton et du Nord-Ouest. Le nouveau bureau de direction et les conseils de section planifient plusieurs activités sociales et séances techniques tout au long de l'année pour les membres. Je vous invite tous à profiter de ces activités et à soutenir les efforts de sensibilisation de votre section. Vous pourrez y rencontrer un grand nombre de personnes, et vous amuser tout en élargissant vos connaissances en cours de route!

Ouverture officielle de l'immeuble à bureaux de l'AIGNB

On a attribué les contrats pour l'aménagement paysager, les bordures, le trottoir et l'asphaltage au nouvel immeuble à bureaux de l'AIGNB situé sur le chemin Hanwell à Fredericton. Lorsque vous recevrez le présent numéro *Engenuity*, tous les travaux devraient avoir pris fin.

Vous êtes tous invités à l'ouverture officielle qui aura lieu de 16 h à 18 h le 13 septembre prochain. Venez voir notre nouveau siège social et prendre une consommation avec nous!

Société des techniciens et technologues agréés du génie du Nouveau-Brunswick (NBSCETT) et les permis d'exercer à portée restreinte

Le Groupe de travail sur le permis d'exercice limité, présidé par Brent Smith, ing., a présenté son rapport à l'assemble annuelle de l'AIGNB en février. On a ensuite acheminé le rapport au comité législatif pour élaborer les modifications à apporter à la Loi et aux règlements en matière de permis d'exercice limité pour les technologues. Ces modifications doivent être approuvées par les membres avant que l'AIGNB ne puisse faire une demande de modification à la *Loi* auprès du gouvernement du Nouveau-Brunswick.

Je vous souhaite de passer un agréable été, et j'espère vous rencontrer aux activités de votre section!

MONCTON BRANCH

Philippe Losier, P.Eng. – *Chair*

I am pleased to introduce the Moncton Branch Executive for 2007-2008, elected last May during our Annual General Meeting:

Chair	**Philippe Losier**, P.Eng.
Past Chair	**Mark Bellefleur**, P.Eng.
Vice Chair	**Maryse Doucet,** P.Eng.
Treasurer	**Pierre Plourde**, P.Eng.
Secretary	**Isabelle Haché**, MIT
Professional Development	vacant
Social Events	**David Kozak**, P.Eng.
	Rudina Lolja
Website & Communications	
	Isabelle Haché, MIT
Provincial Council	**John Gallant**, P.Eng.
	Larry Dionne, P.Eng.
Branch Councillors	**Serge Doucet**, P.Eng.
	Éliane Doucet, P.Eng.
UdeM Representative (Engineering)	vacant

To contact any of us, please find our contact information on the APEGNB Website.

2006-2007 was quite a year for the Moncton Branch. We had several professional and technical development sessions. The perennial favourites – golf tournament and annual lobster dinner – were also much appreciated by our members. We owe many thanks for this wonderful year to **Mark Bellefleur**, P.Eng., and the other members of the 2006-2007 Executive who devoted a great deal of time and energy to making it a success.

You are all invited to turn out in great numbers for the following events your Executive is preparing:

August 15–19, 2007

We'll have a stand at the **International Kite Festival** at Dover Park.

September 21, 2007

Annual Golf Tournament at the Memramcook Golf Course.

For those interested, please note that there are still vacancies in the Executive, and we'll be pleased to welcome you. It is a unique opportunity to create friendship ties with other engineers. Contact a member of the Executive if you have any questions.

A happy summer to all!

APEGNB AIGNB SECTION DE Moncton BRANCH

RAPPORT DE LA SECTION DE MONCTON

Philippe Losier, ing. – *président*

J'ai le plaisir de vous présenté les membres du CA de la section de Moncton pour l'année 2007-2008, élus au mois de mai dernier lors de notre assemblée générale annuelle :

Président	**Philippe Losier**, ing.
Président sortant	**Mark Bellefleur**, ing.
Vice-président	**Maryse Doucet,** ing.
Trésorier	**Pierre Plourde**, ig.
Secrétaire	**Isabelle Haché**, MS
Perfectionnement professionnel	vacant
Activités sociales	**David Kozak**, ing.
	Rudina Lolja
Web et communication	
	Isabelle Haché, MS
Conseil provincial	**John Gallant**, ing.
	Larry Dionne, ing.
Conseillers de la section	**Serge Doucet**, ing.
	Éliane Doucet, ing.
Représentant de l'U de M (ingénierie)	vacant

Pour communiquer avec l'un ou l'une d'entre nous, vous trouverez nos coordonnées sur le site Web de l'AIGNB.

L'année 2006-2007 fut intéressante pour la section de Moncton. Nous avons eu plusieurs séances de perfectionnement professionnel et technique. Aussi, les activités incontournables qui sont le tournoi de golf et le souper annuel au homard ont été très apprécier de nos membres. Pour cette belle année, je tiens à remercier **Mark Bellefleur**, ing. et les autres membres du CA de 2006-2007 pour tout le temps et l'énergie qu'ils ont démontré.

Voici les prochaines activités que votre conseil prépare, venez y participer en grand nombre :

15–19 août 2007

Nous aurons un kiosque au **festival international du cerf-volant** au parc Dover.

21 septembre 2007

Tournoi de golf annuel au Terrain de golf de Memramcook.

Avis à tous les membres intéressés, il reste quelques postes à combler au sein de notre conseil, nous serons très heureux de vous accueillir. Il s'agit là d'une occasion unique de créer des liens d'amitié avec d'autres ingénieurs. Communiquez avec un membre du CA si vous avez des questions.

Bon été à vous!

APEGNB AIGNB SECTION DE Moncton BRANCH

SAINT JOHN BRANCH

Pierre Michaud, MIT – *Chair*

It has been a quiet few months in the Saint John area, but fear not! As this report goes to press, we have been busy at work preparing for the next big event—the **APEGNB-Saint John Hootenanny** which was held on Saturday June 23 at the Glenn Carpenter Centre! Photos and details of the entertainment will be in the Fall Branch Report.

Branch members **Lisa Frazee**, P.Eng.; **Holly Young**, P.Eng.; **Tanya Horgan**, P.Eng.; and **Michelle Paul-Elias**, P.Eng. were among the volunteer judges for the **District 10 Regional Science Fair** held at NBCC St. Andrews on March 20th, 2007.

From L to R: **Diane Woodworth**, Science Fair coordinator; **Lisa Frazee**, P.Eng.; **Holly Young**, P.Eng.; **Tanya Horgan**, P.Eng.; **Michelle Paul-Elias**, P.Eng.

The **annual APEGNB-SJ Golf Tournament** is booked for Saturday July 28 at Rockwood Golf Course. Golfers of all levels of experience/skill are welcome and encouraged to participate. It's a great event and it is just for fun! Dust off those clubs and meet us there! For Rockwood Park Golf Course details you can visit *www.rockwoodparkgolf.nb.ca*. To register, contact **Kevin Kyle**, P.Eng., via e-mail at: kevin.kyle@syntact.net. Space is limited, so register early!

As the school year neared completion, the Young Engineer sessions drew to a close. The **District 8 Young Engineers Enrichment Program** is designed to provide students in grades 6 to 8, with an aptitude for science and math and an opportunity to meet engineers and geoscientists from the local community. We have received excellent feedback from **Danny Marmen**, the program organizer, and parents about the impact this program has had on their child's view about engineering as a possible career. We would like to especially thank the following volunteers who supported this fantastic program: **Steven Driscoll**, P. Eng.; **Tanya Horgan**, P. Eng.; **Trevor Langlais**, P. Eng.; **Susan Ryan**, P. Eng.; **Robert Stewart**, P. Eng.; **Martin Legere**, MIT; and **Solange Laberge**, P. Eng.

Students at Millidgeville North School were given a design challenge during the third session. They had to build something that allowed them to pick up a washer 60cm away, and move it 90 degrees into a cup placed 60cm away. They were only allowed to use the materials given to them.

We have finally managed to gather pictures of various events and upload them to the Saint John Branch web page. Check out this link to access the photo albums: **www.apegnb.ca/bgallery/index.php?cat=8**

As future event details are finalized, Branch members will be notified via e-mail. Also, check the Branch web page for the latest information: **www.apegnb.ca/e/08e/08e2_e.php**

SECTION DE APEGNB AIGNB Saint John BRANCH

NORTHWESTERN BRANCH

Éric Ouellette, P.Eng. – *Chair*

On April 11, 16 members of the Northwestern Branch and students visited the McCain Foods French-fry plant in Grand Falls.

No one is really sure about the origin of French fries. They became popular in France by the late 1800s, and there are also claims that they really originated in Belgium. American soldiers were introduced to them by French-speaking Belgians when they fought in Europe during World War I — and called them "French fries." It is even said that Thomas Jefferson served "potatoes fried in the French manner" in the White House in the early 1800s. The British, of course, call French fries "chips," and England is the land of "fish and chips."

Here in Canada, we seem to be the only country in the world that likes our fries served with vinegar. Of course, Quebec enjoys their French fries with cheese curds and gravy—known as poutine.

McCain Foods is the world's largest producer of frozen French fries and the manufacturer of other quality food products sold in more than 110 countries. They make nearly one third of ***all*** the frozen French fries produced in the world. With all of the 31 potato processing plants around the world, McCain has a total production capacity of more than one million pounds of potato products an hour.

Today, McCain Foods is a global leader among food processors. With its headquarters less than an hour away in Florenceville, McCain has been a major employer in northwestern New Brunswick for more than 50 years.

So next time you go to a McDonald's anywhere in the Maritimes and order French fries, you can feel comforted by the fact that they were processed right here in Grand Falls and you're supporting the regional economy!

APEGNB AIGNB Northwestern BRANCH

RAPPORT DE LA SECTION DU NORD-OUEST

Éric Ouellette, ing. – *président*

Le 11 avril, seize membres de la section du Nord-Ouest et étudiants ont visité l'usine de transformation de pommes de terre frites de la société McCain Foods à Grand-Sault.

Il y a encore des doutes quant à l'origine des frites. Elles sont devenues populaires en France vers la fin des années 1800, et certains prétendent également qu'elles sont une invention belge. Les soldats américains en Europe lors de la Première Guerre mondiale y ont été initiés par des Belges de langue française — et ils ont nommé ce mets des « frites ». On raconte même que Thomas Jefferson aurait servi « des pommes de terre frites à la française » à la Maison-Blanche au début des années 1800. En Grande-Bretagne, il est évidemment question de « chips », et en Angleterre, on retrouve les fameux « fish and chips ».

Ici au Canada, on semble être le seul pays au monde où l'on sert les frites avec du vinaigre. Et au Québec, les frites sont servies avec du fromage non affiné, en grains, et une sauce, un mets communément appelé une poutine.

McCain Foods est le plus grand producteur mondial de pommes de terre frites et d'autres produits alimentaires de qualité vendus dans plus de 110 pays. La société produit environ le tiers de la production mondiale de pommes de terre frites congelées. Avec ses 31 usines de transformation de pommes de terre dans le monde, la capacité de production globale de McCain atteint plus d'un million de livres à l'heure.

Aujourd'hui, McCain Foods est un chef de file mondial de l'industrie de la transformation des aliments. Ayant son siège social à moins d'une heure de Florenceville, McCain est un important employeur du Nord-Ouest du Nouveau-Brunswick depuis plus de 50 ans.

Ainsi lorsque vous commanderez des frites à votre prochaine visite à un McDonald des Maritimes, vous pourrez être rassuré par le fait qu'elles ont été transformées ici à Grand-Sault et que vous appuyez l'économie de la région!

APEGNB AIGNB SECTION DU Nord-Ouest

NORTHEASTERN BRANCH

John LeBlanc, P.Eng. – *Chair*

The Summer and Fall of 2007 are busy seasons for the Northeastern Branch.

We are very pleased to announce that the Northeastern Branch snagged first place at this year's **Atlantic Canada Engineers Hockey Tournament** held in St. John's, Newfoundland. They beat Fredericton in the final for a 3 to 1 victory. It should be noted, that this is the first time a team from New Brunswick has won the trophy in the event's 13-year history. Way to go guys!!

From left to right : **Shawn Kane**, MIT; **Roger Grant** (goalie); **Réjean Boudreau**, P.Eng.; **Michel Dufresne**, P.Eng.; **Serge Thériault**, P.Eng.; **Gary Ogden**, P.Eng.; **Justin Labillois**, P.Eng.; **Marc Boudreau**, P.Eng.; **Martin Roy**, MIT; **Eric Boudreau**, P.Eng.; **Joé Losier** and **Patrick Haché**, MIT.

This year's **Northeastern Branch Lobster Supper** was held at the Dalhousie Regional Marina on June 22. As always, a good time was had by all. Thanks to everyone who volunteered their time and supported the event to make it another well-attended success.

This year, we will be celebrating the 20th anniversary of our **Annual Golf Tournament.** Once again, the event will be taking place at Golf Pokemouche on Friday, August 10. The tournament will start at 11:30 am with the same format as last year

The **fifth annual APEGNB Pumpkin Fling** will be held on Saturday, September 22 at Waterford Green in downtown Miramichi. This is a great family event with plenty of activities for the kids, including pony rides, a petting zoo, children's face painting, pumpkin painting, live entertainment and of course, our famous, must-be-seen-to-be-believed, pumpkin blaster! This is one Branch event you don't want to miss!

The Northeastern Branch will also be hosting the **2008 APEGNB Annual Meeting** on February 21 and 22. The theme is ***Green is the New Gold*** and the technical sessions will feature high-profile guest speakers who have experience commercialising environmental technologies. The luck of the Irish will be with us as our Thursday evening will be an Irish Shin Dig with the Irish band *Bottoms Up* performing.

It should be noted that, in conjunction with this event, we are considering the possibility of hosting a **Green Education Day** on the Saturday immediately following the Annual Meeting for the general public. The Education Day will feature presentations, handouts and displays to show the public how they can help reduce their carbon footprint. If there is enough interest shown from APEGNB's membership, we will proceed with it.

If you, or your organization, would like to get involved with Green Education Day on February 23, 2008, please contact **Kevin Gallant**, P.Eng. (tel: 506-773-7873) or myself (tel: 506-773-9559).

Have a great summer!

APEGNB AIGNB Northeastern BRANCH

RAPPORT DE LA SECTION DU NORD-EST

John LeBlanc, ing. – *président*

L'été et l'automne 2007 sont des saisons occupées pour la section du Nord-Est.

Nous sommes heureux d'annoncer que la section du Nord-Est a décroché la première place du **tournoi de hockey des ingénieurs de l'Atlantique** qui a eu lieu cette année à St. John's (Terre-Neuve-et-Labrador). L'équipe a remporté la victoire en final contre celle de Fredericton au compte de 3 à 1. Il faut noter qu'il s'agit de la toute première fois en 13 ans d'histoire du tournoi qu'une équipe du Nouveau-Brunswick remporte le trophée. Bravo les gars!

De gauche à droite : **Shawn Kane**, MS; **Roger Grant** (gardien de buts); **Réjean Boudreau**, ing.; **Michel Dufresne**, ing.; **Serge Thériault**, ing.; **Gary Ogden**, ing.; **Justin Labillois**, ing.; **Marc Boudreau**, ing.; **Martin Roy**, MS; **Eric Boudreau**, ing.; **Joé Losier** et **Patrick Haché**, MS.

Le **souper au homard de la section du Nord-Est** a eu lieu cette année à la marina régionale de Dalhousie le 22 juin. Comme à chaque année, tous y ont pris grand plaisir. Nous tenons à remercier tous ceux et celles qui ont contribué bénévolement de leur temps et qui ont appuyé cette activité pour en faire une autre réussite très courue.

Cette année, nous célébrerons le 20e anniversaire de notre **tournoi de golf annuel**. Encore une fois, le tournoi, qui aura lieu au club de golf de Pokemouche, débutera à 11 h 30 le 10 août et se déroulera de la même façon que l'an dernier.

Le **cinquième concours annuel Projetez-la-citrouille de l'AIGNB** aura lieu le samedi 22 septembre au parc Waterford Green au centre-ville de Miramichi. Cet événement familial, qui abonde d'activités pour les enfants, comprend des randonnées à dos de poney, un zoo pour enfants, de la peinture faciale, la peinture de citrouilles, des spectacles sur scène, sans oublier notre fameux et incroyable propulseur de citrouille! Cette activité de la section est à ne pas manquer!

La section du Nord-Est accueillera également l'**assemblée annuelle 2008 de l'AIGNB** qui se déroulera les 21 et 22 février. ***La ruée vers l'Or vert*** est le thème retenu pour cette année. Les séances techniques présenteront des conférenciers réputés qui ont l'habitude de commercialiser les technologies environnementales. La chance nous sourit puisque le jeudi soir, nous accueillerons le groupe irlandais *Bottoms Up* pour une soirée irlandaise.

Il faut noter que parallèlement à cette activité, nous envisageons la possibilité d'organiser une **Journée de sensibilisation à l'écologisation**, le samedi suivant immédiatement l'assemblée annuelle pour le grand public. La journée de sensibilisation comprendra des exposés, des documents à distribuer et des expositions expliquant au public comment réduire les rejets de carbone. Si un nombre suffisant de membres de l'AIGNB manifestent leur intérêt, nous organiserons cette activité.

Si vous ou votre organisation souhaitez prendre part à l'organisation de la journée de sensibilisation du 23 février 2008, veuillez communiquer avec Kevin Gallant, ing., (tél. : 506-773-7873) ou avec moi (tél. : 506-773-9559).

Passez un superbe été!

Submitted by ***Trevor Gamblin****, P.Eng.*
Group Leader–Facility Assessment & Sustainable Renewal
Jacques Whitford–Saint John

JACQUES WHITFORD GOES CARBON NEUTRAL

On June 1, Jacques Whitford, one of Canada's largest environmental science and engineering firms, went carbon neutral and hopes clients will follow their lead.

A concerted campaign was launched to simultaneously reduce and offset the company's greenhouse gas emissions.

"We are currently in the process of setting clear targets to reduce our carbon footprint in offices and operations. Our sustainability team is also developing practical step-by-step action plans with employees in every office. This will ensure that all levels of the company are aware of this initiative and will collectively work towards its success," said Janowitz.

Established in 1972, Jacques Whitford is an internationally recognized leader in environmental and earth sciences, engineering and planning. With executive headquarters in Saint John, New Brunswick, the employee-owned consulting firm has successfully completed over 100,000 projects in Canada, the United States and internationally. Jacques Whitford continues to grow to provide the most innovative skills, expertise and technology to meet the needs of its clients.

Jacques Whitford investments will match emissions pound for pound with beneficial climate enhancing initiatives.

Jacques Whitford investments will match emissions pound for pound with beneficial climate enhancing initiatives.

"I am very excited about becoming a carbon neutral firm," said **Bob Youden**, chief executive officer of Jacques Whitford. "Our firm is taking responsibility for the effects of our carbon dioxide emissions while working hard to reduce them. This year we will offset our carbon emissions by purchasing offset credits recognizing that all businesses, industries and communities should bear responsibility for the cost of their pollution."

Jacques Whitford believes in leading by doing. With more than 1,600 employees in 45 offices, the company will show how larger organizations can minimize their carbon footprint. In 2006, **Marty Janowitz** was appointed as the company's first vice-president of sustainability and since then, a network of committed advocates at all levels of the firm has evolved. A long-term business plan is being developed to minimize greenhouse gas emissions and bring the company to the highest standards of energy efficiency, environmental performance and sustainability.

ASK THE DPA

Tom Sisk, P.Eng., *Director of Professional Affairs*

Question

Are there standards of quality for engineers' work, other than the legal and regulatory issues of stamping?

Answer

In the last issue of *Engenuity*, we dealt with a question related to electronic versions of drawings, particularly the use of an electronic version of the seal, date and signature. Since then, we've received another inquiry related to drawings and engineering documents in general, so we'll carry on with the documentation theme.

In this case, the query comes from someone who has received an engineering opinion on a technical matter. The nature of the information was best presented in the form of a drawing and was prepared by the engineer, stamped, signed and dated.

Our submitter was quite disturbed by the quality of the sketch, describing it as "drawn on a coffee shop napkin". His question was: "Aren't there any quality standards for your members when preparing documents for clients or other users of their work?"

We should be clear that in this case, it wasn't that the engineer had provided a rough sketch to capture his thoughts for later referral. The thing that bothered the receiver of the drawing was that it was presented as the final, sealed document. The topic of field notes and field sketches is not usually one of sealed documents. The creative process typically involves numerous notes of observations, preliminary sketches and revised documents.

One could ask, is it possible to give an engineering opinion using a sketch on a napkin or other scrap of paper? Is it necessary to have brand new, bleached white 20# bond paper in order to properly convey a few engineering ideas?

In researching this question, I looked on the Smithsonian Museum web site and found a gallery of engineering and scientific drawings. Many of them were on less than perfect media, some done in pencil, many with handwritten notes in the margins. Some, to my untrained eye, bordered on being pieces of art. But, in some of the examples, these rough, hand-drawn documents were used successfully to create new products or correct an imminent failure.

So, on one hand, it wouldn't be fair to say that engineering drawings must be done on a CAD system or even on a drafting table. In most respects, it is information, not art that is being conveyed. If the technical information or engineering direction is successfully given, does it matter what the quality (either by the receiver's standards or by society's, as a whole) is?

On the other hand, as we are trained in any task, the instructor will invariably tell us to re-do certain pieces of work until, at last, we have perfected one or more techniques. As we pass through the class, we come up to a certain level of expertise and begin to form opinions of what constitutes "good" or "unacceptable" work. Many times, we automatically build in a bias (positive or negative) in knowing that the worker is physically challenged, has or doesn't have access to the latest equipment, is very old or very young, or some other circumstance. We begin to have expectations of what we will accept as "quality" work. This acceptable level will vary depending on the things we have just talked about.

The user of engineering work or engineering opinion should feel comfortable that the presentation of the information, either in the form of drawings, documents or other media meets his/her needs. He or she may well be the client and can influence the quality by threatening to withhold payment or the client may have corporate standards that the engineer was supposed to adhere to.

Similarly, a client may compare the quality of work of two competitors and wonder why one is so much higher than another. Pressure to obtain contracts may force one firm to improve their quality of presentation in order to secure work.

But, what if the work was done by the engineer for the client who then turns the drawing over to a third party contractor who must now build the project? The contractor depends wholly on their ability to interpret the engineer's documents and any deficiency in understanding sketchy documents may adversely affect the project. And, because the engineer stamped them, he/she will be responsible for the completeness of the information provided, whether on a napkin or on the finest media.

One person who works with engineers on a regular basis comments:

"Engineers shouldn't just be concerned about the legal and regulatory issues about how their work is presented.

"Maybe they should also consider that sloppy work reflects negatively on the engineering profession as a whole. How can clients and colleagues have confidence in engineering/the engineer's ability if their drawings look like doodles?

"If we want to project a professional image, our work should be professional. It's the perception of value. If they were making a presentation to the Nobel Foundation, would they expect people to take the application seriously if it was submitted in crayon on a piece of toilet paper? Even though the content is all there, are you really communicating your ideas in the most effective manner?

"Poorly presented work shows they don't consider me, or the project, worth the effort to submit a professional-looking document."

To wrap-up, there are no particular standards for drawings enforced by APEGNB. But, the engineer can be expected to perform at a level where the documents clearly convey the engineering information.

In some cases, this may be a simple sketch and a few notes. In others, it may require hundreds of drawings and books of additional material. In all cases, the engineer is responsible for the information presented. If challenged through the complaint process, the engineer will be held to the standard of competent peers.

If you have a regulatory, enforcement or ethical question that you'd like answered, e-mail APEGNB's Director of Professional Affairs.

sisk@apegnb.com

NEW ENGINEERING OFFICES

Miramichi Engineering staff (L to R):
Tim Dawson; **Karen Howe**, Structural Technologist,
Cynthia Hayes, structural/architectural technologist,
Larry MacLaggan, P.Eng,
Linda Matchett, Business Representative.

NEW BUILDING FOR MIRAMICHI ENGINEERING LTD.

Miramichi Engineering Ltd. purchased an office building in downtown Miramichi City during December 2006, completed renovations, and moved in on February 12, 2007. The company occupies one-third of the 5,000 square feet of office space in the three-storey brick building.

The existing building had significant structural problems, which were corrected by Miramichi Engineering. The previous owners had placed a sloping roof made of wood rafters over the original flat roof, removing supports in the process, which caused sagging and cracking in the ceiling. This was jacked back into place. New bracing and wood stud walls were strategically placed to meet code-loading requirements.

Inside the building, there were baseboard electric heaters and some ductwork from a previous ventilation system. Programmable night-set-back thermostats were installed to replace traditional thermostats to control the baseboard heaters. For more energy efficiency, a three-speed air exchange unit was installed instead of a larger, more expensive air conditioning unit. Minimum heated air is circulated during the winter months. A combination of insulation, brick exterior, shading from adjacent buildings, and well-placed thermo pane windows enhances comfort levels and green design, consistent with LEED principles.

ROCHE LTD. OPENS DALHOUSIE BRANCH

Reprinted from the Tribune (May 9, 2007)

Strong support from eastern Restigouche and the presence of major clients has lured a consulting engineering firm to Dalhousie.

On May 9, Roche Ltd. officially opened its office on William Street. It's a branch of a major firm with headquarters in Quebec City. There are two offices in New Brunswick; the other is in Caraquet.

In all, Roche employs about 840 people and works across Canada and around the world.

Sylvain Delasablonnière, who heads the Dalhousie office, said that they are currently working on feasibility studies, water projects in Madawaska County and have two contracts with the Town of Dalhousie. Their clients also include the Village of Charlo, Bowater Maritimes and Pioneer Chemical.

Basically a civil engineering firm, Roche works in the municipal, energy, environmental, safety, transportation and building fields.

Dalhousie mayor **Clem Tremblay** and Roche's president, **Mario Martel**, were on hand for the opening.

Delasablonnière said that the company is very encouraged by the work it is getting in East Restigouche.

THEY SAID IT BEST

Learning is not compulsory…neither is survival.

W. EDWARDS DERNING, MIT, MANAGEMENT EXPERT

The real source of wealth and capital in this new era is not material things… it is the human mind, the human spirit, the human imagination, and our faith in the future.

STEVE FORBES, *FORBES* BUSINESS MAGAZINE

Innovation distinguishes between a leader and a follower.

STEVE JOBS, CEO, APPLE COMPUTERS AND PIXAR ANIMATION

A happy life consists not in the absence, but in the mastery of hardships.

HELEN KELLER, AUTHOR AND ACTIVIST

Everybody has talent. It's just a matter of moving around until you've discovered what it is.

GEORGE LUCAS, FILM DIRECTOR

NCEES NORTHEAST ZONE MEETING

POSTCARD FROM NEWPORT, RHODE ISLAND

Submitted by Hollis Cole, P.Eng.

*From May 3-5, 2007, **Andrew McLeod**, APEGNB's executive director and I attended the National Council of Examiners for Engineering and Surveying (NCEES) Northeast Zone meeting in Newport, Rhode Island. This was the fourth opportunity for APEGNB to meet with the State Boards of engineering in the Northeast.*

APEGNB has adopted a five-year plan to meet with State Boards in an effort to convince them to amend their State laws to allow the Boards to waive the Fundamentals exam (FE) and the Principles of Practice exam (PE) that are required by State Boards for licensure.

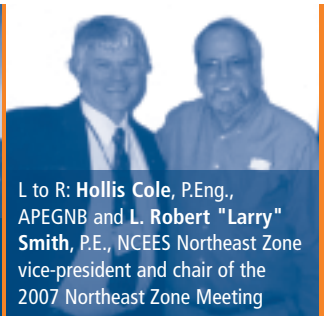
At our meeting in Newport, I was able to make a presentation to the group about the similarities of licensing in Canada and the United States. Our ultimate goal is for State Boards to recognize that P.Eng. = P.E. but we also suggested that they might waive both exams for Canadian engineers providing they have eight years of work experience following licensure.

Progress is slow, but Delaware and Vermont have confirmed that they will waive both the FE and the PE for Canadian engineers. Maine will allow both exams to be waived if the candidate passes an oral interview for graduates with 10 years experience after licensure. They have agreed to go to the State legislature to ask that this be reduced to eight years after licensure, as per our request. Several western states are working toward changes to their State laws to allow P.Eng. = P.E.

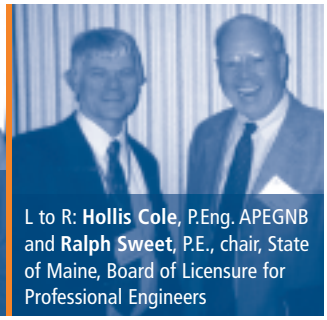
We will be attending the NCEES annual meeting in Philadelphia, Pennsylvania in August along with representatives from APEGGA, APEGBC and Engineers Canada.

The Breakers, an 11-acre estate on Ochre Point overlooking the ocean in Newport, Rhode Island, epitomizes the wealth and extravagance of America's Gilded Age. Designed by **Richard Morris Hunt** for **Cornelius Vanderbilt**, the grandson of **Commodore C. Vanderbilt**, the solid stone Renaissance Revival summer palace was built to replace a wooden "cottage" that burned to the ground.

L to R: **Hollis Cole**, P.Eng., APEGNB and **Louis A. Raimondi,** P.E., L.S., president of NCEES



L to R: **Hollis Cole**, P.Eng., APEGNB and **L. Robert "Larry" Smith**, P.E., NCEES Northeast Zone vice-president and chair of the 2007 Northeast Zone Meeting



L to R: **Hollis Cole**, P.Eng. APEGNB and **Ralph Sweet**, P.E., chair, State of Maine, Board of Licensure for Professional Engineers

DIVERSIONS

Dr. Eldo Hildebrand, P.Eng., laces up for West Side Story

In addition to his duties as assistant dean of engineering at UNB, APEGNB Councillor for Fredericton, **Dr. Eldo Hildebrand**, P.Eng., is a member of the Fredericton Skating Club's adult skating group. In March 2007, he was awarded the "Most Improved Skater of the Year" by the coaches of the Fredericton Skating Club.

Dr. Hildebrand and his daughter **Martina Hildebrand**, MIT, (far right of group photo) also performed in this year's production, "West Side Story" at the Lady Beaverbrook Arena.

Jean Quirion, P.Eng., runs first marathon

Jean Quirion, P. Eng., son-in-law of APEGNB member **Bill Luff**, P.Eng., completed his first full marathon (42.2 kms) on May 20, 2007. Jean was one of 7500 participants in Halifax's Blue Nose International Marathon which raised $50,000 for the YMCA Strong Kids Program. The Nova Scotian engineer finished in the middle of the pack, with a time of 4 hours, 24 minutes.

Sisk and Tesla

During a recent trip to Ontario, APEGNB's director of professional affairs, **Tom Sisk,** P.Eng., took time to visit the **Nikola Tesla** monument on the Canadian side of Niagara Falls. The monument, created by **Les Drysdale** of Hamilton, Ontario shows engineer Nikola Tesla standing atop a base depicting his AC motor invention, one of over 700 patents Tesla registered in his prolific career. Tesla is sculpted, as he would have appeared in 1896, age 39, about the time his inventions were being used to create the Niagara Falls Power station. The statue shows Tesla drawing three sine waves that are out of sync by 120 degrees (his revolutionary idea that created AC electricity.) The waves he is drawing flow out and into the real foundation beneath him, the AC motor, as does the idea which has become the foundation of every motor and generator to this day. Tesla died in 1943. The monument was unveiled July 9, 2006--the day before the 150th anniversary of Tesla's birth.

Quality Function Deployment: GETTING THE RIGHT SOLUTION FOR THE CUSTOMER

Submitted by: ***Dr. Dale Roach****, P.Eng.*
Department of Engineering
University of New Brunswick

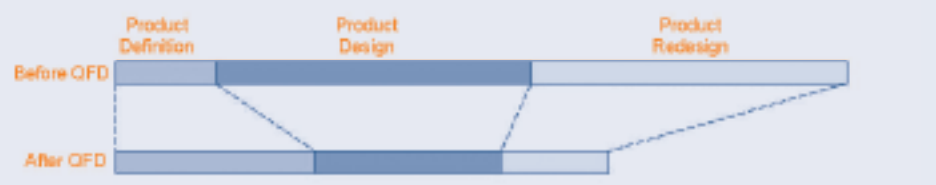
Many of us are familiar with Thomas Edison's, holder of 1,093 US patents, famous statement that "genius is 99% perspiration and 1% inspiration." However, relying on moments of "divine intervention" is hardly a bankable strategy and does not help someone to design a solution to a problem that is sitting on their desk that needs to be solved right now. In today's world of quick turnaround times and pressures on the bottom line, we must work smarter in order to be competitive and hopefully, gain some ground on Edison!

Many of today's practicing engineers are not trained in structured design and problem solving. Much has been learned about the design process in recent times with a large proportion of the most innovative and productive tools coming from Japanese auto manufacturers in the late 1980s and early 90s.

What these companies have learned is that it is important to understand the problem before committing money and detail design work to the project. By taking time to explore the problem and learn what the solution needs to be able to do, designers can shorten the overall development time and better meet the needs of their customers.

One of the most popular techniques currently being used in the design process is Quality Function Deployment, or as it is more commonly referred to, QFD.

Carrying out the QFD process takes a significant amount of time; however, Japanese automobile manufacturer Toyota, where QFD was developed and is known for their quality, reduced the cost of bringing new products to market by 60 per cent. Regardless of what industry you work in this is nothing to sneeze at.



Effect of QFD on product design (adapted from "Key Factors in the Successful Application of Quality Function Deployment (QFD)", Cristiano, Liker and White, IEEE Transaction on Engineering Management, Vol. 48, No. 1, February 2001

So what can QFD do for you?

That is a good question! One of the most significant advantages of using QFD is reduced design time. There are, however, many other advantages including:

- Reduced design time;
- Solutions that meet the needs of the customers;
- A technique that forces you to think about what needs to be designed first and then what it might look like after;
- Learning what a team does, and does not know, about the problem;
- Generating the information required to write engineering specifications;
- Translating the customers' requirements into *measurable design targets* which aid in determining how well a particular design is performing; and,
- Using an algorithm that works for machines, processes, organizations, etc. as well as whole systems or sub-systems.

The steps in the QFD process are:

1. Identify the customer.
2. Determine the customer's requirements.
3. Determine the relative importance of the requirements.
4. Identify and evaluate the competition.
5. Generate the performance metrics.
6. Relate customers' requirements to performance metrics.

NOTICE

To:
Engineers Considering Work in the US

Re:
NCEES Fundamentals Exam – Saturday, October 27, 2006

If you're contemplating working in the United States, please be advised that APEGNB will be offering the **NCEES** (National Council of Examiners for Engineering & Surveying) **Fundamentals Exam.**

The eight-hour exam is open to APEGNB members and UNB/UdeM engineering students. The NCEES Fundamentals Exam is the first step to becoming a licensed engineer in the U.S.

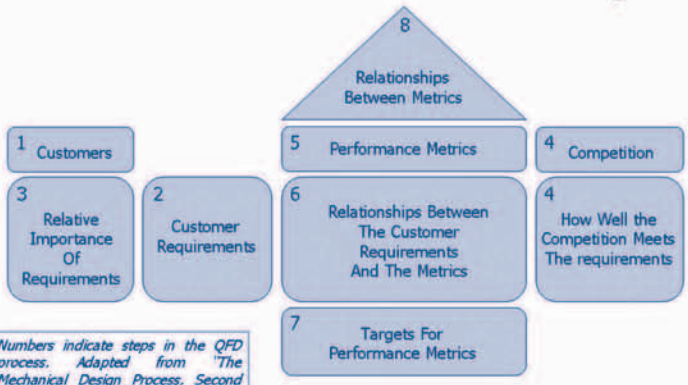
The cost is **$175 CAD (incl. Taxes)**.

For more information, contact:
Andrew McLeod
Executive Director–APEGNB
mcleod@apegnb.com
Tel: **506-458-8083**

7. Set target values for the performance metrics (engineering specifications).
8. Identify relationships between the performance metrics (e.g. there is a relationship between reducing size and reducing weight).

In conclusion, being competitive in today's fast-paced world means being leaner and meaner. One does not, however, have to sacrifice quality, and ultimately, customer satisfaction to so. In fact, companies can become more efficient while increasing the quality of their products and customer satisfaction.

"The House of Quality"



Numbers indicate steps in the QFD process. Adapted from "The Mechanical Design Process, Second Edition", D. Ullman, McGraw-Hill, 2003, p. 116

In North America, the information generated is presented in the "House of Quality". This central location for presentation of the results from the QFD process allows one to visualize relationships between customer requirements, performance metrics, competitive products and our design targets.

For more information on the Quality Function Deployment process, visit **www.qfdi.org**

MORALITY OF MACHINERY

Excerpted from ***Ethics Newsline*** *™ (April 30, 2007)*
Copyright © 1995-2007 the Institute for Global Ethics, Camden, Maine

The ethics of robotics – until recently marginalized as a fringe issue – is increasingly becoming a topic of debate in the mainstream media. (April 2007) saw a series of reports in the world press dealing with the morality of machinery:

- The *Economist* (April 24, 2007) reports that the U.S. Department of Defense is looking to replace a third of its armed vehicles and weaponry with robots by 2015. The change would save money, the report claims, but also change the political complexion of war, making it less vulnerable "to the politics of body bags.... No one mourns a dead robot." In addition, scientists, including **Ronald Arkin** of the Georgia Institute of Technology, are developing a set of rules that amount to a robotic soldier's code of ethics –factoring in, for example, whether a target was drawing near to a school bus, and therefore deciding to hold fire.
- From London, the April 24 *Guardian* reports that scientists in the United Kingdom are criticizing a recent government report on robot ethics, saying that instead of focusing on long-term speculation over the morals of super-intelligent robots of the future, the public should be worrying now about the ethics implications of robots in the police and military. The *Guardian* notes that military applications of robotics already are surfacing: Last year, for example, the South Korean military unveiled a robot border guard that can hit targets 500 metres away. One researcher interviewed for the piece claimed that robots will become more widely used in policing and surveillance, but noted that there has been very little public debate on the ethics of these issues.
- The April 24 *Glasgow Herald* and the *Belfast Telegraph* report that some researchers are concerned about the implications of robots becoming caretakers and companions for the elderly. **Professor Noel Sharkey** of Sheffield University says prototypes for robot caregivers already are being tested. "The robots are programmed to follow the elderly around and make sure they take their drugs. I find that highly concerning," Sharkey tells the *Herald*. "I'm 58 now and I fear that in my future I will be dumped in a home where I am cared for by machines. We need to have a public debate and we need to have it now, before the robots really bore into our society."

FUN CLICKS

Decrease your stress level!
Increase your brainpower!
Check out these websites!

What's the best way to survive a blizzard? How can you prevent your bicycle from getting stolen? This site offers real life advice from hundreds of doctors, nurses, firefighters, child care providers, disaster relief officials, police officers, and others who have encountered life's many challenges.

www.whathappensnow.com

SoYouWanna.com teaches you how to do all the things nobody taught you in school. From paying off your student loans to buying a pet ferret, this site contains articles, advice and reference information for just about anything you were wondering about.

www.soyouwanna.com

Need help planning your family vacation? Get travel advice from families who just returned from vacation. Get the lowdown on how to get around in a strange place, best local tours, where to soak up the scenery, etc.—all from a family-oriented point of view.

www.justgotback.com

If you're planning a trip to Washington this fall, put the Newseum on your trip itinerary. When it opens in October 2007, the 250,000-square-foot museum of news will offer visitors an experience that blends five centuries of news history with the latest technology and hands-on exhibits. Use their website to take a 3-D tour of the Newseum or read the front page of 544 different newspapers from around the world.

www.newseum.org

RECOMMENDED READING

Reviewed by
***Tom Sisk**, P.Eng*

21 Things Every Future Engineer Should Know

A Practical Guide for Students and Parents

Written by Pat Remick and Frank Cook
Kaplan, 2007

Price:
$16.47 USD
(amazon.com)

I picked this book up recently on a stroll through a big box bookstore in the United States. Titles with the word "engineer" are rare enough in a retail bookstore that it demanded at least a cursory look. This one hit the head of so many nails that I bought it.

The authors have written several career guidance books and this one follows the "21 Things....." theme. Designed to provide lots of information in a compact but entertaining way, this softbound volume will be of great interest to students considering engineering school. As well, parents of students may find it useful reading material to leave on the family room coffee table.

As a member of APEGNB, I was at first cautious that this American book might not relate to the Canadian engineering profession. I was quite pleased to see references to "Ethics and Law", the importance of choosing a program that prepares the student to get professional designation, suitability of engineering as a career path for women, and the necessity of life long learning and professional development. These were all presented in a way that will be recognized by the Canadian-trained engineer.

It also pointed out something noted by many of our own employers; that engineers can benefit from professional development in the "soft skills" of public speaking, report writing, business administration and volunteering for public service.

The last chapter, aptly titled "In Conclusion", sums up engineering as perhaps not the easiest of university programs but one that leads to the long-term job satisfaction based on their interviews with engineers. The prediction is that engineering will be a career in demand for many years to come.

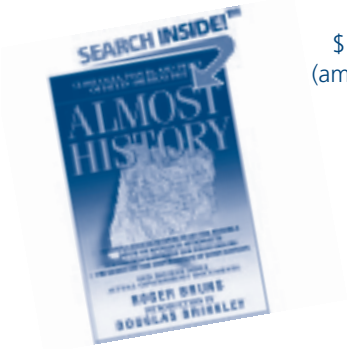
Success in engineering was attributed to just three things:
1. Devise a plan.
2. Move forward.
3. Do it now.

Can't argue with that!

Almost History

Close Calls, Plan B's and Twists of Fate

Written by Roger Bruns
Barnes and Noble, 2000, 2007



Price:
$13.95 USD
(amazon.com)

It's probably a common human trait to wonder "what if....". Most of us have wondered what would have happened if we had taken the other fork in life's road. What if we had taken the second job offer? What if our Enron stock had continued its spectacular climb? What if we had missed our connecting flight?

The author has written several biographies, including those of **Martin Luther King, Jr.**, **Abraham Lincoln** and **Cesar Chavez** . The research for those probably played a part in the details used in this book. That information makes this collection of stories of what might have been interesting and thought provoking.

For those of us of a certain age, the Apollo moon landing of 1969 was the ultimate achievement of that space program. Have you ever wondered what Richard Nixon's speech would have been had the mission failed? What was the plan should they successfully land on the moon then not be able to leave? Both of those scenarios are described with the official notes as backup.

We all learned that **Alexander Graham Bell** was credited with the patent for the telephone. But, only two hours separated Bell's successful patent application from that of **Elisha Gray**. On the same day, February 14, 1876, both men filed patents for devices that described what evolved into the instrument we recognize today. Ironically, later research in sorting out the lawsuits would confirm that Bell's invention would not have worked and the other would have. But, holding the patent, Bell persevered and ultimately produced a working system.

What if the US had had warning of the Pearl Harbor attack? How much warning would have been enough? A week, a month, a few hours? The text of a message by the U.S. Ambassador to Japan puts the warning almost exactly 11 months before the actual event.

And, in a demonstration of how short-sighted we can be, even the prestigious *Scientific American* magazine of January 2, 1909, stated "...the automobile has practically reached the limit of its development...". Missed were the assembly line, the automatic transmission, power brakes and steering, installment financing and cars that could go at least 25,000 miles before wearing out.

From the US Civil War and the *Titanic* to the Galveston hurricane and instructions for use of a bomb shelter, the references in the book are almost worth the price by themselves. The commentary only adds to the wondering of "What if?".

88th APEGNB Annual Meeting

February 21-22, 2008

Rodd Miramichi Hotel and Resort
Miramichi, NB

GREEN IS THE NEW GOLD

Venture capitalists are placing big bets on "green technology" –a sector that could become as lucrative as information technology and biotechnology. Last year alone, North American venture capitalists invested more than $1.6 billion in cleantech companies, a 35 per cent increase over 2004.

In Canada, the federal government is putting $1.5 billion into funding alternative energy technologies. A 10-year incentive program, the so-called ecoEnergy Renewable Initiative, will be established to fund eligible projects to be constructed over the next four years. The money could be spent on wind, solar, geothermal and other forms of renewable energy.

The timing couldn't be better for New Brunswick engineers to take a leap, use their innovative thinking and develop commercially successful green technology. Learn how at the 2008 Annual Meeting.

SPECIAL GUEST SPEAKER:

Gillian Holcroft, P.Eng.
Chief Operating Officer
PyroGenesis
Montreal

PyroGenesis develops and commercialises technologies which use the intense energy found in plasma to convert waste into energy and useful materials. These systems are designed to treat a range of industrial, hazardous, clinical and municipal waste streams on land. PyroGenesis has also developed a specially system designed to treat various waste streams on board ships. The company is proud to have clients from two of the largest marine fleets in the world namely the US Navy and Carnival Cruise Lines.

Gillian Holcroft, P.Eng., joined PyroGenesis in 2003 as product development manager. Gillian is now the Chief Operating Officer with responsibility for overseeing the team of engineers and technicians in the design, development and manufacture of systems, as well as seeking new business opportunities.

She graduated with a Bachelor's degree in chemical engineering from McGill University, in 1989 and joined Noranda, a natural resources company, as a research engineer. During her 12 years at Noranda, Gillian held a number of positions, including team leader of the process control and automation group supporting the company's operations. While at Noranda, Gillian also earned a Master's degree in chemical engineering from McGill University in 1994. Gillian left Noranda in 2001 and became a manager of an advanced process control and optimisation group at CIMA+ Engineering Consultants before joining the PyroGenesis team.

Her presentation, **TRASH TO CA$H**, will discuss:

- What is plasma?
- Why use plasma to convert waste to energy and other products?
- PyroGenesis' Plasma Arc Waste Destruction System (PAWDS) for shipboard waste disposal
- PyroGenesis' Plasma Resource Recovery System (PRRS) for land-based hazardous and non-hazardous wastes
- Path to commercializing both the PAWDS and PRRS
- Action plan for increasing market penetration of PyroGenesis products
- Advice and suggestions for "green" entrepreneurs

In addition to the February 22 technical session, the 2008 Annual Meeting will also host:

- an **Irish Shindig** at the French Fort Cove Eco-Centre with the band "Bottoms's Up".
- an **Awards Banquet**
- plenty of **networking opportunities**!

Association of Professional **Engineers** and **Geoscientists** of New Brunswick

APEGNB

2007 CENB SHOWCASE DINNER & AWARDS CEREMONY

Delta Hotel, Fredericton | *April 25-26, 2007*

Incoming CENB President **Chris Haines**, P.Eng., shares his vision of CENB with delegates

Chris Haines elected CENB President

Chris Haines, P.Eng., manager of Dillon Consulting Limited's Fredericton office, was confirmed as CENB President with **Pat Chouinard**, P.Eng., Neill and Gunter becoming Past President for 2007/2008.

New Directors

Brian Moreau, P.Eng., *CBCL Limited (Secretary)*

Dave Kozak, P.Eng., *Terrain Group Inc.*

Lee McWilliams, P.Eng., *AMEC Earth & Environment*

David McAllister, P.Eng., *The Maricor Group, Canada Ltd.*

Michel Dufresne, P.Eng., *Roy Consultants Group*

New ACEC Representative Appointed

Ian MacDonald, P.Eng., *R. J. Bartlett Engineering Ltd. (outgoing)*

Roland LeBlanc, P.Eng., *Acadia Consultants & Inspectors Ltd. (incoming)*

Returning Directors

Chris Haines, P.Eng., *Dillon Consulting Limited (President)*

Pat Chouinard, P.Eng., *Neill & Gunter (Past President)*

Marc Robichaud, P.Eng., *Comtrac Engineering (Treasurer)*

Bruce Pearson, P.Eng., *ADI Limited*

Returning for a second year as Executive Director is **John Fudge**, P.Eng.

The Achievers

Benefit to Society Award

PROJECT: Upgrade of Village of Memramcook Water System
CONSULTANT: Crandall Engineering

Crandall Engineering Ltd. won the Benefit to Society Award for the design and project management of the Village of Memramcook Water System Improvements project. This included the updating of the existing water system, as well as adding water treatment facilities. The improvements were needed to produce better quality and to provide consistently safer water to the residents. The $1.55 million project was funded entirely by the Village of Memramcook.

(L to R): **Pat Chouinard**, P. Eng., CENB President; **Mike Cormier**, P. Eng., Crandall Engineering Ltd.; **Hon. Roland Haché**, NB Minister of Environment; **Pierre Plourde**, MIT, Crandall Engineering Ltd.; **Pierre LaForest**, Chief Administrative Officer, Village de Memramcook

Technical Excellence Award

PROJECT: Highway 118—Wright Avenue Interchange (Dartmouth, NS)
CONSULTANT: Neill & Gunter Ltd.
CLIENT: Nova Scotia Department of Transportation and Public Works

Neill and Gunter was selected as the project manager and lead design engineer for the Highway 118 - Wright Avenue Interchange project. The project was designed, tendered and constructed within 21 months and was required to provide access to a 538-acre commercial development. This was the largest interchange project in Nova Scotia's history totaling $16 million. It is also the province's first collector-distributor system.

(L to R): **Pat Chouinard**, P.Eng, President, CENB; **David Johnstone**, P.Eng., deputy minister, NB Department of Transport; **Val Bosse**, P.Eng, Neill and Gunter; **Rodney Blanchard**, P.Eng., Neill and Gunter; and **Tabatha Neilson**, P.Eng., Neill and Gunter.

Innovation Award

PROJECT: Zinc Dryer Heat Recovery Project
CONSULTANT: Roy Consultants Group
CLIENT: Brunswick Mine

Roy Consultants Group was commissioned by Brunswick Mine to conduct an energy survey of the concentrate dryer building with a view to reducing energy cost. Roy Consultants joined forces with Energy Engineering Ltd. to complete their mandate. This project, completed in December 2006, will enable the owner to recuperate heat to the flotation process for a value of $800,000 per year.

(L to R): **Pat Chouinard**, P.Eng.; **Kevin Chisholm**, Energy Engineering; **Stephenson Wheatley**, P.Eng., NB Supply and Services; **Claude Cormier**, P.Eng., Roy Consultants; **Jean-Guy Paulin**, P.Eng., **Xstrata Zinc**, Brunswick Mine

The Achievers

CENB 2007 Service Awards

- **Darryl Ford**, P.Eng., *Past President, Fundy Engineering*
- **Tim McCluskey**, P.Eng., *Treasurer, CBCL*
- **Darcy Harris**, P.Eng., *Secretary, Godfrey Associates*
- **Dan MacDonald**, *ACEC Representative, R.J. Bartlett Engineering*

Pat Chouinard, P.Eng., presents CENB Service Award to **Tim McCluskey**, P.Eng.

Special thanks to the event sponsors:

CORPORATE SPONSORS

- XL Insurance
- Talentworks
- AECL (Atomic Energy of Canada Ltd)
- Bird Stairs
- Atlantic Industries

MEMBER SPONSORS

Gold

- ADI
- Dillon Consulting
- Fundy Engineering
- Neill and Gunter

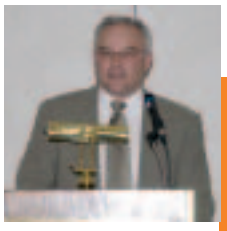
Silver

- Boissonault McGraw & Associates
- CBCL
- Comtrac
- Godfrey Associates
- Jacques Whitford
- Roy Consultants Group
- Terrain Group

Bronze

- Crandall Engineering
- Eastern Designers & Company
- Hillside Consulting Engineers
- R.J. Bartlett Engineering

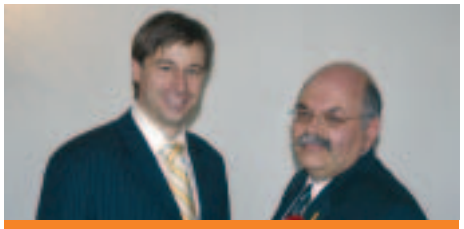
The Speakers



Hon. Jack Kerr, New Brunswick's Minister of Energy addresses the 122 attendees at the CENB Showcase Awards Dinner on April 26.

Darryl Ford, P.Eng., Fundy Engineering

Peter Needra, P.Eng., vice-president and general manager for XL Design Professional (Canada), addresses CENB delegates at the Loss Prevention Seminar during the AGM



Premier Shawn Graham and **Pat Chouinard**, P.Eng.

The Guests

Guests attending the CENB Showcase Awards Dinner and Ceremony at the Delta Hotel in Fredericton on April 26.

The award-winning Neill and Gunter team with the Premier: (l to r) **Rod Deap**, **Rodney Blanchard**, **Premier Shawn Graham**, **Tabitha Neilson**, **Jason Embleton**.

On far left, **Davis Scott** of AECL Mississauga, seminar presenter ("Refurbishment of Point Lepreau") and **Claire Ripley** of AECL, Saint John, on far right talks with fellow engineers.

LOCAL ARTIST DONATES ARTWORK TO APEGNB

Created specifically for APEGNB's new office lobby through the use of colour, size and texture, artist John Christenson conceived "Contrivance" to represent the complexity and connectedness of engineering and geoscience's many disciplines.

Consisting of approximately 35 individual images, the graphic representation allows the viewer to assess the varied work undertaken by New Brunswick engineers and geoscientists. Christenson, who donated the artwork to APEGNB, used a graphic pen style to reference technical drawings of the past and married it with manipulated still imagery to relate the work to today's technology.

Title: Contrivance
Dimensions: 48" x 36"
Media: Digital Output on Canvas
Artist: John Christenson

HIGH-TECH EQUIPMENT MAY HELP REDUCE WILDLIFE-VEHICLE COLLISIONS

MSU News Service (September 2006)

As part of a six-year study, researchers at the Western Transportation Institute (WTI) at Montana State University have helped test and develop an animal-detection system that may give motorists the upper hand in avoiding crashes with wildlife across the United States.

The system, by Sensor Technologies & Systems of Scottsdale, Arizona., reliably detected elk on U.S. Highway 191 in Yellowstone National Park. How effective the system is in reducing animal-vehicle collisions will be evaluated over the next two years.

The testing and development of the system was just one part of a 271-page report summarizing all the available information on animal-detection systems in the world: data from more than 30 study sites and 15 different animal-detection technologies in place across United States and Europe. One Swiss study showed collisions with large animals were reduced 82 percent in locations with animal detection systems.

Animal detection systems use passive or active infrared signals, lasers, microwaves, or seismic sensors to activate warning signs that urge drivers to slow down, be more alert, or both, when large animals are on, or near, the road ahead.

"This is a very promising technology that can make U.S. roadways safer. Our results urge us to fine tune this technology so that it can be used across the country," said **Marcel Huijser**, the study's lead investigator at the WTI.

WTI researchers also calculated the average total costs associated with an animal-vehicle collision for three species: $7,890 USD for deer, $17,100 USD for elk, and $28,100 USD for moose. Further calculations showed that animal detection systems could be cost effective; they may pay for themselves at locations that have at least five deer, three elk or two moose collisions per mile per year on average.

(In the United States), roughly 200 people are killed, more than 15,000 injured and 300,000 vehicles damaged annually from collisions with wildlife and domestic animals, according to federal safety data.

In Montana alone, five people were killed and 123 injured in 2005 out of 1,866 recorded wildlife-vehicle collisions, according to the Montana Highway Patrol.

The Oregon Department of Transportation was the lead funding agency for the study, but reducing animal-vehicle collisions has a broad national interest and the departments of transportation from California, Indiana, Iowa, Kansas, Maryland, Montana, Nevada, New Hampshire, New York, North Dakota, Pennsylvania, Wisconsin, Wyoming, Alaska, as well the Federal Highway Administration all participated.

As part of a six-year study, the Western Transportation Institute at Montana State University helped test and develop this animal detection system on U.S. Highway 191 in Yellowstone National Park. The system reliably detects elk on, or near, the roadway ahead and warns drivers. (Photo by Marcel Huijser, WTI-MSU.)

"Animal detection systems are a relatively new application of these technologies. This study gives us some data on how effective they are," said **Barnie Jones** of the Oregon Department of Transportation, the lead state in managing the research project.

"Despite these technologies being exposed to extreme cold, snow and rain, the project helped develop a system that detects elk reliably," Jones said. "States such as Arizona, California, Colorado, New Mexico and Nevada are all planning on adding animal detection systems to their roadways."

The study also generated ideas on how to make animal-detection systems smaller and more reliable. Another follow-up project will aim to set standards for reliability by comparing different systems at the same location under similar circumstances in Lewistown, Montana.

Marcel Huijser, research ecologist, WTI, can be reached at (406) 543-2377 or mhuijser@coe.montana.edu

PLANT FOR THE PLANET: BILLION TREE CAMPAIGN

Submitted by Michelle Paul-Elias, P.Eng.

How many of you have gardening and yard work to do this summer? As part of that work, will you be planting any trees? If so, I would encourage all APEGNB members, your friends and families to take part in the United Nations Billion Tree Campaign. The campaign is a grassroots initiative, meaning that while climate change, air quality and clean water are all topics of discussion politically, there are actions we can take immediately to help improve our planet's environment now. Why wait for political will to decide when environmental initiatives will take place?

The idea for the "*Plant for the Planet: Billion Tree Campaign*" was inspired by Professor **Wangari Maathai**, Nobel Peace Prize laureate for 2004 and founder of Kenya's Green Belt Movement, which has planted more than 30 million trees in 12 African countries since 1977. When a corporate group in the United States told Professor Maathai it was planning to plant a million trees, her response was: "That's great, but what we really need is to plant a billion trees."

The United Nations Environment Programme (UNEP) has launched a major worldwide tree planting campaign. Under the *Plant for the Planet: Billion Tree Campaign*, individuals, businesses and community groups (i.e., any and all of us) are asked to enter tree pledges online to meet the goal of planting at least one billion trees worldwide this year.

Please keep in mind that as part of this initiative, we must ensure that the planted trees can survive in our climate. In addition, diversity of native tree species is encouraged as part of expanding the overall biodiversity of the planet.

The UNEP website *(www.unep.org/billiontreecampaign)* has more information on how the pledges work and the program in general. You will also find tips on how to plant a tree, reforestation information and other tree-related topics and fun facts. Even if you are not a gardener you may be able to buy a tree from your municipality and they will plant it on your behalf during their regular planting schedule.

Happy Planting!

ENGINEERS CANADA— NEW NAME, SAME SERVICES

The engineering profession in Canada has begun a new chapter in its history. The Canadian Council of Professional Engineers (CCPE) will now be known as Engineers Canada.

Engineers Canada will continue to work in the same areas as CCPE has for the past 71 years: promoting Canada's engineering profession; setting and assessing engineering education standards; facilitating the mobility of engineers within Canada and negotiating international agreements; as well as coordinating the development of practice standards in Canada. The new business name, however, captures the energy of today's engineer and better reflects the profession's dynamic nature.

CEO **Marie Lemay**, P.Eng., and president **Ken McMartin**, P.Eng., unveil the new Engineers Canada logo during the May 24, 2007 Annual Meeting in Winnipeg.

The new logo represents the growth and momentum that the organization has been experiencing over the past few years. It is a symbol of partnership as we move forward together to continue enhancing the lives of all Canadians.

"Engineering has changed over the last 20 years," says **Ken McMartin**, P.Eng., past president of CCPE (2006-2007). "Technical skills are key but so too are team work, negotiation skills, problem solving and creativity. It is important that our business name reflects who we are today. Engineers Canada is a memorable, straightforward and dynamic name."

Although Engineers Canada is now the "public" face of the national organization, the Canadian Council of Professional Engineers remains the incorporated name and will be used on all contracts, invoices, orders for goods and services and other official documentation.

Through its members, the provincial and territorial engineering licensing bodies, Engineers Canada will continue to represent *all* engineers, from agricultural engineers to water resources engineers and all disciplines in between.

"We respect the history of our previous name so we wanted to be sure that we understood our members' perspectives on changing it," says chief executive officer **Marie Lemay**, P.Eng. "In the end, we were glad to find support for creating a new, memorable name that we know will help us promote engineering and thus help improve Canadians' quality of life, health and economic prosperity."

According to Engineers Canada's director of communications, **Marc Bourgeois**, the new logo represents "the growth and momentum that the organization has been experiencing over the past few years. It is a symbol of partnership as we move forward together to continue enhancing the lives of all Canadians.

"The image encompasses two parts coming together to form one entity. The blue and green colours reflect an organization that works in harmony with nature and the icon symbolizes how, in collaboration with constituent members, we are building an even brighter future for Canada's engineering profession."

APPLAUSE

Fredericton names water treatment plant after Bill Barrett, P.Eng.

The City of Fredericton has named its 124-year-old water treatment plant in honour of retired city engineer, **William L. Barrett**, P.Eng.

Barrett served as city engineer from 1953 to 1979. He was responsible for managing water, sewer and storm systems, roads and streets, parks and trees, and maintenance of the City's fleet of vehicles.

"During his watch, the City of Fredericton took many bold steps forward in upgrading and modernizing its water supply system," said **Mayor Brad Woodside**. "There's no doubt he is one of the reasons why we enjoy the high-quality drinking water which we take for granted today."

Barrett carried out significant research before making the difficult decision to change the source of Fredericton's drinking water from river water to groundwater.

"He had a long and productive career and it is fitting that we should honour his contributions," said **Councillor Tony Whalen**, P.Eng., Chair of the City's public safety and environment committee. "Mr. Barrett also played a significant role in the provision of wastewater treatment for the greater Fredericton area and the establishment of the Fredericton Area Pollution Control Commission."

Barrett continues to serve the City as one of the Commissioners of the Fredericton Area Pollution Control Commission, a position he has held since 1981.

APEGNB President, **David Crandall**, P.Eng., (left) was on hand to congratulate **Bill Barrett**, P.Eng., during the June 15 water treatment plant naming ceremony in Fredericton.

L to R: Fredericton Mayor, **Brad Woodside**; APEGNB member **Bill Barrett**, P.Eng.; Fredericton Councillor, **Tony Whalen**, P.Eng.

He was honoured by the American Water Works Association (AWWA) in 1974 by being named Water Utility Man of the Year for making significant contributions to the advancement of water works practice, going above and beyond the expected level of performance of his duties. He served as president of the Canadian Section of the AWWA in 1968 and as section director from 1972 to 1975. In 1984, he was made a life member in the AWWA and he continues to play an active role in the association.

The brick and stone building that will now carry his name is located near the intersection of Woodstock Road and Smythe Street. It began as a pump house on the banks of the St. John River in 1883. The building was expanded in 1906 to include a filtration plant, one of the first to use rapid sand filtration for surface water treatment. The City began adding chlorine to its water supply in 1912, one of the first communities in Canada to do so.

From 1955 to 1982, the plant was used as a pump house for a new water supply drawn from wells in the nearby Wilmot Park area. A major renovation to the building was made in 1984 with the addition of pressure filtration equipment to remove manganese from the well water. At the time, it was the largest manganese removal plant in North America. The plant underwent another expansion in 1993 to house more filtration equipment.

The City will begin construction of a second water treatment plant later this year to keep up with the demand for water created by record-breaking development.

Engineers Canada honours two APEGNB members

Hollis Cole, P.Eng., (below right) accepts the **2007 Meritorious Service Award for Professional Service** from Engineers Canada president, **Ken McMartin**, P.Eng. The award was presented during the Engineers Canada annual meeting in Winnipeg on May 26.

The Meritorious Service Award recognizes outstanding service and dedication to the Canadian engineering profession through Canadian professional, consulting or technical associations and societies, and to enhance the role of the associations and societies in the career of the professional engineer. Cole is a past president of APEGNB and Engineers Canada.

Engineers Canada president, **Ken McMartin**, P.Eng. (at right) presents **Alejandro Gómez-Juliao** with the **2007 Gold Medal Student Award** during the May 26 Engineers Canada annual meeting in Winnipeg. As the New Brunswick chapter's first overseas volunteer with Engineers Without Borders,

Gómez-Juliao received the award for his exceptional contributions to societal issues. He is currently enrolled in UNB's electrical engineering program and received APEGNB's first-ever Outstanding Student Award in February 2007.

Two APEGNB members receive CAE Fellowships

On June 1, past president **John McLaughlin**, P.Eng., announced the induction of 24 new Fellows into the Canadian Academy of Engineering (CAE)—including APEGNB members **Dr. David Coleman**, P.Eng., and **Dr. Nancy Mathis**, P.Eng. The ceremony took place in Toronto, in conjunction with the Academy's 2007 Annual General Meeting.

Dr. McLaughlin commented: "The Academy sets extremely high standards in considering new nominees for membership. The inductees for 2007 represent a truly outstanding group who have significantly enhanced the profession of engineering in Canada and they can be justifiably proud of this recognition."

Coming from an engineering management background in Canadian industry, Dr. Coleman, Dean of Engineering at the University of New Brunswick, has invested the past 15 years in examining the evolution and current role of spatial data infrastructure as an engine of economic development. His research has demonstrated important linkages between emerging technologies, operations management, institutional cultures, and economic policies in a manner understandable by provincial and national mapping organizations world-wide. An early pioneer in Web-based mapping research, he and his graduate students have worked with partners in government and industry to put his ideas into action. His group's systematic examination of economic financing models for spatial data infrastructure has attracted the attention of academic and government leaders on both sides of the Atlantic.

Dr. Nancy Mathis, as CEO of Mathis Solutions Ltd., is the innovative force behind a sensor technology that resulted from her Ph.D. work at UNB. The technology is revolutionizing how pharmaceutical companies monitor their processes to assure that cost effective, quality drugs reach the public. Dr. Mathis and her patented technology have been honoured with awards that have also been received by the Blackberry, ATM machines and Polaroid film. These include the $100,000 Principal Manning Innovation prize (2003), and an R&D 100 Award, issued to the top 100 innovative products worldwide (1999). Dr. Mathis was also named one of the Top 15 Women to Watch in 2000 by *Chatelaine* magazine. She volunteers her time to promote innovation and entrepreneurship in Atlantic Canada, and is an active member of the New Brunswick Business Council, and the Atlantic Manning Award Chapter.

The Canadian Academy of Engineering comprises many of the country's most accomplished engineers, who have expressed their dedication to the application of science and engineering principles in the interests of the country and its enterprises. Members of the Academy are nominated and elected by their peers to honorary Fellowships, in view of their distinguished achievements and career-long service to the engineering profession. Fellows of the Academy are committed to ensuring that Canada's engineering expertise is applied to the benefit of all Canadians.

APEGNB plays key role in NB Science Fairs

Over the past several of months, Science East has been coordinating New Brunswick's Regional Science Fair program. With the support of APEGNB, the fairs have encouraged more than 200 young people to get involved in science and engineering.

From one end of the province to the other, young people have been thinking, asking questions, plotting results and preparing public presentations, all in the hopes of winning the grand prize, a trip to the Canada-Wide Science Fair.

"APEGNB is a key partner for us, says **Warren Maddox**, Science East's director of business development. "By supporting this program with an engineering prize, we are able to highlight some of our future engineers; young people who demonstrate their creativity and ingenuity through an innovative science fair project.

"We feel the investment from APEGNB is extremely well-targeted with this program. This isn't like preaching to the choir, rather it's recruiting new members to the choir and for APEGNB, this has to be important."

The engineering prize for the Regional Science Fairs is one of the most important special awards for the competition. Maddox says the winners of these prizes are almost certainly going to go on and take engineering in university.

Shown in the photograph are (L to R): The **Honourable Kelly Lamrock** (Minister of Education); **Jonathan Daigle** (River Valley Regional Engineering Award Winner); and **David Crandall**, P.Eng., president of APEGNB. Jonathan's project was about electromagnetic propulsion. He is a student at Leo Hayes High School in Fredericton.

Tyler Hovey of Superior Middle School won the Chaleur Regional Science Fair Engineering Award and the team of **Tanner Thompson** and **Howie Newman** of St. George Elementary School in Saint George took home the Fundy Regional Science Fair Engineering Award.

Alain Ouellet choisi Ancien de l'année en ingénierie

*Lors de son banquet annuel, la Faculté d'ingénierie a remis son prix Ancien de l'année à **Alain Ouellet**, diplômé du baccalauréat en génie mécanique en 1993.*

La Faculté d'ingénierie souligne ainsi sa contribution à l'ingénierie et à la société en général. Possédant aussi la maîtrise en génie robotique de l'Université McGill, M. Ouellet est un modèle de réussite grâce à la contribution qu'il apporte au rayonnement de l'Agence spatiale canadienne où il travaille depuis 1994.

*Cette année, **Roland LeBlanc**, ing., directeur du bureau d'ingénieur-conseil ADI Ltée de Moncton, était le conférencier d'honneur.*

*La Faculté a aussi profité de l'occasion pour remettre ses prix de reconnaissance. **Dominique Doucet**, de Memramcook, étudiante de 5e année en génie mécanique, a été choisie finissante de la promotion pour souligner son leadership et son implication dans les activités para-académiques tout en maintenant un excellent rendement académique.*

(de gauche à droite) : **Nassir El-Jabi**, ing., vice-recteur à l'administration et aux ressources humaines; l'étudiante **Fatouma Baignan Beidou**, récipiendaire; **Roland LeBlanc**, ing., directeur du bureau d'ingénieur-conseil ADI Ltée de Moncton, conférencier; **Alain Ouellet**, ancien de l'année 2007; **Dave Crandall**, ing., président de l'Association des ingénieurs et géoscientifiques du N.-B.; l'étudiante **Geneviève Paradis**, récipiendaire et également maîtresse de cérémonie lors du banquet; l'étudiant **Mathieu Breau**, maître de cérémonie; l'étudiante **Dominique Doucet**, récipiendaire; et **Paul Chiasson**, ing., doyen de la Faculté d'ingénierie.

__Fatouma Baignan Beidou__, de Niamey, au Niger, étudiante de 5e année en génie électrique - régime coopératif, a reçu le prix du meilleur rendement académique de la promotion pour la plus haute moyenne cumulative obtenue pendant son programme d'études. Le prix CANCAM a été décerné à __Benoit Landry__, de Pointe-des-Robichaud, étudiant de 3e année en génie mécanique. La Faculté a aussi attribué un prix de reconnaissance spécial remis à __Geneviève Paradis__, de Saint-Maure, étudiante de 5e année en génie civil pour sa contribution exceptionnelle, son implication et son dévouement dans l'enrichissement de la vie étudiante à la Faculté d'ingénierie.

Jacques Roy, ing., a reçu le titre de Docteur d'honneur en ingénierie

(par Normand Thériault, le 26 mai, L'Acadie Nouvelle)

__Jacques Roy__, ing., président du conseil d'administration du Groupe Roy Consultants ltée de Bathurst, Tracadie-Sheila, Moncton, Fredericton et Edmundston, a reçu lors de la remise des diplômes de l'Université de Moncton, campus de Shippagan, le titre de Docteur d'honneur en ingénierie. M. Roy a accepté ce titre avec humilité et a reconnu les gens qui lui ont permis de grandir et de croire en ses possibilities. Très bien connu au niveau provincial, M. Roy est très actif au niveau communautaire et dans le domaine des affaires. Nommé entrepreneur de l'Année par Entreprise Chaleur et le Conseil économique du Nouveau-Brunswick, il a reçu en 2003 le titre de Fellow de la Société canadienne de genie civil. C'est un honneur bien mérité pour cet entrepreneur, originaire de Petit-Rocher.

Bruce Broster, P.Geo., elected president of CCPG

During the 2007 board of directors' and annual meeting of members held June 1 to 3 in Kananaskis, Alberta, Dr. **Bruce Broster**, P.Geo., was elected president of the Canadian Council of Professional Geoscientists (CCPG). Dr. Broster is chair of UNB's geology department and the CCPG Director for New Brunswick.

Dr. David Lentz, P.Geo., earns three awards

University of New Brunswick geology professor **David Lentz**, P.Geo., has received a 2007 Geological Association of Canada (GAC) Distinguished Service Award. Dr. Lentz is an associate professor on the Fredericton campus of UNB and holds the UNB Economic Geology Chair.

The GAC Distinguished Service Award recognizes individuals who have made an outstanding contribution to the GAC. The aim of the award is to distinguish individuals who have excelled at a particular volunteer position by doing an exceptional committee function, initiating new and innovative ideas, or making an effort above and beyond that which could be termed exemplary.

"Service to the community and to my profession has always been important in my life," said Dr. Lentz. "Early on my parents instilled values of giving back. It has always moved me to participate passionately wherever I can and rolling up my sleeves is something I really look forward to."

Dr. Lentz says that receiving the GAC Award makes him very proud.

"More so, because of the time my friends and colleagues took pulling together this nomination. I want to thank former supervisors, colleagues, and staff who strongly supported my extracurricular volunteer activities that have lead to this prestigious award, and all the individual volunteers and scientific contributors who helped me succeed at many of the things I accomplished for GAC. I also want to thank my wife **Stephanie** and our three children **Carlin**, **Kayla**, and **Kieran** for their strong support."

Before coming to UNB, Dr. Lentz worked as a researcher with the Geological Survey of Canada and the New Brunswick Department of Natural Resources. He is a leader and contributor within the geological community and is one of the strongest promoters of the Geological Association of Canada worldwide. For more than 20 years, he has been an active volunteer in the field of geology and has made many outstanding contributions to GAC's Mineral Deposits Division.

The example that Dr. Lentz sets and the commitment he demonstrates, especially to his students, has inspired others to volunteer their time and effort, ensuring that GAC remains a vibrant organization.

In addition to being recognized for his contributions to GAC, Dr. Lentz also received the UNB Merit Award earlier this year in recognition of his extraordinary accomplishments at UNB.

"As well as being an active contributor to several professional and scholarly associations and a prolific researcher, David also has taken on extra voluntary teaching within the geology department," said **Bruce Broster**, P.Geo., department chair.

Dr. Lentz also received the Canadian Institute of Mining and Petroleum Distinguished Lecturer Award for 2007-08 and will present lectures across Canada to industry communities and selected universities.

He says that the most rewarding part of his career has been seeing his former students actively involved in the many organizations that he had contributed to in the past.

"I hope they embrace and covet the important dividends that make it all worthwhile, especially the valuable friendships one makes along the way."

Six NB exporters cited for achievement (May 26, 2007, Times & Transcript)

Four New Brunswick exporting companies walked away with top prize at this year's Export Achievement Awards ceremony during the Canadian Manufacturers and Exporters Annual Meeting held May 23 in Fredericton. Another two, from the Metro Moncton region received honourable mention at the ceremony.

Hachey Construction and Fabrication Ltd. of Caraquet, a mechanical contracting firm specializing in project management and engineering, design and custom metal fabrication, won the new exporter award.

LuminUltra Technologies Ltd. of Fredericton which specializes in the development, sales and service of innovative biological monitory technologies, won the new frontier exporter award.

The **Moncton Flight College** in Dieppe was given an honourable mention in this category.

Professional Quality Assurance Ltd. of Fredericton, a large independent software testing and quality assurance company, won the innovative exporter award.

Neill and Gunter of Fredericton, a multi-discipline engineering design firm, won the exporter of the year award.

Whitehill Technologies Inc. of Moncton received an honourable mention for exporter of the year.

"These awards highlight the important role New Brunswick exporters play in making New Brunswick the most trade active province in Canada," said Business New Brunswick Minister **Greg Byrne** who added export figures are up seven per cent for the first quarter of 2007.

Also present was CME's president and CEO **Perrin Beatty**.

CLUB EURÊKA – ENGINEERING THE FUTURE!

*Submitted by **Anne-Marie Laroche**, P.Eng., Ph.D.*
Assistant Professor, Department of Civil Engineering, Faculty of Engineering, Université de Moncton

Some 114 girls in Grades 3 to 6 took up the Club Eurêka challenge this year! For most of them, it was a chance for an in-depth exploration of an area of interest, while for others it was an opportunity to demystify, peer into and penetrate the captivating world of science and engineering.

A series of six lunchtime workshops were organized at the schools between October and March. A "Discovery Day" event took place at Université de Moncton's Faculty of Engineering.

This year, three Moncton-area schools (École Champlain, École Le Mascaret and École Ste-Bernadette) as well as Shédiac's École Monseigneur François-Bourgeois opened their doors to Club Eurêka.

The workshops are intended to be a true scientific and technical adventure that addresses the underpinnings of science and engineering. This year, the girls delved into the world of photography, structures, perspective, geology, chemistry and physics. "Discovery Day" saw the Faculty of Engineering transformed, in matter of a few hours, into a creation and design laboratory for civil, electrical and mechanical engineering projects. The elementary school girls also got the chance to go about and get things done within the walls of the university, a mostly unknown environment. This experience allowed them to become partially familiar with what constitutes a postsecondary teaching institution.

Club Eurêka was founded in September 2005 to offer French-language science and technology activities to young girls in Francophone schools. Before 2005, these activities were overseen by the Worlds UNBound "Quest 4" Club.

It is worth noting that the launch of this project was the product of a joint effort by professors **Marise Gallant**, MIT, and **Anne-Marie Laroche**, P.Eng., who respectively teach mechanical engineering and civil engineering at Université de Moncton's Faculty of Engineering. Club Eurêka was also made possible thanks to the funding Professor Laroche was able to obtain from the NSERC/Alcan Chair for Women in Science and Engineering in Quebec. The impetus to establish the club came from the awareness work that has been done on the problem of the under-representation of women in science, technology, engineering and mathematics (STEM). The situation prompted the two professors to actively get involved in the promotion of science and engineering to young girls.

Professor **Marise Gallant**, MS, (left); **Dr. Anne-Marie Laroche**, P.Eng.

In Canada, studies and statistics have clearly demonstrated the importance of implementing initiatives to attract girls and women to these fields. Indeed, women's absence from these fields has social and economic implications for today's society and future generations. It is in fact crucial to address the demographic challenge posed by an aging population and the expected mass retirements of baby boomers in the coming years. Canada is expected to face a labour shortage in the fields of STEM which is why many organizations and educators are worried about the small number of women involved in STEM-related studies or professions.

For engineering in particular, the number of undergraduate enrolments increased by 11,810, including 1,321 women, across the country between 1997 and 2005. But despite this overall increase, the number of female students actually dropped by two per cent over the same period, to only 17.5 per cent of total enrollment in 2005. These numbers reflect a trend that has been observed since 2001, as the number of women enrolled in engineering programs continues to decline.

Some of the students who volunteered during the Discovery Day event on March 17 at the Université de Moncton. FRONT ROW (l to r): **Mariam Meite**; **Kadiatou Diallo**; **Maryse Cousineau**; **Myriam Mohamed Said**; **Safiatou Maiga**. BACK ROW (l to r): **Daniel Sonier**, **Steve Robichaud**, **Luc Archer**.

The impetus to establish the club came from the awareness work that has been done on the problem of the under-representation of women in science, technology, engineering and mathematics (STEM).

So what is the reason for the unpopularity of these disciplines despite the efforts deployed to encourage girls to take them up? To understand this phenomenon, researchers have focused on women's perceptions of careers in STEM-related fields. For example, Anderson et al. (2005) found that only four per cent of women perceive engineering as an attractive and passionate career for them. Three main factors account for this finding: girls' disinterest in science as they complete their school curriculum; an approach to teaching science that appears to be too far removed from women's concerns and interests; and our society's stereotypes. Knowing these causes, how then can we reverse the trend and attract more women to these disciplines?

One of the solutions proposed by professors Gallant and Laroche is to awaken elementary school girls to science and engineering as well as develop their science skills, but also their interest in STEM-related fields, through the fun activities offered by Club Eurêka. These girls-only activities are designed to give them greater confidence with respect to their abilities. Indeed, several studies show that interest among girls has to be awakened well before they complete their secondary school studies. Seen from this perspective, Club Eurêka becomes a dynamic pedagogical tool that enables participants to apply their know-how and enrich their knowledge while having fun.

What's more, the satisfaction expressed by school authorities, parents' enthusiasm, as well as the young girls' keenness for these activities more than justify the existence of Club Eurêka.

The organization could not, however, offer so much without the financial support of the Association of Professional Engineers and Geoscientists of New Brunswick (APEGNB). It is, for example, thanks to a $2,000 grant from APEGNB in 2006 that Club Eurêka was able to hire a coordinator, **Ms. Safiatou Maiga**, an electrical engineering student. The grant was also used to purchase material for the activities, pay for volunteer travel expenses and offer free lunch to the girls on Discovery Day. It is also important to salute the contribution of 18 volunteer presenters who throughout the year offered their time, energy and passion for science and engineering. These student volunteers hail from three faculties, namely, engineering, science, and education. Without their active and voluntary participation, Club Eurêka would not exist.

The Faculty of Engineering is proud to have the support of APEGNB. The Association's support and encouragement help offer young girls from Francophone schools the opportunity to bolster their learning of science and engineering. This collaboration demonstrates the engineering community's great openness to the promotion of the profession, in addition to strengthening the culture of science and technology in elementary schools.

CONTEST CORNER

Spring 2007 Contest Corner Winners

Stephen R. Robinson, P.Eng.
Robinson Forensic Engineering
Moncton, NB

Michelle Paul-Elias, P.Eng.
Environmental Engineer
Irving Oil
Saint John, NB

Ian J. Campbell, P.Eng.
NB Power
Mactaquac, NB

Bruce Gault, P. Eng.
Works Commissioner
Town of Grand Bay-Westfield, NB

Rod Malcolm, P.Eng.
Irving Equipment
Saint John, NB

For those of you heading out on the highway for your summer vacation, it might interest you to know that Scottish engineer **John Loudon MacAdam** invented the modern road. Congratulations to the five winners listed on the left who correctly identified MacAdam ("D") as the answer to the Spring 2007 Contest Corner.

According to *www.electricscotland.com*, MacAdam started experimenting with a new method of road construction in Ayrshire, Scotland, in 1783. "When he was appointed surveyor to the Bristol Turnpike Trust in 1816, he remade the roads under his control with crushed stone bound with gravel on a firm base of large stones. A camber, making the road slightly convex, ensured the rainwater rapidly drained off the road and did not penetrate the foundations." This way of building roads later became known as the Macadamized system. (In fact the term "TarMac" comes from putting tar on a Macadamized road.)

"As a result of Loudon's success, MacAdam was made surveyor-general of metropolitan roads in England. By the end of the 19th century, most of the main roads in Europe were built in this way. John MacAdam died in 1836."

If you'd like to win your own APEGNB prize package, tell us:

WHO SET THE LONGEST DURATION SPACEFLIGHT BY A WOMAN?

A NASA astronaut Sunita Williams
B Judy Jetson
C Cosmonaut Nadezhda Kuzhelnaya
D Geologist Dr. Kathy Sullivan

*To win this season's Engenuity prize package, e-mail your answer to **melissa@apegnb.com** by **August 31, 2007**.*
The first five correct submissions drawn will win an APEGNB flash disk (256 MB), messenger bag, ball cap, t-shirt and pen!

LE CLUB EURÊKA – UNE IDÉE DE GÉNIE!

Anne-Marie Laroche, ing., Ph.D.
Professeure adjointe, Département de génie civil, Faculté d'ingénierie, Université de Moncton

Cent quatorze filles ont relevé les défis du Club Eurêka cette année! Pour plusieurs d'entre elles, ce fut la chance d'explorer plus à fond un champ d'intérêt alors que pour d'autres, ce fut la découverte de l'univers scientifique et technique.

Ces participantes de la 3e à la 6e année ont démystifié, fouillé et pénétré le monde captivant des sciences et du génie à travers six activités et une journée découverte. Ces ateliers se déroulent à l'heure du dîner, dans les écoles, entre les mois d'octobre et mars, alors que la journée découverte a lieu à la Faculté d'ingénierie de l'Université de Moncton.

Cette année, trois écoles de la région de Moncton (École Champlain, École Le Mascaret, École Ste-Bernadette) et une école de la région de Shédiac (École Monseigneur François-Bourgeois) ont ouvert leurs portes au Club Eurêka.

Les ateliers se veulent, en fait, une aventure scientifique et technique qui aborde les dessous de la science et du génie. Cette année, les jeunes filles ont scruté le monde de la photo, des structures, de la perspective, de la géologie, de la chimie et de la physique. Pour ce qui est de la journée découverte, le temps de quelques heures, la Faculté d'ingénierie a été transformée en laboratoire de création et de conception en génie civil, génie électrique et génie mécanique. En plus, les jeunes filles du primaire ont eu la chance de circuler et d'évoluer dans l'enceinte de l'université, un milieu méconnu pour la plupart. Cette expérience leur a permis de s'approprier ce que constitue, en partie, une institution d'enseignement postsecondaire.

Le Club Eurêka a vu le jour en septembre 2005 afin d'offrir des activités scientifiques et techniques en français pour les jeunes filles des écoles francophones. Avant 2005, ces activités étaient chapeautées par le Quest 4 Girls Club de UNBound.

*Il importe de souligner que la mise sur pied de ce projet découle de la collaboration des professeures **Marise Gallant**, MS, et **Anne-Marie Laroche**, ing. Ces deux professeures évoluent à la Faculté d'ingénierie de l'Université de Moncton, respectivement en génie mécanique et en génie civil. Par ailleurs, l'instauration du club Eurêka a été possible grâce à un fonds obtenu par la professeure Laroche de la Chaire CRSNG/Alcan pour les femmes en sciences et génie au Québec. La motivation d'implanter ce club provient de leur conscientisation face à la problématique de sous-représentation des femmes dans les domaines des sciences, de la technologie, de l'ingénierie et des mathématiques (STIM). Ce contexte les a incitées à s'investir activement dans la promotion des sciences et du génie auprès des jeunes filles.*

Au Canada, les études et les statistiques démontrent bien l'importance de mettre en place des initiatives pour attirer les filles et les femmes dans ces secteurs. En effet, socialement et économiquement, l'absence des femmes dans ces domaines entraîne un enjeu pour la société d'aujourd'hui et de demain. Il importe effectivement de pouvoir pallier au portrait démographique qui se dessine soit le vieillissement de la population et les retraites massives prévues des baby-boomers dans les prochaines années ; la société canadienne peut s'attendre à un manque de main-d'œuvre dans les domaines des STIM. De ce fait, un grand nombre d'organisations et d'intervenants dans les milieux scolaires s'inquiètent du faible taux de femmes engagées dans des études ou des professions apparentées au STIM.

Plus spécifiquement, en ingénierie, on dénombre une hausse de 11 810 individus dont 1 321 femmes dans les inscriptions au premier cycle

Professeure **Marise Gallant**, MS, (à gauche); **Dre Anne-Marie Laroche**, ing.

Des étudiant(e)s bénévoles lors de la journée découverte du 17 mars à l'Université de Moncton.

PREMIÈRE RANGÉE (g à d): **Mariam Meite**; **Kadiatou Diallo**; **Maryse Cousineau**; **Myriam Mohamed Said**; **Safiatou Maiga**.

RANGÉE DU FOND (g à d): **Daniel Sonier**, **Steve Robichaud**, **Luc Archer**.

dans les facultés de génie à travers tout le pays entre 1997 et 2005. Malgré cette augmentation, pour cette même période, cela signifie un recul de 2 % des étudiantes, elles ne constituent plus que 17,5 % des effectifs totaux en 2005. Ces données reflètent la tendance depuis 2001 puisque les inscriptions des femmes en génie décroissent continuellement.

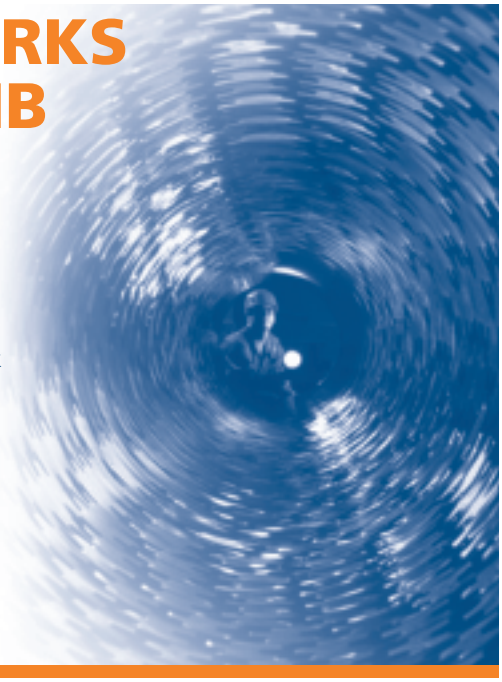
Qu'est-ce qui explique l'impopularité de ces disciplines en dépit de l'énergie déployée afin d'y encourager les filles? Pour comprendre ce phénomène, des chercheurs se sont penchés sur la perception des femmes par rapport aux carrières offertes dans les domaines reliés aux STIM. Anderson et al. (2005) ont montré que seulement 4 % des femmes perçoivent le génie comme étant une carrière intéressante et passionnante pour elles. Trois facteurs principaux peuvent expliquer ce constat : le désintéressement des filles pour les sciences à mesure qu'elles complètent leur cursus scolaire, l'enseignement des sciences qui semble trop s'éloigner des préoccupations et des intérêts des femmes et les stéréotypes véhiculés dans notre société. Connaissant ces causes, comment peut-on renverser cette propension et attirer plus de femmes dans ces secteurs?

Une des solutions suggérées par les professeures Gallant et Laroche est d'éveiller les filles du primaire aux sciences et au génie, de développer des compétences en sciences, mais aussi leur intérêt à l'égard des domaines liés aux STIM à travers les activités divertissantes du club Eurêka. Ces dernières, offertes uniquement aux filles, visent à les rendre plus confiantes face à leur capacité. En outre, plusieurs études montrent que les filles doivent être sensibilisées bien avant d'atteindre la fin de leurs études secondaires. Pour cette raison, le club Eurêka devient un outil pédagogique dynamique où les participantes peuvent appliquer leur savoir-faire et enrichir leur savoir tout en s'amusant.

D'ailleurs, la satisfaction des directions d'école, l'enthousiasme des parents et la vivacité des jeunes filles envers les activités et cette initiative justifient bien l'existence du club Eurêka. Toutefois, l'organisation ne pourrait offrir autant sans le soutien financier de l'Association des ingénieurs et géoscientifiques du Nouveau-Brunswick (AIGNB). L'association a, en effet, remis au Club Eurêka un montant de 2 000 $ en 2006, ce qui a permis d'engager une coordonnatrice, **Mme Safiatou Maiga***, étudiante en génie électrique. En plus, cette somme a servi à acheter du matériel pour les activités, à payer les déplacements des bénévoles et à offrir gratuitement le repas du midi des jeunes filles lors de la journée découverte. Il est essentiel de reconnaître le travail bénévole des 18 animatrices et animateurs dévoués qui ont offert leur temps, leur énergie et leur passion des sciences et du génie tout au long de l'année. Ces étudiantes et étudiants sont issus de trois facultés soit d'ingénierie, des sciences et des sciences de l'éducation. Sans leur participation active et volontaire, le Club Eurêka ne pourrait pas exister.*

La Faculté d'ingénierie est fière de compter sur le soutien de l'AIGNB. Ce support et cet encouragement offerts par cette dernière offre la possibilité aux jeunes filles des écoles francophones d'approfondir leur démarche d'apprentissage en sciences et en génie. Cette collaboration démontre une grande ouverture du milieu de l'ingénierie à l'égard de la promotion de cette profession en plus de faire rayonner la culture scientifique et technique dans les écoles primaires.

URANIUM EXPLORATION SPARKS BIGGEST STAKING RUSH IN NB SINCE 1950s



With uranium prices skyrocketing from $10 per pound to $120 per pound in the past few years, New Brunswick has again become a hotbed of mineral exploration. As of June 2007, the provincial Department of Natural Resources registered 30,000 claims—the highest number since lead, zinc and copper were discovered near Bathurst in the early 1950s when 70,000 claims were registered in one year.

This price increase combined with New Brunswick's favourable geology and a database of geological information, efficient land tenure and mineral development regulations, and financial incentives for grassroots prospectors and junior mining companies, all serve to attract investment in mineral exploration and mine development to the province.

Brazilian mining company CRVD Inco, one of the largest uranium producers in the world, announced a $4 million, five-year exploration deal with the Province in June. It gives them exclusive rights to search for uranium on 136,000 hectares of land between Sussex and Moncton. Also on the hunt for uranium in southern New Brunswick is Landmark Minerals who have acquired, by staking, a 100 per cent interest in 280 contiguous mineral claims covering 4450 hectares. Geodex Minerals reports that two of its properties in southwestern New Brunswick have significant uranium potential.

Other exploration companies looking for uranium are staking claims between Harvey and Plaster Rock. Freewest Resources Canada Inc. has acquired a 100 per cent interest, by claim staking, in Plaster Rock. The Plaster Rock property is located in a Carboniferous-age basin, known as the Plaster Rock basin. The 230-claim property comprises 3723 hectares and straddles a 10 kilometre long section of the western margin of the Plaster Rock basin, in fault contact with Devonian-age felsic volcanic rocks. According to a company news release, previous exploration efforts completed in the 1970's by Urangesellschaft Ltd. and Lacana Mining Corporation in the same locale, were successful in locating a number of new uranium showings and soil geochemical anomalies.

Brazilian mining company CRVD Inco, one of the largest uranium producers in the world, announced a $4 million, five-year exploration deal with the Province in June.

Approximately 35 primary uranium occurrences are known in the province, and several more contain anomalous levels of radioactivity and uranium minerals associated with other commodities.

Les Fyffe, director of geological surveys with DNR said in a May 15 *Times Transcript* interview that more than $23 million is expected to be spent just for metallic exploration this year alone. In the same article, **Malcolm McLeod**, P.Geo., the regional geologist for DNR in southern New Brunswick, stated that "every metal in the periodic table is in demand right now."

BIOENERGY CONFERENCE

Bob Allore, P.Eng., attended the Atlantic Canada BIOEnergy Conference from May 9 to 11, 2007, in Saint John, where he presented a poster on his recent participation in the NSERC Technology Transfer Mission to Germany. More than 300 attendees from across Canada and the USA were on hand to ensure the event was a huge success. As an added bonus, Bob's poster is now on display in the Saint John Atrium Library in Market Square for the next couple of months.

Readers Respond

Culverts and Climate Change

With the effects of climate change so prominent in the public eye will engineers, manufacturers and public agencies find themselves able to promote new solutions? In "City of Dieppe Replaces Melanson Road Culvert" (*Engenuity* Issue 134, Spring 2007), we are lead to believe that global warming primarily was responsible for the failure of a culvert. The culvert was replaced with a bridge. The fact that the bridge had an effective end area 533 per cent larger than that of the failed culvert (plus additional design features for flooding and overflow) is downplayed in the article. The washout was clearly a hydraulic failure of a seriously undersized culvert. While climate change played a role, urban development, land use changes and increased percentage of the total watershed changing from forests to rooftops and pavement, likely produced the greater increase.

In the McMaster University research paper, *Identification of the Effect of Climate Change on Future Design Standards of Drainage Infrastructure in Ontario* (June 2005, Coulibaly and Shi) it is suggested that an "increase of about 16 per cent in pipe diameter would be necessary for all sewer pipes in order to maintain the present level of operational capacity of highway infrastructures." The fact that such a large structure was required in the Dieppe replacement suggests that many factors over and above climate change were in play.

Much of our infrastructure will have to be replaced and upgraded in the coming years. Hopefully the undersized structures will be identified and rectified well before dangerous failures occur. The new Melanson Road structure incorporates many of the features needed to be included in replacement and / or rehabilitation of existing culverts. Headwalls, hydraulically improved inlets and cutoff walls to direct water into the opening are often overlooked in culvert design. Constructing an armoured low point or overflow culvert, several metres from the structure for extreme events will provide economic disaster prevention. As the expense of these upgrades will be significant, it is imperative that engineers conduct hydraulic modeling studies as performed in Dieppe and consider all options and materials that are available to them in their designs.

David J. Penny
Marketing Manager
Corrugated Steel Pipe Institute

Engenuity article may inspire a career in engineering!

There was an article in a previous issue of *Engenuity* (Fall 05 / Winter 06) that had an article on a mechanical engineer who has gone on to a career in automotive engineering. The engineer profiled collected and restored cars.

I have a son who is in high school who is considering a similar career. I had borrowed the magazine from one of my employees and after showing it to my son returned it.

My son has now questioned me on where the post-graduate studies took place and I went looking for the journal, but it has been disposed of. I would like to obtain a copy of the article to nurture the desire my son has for his future engineering degree.

Brian Gillis, B.Arch.
Vice-President—Business Development
APM Group

Letters to the Editor can be emailed to *melissa@apegnb.com*.
Please note that letters may be edited for length and suitability.

Corrections/Clarifications

- **Germany Leads the Way in Renewable Energy** (p. 42, Spring 2007 *Engenuity*),

  In the above-named article, "the Euro symbol (€) was inadvertently omitted by the publisher. Unless stated otherwise, all references to currency are in Euros (€). At the time of writing, 1 Euro (€) = $1.56 CAN

  It was also recently brought to the author's attention by Schmack engineers that the section discussing Schmack Biogas, should have appropriately included the following:

  "The Pliening biomethane plant produces approximately 3.9 million cubic metres of biomethane per year. This corresponds to the amount of natural gas consumed by about 1,300 four-person households."

- **Postcard from Bangladesh** (p. 24, Spring 2007, *Engenuity*)

  Readers interested in the arsenic mitigation project of Dr. Nadim Khandaker, P.Eng., are invited to e-mail him at: **nadimkhandaker@hotmail.com**

U DE M RESEARCHERS UNVEIL A HIGH-RESOLUTION WIND RESOURCE MAP OF NEW BRUNSWICK

The K.C. Irving Chair in Sustainable Development at the Université de Moncton unveiled a high resolution wind resource map of New Brunswick.

This second generation wind resource map at 200m resolution has 25 times more information than the previous map produced by the Chair research group and better captures the topographic features of the land and the induced wind velocities, while having better accuracy in regions with land-water interfaces.

According to **Yves Gagnon**, P.Eng., of the K.C. Irving Chair in Sustainable Development, the new wind resource map constitutes a new level of development for wind energy in New Brunswick and will assist in developing wind energy in the most appropriate locations throughout the province, both at the large scale level and at the community level.

"Most importantly, it will allow local entrepreneurs, investors and businesses, along with municipalities and community groups, to develop wind farm projects and to respond to the provincial government's invitation to produce 300 megawatts of electricity from wind energy," Dr. Gagnon said.

In particular, the new wind resource map identifies the exceptional wind potential in the Acadian Peninsula, along with the previously identified excellent wind resource along the Northumberland Straight, Albert County, the region of the Bay of Fundy and the mountainous regions in the centre and the northwest area of the province.

The development of this high-resolution wind map was made possible through a financial contribution from the provincial government. "We are happy to partner and to work with the K.C. Irving Chair in Sustainable Development at Université de Moncton to build research and innovation capacity, to develop a new energy sector and to foster economic development in the Province of New Brunswick," said **Jack Keir**, Minister of Energy for New Brunswick in a message sent to the research team.

"The unveiling of the high-resolution wind resource map is part of our government's strategy for New Brunswick to be self-sustainable in 2026 and to be a leader in electricity generation and a leader in green energy," the minister added.

In addition to Dr. Gagnon, the other researchers involved in the project are research assistants **Maryline Mallet** and **Nicolas Gasset**, along with professor **Gérard Poitras**, P.Eng.

The detailed wind resource map of New Brunswick, along with the other wind resource maps produced by the U de M chair can be obtained at the following website: **www.nbwindatlas.ca**.

DES CHERCHEURS DE L'U DE M PRODUISENT UNE CARTE À HAUTE RÉSOLUTION DE LA RESSOURCE ÉOLIENNE AU NOUVEAU-BRUNSWICK

La Chaire K.-C.-Irving en développement durable de l'Université de Moncton a procédé au Campus de Moncton au dévoilement d'une carte à haute résolution de la ressource éolienne au Nouveau-Brunswick.

Produite à une résolution de 200 mètres au sol, cette carte possède 25 fois plus de renseignements que celle réalisée auparavant par les chercheurs de l'U de M pour le Nouveau-Brunswick.

Selon le titulaire de la Chaire, ***Yves Gagnon****, ing., ce nouvel outil de travail constitue un pas de l'avant dans le développement de l'énergie éolienne au Nouveau-Brunswick.*

« Cette carte pourra être utilisée par les entrepreneurs, les investisseurs et les communautés dans leurs projets de développement de parcs éoliens à petite et à grande échelle, a-t-il dit. Elle sera également d'une aide précieuse à ceux qui désirent répondre à l'appel du gouvernement provincial de produire 300 mégawatts d'électricité à partir de source éolienne. »

La nouvelle carte permet d'identifier plus clairement les zones ayant les gisements éoliens les plus propices pour y établir des parcs éoliens, notamment le potentiel exceptionnel de la région de la Péninsule Acadienne, en plus des zones identifiées auparavant, telles les côtes longeant le détroit de Northumberland, le comté d'Albert, la région entourant la Baie de Fundy et les régions montagneuses dans le centre et le nord-ouest de la province.

La réalisation de la carte de la ressource éolienne a été rendue possible grâce à une contribution financière du gouvernement du Nouveau-Brunswick. « C'est dans la perspective de développer ce secteur de recherche qui favorise du même coup le développement économique dans la province que nous avons établi un partenariat avec la Chaire K.-C.-Irving en développement durable de l'Université de Moncton », a fait savoir le ministre de l'Énergie du Nouveau-Brunswick, ***Jack Keir****, dans un message qu'il a fait parvenir aux chercheurs.*

« L'annonce fait partie intégrante de la stratégie du gouvernement de faire du Nouveau-Brunswick un leader dans la génération d'électricité et la production d'énergie verte dans la perspective d'une province autosuffisante d'ici 2026 », a ajouté le ministre.

Le projet dirigé par M. Gagnon a été réalisé avec la participation des assistants à la recherche, ***Maryline Mallet*** *et* ***Nicolas Gasset****, ainsi que du professeur* ***Gérard Poitras****, ing.*

Il est possible de visualiser la carte détaillée de même que celles produites précédemment par les chercheurs à l'adresse ***www.atlaseoliennb.ca***

Q&A WITH TANYA HORGAN, P.ENG.

Chair, Continued Competency Assurance Committee

WHY DOES APEGNB NEED A CONTINUED COMPETENCY ASSURANCE PROGRAM?

Technology and scientific developments are pushing our professions forward at an unprecedented pace. It is our responsibility as professional engineers and geoscientists to prove to the public that we are keeping pace with these changes—regardless of when we completed our education and earned our professional designations.

It is not enough for the public to know that at one time during our careers, we were qualified. Regulatory bodies such as APEGNB must continue to assure the public that our members meet the minimum standards of competency throughout their professional lives.

By taking the lead in establishing a continued competency program, APEGNB fulfills its most important mandate: to serve and protect the public interest. The program also ensures APEGNB's status as a self-regulatory body is not challenged.

HOW DID APEGNB DEVELOP THE CONTINUED COMPETENCY ASSURANCE PROGRAM?

As far back as 1996, the Canadian Council of Professional Engineers (CCPE) reported on the general issue of professional development among engineers.

One of the findings was that, without some formalized plan of professional development, there was no assurance that the capabilities of engineers were staying current with the advance of technology in the various areas of practice.

The challenge for APEGNB was to develop a program that reflected the wide range of engineering and geoscience disciplines within our membership. As well, the various sizes of engineering/geoscience firms (e.g., one-person consultancies to the individual professional working within large national or multinational firms) had to be taken into account.

The ability of APEGNB to manage the data efficiently and in a timely manner also had to be considered. After all, it was argued, what benefit is there to have all members submit information every year if the staff and committees could not process the data and follow up with members?

Thus was born the model that APEGNB (formerly APENB) ultimately adopted in 1998 at the Annual Meeting. After that meeting, a committee of members worked diligently to develop and test the program that was adopted by the membership at our 2002 Annual Meeting. It has been in operation since that date with several hundred members being involved in the process each year.

The process includes selecting a significant sample of members per year and reviewing those submissions in reasonable detail. After a period of time, statistically, all members would be surveyed. Naturally, several adjustments were considered. All of these questions and hundreds more were discussed by the committee during the development process.

SHOULD HIGH-RISK ENGINEERING/GEOSCIENCE GET MORE REVIEWS?

After much discussion, it was decided that no area of engineering/geoscience should be singled out as riskier than another.

ARE NEW ENGINEERS/GEOSCIENTISTS SUBJECT TO REVIEW IN THEIR FIRST YEARS OUT OF UNIVERSITY?

During their first years of gathering experience, Members-in-Training do not need to be reviewed as they are likely to be under the tutelage of a licensed engineer or gesocientist.

WHAT ABOUT RETIRED MEMBERS?

Retired members (meaning those who are not doing engineering or geoscience work) are exempt from the program. If they begin offering engineering/geoscience services again, they would come under the program.

DOES LIFE MEMBERSHIP STATUS CHANGE THE REQUIREMENT FOR CONTINUED COMPETENCY?

Life membership is granted after 35 years of membership in APEGNB. Unless registered as a retired member, Life Members are not exempt from the Continued Competency Assurance Program.

WHAT IS THE FAIREST WAY TO SELECT MEMBERS FOR SUBMISSION?

Rather than working through the membership numerically or alphabetically, it was felt that a selection process based on a random number generator program using the member database would provide an arbitrary selection of members. This also allowed a simple method of "blocking" the selection of the same number within three years of it being chosen.

SHOULD ONLY UNIVERSITY COURSES BE CONSIDERED VALID?

As to what would constitute an acceptable contribution to continued competency, the committee felt that engineers and geoscientists could benefit from development opportunities from a wide range of sources. Therefore, a broad range of activities was included in the list of acceptable improvement activities.

This table, summarized in the Guidelines, includes such diverse activities as self-directed study, formal training provided by an employer, community service work and part-time study by correspondence, community college or university. In short, if the member deemed the particular training to be of value to his/her practice, it would count towards the program.

To provide uniformity and flexibility, a simple valuation formula (PDH's, or Professional Development Hours) is used to track development activities. It attaches different values to different activities and provides an easy conversion from other valuation methods, such as CEU's.

The activities are listed on a diary-like summary form and essentially reports on a three-year period. While it is possible to accumulate as many as 170 PDH's in a given year, the target is to accumulate 240 PDH's in THREE years. Provision is made to carry over excess PDH's from one year to another and such things as unemployment, parental leave, long-term disability, or retirement are valid reasons for exemption.

WHY DO THE GUIDELINES GIVE DETAILS ABOUT A FACE-TO-FACE INTERVIEW?

As the program was introduced, each review included a face-to-face interview between a peer reviewer and the member. This was conducted after the member had submitted the documentation. After the approximately one-hour interview, the volunteer reviewer would report back to the committee.

After a number of years, it was noted that, of the members who had successfully submitted the required documentation, all had completed the interview successfully. Therefore, in 2005, the submission of the documentation became the dominant element of the review. With a centralized committee structure and less demand on locating peer reviewers, more members could be reviewed each year. This format continues today with some 300-400 reviews carried out per year.

When members are asked to submit documentation of their continued competency activities, a letter is sent from the CCAP Committee requesting a response. The typical member uses their work diary or on-going Record Sheet from the CCAP Guidelines and fills out the five-page form, which includes such things as Name, Employer, Responsibilities, etc.

Since members would only have to participate in one review every three years, it was felt that two to four hours was a reasonable commitment to ask of the member.

HAS ANYONE COMPLAINED ABOUT THE PROCESS?

The usual complaint is that "I don't have time", or "I'm too busy". But, experience has shown that it often really means, "I don't keep a work diary".

The time factor involves going back over job files or travel expense accounts to piece together activities from a year or two ago. In contrast, engineers and geoscientists who are licensed in more than one jurisdiction and are subject to other competency assurance programs report that APEGNB's program is no more difficult than any other and takes less than half a day to complete and submit.

Similarly, misunderstanding what actually qualifies for professional development activity can cause undue angst. As the Professional Development (PD) activity summary shows, there are six different categories of PD activity that can go toward the program objectives.

For instance, just carrying out day-to-day professional practice requires as many as 40 PDHs per year. And, many of the activities that "just happen" are included as well (e.g., reading technical books and trade journals, attending trade shows, attending industry or technical society short courses).

Volunteering on APEGNB committees, being a mentor to a Member-in-Training, serving on public boards, contributions to community or church organizations also work towards building the 240 PDH's in a three- year period.

IF I HAVE CCAP QUESTIONS, WHOM DO I CONTACT?

Just e-mail Sandra Stairs (sandra@apegnb.com), APEGNB's Director of Registration or send a letter to:

Sandra Stairs
Director of Registration

Association of Professional Engineers and Geoscientists of New Brunswick

183 Hanwell Road
Fredericton, NB
E3B 2R2

QUESTIONS ET RÉPONSES DE TANYA HORGAN, ING.

Présidente, Comité de l'assurance de la compétence continue

POURQUOI FAUT-IL À L'AIGNB UN PROGRAMME D'ASSURANCE DE LA COMPÉTENCE CONTINUE?

Des avancées technologiques et scientifiques éperonnent nos professions à une cadence sans précédent. Il nous revient à titre d'ingénieur et de géoscientifique de prouver au public que nous restons au fait de ces changements — peu importe à quel moment nous avons terminé notre éducation et acquis nos titres professionnels.

Il ne suffit pas que le public sache qu'à un moment donné de nos carrières, nous étions qualifiés. Les organismes de réglementation tels que l'AIGNB doivent sans cesse garantir au public que leurs membres répondent à des normes minimales de compétence tout au long de leur carrière professionnelle.

En allant de l'avant avec l'établissement d'un programme de compétence continue, l'AIGNB remplit son mandat le plus important : servir et protéger l'intérêt public. Le programme assure aussi que l'on ne remette pas en question le statut de l'AIGNB en tant qu'organisme d'autoréglementation.

COMMENT L'AIGNB A-T-ELLE ÉLABORÉ LE PROGRAMME D'ASSURANCE DE LA COMPÉTENCE CONTINUE?

Dès 1996, le Conseil canadien des ingénieurs (CCI) avait émis des rapports sur l'ensemble de la question du perfectionnement professionnel des ingénieurs.

Un des constats était que, sans plan de perfectionnement professionnel structuré, rien ne garantissait que les capacités des ingénieurs suivent le pas des avancés technologiques dans les différents domaines d'exercice. Pour l'AIGNB, le défi a été d'élaborer un programme qui correspond au grand éventail des domaines du génie et des sciences de la terre de nos membres. De plus, il a fallu tenir compte des tailles variées des entreprises de génie ou de sciences de la terre (p. ex. depuis des sociétés de conseil constituées d'une seule personne au professionnel qui travaille au sein de grandes entreprises nationales ou multinationales).

Il a aussi fallu tenir compte de la capacité de l'AIGNB à gérer les données efficacement et en temps opportun. Après tout, signalait-on, à quoi sert de demander à tous les membres de présenter des renseignements chaque année si le personnel et les comités ne peuvent traiter les données et assurer le suivi auprès des membres?

Ainsi est né le modèle que l'AIGNB (jadis l'AINB) a en fin de compte adopté en 1998 lors de l'assemblée annuelle. Par suite de cette assemblée, un comité de membres a travaillé avec diligence pour élaborer et mettre à l'épreuve le programme qui a été adopté par les membres à notre assemblée annuelle de 2002. Le programme est en vigueur depuis ce temps, plusieurs centaines de membres prenant part au processus chaque année.

Le processus comprend la sélection d'un échantillon important de membres chaque année et l'examen relativement détaillé de leurs présentations. On avait prévu qu'après un certain temps, on réaliserait, au plan statistique une enquête auprès de tous les membres. Naturellement, on a songé à plusieurs adaptations. Le comité avait discuté de toutes ces questions et de centaines d'autres au cours de l'élaboration du processus.

DEVRAIT-ON EXAMINER DAVANTAGE LES DOMAINES À RISQUE ÉLEVÉ DU GÉNIE ET DES SCIENCES DE LA TERRE?

Après de longues discussions, on a décidé qu'aucun domaine du génie ou des sciences de la terre ne devait être pris à partie comme étant plus risqué que les autres.

LES NOUVEAUX INGÉNIEURS ET GÉOSCIENTIFIQUES SONT-ILS ASSUJETTIS À UN EXAMEN AU COURS DES PREMIÈRES ANNÉES SUIVANT L'UNIVERSITÉ?

Au cours de leurs premières années d'acquisition d'expérience, les membres stagiaires n'ont pas à subir d'examen, car ils seront vraisemblablement sous la tutelle d'un ingénieur ou d'un géoscientifique agréé.

QU'EN EST-IL DES MEMBRES À LA RETRAITE?

Les membres à la retraite (c'est-à-dire qui n'effectuent plus de travaux en génie ou en sciences de la terre) sont dispensés du programme. S'ils offrent à nouveau des services en génie ou en sciences de la terre, ils seront assujettis au programme.

EST-CE QUE LE STATUT DE MEMBRE À VIE ALTÈRE LES EXIGENCES EN MATIÈRE DE COMPÉTENCE CONTINUE?

On accorde le statut de membre à vie après 35 années d'adhésion à l'AIGNB. À moins d'être inscrits comme membres à la retraite, les membres à vie ne sont pas dispensés du programme d'assurance de la compétence continue.

QUELLE EST LA MANIÈRE LA PLUS ÉQUITABLE DE CHOISIR LES MEMBRES QUI DOIVENT SE SOUMETTRE À L'EXAMEN?

Plutôt que de traiter la liste des membres en ordre numérique ou alphabétique, on a jugé qu'un processus de sélection faisant appel à un logiciel qui génère des nombres aléatoires à partir de la banque de données des membres assurerait une sélection arbitraire des membres. Cela a aussi permis d'intégrer une méthode pour « empêcher » la sélection du même numéro dans les trois ans après qu'il a été choisi.

DEVRAIT-ON CONSIDÉRER QUE SEULS LES COURS UNIVERSITAIRES SONT VALIDES?

Quant à ce qui constitue un apport acceptable en matière de compétence continue, le comité a été d'avis que les ingénieurs et les géoscientifiques devraient pouvoir profiter de possibilités de perfectionnement auprès d'un grand éventail de sources. Par conséquent, on a inclus dans la liste des activités de perfectionnement acceptables un grand éventail de possibilités.

Ce tableau, dont on trouve un résumé dans les lignes directrices, comprend des activités aussi variées que les études autogérées, la formation structurée fournie par un employeur, des travaux de service communautaire et des cours à temps partiel par correspondance, au collège communautaire ou à l'université. En bref, si le membre juge qu'une formation particulière est valable pour son exercice de la profession, elle sera recevable en vertu du programme.

Pour assurer uniformité et souplesse, une formule d'évaluation simple (les HFC, c'est-à-dire des heures de formation continue) sert à suivre les activités de perfectionnement. Elle accorde différentes valeurs à différentes activités et permet d'effectuer facilement la conversion depuis d'autres méthodes d'évaluation, telles que les unités d'éducation permanente (UEP).

On énumère les activités sur un formulaire sommaire qui ressemble à un journal chronologique, fournissant ainsi un rapport sur une période de trois ans. Bien que l'on puisse cumuler jusqu'à 170 HFC au cours d'une année, l'objectif est de cumuler 240 HFC en trois ans. Des dispositions permettent de reporter les HFC excédentaires d'une année à l'autre, et des situations telles que le chômage, un congé parental, l'invalidité de longue durée, ou la retraite peuvent justifier une dispense.

POURQUOI LES LIGNES DIRECTRICES DONNENT-ELLES DES PRÉCISIONS AU SUJET DES ENTREVUES EN PERSONNE?

Au moment de l'introduction du programme, chacun des examens comportait une entrevue personnelle entre un pair examinateur et le membre, entrevue qui se déroulait après que le membre eut déposé ses documents. Après l'entrevue d'environ une heure, l'examinateur bénévole devait présenter un rapport au comité.

Après un certain nombre d'années, on a constaté que les membres qui avaient présenté avec succès la documentation demandée avaient tous réussi l'entrevue. Par conséquent, en 2005, la présentation de documentation est devenue le principal élément de l'examen. Grâce à une structure de comité centralisé et à la réduction de la difficulté de trouver des pairs examinateurs, on pouvait se pencher sur le cas d'un plus grand nombre de membres chaque année. Ce format, qui est toujours en vigueur aujourd'hui, permet de réaliser de 300 à 400 examens par année.

Quand vient le temps de demander aux membres de présenter des documents étayant leurs activités de perfectionnement professionnel continu, une lettre exigeant une réponse est envoyée par le comité du PACC. Le membre type se sert de son journal des travaux ou d'une fiche de registre permanent conforme aux lignes directrices du PACC, puis remplit le formulaire de cinq pages, qui comprend des éléments tels que le nom, l'employeur, les responsabilités, etc.

Étant donné que les membres n'auront à participer qu'à un examen tous les trois ans, on a jugé qu'il était raisonnable de leur demander de réserver de deux à quatre heures à cet effet.

Y A-T-IL EU DES PLAINTES AU SUJET DE CE PROCESSUS?

La plainte habituelle, c'est « Je n'ai pas le temps », ou « Je suis trop occupé ». Néanmoins, l'expérience nous a enseigné que, souvent, cela veut vraiment dire « Je ne consigne pas mes travaux à un journal ».

La composante temps comprend repasser les dossiers des travaux ou les comptes de dépense de voyage pour reconstituer des activités d'il y a un an ou deux. Cependant, les ingénieurs ou les géoscientifiques qui ont reçu un agrément dans plus d'un territoire et qui sont assujettis à d'autres programmes d'assurance de la compétence indiquent que le programme de l'AIGNB n'est pas plus difficile qu'un autre, et qu'il faut moins d'une demie journée pour remplir ces documents et les présenter.

Dans le même ordre d'idée, la mécompréhension de ce qui est admissible comme activité de perfectionnement professionnel peut susciter des frustrations inutiles. Comme l'indique le sommaire des activités de perfectionnement professionnel (PP), il y a six différentes catégories d'activités de PP que l'on peut inscrire pour atteindre les objectifs du programme.

Par exemple, le simple exercice de la profession au quotidien donne jusqu'à 40 HFC par année. Et cela comprend aussi plusieurs des activités qui sont simplement accessoires (p. ex. lire des manuels techniques et des revues professionnelles, assister à des salons professionnels, assister à de brèves séances de formation de l'industrie ou de sociétés techniques).

Participer bénévolement à des comités de l'AIGNB, agir à titre de mentor auprès d'un membre stagiaire, siéger à des conseils d'administration publics, et participer à des organismes communautaires ou paroissiaux s'ajoutent aussi au calcul des 240 HFC dans la période de trois ans.

SI J'AI DES QUESTIONS AU SUJET DU PACC, À QUI PUIS-JE M'ADRESSER?

Envoyez simplement un courriel à Sandra Stairs, (*sandra@apegnb.com*), directrice des admissions de l'AIGNB, ou faites parvenir une lettre à :

Sandra Stairs, *Directrice des admissions de l'AIGNB*
Association des ingénieurs et des géoscientifiques du Nouveau-Brunswick
183, chemin Hanwell, Fredericton (N.-B.) E3B 2R2

APEGNB HELPS FUND NB'S FIRST LEGO® MINDSTORMS™ ROBOTICS COMPETITION

Submitted by John Gallant, P.Eng.

*The first Lego® Mindstorms competition in New Brunswick was held at the **Claude D. Taylor School** in Riverview on June 5 with a total of eight robotics projects being built. This project was funded through APEGNB's Outreach program.*

In 2006, the Lego program at the school got underway with funding from APEGNB to purchase five RCX units (programmable "bricks") and additional Lego® sets associated with the Roads and Transportation module which the junior robotic teams constructed this year.

In 2007, funding was again received from APEGNB to expand the program to include three new sets of Lego® Mindstorms™ NXT, an advanced robotics system that allowed robots to "see, move, hear, and touch". These sets were used for the senior robotics teams (Grade 5). Through a corporate donation from Terrain Group Inc., an additional NXT system was purchased for the program.

John Gallant, P.Eng., of Touchie Engineering, a division of R.V.Anderson Associates Limited, continued his role as mentor and helped the students build the robots and learn the programming. With the assistance of **Lisa Grasse**, P.Eng., the two were able to mentor more than 60 students during the 11-week program.

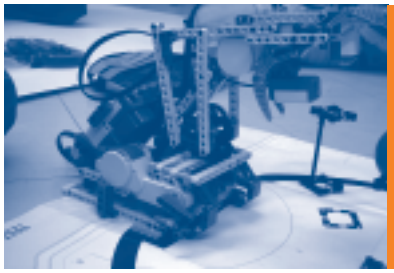
The competition itself showcased the NXT systems with four robots entered for judging:

- a 'humanoid' that can walk, talk, see, and touch;
- a machine that can reach for a ball on a pedestal, "grasp" the ball, and move it to another pedestal;
- a 'tribot', which operates similar to a forklift; and,
- a scorpion, that would move to an object and 'sting' its prey.

The teams were judged in two stages. The first stage was based on team attendance, team cohesiveness, the building of the robot, and programming. This portion of the build was valued at 60 per cent and judged by **John Gallant**, P.Eng., project mentor and **Betty Vick**, the school's vice principal.

The second stage of the challenge was valued at 40 per cent of the total mark. This part of the competition was judged by **Bruce Buchanan**, P.Eng., **Allyson Clinch**, P.Eng., and **David Kozak**, P.Eng. Each team had individual tables that presented their robot, a display board, manuals, and connection cables. The four categories the judges had to score included, the overall presentation, the content of the display board, the functioning of the robot, and the team's responses to judges' questions.

The final overall scoring was very close with the team constructing the scorpion winning the competition and having a combined overall score of 62.02 out of a possible 100. The other scores were the Machine (61.83), Tribot (60.55), and the Humanoid (60.30). Cash awards of $350 and $250 were awarded to the first and second place teams. The prize money will be donated to the school so more Lego Mindstorms kits can be purchased and the program expanded next year. Touchie Engineering, a division of R.V.Anderson Associates Limited, donated $300 towards the cash awards.



The competition had a wonderful turnout with more than 20 parents, students, teachers and members of the local media attending the hour-long event.

Vice principal Vick thanked the Association for their continued support and personally thanked the mentors of the program for their dedication to the students and the program.

Overheard

- *"Very well organized event"*
- *"Very proud of the students work and a lot of effort was put forward by the students"*
- *"Amazed that APEGNB sponsored this type of event"*
- *"Could not believe the complexity of each robot"*

For more information on Lego Mindstorms technology and the First Lego League, visit these websites:

http://mindstorms.lego.com/
http://www.firstlegoleague.org/

For more information on APEGNB and its community outreach program, visit:

www.apegnb.com
www.apegnb.ca/e/07/07b_e.php

REGISTRATION SUMMARY

MARCH - MAY, 2007

Registrations

ALLAIN, Jason, P.Eng.
BELLEFLEUR, Mark, P.Eng.
BLAKE, Bertram, P.Eng.
BROKOPP, Alan, P.Eng.
COLES, Benjamin, P.Eng.
COLFORD, Darren, P.Eng.
DOIRON, Marc, ing.
DOUCET-LANDRY, Stéphanie, P.Eng.
LAFORGE, Mickey, P.Eng.
LeROY, Jonathan, P.Eng.
MacFARLANE, Kenneth, P.Eng.
MacKENZIE, Lindsay, P.Eng.
MORALES, Juan, P.Eng.
MUDGE, Sara, P.Eng.
O'REILLY, Timothy, P.Eng.
PIRZADA, Ghulam Bashir, P.Eng.
ROGERS, Angela, P.Eng.
SANSOM, Corey, P.Eng.
SPATZ DiVETO, Elisabeth, P.Geo.
STEWART, Corey, P.Eng.
TURCOTTE, Pierre-André, P.Eng.
WALSH, Christina, P.Eng.
WANG, Qing, P.Eng.
ZHUANG, Yan, P.Eng.

Transfers–in

BOUCHARD, Yohann, ing.
FRÉCHETTE, Steve, ing.
GERBER, Wolfgang, P.Eng.
GOVER, Paul, P.Eng.
MONTGOMERY, John , P.Eng.
POLLARD, Stewart, P.Eng.
SAVOIE, Louis, ing.
TREMBLAY, Stéphane, ing.

Members–in–Training

ACOTT, Thomas, MIT
ARSENAULT, Stephen, MIT
BHATT, Siddharth, MIT
BLUNDON, Ricky, MIT
CHAW, Salam, MIT
CLARK, Graham, MIT
COOPER, Maureen, MIT
COWAN, Matthew, MIT
FAUST, Audrey, MIT
FERRON, Pascal, MS
GALLEY, Kurt, MIT
HUGHES, Andrea, MIT
LABONTÉ, Jonathan, MS
LAVIGNE, François, MS
LeBLANC, Nicolas, MIT
LeBOUTHILLIER, David, MIT
LI, Chunying, MIT
MacCORMICK, Melanie, MIT
MALLET, Eric, MIT
MARTINELL, Kelly, MIT
McCULLOUGH, John, MIT
MORGAN, David, MIT
MYETTE, Amy, MIT
NOORY, Mohammed, MIT
O'DELL, Liam, MIT
OWATTA, Joel, MIT
PARSONS, David, MIT
PELLETIER, Sophie, MS
PIRZADA Aliraza, MIT
RAJBHANDARI, Vivek, MIT
RICHARD, Denny, MIT
ROBICHAUD, Martin, MIT
ROY, Manoranjan, MIT
SHAH, Hashmat Ali, MIT
SPEIGHT, Peter, MIT
THÉRIAULT, Jean-Michel, MS
THÉRIAULT, Julie, MS
URQUHART, Tara, MIT
WALSH, Paula, MIT

Licencees

BADIE, Navid, P.Eng.
BONNET, Jean-Luc, P.Eng.
BROWNING, Oliver, P.Eng.
BUTLER, Justin, P.Eng.
CHANFREAU, Emmanuel, ing.
CHOO, Chen Kiang, P.Eng.
DANSEREAU, François, ing.
DENT, Michael, P.Eng.
DESJARDINS, Simon, ing.
DEVEAU, Marcel, P.Eng.
DORÉ, Norman, P.Eng.
DUCK, Brian J., P.Eng.
DUMAS, Sylvain, ing.
EDWARDS, Scott, P.Eng.
FORBRIGGER, Blair, P.Eng.
GAGNON, André, ing.
GOAD, George, P.Eng.
GUGLIELMI, Tito, P.Eng.
HUNCHUK, Douglas, P.Eng.
KADONAGA, Shasta, P.Eng.
KENNY, James, P.Eng.
KULBA, Peter, P.Eng.
LYMER, Robert, P.Eng.
MacDONALD, Lewis, P.Eng.
MacFARLANE, David S., P.Geo.
MAILLET, Bryan, P.Eng.
MARIEN, Donald, P.Eng.
McMANUS, Steven, P.Eng.
MIHEAYE, Komla, P.Eng.
MOZAFFAR, Tanweer, P.Eng.
PAUL, Kermit, P.Eng.
PERIC, Mark, P.Eng.
SAMOSTIE, Alan, P.Eng.
SIMARD, Céline, ing.
SMITH, Stuart, P.Eng.
STIEMER, Robert, P.Eng.
STOREY, Ian, P.Eng.
SZCZEPAN, Andrzej, P.Eng.
TOUPIN, Jean-Denis, P.Eng.
TREMBLAY, Pierre, ing.
UNDERHILL, George, P.Eng.
VAN KOUGHNETT, Kevin, P.Eng.
VERSTEEG, Andrew, P.Eng.
WILKINSON, Graham, P.Eng.

Certificates of Authorization – Resident

KAIZEN ENGINEERING, Hanwell, NB

Certificates of Authorization – Non Resident

ALGONQUIN BRIDGE INC., Mississauga, ON
BRENIK ENGINEERING INC., Concord, ON
CALLIDUS TECHNOLOGIES, L.L.C., Tulsa, OK, USA
CIMARRON ENGINEERING LTD., Calgary, AB
CONSTRUCTIONS PROCO INC., St-Nazaire, QC
CONSULTEC, SOCIÉTÉ D'INGÉNIERIE, Le Gardeur, QC
CRONNOX INCORPORATED, Oakville, ON
DENT ENGINEERING LTD., Kingston, ON
FB CONSULTING LTD., St. Philips, NL
FINELLI ENGINEERING INC., Burlington, ON
GEA RAINEY CORPORATION, Catoosa, OK, USA
IRC BUILDING SCIENCES GROUP INC., Mississauga, ON
KIEWIT WEEKS SANDWELL, Boisbriand, QC
MALLOT CREEK ASSOCIATES INC., Fergus, ON
MILLENNIUM INTERNATIONAL ENGINEERING LTD., Burlington, ON
MULVEY & BANANI INTERNATIONAL INC., Toronto, ON
NOVEO TECHNOLOGIES INC., Montréal QC
O'HALLORAN CAMPBELL CONSULTANTS LIMITED, Halifax, NS
RISING EDGE ENGINEERING LTD., Calgary, AB
TRANSALTA ENERGY CORPORATION, Calgary, AB
W ROBERTS & ASSOCIATES LTD., Halifax, NS

Reinstatements

BURTT, Michael, P.Eng.

Resigned

BAIRD, David
BELLEFLEUR, Richard
BOWIE, Gordon
HIGHFIELD, Gary
HOGAN, Michael
QUENNEVILLE, Pierre
RIZK, Ziad
SHEPPARD, Gordon
STEEVES, Matthew
VAYALI, George

Transfers–Out

FORTIN, Carole
HOAR, Donald
KERR, Kevin
KING, Janice
LIN, Steven
MALEKIAN, Amir
RECTOR, Tim
THORBURN, Raymond
WEBSTER, James
WOOD, Bruce
YU, Ting

Deceased

BELLIVEAU, Norman, P.Eng.
CAISSIE, Leandre, P.Eng.
CYR, Gilles, P.Eng.
KALNINS, Edvins, P.Eng.
NASON, Walter, P.Eng.
RUSHTON, Garth, P.Eng.
SPORE, Dennis, P.Eng.
STRANG, Allen, P.Eng.
THOMPSON, Gary, P.Eng.
WALSH, Duncan, P.Eng.

JOIN US FOR THE

Grand Opening Celebration

OF APEGNB'S NEW OFFICE!

APEGNB members are invited to attend the Grand Opening of the Association's new office at 183 Hanwell Road in Fredericton on

SEPTEMBER 13, 2007
4:00 pm to 6:00 pm