

Awards Dinner
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The Source of Engineering and Geoscience News in New Brunswick
La source d'information en ingénierie et géoscience du Nouveau-Brunswick



Many Hats Of Senator Joe Day, P.Eng. • Postcard from...Baffin Island



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Roger Cormier
P.Eng., ing.



President's Message Message du Président

The summer weather has been great and my schedule heated up with a wide range of provincial and branch activities these past few months. To keep everyone in the loop, here's a snapshot of what's been going on across New Brunswick and Canada.

Public Hearing

On June 27, the Canadian Nuclear Safety Commission held a public hearing on the proposed modifications to the Point Lepreau solid radioactive waste management facility (SRWMF). **Wolfgang Faig**, P.Eng., represented the Association's membership on behalf of Council and appeared before the Commission to support the conclusions of the Screening Report. It is APEGNB's view that the proposed modifications to Point Lepreau's waste management facility are not likely to cause significant adverse environmental effects.

CCPE Annual General Meeting: May 20-24, 2003

Several topics were discussed including the merger of technicians/technologists with some of the engineering associations.

In New Brunswick, the feeling is that the public is better served by two distinct entities due to the current level of collaboration that each is bringing. The opinion of several associations, especially the smaller ones, is that CCPE's role is vital in providing economies of scale that the small associations could not otherwise attain.

Greater Moncton Sewerage Commission 20th Anniversary: May 29, 2003

I was pleased to help commemorate the Commission's 20th anniversary along with a number of representatives from the government and business community.

CSCE Conference: June 5-6, 2003

The opening ceremony saw a wide range of industry, government, and academia representatives in attendance. At the press conference, **Hollis Cole**, P.Eng., past president of CCPE and APEGNB, presented the perspective of protecting the public interest and the need to treat infrastructure as part of the necessities of life. His observations generated positive mainstream media coverage with an appearance on CBC and articles in various newspapers.

OIQ Annual Meeting: June 12-14, 2003

The Ordre des Ingénieurs de Québec hosted another well-organized and

sophisticated event. I had the opportunity to attend technical sessions on risk management and the Award and Recognition lunch.

PEI Lobster Supper: June 21, 2003

The lobster was delicious, the hospitality was generous and the entertainment was memorable. Although the Association of Professional Engineers of Prince Edward Island only has 220 members, approximately 270 people showed up!

Moncton Branch Lobster Supper: June 27 2003

More lobster... and an opportunity to mingle with the members of the local Branch! It was a well-attended event and I encourage all APEGNB members to get out and support their branch activities this Fall.

As the marathon of hectic work weeks and holidays begins, I welcome your comments and feedback (cormiero@umoncton.ca). My in-box is always open! ☺

L'été a été à ce point magnifique que même mon calendrier, au cours des derniers mois, s'est réchauffé à un large éventail d'activités aux niveaux provincial et régional. Pour le bénéfice de tous, voici le portrait des activités qui ont eu lieu partout au Nouveau-Brunswick et au Canada.

Audience publique

Le 27 juin, la Commission canadienne de sûreté nucléaire a tenu une audience publique sur les modifications proposées aux installations de gestion des déchets radioactifs solides de Point Lepreau. L'ingénieur **Wolfgang Faig** représentait les membres de l'Association au nom du conseil et s'est présenté devant la Commission pour appuyer les conclusions du Rapport d'examen préliminaire. L'AIGNB est d'avis que les modifications proposées aux installations de gestion des déchets de Point Lepreau n'auront probablement pas de conséquences néfastes importantes sur l'environnement.

Assemblée générale annuelle du CCI : du 20 au 24 mai 2003

Divers sujets ont été abordés, notamment l'adhésion des techniciens et technologues à certaines associations d'ingénieurs.

Au Nouveau-Brunswick, on a le sentiment que le public est mieux desservi par deux

entités distinctes étant donné le degré de collaboration de part et d'autre. Plusieurs associations – en particulier les plus petites – sont d'avis que le rôle du CCI est vital pour réaliser des économies d'échelle que les petites associations ne pourraient réaliser autrement.

Vingtième anniversaire de la Commission des eaux usées du Grand Moncton : 29 mai 2003

J'étais heureux d'aider à commémorer le 20^e anniversaire de la Commission, en présence de nombreux représentants du gouvernement et du milieu des affaires.

Conférence de la SCGCh : 5 et 6 juin 2003

Un grand nombre de représentants des secteurs de l'industrie, du gouvernement et des universités étaient présents à la cérémonie d'ouverture. À l'occasion de la conférence de presse, **Hollis Cole**, ingénieur et ancien président du CCI et de l'AIGNB, a parlé de la perspective de protéger l'intérêt public et du besoin de considérer l'infrastructure comme faisant partie des nécessités de la vie. Ses observations ont fait l'objet d'une couverture positive des médias grand public; il a participé à une émission de la CBC et des articles ont paru dans divers journaux.

Réunion annuelle de l'OIQ : du 12 au 14 juin 2003

L'Ordre des ingénieurs du Québec a accueilli une autre activité bien organisée et de grande classe. J'ai eu l'occasion d'assister à des séances techniques sur la gestion du risque ainsi qu'au banquet de récompenses et de reconnaissances.

Souper au homard à l'Î.-P.-É. : 21 juin 2003

Le homard était délicieux, l'hospitalité chaleureuse et les divertissements inoubliables. Bien que l'association des ingénieurs de l'Île-du-Prince-Édouard ne compte que 220 personnes, environ 270 étaient présentes!

Souper au homard de la section locale de Moncton : 27 juin 2003

Encore du homard... et l'occasion de se mêler aux membres de la section locale! L'activité a attiré de nombreux participants et j'encourage tous les membres de l'AIGNB à se rendre aux activités de leur section locale cet automne.

En ce début de marathon des folles semaines de travail et de congés, je vous invite à me faire part de vos commentaires et réactions (cormiero@umoncton.ca). Ma boîte de réception est toujours ouverte! ☺



Flintknapping

An Art as Old as the Stones Gains Popularity

By Melissa Mertz

Flintknapping has become an enjoyable weekend pastime for Jimmy Smith

If you thought stone-age technology required limited skill and even less artistic ability, you've obviously never tried the ancient art of flintknapping.

Flintknapping, or the technique of chipping flakes of stone to create arrowheads, spearheads, knife blades and other tools, dates as far back as two and one-half million years.

Dr. David Black, a professor of anthropology at the University of New Brunswick and a flintknapper himself, says flaked stone technology is the oldest detectable human technology in the archaeological record. "Virtually every group of people, from Tanzania to the Arctic, used flaked stone technology throughout history. In our own culture, flintknapping remained an important craft until the mid-1800s, when flint-lock guns were replaced by percussion-cap guns."

Today, the craft of flintknapping seems to be experiencing a resurgence in popularity. According to Dr. John Whittaker, a master knapper and assistant professor of anthropology at Grinnell College in Iowa, there are currently over 5,000 active, non-academic knappers in the United States alone who produce an average of 25 pieces per month. (Canadian statistics are unavailable.)



Some of the stone projectile points in Jimmy Smith's "keeper case".

One of the newer converts to stone-age technology is Jimmy Smith, a Tennessee Technological University graduate from Cookeville, Tennessee. He became seriously interested in the art about 18 months ago when he saw a flintknapping kit advertised in a magazine. Initially, he schooled himself with the help of various "how-to" books but now trains with a master knapper near his hometown.

Jimmy Smith and Mandy



"As a kid, I always enjoyed searching for arrowheads on our farm," explains Smith. "They fascinated me and when I realized I could learn to do it myself, I thought I'd give it a whirl. Now I'm hooked."

Smith says it's a relaxing, rewarding and humbling experience. "It requires a fair amount of strength and skill to fashion tools out of stone. You definitely give your muscles a workout. And I guarantee you—if you continue this hobby, you will cut yourself. These stone flakes are razor sharp."

One of the biggest challenges both Smith and Black say flintknappers face is locating raw materials for their art. Knappers require large slabs of chert – an umbrella term used to describe a wide variety of primarily opaque rocks which includes jasper, agate, flint, obsidian (volcanic glass), or similar rocks with a glassy structure.

"In New Brunswick, there is really only one significant source of chert" says Black. "It's near Washademoak Lake. Other good sources of chert can be found around Nova Scotia's Minas Basin."

Black also cautions novice knappers to be careful where they collect their raw materials. "Outcroppings of chert are often part of prized archaeological sites since that is where archaeologists and anthropologists find many Native artifacts. Some of the Nova Scotia chert sources are parts of protected heritage sites."



Smith displays two flint arrowheads he recently completed.

Smith sometimes finds his own raw material in his home state or he buys it as "preforms" (small pieces cut from larger chert slabs by a rock saw) from local suppliers, at flintknapper trade shows or via the Internet. "It also helps to study geology," says Smith. "Knowing the properties of various rocks and where they can be found can lessen the frustration and cost of obtaining your raw material."

Getting started in flintknapping is relatively inexpensive. The basic tool kit is about \$50 CAN and should include:

- a **billet** (a little "club" used to strike an edge on stone in order to shape it by the removal of flakes. Traditionally made of antler, many knappers may also use billets made of copper. Wooden billets are usually referred to as "batons".)
- a **hammerstone** (for rough removal)
- an **abrading stone** (to dull a platform edge)
- a **pressure flaker** (for finer flake removal) and,
- **leather pads** (to protect against sharp flakes)

Protective eyewear is also a must. As your skill level grows, so does your toolbox. Smith estimates he spends approximately \$250 US per year on his hobby. "But the sense of accomplishment and pride you feel when you finally create a projectile point is worth every penny. You certainly gain an appreciation for the skill and ingenuity of your ancestors."

Black issues a final word of caution to those about to embark on this re-

discovered craft. "Mark your work. The increasing numbers and skill level of flintknappers will make it difficult for experts to distinguish authentic artifacts from modern reproductions. Modern flintknappers who don't sign their work can muddy the archaeological record.

Future anthropologists may wonder whether stone tools made from stones from far away ended up in New Brunswick because they were brought by prehistoric Native people, or because they were made from stones imported by twenty-first century flintknappers."

Interested in flintknapping? Check out these reference links and books.

FLINTKNAPPING SUPPLIES AND RESOURCES:

- <http://www.geocities.com/knappersanonymous/>
- http://nativeway.safewebshop.com/flintknapping_supplies.html
- <http://www.greatlakeslithics.com/bandv.html>

LITHIC SOURCES IN SCOTS BAY, NS AND WASHADEMOAK LAKE, NB:

- <http://www.mun.ca/archaeology/scotsbay.htm>
- <http://www.unbf.ca/arts/anthropology/Experiences/black/WashademoakLake/wash.htm>

FLINTKNAPPING DEFINITIONS:

- <http://www.onagocag.com/define.html>

RECOMMENDED READING:

Flintknapping: Making and Understanding Stone Tools by John C. Whittaker
Published January 1994 by University of Texas Press
ISBN:029279083X



Flintknapper's Tool Kit



Sawn preform blanks that will soon be pressure flaked into arrowheads.

Branch News – Moncton

Marc A. LeBlanc, P.Eng./ing – Chair/Président

On May 14, the Moncton Branch held its **Annual General Meeting** where the new Executive Committee for 2003-2004 was formed. The members for the upcoming year are as follows:

Chair	Marc A. LeBlanc, P.Eng.
Vice Chair	Mike Cormier, P.Eng.
Past Chair	John Gallant, P.Eng.
Secretary	Bernard LeBlanc, P.Eng.
Treasurer	Alcide Richard, P.Eng.
Professional Development	Margot Bélanger, EIT
Social	Éliane Doucet, P.Eng.
Awards Committee	Mustapha Bouhamdani, P.Eng.
Communication / Web	Jolaine Landry-LeBlanc, EIT
Provincial Councillor	John Gallant, P.Eng.
Provincial Councillor	Larry Dionne, P.Eng.
Branch Councillor	Charles Michaud, P.Eng.
Branch Councillor	Serge Doucet, P.Eng.
U de M Faculty Representative	To be named
U de M Student Representative	To be named

Key issues were discussed at this meeting including the **creation of a scholarship or award** to recognize local engineers, and/or students, of the Moncton area for their contribution to the professions.

The **Annual Lobster Supper**, held in June, attracted more than 110 members

Saint John Branch Report

Brent Smith, P.Eng. – (Immediate Past) Chair

By the time this report is distributed in Fall issue of *Engenuity*, the Saint John Branch of APEGNB will be looking ahead towards the “new” Branch year. The election for the new Branch Executive was held September 16 at the Branch’s annual meeting. For a look at your new Branch Executive, refer to the Branch website at www.apegnb.com/branch/saintjohn.html. Minutes of the Branch’s annual meeting will also be available on the web site.

One of the Branch’s most popular summer events is the **golf tournament**.

and guests. As usual, this event was well-attended, the food was great and everybody seemed to have a good time. Arrangements are already underway for next year’s event.

Activities for the Branch resumed in September, starting with the **Annual Golf Tournament** on September 19 at

This year’s event was again held at the Rockwood Park Golf Course, Saturday, July 26. By all accounts, this four-person scramble format event was a success and those attending had a great time. Golf, a steak dinner and many prizes were up for grabs. The Branch Executive thanks **Kevin Kyle**, P. Eng., for continuing to organize this event.

Your new Branch Executive has already started to plan the upcoming events for the 2003-2004 year. New ideas/suggestions are always welcomed. As always, please visit www.apegnb.com/branch/saintjohn.html for the latest information on any of our

the Maplewood Golf and Country Club. The first monthly meeting will also be getting underway for the new executive. Technical sessions are planned monthly starting in October. Check out the Moncton Branch web page at www.apegnb.com/branch/moncton.html for upcoming technical presentations and social activities.

Please be advised that the Moncton Branch now uses e-mail for communicating all of its activities. If you are not already on the Branch e-mail list, or if you are not sure you are on the list, please send an e-mail with your name and preferred e-mail address to Jolaine Landry at jomaeng@nbnet.nb.ca.

Finally, I would like to congratulate our past Branch Executive for the great work and accomplishments for the 2002-2003 year and welcome the new members for 2003-2004. ☺



events as it becomes available, or to contact any member of the Branch Executive. The Saint John Branch e-mail address is saintjohn@apegnb.com and the hotline is **1-877-425-5500**.

As the outgoing Chair of the Branch, I thank the previous executive for making this past year most enjoyable. It has been my pleasure to be associated with all of you. My personal thanks go out to **Lisa Woodworth**, EIT; **Chad Connors**, EIT; **Holly Young**, P. Eng.; **Alexis Smith**, EIT; **Tanya Horgan**, P. Eng.; **Dr. Dale Roach**, P. Eng.; **Ken Bhola**, P. Eng. and **Steven Scott**, P. Eng. Also, my thanks go to all of the staff at the APEGNB office for continuing to assist the Saint John Branch with its activities. ☺

La section de Moncton

Marc A. LeBlanc, ing. – Président

La réunion annuelle de la Section de Moncton a eu lieu le 14 mai. Lors de cette réunion, le nouveau comité exécutif pour l’année 2003-2004 a été formé :

Président	Marc A. LeBlanc, ing
Vice-président	Mike Cormier, ing
Ancien président	John Gallant, ing
Secrétaire	Bernard LeBlanc, ing
Trésorier	Alcide Richard, ing
Développement professionnel	Margot Bélanger, EIT
Social	Éliane Doucet, ing
Prix de mérite	Mustapha Bouhamdani, ing
Communication / Internet	Jolaine Landry-LeBlanc, EIT
Conseiller provincial	John Gallant, ing
Conseiller provincial	Larry Dionne, ing
Conseiller	Charles Michaud, ing
Conseiller	Serge Doucet, ing
U de M représentant de la faculté	To be named
U de M représentant étudiant	To be named

Certains items discutés lors de cette réunion incluaient **la création d’une bourse ou prix de mérite** afin de reconnaître un(e) ingénieur(e) ou un(e) étudiant(e) de la Section locale pour leur contribution au domaine.

Northeastern Branch Report

Ray Ritchie, P.Eng.— Chair

Greetings to all members of the APEGNB Northeastern Branch. We have had a fairly active summer season, and are preparing for an ambitious autumn one as well.

Our **Lobster Cruise** took place in Caraquet with a full house (or deck) on July 18. We appreciate, as always, the deft work of **Lisa Albert-Thériault**, P.Eng., whose exceptional organizational skills were further honed on arranging this delicious event. I believe all those attending were impressed with the food, method of serving, and weather-proof awning on the upper deck!

Lisa was also responsible for selection and presentation of the two **student bursaries**, which we had the pleasure to witness aboard the Croisière Île Caramer. UNB Student, **Brian Lavallee**,

of Balmoral and U de M student, **Renaud Boudreau**, of Losier Settlement were this year’s deserving recipients.

The **Annual Branch Golf Tournament** was another popular event, held on August 16 at Gowan Brae in Bathurst. The golfers enjoyed their rounds but re-invented the term “Texas Scramble” when the lightning storm hit! I understand there were a wealth of prizes to be shared amongst the players, and everyone was a winner.

This year, the APEGNB Northeastern Branch sponsored a new Fall event—the **“APEGNB Fling-A-Pumpkin Contest”**.

Kevin Gallant, P.Eng., (who incidentally also organized our golf tournament) is busy pulling this event together and details are still unfolding as this report

En juin, le **souper au homard annuel** eu lieu. Plus de 110 membres et invitées se sont réunis pour un excellent repas.

Les activités de la Section à commencé en septembre avec le **tournoi annuel de golf** prévu sur le 19 septembre au Club de Golf Maplewood. Septembre s’annonce aussi pour la première réunion du nouvel exécutif. Les sessions techniques débuteront en octobre. Une cédule complète des activités de la Section sera postée sur le site Internet de l’AIGNB – Section de Moncton sous peu www.apegnb.com/branch/moncton.html.

Depuis quelque temps, les avertissements des activités sociales et des présentations techniques se font principalement par courriel. Si vous n’êtes pas sur notre liste de distribution, envoyez-nous un courriel à l’adresse suivante : jomaeng@nbnet.nb.ca en y incluant votre nom et adresse courriel et nous vous ajouterons à la liste.

En terminant, j’aimerais féliciter les membres de l’ancien exécutif pour leurs efforts et leurs accomplissements durant la dernière année et accueillir les membres de l’exécutif pour 2003-2004. ☺

goes to press. However, we do know that a 12-foot trebuchet, built by Sunny Corner Enterprises, is being used to toss pumpkins toward a target positioned 400 feet away in the Miramichi River. At \$5 a toss, competitors will use their knowledge of aerodynamics, friction and trajectory to help hurl their pumpkin closest to the target. Proceeds will be given to the New Brunswick Kids Breakfast Program. Be sure to read the winter issue of *Engenuity* for the complete report on the event!

And don’t forget that it is nominating time for upcoming provincial Council positions. If you know of an interested candidate, please contact a member of the Branch Executive. ☺



Greetings all!

The annual branch meeting was held in June at the Près du Lac in Grand Falls. Our guest speaker was our very own **Eric Ouellette**, P.Eng., who spoke of his attempts at locating the CPR steam locomotive (No. 508) which plunged into the Saint John River back in June of 1900. (EDITOR'S NOTE: Read more about Locomotive 508 and the ongoing search efforts at www3.nbnet.nb.ca/erichris/508.htm)

The new executive was also selected for 2003-2004, with little change from the previous year:

Chair	Paul Cormier , P.Eng.
Vice-Chair	Mireille Vautour , P.Eng.
Treasurer	Eric Ouellette , P.Eng.
Secretary	Alain Pelletier , EIT
Provincial Councillor	Eric Ouellette , P.Eng.
Provincial Councillor	Tony Desjardins , P.Eng.
Councillor	Georges Corriveau , P.Eng.
Councillor	Joey Corriveau , EIT
Couucillor	Shawn Hickey , P.Eng.
Councillor	Louis Ruest , P.Eng.
Councillor	Paul Rossignol , P.Eng.
Councillor	Georges Roy , P.Eng.



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Northwestern Branch

Paul Cormier, P.Eng. – Chair

The Branch activities resumed in September with our new committee's first meeting, and our branch objectives were set for the upcoming year.



Eric Ouellette, P.Eng.

Most of this year's efforts will go into the preparation for the 84th APEGNB Annual Meeting, which will be held in Edmundston, February 20 and 21, 2004.

La section du Nord-Ouest

Paul Cormier, ing – Président

Bonjour à tous!

La réunion annuelle de la branche a eu lieu en juin au Près du Lac de Grand Sault. Notre conférencier invité fut nul autre que **Eric Ouellette**, ing. Il a discuté de ses recherches sur la locomotive à vapeur no. 508, qui a tombé dans la rivière Saint Jean en juin 1900.

Le nouvel excécutif pour l'année 2003-2004 a aussi été formé avec peu de changements de l'année précédente:

Président:	<i>Paul Cormier, ing.</i>
Vice-Président:	<i>Mireille Vautour, ing.</i>
Trésorier:	<i>Eric Ouellette, ing.</i>
Secrétaire:	<i>Alain Pelletier, EIT</i>
Conseiller Provincial:	<i>Eric Ouellette, ing.</i>
Conseiller Provincial:	<i>Tony Desjardins, ing.</i>
Conseiller:	<i>Georges Corriveau, ing.</i>
Conseiller:	<i>Joey Corriveau, EIT</i>
Conseiller:	<i>Shawn Hickey, ing.</i>
Conseiller:	<i>Louis Ruest, ing.</i>
Conseiller:	<i>Paul Rossignol, ing.</i>
Conseiller:	<i>Georges Roy, ing.</i>

The Branch has formed a task group to plan the meeting activities, so if any member would like to be a part of it, please contact myself at 207-728-8683 or **Mireille** at 506-737-9730.

Northwestern members are reminded that e-mail is used for upcoming event notices. Members who are not currently receiving emails from the Branch should contact any member of the executive to be added to the list, or you can email us at apegnb@canada.com.

As we prepare for the coming year, we look forward to seeing you at our upcoming Branch activities. ☺

Les activités de la branche a commencé en septembre avec la première réunion du nouvel excécutif, alors que les objectifs pour l'année y seront établis.

La majorité des efforts cette année seront dans la préparation de la prochaine réunion annuelle de AIGNB, qui aura lieu à Edmundston le 20 et 21 février, 2004. Un nouveau comité a été formé pour la planification de cet événement, alors si vous êtes intéressés à faire parti du comité organisateur, contactez-moi au 207-728-8683 ou **Mireille** au 506-737-9730.

On rappelle aux membres de la branche que les annonces d'évènements à venir se font toujours par courriel. Les membres qui ne reçoivent pas de courriel de la branche devraient contacter quelqu'un de l'exécutif, ou par courriel au apegnb@canada.com afin d'être ajouter à la liste.

Alors que nous nous préparons la prochaine année, nous espérons de vous voir aux prochaines activités de la branche. ☺

Fredericton Branch

Andy Small, P.Eng. – Chair

The Fredericton Branch held its annual **Spring Golf Tournament** on June 6 at Mactaquac. Over 40 golfers participated in a Texas Scramble that was co-organized with Dillon Consulting and ended with a steak dinner and prizes. Thanks to all of those who sponsored the tournament with prizes and to the hard work of the organizing committee.

We have a busy fall planned with technical sessions, social events, and the **Annual Fall Golf Tournament**. On Friday, October 3, the Annual Fall Golf Tournament, featuring a steak and lobster barbecue, took place at Kingswood Golf Course with the proceeds going to the APEGNB Foundation for Education.

On October 14, we will be holding a joint session with the **American Society of Heating, Refrigeration, and Air Conditioning Engineers**. On October 22, we will be holding a joint session with the New Brunswick chapter of the **Project Management Institute** with a presentation by **Dave**

Cameron, P.Eng., from Neill and Gunter on the Clean Power Coalition. From September 23 to 25, 2003, the New Brunswick Environmental Industry Association (NBEIA) held their fall conference on "Climate Change & Sustainable Communities: Real Problems, Real Solutions".

We are also planning social nights for this fall and another curling bonspiel to be held in the new year.

The executive of the Fredericton Branch is:

Andy Small , P.Eng.	Chairman
Marty Gordon , P.Eng.	Vice-Chair
Ken Peck , P.Eng.	Treasurer
Serge Levesque , P.Eng.	Communication Chair
Trevor Hanson , EIT	Co-Program Chair
Matt Alexander , EIT	Co-Program Chair
Tom MacNeil , EIT	Councillor at Large
Jeff Braun , P.Eng.	Councillor at Large
Greg Snyder , P.Eng.	Councillor at Large
Ed Smith , P.Eng.	Councillor at Large
John Pugh , P.Eng.	Councillor at Large
Alana MacLellan Bonnell , EIT	Councillor at Large

If you have any questions or comments, please contact **Andy Small** at 506-450-0168 or andy.small@amec.com. If you wish to be added to our e-mail distribution list, please send your contact information to Andy.

Please note that in 2004, the Fredericton Branch will be modifying the dues structure to bring it more in line with the other branches in the province. The dues will be raised from current \$12.50 per year to \$13.75 per year in 2004. This is a 10% increase and is in accordance with the by-laws of the Fredericton Branch that were approved by the membership in January 2003. In addition, in 2004, we will not be charging life members dues to be part of the branch. ☺

Sponge shows scientists the way to make fibre optics

By Roger Highfield

© Telegraph Group Limited 2003

A superior version of fibre optics — the key technology of the communications revolution — was first invented by a sea sponge, scientists reported in August.

The deep-sea sponge has fibre optic-like growths that are in many ways superior to any used by industry, according to Dr **Joanna Aizenberg** and colleagues of Bell Laboratories in Murray Hill, New Jersey.

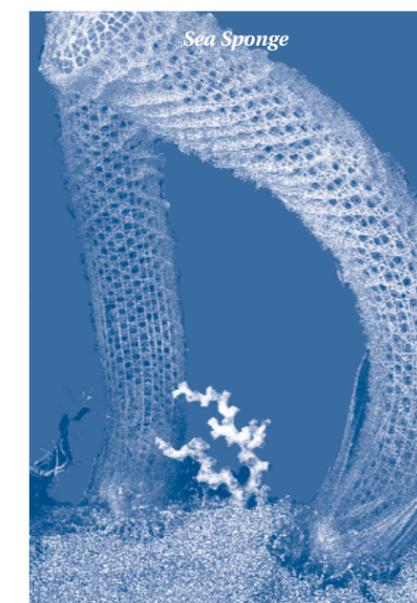
The skeleton of the deep-sea sponge Euplectella is made from an intricate silica cage that typically houses a mating pair of shrimp—hence its nickname,

"Venus flower-basket". It is composed of a lattice of fused outgrowths, or "spicules"

The scientists found that the optical properties of the spicules are similar in size to, and made from the same material as, conventional fibre-optic cables, they report in the journal *Nature*.

Man-made fibre optic cables often crack and break, whereas Euplectella's spicule layers are connected in a way that enhances their toughness.

"It's such a wonderful example of how exquisite nature is," said Dr **Geri Richmond**, of the University of Oregon. "We're in the stone age compared to nature." ☺



When we become Professional Engineers and Geoscientists, we are agreeing to practice by the Act and the By-laws of the Association. Part of those by-laws include a section on Ethics. The Code of Ethics in Section 2 of our by-laws is described in the Foreword to that section "as a set of dynamic principles guiding (our) conduct and way of life".

In recent months, we have been seemingly swamped with stories of the collapse of mighty enterprises as some form or other of corporate misdeed is unraveled. The underlying cause in some cases has been shown to be simple greed. Greed for power, greed for money. We shake our heads and wonder aloud, 'where have the ethics of those corporations and their leaders gone astray?'

Seated at the head of the small boardroom on the second floor of a century-old office building in Camden, Maine was **Dr. Rushworth Kidder**. The soft-spoken founder of the Institute for Global Ethics promised that over the next 10 to 12 hours he would discuss this and other apparent rips in the ethical fabric of North American and world culture.

The "Ethical Fitness Seminar" I had enrolled in had goals of not so much talking about what ethics are but rather describing a process for dealing with ethical dilemmas. That is, dealing with those choices and decisions which we all have to make on a daily basis and that we find "hard" or make us "uncomfortable".

In generating the framework for resolving ethical dilemmas, my 10

The evidence that all people in the global community have similar core values stands in contrast to what many think about 'different' cultures.

Making Tough Decisions

How an Ethical Fitness Seminar Can Help

By Tom Sisk, P.Eng., APEGNB Director of Professional Affairs

American colleagues and I would be led through a process to learn the four parts of the process plus learn some interesting results of the Institute's research around the world.

Our first task was to define in practical terms what exactly ethics are. A two-part definition unfolded:

- obedience to the unenforceable
- not only "right versus wrong" but also "right versus right"

This second part of the definition brings up an interesting point. Many of the decisions with which we are faced are not black and white. There isn't a specific "rule" to follow or a definite comparison of right versus wrong. Many times the decision is difficult because there really is more than one "right" aspect to consider.

The second step for participants required setting up a "code of ethics" for a fictitious school board. The exercise saw us divided into four groups who independently listed the qualities that we would want to see reflected in the school and its graduates.

When we reconvened, it was quickly apparent that each group had chosen 20 or more similar qualities. With the guidance of the seminar leader to isolate the synonyms, we were able to pick out the top five qualities from this list of 80 or so characteristics. They included honesty, respect, responsibility, compassion and fairness.

While we paused to congratulate ourselves on obviously having high ideals and concern for ethical behaviour, Dr. Kidder revealed something so startling that it still stands out as worth the cost of the seminar.

The Institute operates seminars and courses throughout the world and is

contracted by many Fortune 500 companies. It has asked diverse groups to generate this list of high-priority qualities many times over a dozen years. Surprisingly, the list contains the same top five qualities universally. It doesn't matter the gender, race, religion, age, culture, political persuasion or economic status of the group. We all value the same 'top five' qualities in our codes of ethics. Importantly, the Institute has observed that there is variation in the order of priority of the traits. For example, some cultures value a sense of responsibility slightly higher than compassion. The evidence that all people in the global community have similar core values stands in contrast to what many think about 'different' cultures.

So, assuming that the core ethical values are constant, time was spent understanding how to analyze the questions of ethics that confront us almost daily. It was pointed out that ethical questions are not about right versus wrong; if it's wrong (i.e., against the laws of the country, corporation or moral standards), the ethical person has a clear path: don't do it! The dilemmas are those cases where the choice appears to be "right versus right".

This part of the seminar again made use of the group discussion method to get us to develop some general frameworks or paradigms to identify specific ethical dilemmas. Again, the groups were found to align with the Institute's research. It can be shown that all ethical dilemmas can be reduced to one or more of these four:

- "truth" versus "loyalty"
- "self" versus "community"
- "short term" versus "long term"
- "justice" versus "mercy"

Finally, once the dilemma is confirmed as being a real "right versus right" ethical question, a resolution mechanism is needed. As it turns out, there are again principles that touch on the moral

philosophy of every culture. They appear time and again throughout history around the globe.

1. **Ends-based** or "the greatest good for the greatest number" or "the end justifies the means"
2. **Rule-based.** The same rule is applied to every similar case, every time regardless of the consequences.
3. **Care-based.** This reflects what we commonly call the Golden Rule.

Perhaps the most significant thing about the resolution of ethical dilemmas, which can run contrary to the problem-solving mind of an engineer, is that there is no formula that will deliver the "correct" answer. The seminar leader stressed that the seminar would not result in a check-list to work through the dilemma. It was shown that for a given situation, it might be valid to apply any of the three resolution principles. It can still be tough to make decisions but the process showed that by describing the "rights" contained in the dilemma, then identifying the paradigm involved and then determining the "higher right", a consensus for a course of action can be determined.

As a final peek into the Institute's research, Dr. Kidder presented another slide. The results might be interesting as a comment on our global ability to deal with ethical questions. When decisions were analyzed, it was found that 50 percent were handled in the "greatest good for the greatest number" manner. The Golden Rule appeared in 32 percent of the decisions and the strict interpretation of a rule-based decision was used in 16 percent of the cases.

The Ethical Fitness Seminar raised many provocative issues and was certainly a worthwhile glimpse into an area that many engineers or geoscientists might not study in detail but to which they agree to abide by.

If you're interested in increasing your personal or company's ethical fitness, the Institute offers a three-day course as well as on-site presentations and key-note addresses. Camden is located in coastal Maine, about five hours from Fredericton. ☺

Cynical Chic

by Rushworth M. Kidder

Reprinted with permission Ethics Newline.

Sitting where I do, I get a lot of material on ethics from readers. Recently a column in the July 20 *Washington Post* by Richard Morin, titled "Cashing In on Kindness," came my way. In it, Mr. Morin reports on new research demonstrating that "virtuous" companies do better – by as much as 15 percent in shareholder value – than companies that pay scant attention to ethics.

Along the way, however, he uses a tone – call it "cynical chic" – that I find disturbingly present in many of today's conversations about business ethics.

More on that in a moment. First, the research. Morin quotes researcher Kim S. Cameron as saying that "organizations in which employees perceive higher levels of virtuousness have a significantly higher profit margin." Prof. Cameron of the University of Michigan Business School – who, along with David Bright of Case Western Reserve University and Arran Caza of the University of Michigan, will publish these findings in a forthcoming issue of the **American Behavioral Scientist** – asked employees at 18 Midwestern companies to assess various attributes of virtue in their firms, including integrity, trustworthiness, honesty, and courage. The researchers then compiled a "virtuousness" score for various companies.

Bottom line: "Virtuousness and organizational performance are positively related," Cameron says, explaining that "innovation, customer retention, [low] employee turnover, quality, and profitability are all positively associated with virtuousness."

Morin reports the research very well. But as he sets up his column, he coyly distances himself from his subject in his fourth paragraph, which is comprised of only eight words:

"Wow. Making money by being good. Who knew?"

Invoking a kind of mock surprise – an old and well-used device of commentary writing – he telegraphs a crucial, perhaps obligatory message to his skeptical business-minded readers: *I too have an innate suspicion of this "virtue" stuff. It's a bit too good to be true, isn't it?*

To his credit, he immediately answers the question "who knew?" with a pointed sentence fragment: "Certainly not many business executives or economists." Technically, he's bailed himself out of his mockery by attributing it to others. But not before the effect has been felt on the reader. *If you're one of the fashionable cynics*, Morin seems to be saying, *it's safe to keep reading, because so am I*. And while he later admits that he "fervently hopes that Cameron is right about virtue," even that comment opens the possibility that Cameron may, in fact, be wrong.

This is cynical chic, and Morin manipulates it skillfully. Why does it work? Because there remains, in many business circles, an underlying attitude toward ethics that neatly fits the definition of cynicism: a contemptuous dismissal of the idea that virtue matters or even exists. Ethics as a corporate fig leaf to cover embarrassing details? Fine. As a sop to soothe the dogs of Sarbanes-Oxley? Essential. As a banner for recruiting idealistic young employees? Powerful. But ethics as an inner, practiced conviction that virtue can improve the bottom line? Nice notion, say the cynics, but it just doesn't fit with corporate reality.

Never mind that this view of corporate reality keeps getting stood on its head. Wise former CEOs – like Medtronic's Bill George, in his new book *Authentic Leadership* – keep making the point that integrity matters hugely to the bottom line. Meanwhile, wobbly corporate giants keep getting slammed

continued page 12

Fifty-seven-year-old Joseph Day, P.Eng., from Hampton, New Brunswick, wears many hats – long-time volunteer, professional engineer, lawyer, and senator. That last hat is rather unique for someone with Day's background since few engineers have sat in the Canadian Senate.



Senator Joe Day participates in the 87th Nijmegen Four Days Marches in the Netherlands.

"All my life I've been involved in different matters in public affairs," said Day, who is the senator for Saint John-Kennebecasis Valley in New Brunswick. "The Prime Minister noticed and chose me. I accepted right away."

Day graduated with his electrical engineering degree from the Royal Military College in 1968. He was one of a handful of engineers to then pursue law, graduating from Queens Law School in 1971. In 1977, he graduated with his Masters in Business Law from Osgoode Hall Law School. Then it was really

The Many Hats Of Senator Joe Day, P.Eng.

by Trudy Kelly Forsythe

Special to Engenuity

down to work as an engineer lawyer in Montreal, Ottawa, Toronto and Saint John.

While his main areas of expertise include technology and the law, patent law and environmental matters, Day is also interested in the military, veteran affairs and security issues.

As part of his duties in Senate, Day sits on various committees and is deputy-chair of the subcommittee for veterans affairs. That's led to some interesting travels recently.

On June 6, Day represented the Senate in Normandy, France, at the opening of the Juno Beach Centre, an educational facility that recognizes Canada's military and civilian contributions during the Second World War. Since his appointment to Senate on October 4, 2001, Day worked hard to get Canada to fund the centre.

More recently, Day donned military boots to participate in the 87th Nijmegen Four Days Marches. This four-day, 160-kilometre walk in the Netherlands attracts over 40,000 civilians and military from approximately 20 countries each year. A highlight of the event was the Victory March through Nijmegen.

"They estimate a crowd of one million was there watching," said Day. "How Canada was received when people saw our Canadian flags; it was amazing."

Back in the Canadian Senate, Day said, as an engineer in Senate, he has a great opportunity to represent the engineering and technology professions at the national stage.

"Technologists and engineers are not represented heavily in the Senate or the House of Commons," said Day. "I'm the only professional engineer in the Senate; there are only a couple in the House of Commons.

"Professional engineers and technologists have important national issues that have to be brought to government," he added, explaining technologists or engineers can bring their concerns to him.

Or the government can initiate. "I tend to get called upon with engineering issues or if a piece of legislation involves something I've done in the past. If the government comes to me with something, I understand it, and that impacts on technologists and engineering."

Toronto team builds bridge for faster bone healing

Reprinted with permission from www.cbc.ca

Canadian scientists have developed a sponge-like structure that may help broken bones to heal more quickly.

Bone cells can repair many fractures that require a cast. But if the damage is severe, such as a crush from a car accident, there may not be enough bone left for the cells to fill in the gap.

Surgeons often take bone grafts from other parts of the body. The problem is a patient may not have enough bone to move.

Now an interdisciplinary team of engineers, biologists, chemists and dentists at the University of Toronto uses an artificial material to help regenerate bone.

The biodegradable material looks like a sponge and contains bone marrow cells. The cells naturally grow along the scaffold and fill in the gaps. When the bone is replaced, the plastic structure dissolves away.

Researchers have stimulated cell and tissue growth in the laboratory and in animal models.

When the scaffolds were implanted in the damaged femur bones of rabbits,

the animals were able to walk within six weeks.

Bone marrow cells developed throughout the entire volume of the scaffold within eight weeks, the team reported in a recent issue of the *Journal of Biomedical Materials Research Part A*.

The size of the pores is critical, according to Prof. John Davies of the Institute for Biomaterials and Biomedical Engineering. If the pores are too large, the scaffold will not be strong enough; too small and bone growth will be slowed.

Unlike other bone repair efforts, the U of T team's technique doesn't require the use of expensive bone growth factors to stimulate growth.

They plan to study the scaffolds in larger animals, and hope the technique will eventually speed healing of bone trauma in humans.

The study was funded by the Canadian Institute of Health Research, the Ontario Research and Development Challenge Fund, BoneTec Corp. and the Physician's Services' Incorporated Foundation.

continued from page 10

for unethical behavior – as happened in July when the Air Force effectively leveled penalties of up to \$1 billion on Boeing for using documents stolen from Lockheed Martin in bidding for a contract to launch satellites. And the public keeps noticing: A June Gallup Poll of confidence in public institutions found "big business" just one rung up from the bottom. Only 22 percent of respondents had "a great deal" or "quite a lot of confidence" in big business -- better than the last-place HMOs (16 percent), but significantly lower than organized labour (28 percent), Congress (29 percent), and even newspapers (33 percent).

Yet cynical chic persists. It's still cool in some circles to talk patronizingly and derisively about ethics. Maybe it's a throwback to the hold-your-hat 1990s, when the only cool thing was making gobs of money. Maybe it's a resurgent moral relativism, which was so cool in educational circles back when today's top executives were still in school.

Or maybe it's a failure to grasp something as basic as the Golden Rule, which underlies the idea that what goes around comes around. When people see virtue being not just talked but lived, they like it. They feel comfortable with it. They enjoy doing business with it.

I realize, of course, it's not cynical chic to say so – despite the fact that, as Cameron and his colleagues have demonstrated, it happens to be true.

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For other commentaries by Mr. Kidder or to subscribe to the newsletter, "Ethics Newsline", visit www.globalethics.org



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La Faculté d'ingénierie de l'Université de Moncton a récemment fait l'achat d'un canal hydraulique, d'une soufflerie et de plusieurs autres pièces d'équipements à la fine pointe de la technologie. L'achat de ces pièces d'équipements a été rendu possible grâce à un investissement d'un million de dollars du gouvernement du Nouveau-Brunswick dans le cadre du programme de rénovation de l'infrastructure universitaire. Ces pièces d'équipements font partie des laboratoires d'hydraulique et de mécanique des fluides et du centre de génie éolien de la Faculté d'ingénierie.

Le canal hydraulique à pente variable ayant une section de 30 cm de largeur et 10 m de longueur utile permet de

Rénovation de l'infrastructure à la Faculté d'ingénierie

simuler les écoulements en rivières. Il est muni d'un batteur à vagues. La Faculté s'est dotée de plusieurs autres petits équipements tels qu'un appareil pour l'étude du coup de bélier dans les conduites, plusieurs appareils pour l'étude des pompes et des turbines et un canal permettant de simuler les problèmes d'érosion en rivières.

La soufflerie à circuit ouvert permet d'atteindre des vitesses maximales de 75 m/s (270 km/h) à l'intérieur de la section d'essai de 50 cm x 70 cm. Plusieurs types de travaux de recherche seront effectués tels que l'étude de l'écoulement autour de modèles de

bâtiments, l'étude de l'écoulement autour des ailes d'avion, l'étude de couche limite, etc.

L'infrastructure sera utilisée par les étudiants et étudiantes inscrits en ingénierie, à la maîtrise et au baccalauréat, par les professeures et professeurs de la Faculté, par des chercheuses et chercheurs externes et par l'industrie. L'acquisition de cette infrastructure va favoriser l'enseignement et la recherche dans plusieurs domaines telles que l'hydrologie, l'hydraulique, l'aérodynamique, l'environnement, le génie éolien, l'interaction fluide-structure et plusieurs autres. ☺

The Faculty of Engineering at l'Université de Moncton recently acquired a hydraulic channel, a wind tunnel along with several pieces of state-of-the-art equipment. This purchase was made possible by a million dollar investment from the Province of New Brunswick within the framework of the university infrastructure renovation program. The equipment is part of the fluid mechanics and hydraulic laboratories as well as the wind engineering centre of the Faculty of Engineering.

The 10-metre, glass-sided tilting hydraulic channel has a 30-centimetre width test section and will allow the simulation and study of river flows. The channel is equipped with a

Infrastructure renovation for the Faculty of Engineering

random wave maker to simulate all kinds of waves. The Faculty also purchased several other smaller pieces of equipment such as a demonstration unit for the study of water hammer behaviours in pipes, several demonstration units for the study of pumps and turbines and a unit to study water channel river erosions.

The open circuit wind tunnel can reach maximum speeds of 75 m/s (270 km/h) inside the 50 cm x 70 cm test section. Several types of research will be conducted such as the study of the flow around model buildings, the study

of the flow around airplane wings and the study of boundary layers.

The infrastructure will be used by graduate and undergraduate students enrolled in the engineering programs, by engineering professors, by external researchers and by the industry. The purchase of this infrastructure will foster better teaching and research in several fields, namely hydrology, hydraulics, aerodynamics, the environment, wind engineering and fluid-structure interaction. ☺

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The New Brunswick Department of Public Safety advises that in hydraulic elevators with pits 12" or deeper, the pit drain must be equipped with an oil interceptor and vented as per the National Plumbing Code.

For further clarification, call 506-453-8623 or contact your nearest Inspection Services office.

Ask The DPA

Tom Sisk, P.Eng.
Director of Professional Affairs

Q. What is a C of A?

A. Just as the APEGNB has a responsibility to ensure that individuals holding themselves out to be capable of doing engineering or geoscience are properly registered or licenced, the Association also regulates business entities (commonly any business that is 'Inc.' or 'Ltd.') which carry out engineering work.

The Association can issue a Certificate of Authorization (or C of A) to firms which apply to APEGNB and indicate the member or members of their staff who will assume responsibility for the engineering work and pay the required fees. The Act is quite specific in who the responsible person can be. Section 10(8) specifies that the responsible engineer will be "...a partner of the partnership, a principal of the association of persons, or a director or full-time employee of the corporation, who is a member or licensee."

The Certificate of Authorization applies to both firms based in New Brunswick and those outside the province. It is also important to note that the intent is to cover the practice of engineering or geoscience within New Brunswick OR applied in New Brunswick.

It is possible for a business to legally practice engineering and

not have a valid C of A. This usually applies to small firms where the business name has been registered, but not incorporated. A single engineer practices under the business name. The arrangement is viewed as being equivalent to the individual engineer practicing in his own name.

The other situation that the Association works to correct is the one where a non-engineering company could be viewed as offering engineering services. This would be the case where the company has incorporated with the word 'engineering' in its title, but has no engineering capability. This might come about because of ignorance of our Act, the purchase of the business and a change in its business direction or even because the business feels that 'engineering' adds an air of professionalism to its name. The same concern exists for firms with 'geoscience' in their names.

In summary, if the business carries out, or can be perceived as carrying out engineering or geoscience, in or for application in New Brunswick, it needs a Certificate of Authorization. If an incorporated business has "Engineering" in its title, it needs a Certificate of Authorization and a full-time, responsible engineer on staff. ☺

Accessing information on exporting just got a little easier for companies in New Brunswick. By going online to <http://www.ttnb.ca>, export-oriented companies can find comprehensive information on current trade and export activities through Trade Team New Brunswick's new web portal.

Trade Team New Brunswick (TTNB) is a partnership of government organizations dedicated to stimulating export activity in New Brunswick. The partnership includes several federal and provincial departments, and the enterprise network providing potential and active exporters with access to various trade-related programs and services.

"The Government of Canada, through ACOA, is thrilled to invest in this initiative, which will allow companies to find the information they need for success beyond our borders," said **Jeannot Castonguay**, MP for Madawaska-Restigouche. "This site will be an easy access point companies can turn to when looking for guidance on entering new global markets, which will in turn help increase their sales and profits and ultimately generate more jobs here at home." Castonguay spoke on behalf of Gerry Byrne, Minister of State for the Atlantic Canada Opportunities Agency (ACOA).

"This new business tool will help our New Brunswick companies continue to grow and be competitive and export-oriented," Business New Brunswick Minister **Peter Mesheau** said. "As the most 'trade active' province in Canada, we want to build on the success we are already achieving in export development. The TTNB website will reduce red tape and help our companies build their business to create jobs and strengthen and support greater prosperity in New Brunswick."

A vital feature of the new TTNB website is the type of information that New Brunswick companies can search

New web portal to assist NB businesses succeed in export markets

for the tools they need, depending on the level of their export knowledge and abilities.

They can also explore future opportunities for exporting their products and/or services by accessing information on upcoming trade missions, exhibitions and events.

Exports are Canada's economic growth generator, accounting for an increasingly large share of the gross domestic product (GDP). Only 10 years ago, exports comprised 25 per cent of the nation's GDP. By 2000, that number was up around 45 per cent.

New Brunswick is leading Atlantic Canada in exports, which have increased from \$3.4 billion in 1989 to \$8.7 billion in 2002. Top export markets in 2002 for New Brunswick companies were the United States, Japan, United

Kingdom, Belgium and Brazil. In May 2003, Statistics Canada reported New Brunswick was leading the nation in export development with 75.5 per cent of everything it produced sold to customers outside the province. New Brunswick's number one trading partner is the United States where 85 per cent of all its exports are sent.

The federal and provincial governments are sharing the cost of the \$10,000 project, with ACOA providing 70 per cent of the total amount and Business New Brunswick providing 30 per cent.



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506-453-4570

The Asphalt Hits Home In November

The 48th Annual Canadian Technical Asphalt Association Conference is being held in Halifax, November 17 to 19, 2003, at the Casino Nova Scotia Hotel.

The conference mixes workshops on asphalt technology with contractor workshops and discussion panels. There is also a full round of social events for conference delegates and their accompanying guests. For more information, visit the conference web site, at www.ctaa.ca/eng/halifax or contact:

Paul Reynolds, *Co-chair*
Tel: 902-860-5604

NBDNR Hosts 28th Annual Review of Activities

The Minerals, Policy and Planning Division of the New Brunswick Department of Natural Resources will be promoting mineral and petroleum exploration at their 28th Annual Review of Activities.

The event, featuring technical sessions and a trade show, will be held November 3 to 5, 2003 at the Sheraton Fredericton. For more information or to register:

E-mail:
Carol.McNeill-Dobbelsteyn@gnb.ca

Call
506-453-6624

Or click
www.gnb.ca/0078/minerals/index-e.asp

CSCE Annual Conference and Call For Papers

The Canadian Society for Civil Engineering (CSCE) will be hosting their 32nd annual general conference, "Bridging Our Profession", June 2 to 5, 2004, in Saskatoon.

Three formats are being accepted for conference presentations: (1) Presentations accompanied by full papers, (2) Case Study presentations with abstracts only, (3) Posters.

The abstract submittal deadline is October 17, 2003

Full conference details can be found on their website: www.csce2004.ca



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Stipulations: Candidates must be accepted or registered in a Faculty of Engineering

CCPE-Manulife Financial Scholarships

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Field: **Engineering**
Stipulations: Candidates must be accepted or registered in a Faculty of Engineering

CCPE-Meloche Monnex Scholarships

Value: \$7,500
Number: Two
Field: A field **other than engineering**
Stipulations: Candidates must be accepted or registered in a faculty **other than engineering**

Eligibility Requirements

Applicants must be:
▲ Either a P.Eng., Eng. or *ing.*
▲ Pursuing postgraduate university studies and research.

Application forms available from:

CCPE National Scholarship Program
Canadian Council of Professional Engineers
1100-180 Elgin Street, Ottawa, Ontario K2P 2K3
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E-mail: member.services@ccpe.ca
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mireille.vautour@grouperoy.com

Quand les puces envahissent les copeaux

Les succès manufacturiers du Nouveau-Brunswick

DATE Les 20 et 21 février 2004

LIEU Hôtel Howard Johnson
Edmundston (N.-B.)

SÉANCES TECHNIQUES Établissez le lien entre la puce, les copeaux et les croustilles. Voyez comment la puce – électronique, on s'entend – a transformé nos lieux de fabrication... comment aujourd'hui le papier journal naît des copeaux de bois et les croustilles, de la patate. Le 20 février, faites la tournée des entreprises manufacturières de la région ou soyez présent au salon professionnel.

AU MENU **L'hospitalité et les mets traditionnels du Madawaska!**
Ne ratez surtout pas :
• la soirée d'humour, vendredi
• le souper et la danse, samedi

POUR VOUS PORTER VOLONTAIRE OU OBTENIR PLUS DE RENSEIGNEMENTS

PERSONNE-RESSOURCE :
Mireille Vautour, ing.
Présidente du comité
de l'assemblée annuelle
mireille.vautour@grouperoy.com

Randy Miller, P.Geo., To Study Restigouche Fossils in Britain

Edited from the Tribune

Back in the 1880s and '90s, a lot of fossils were collected in the Campbellton Formation and from the cliffs of Miguasha on the Gaspé Peninsula. They ended up in major museums in Great Britain and Ottawa, among other places.

In September 2003, Dr. **Randy Miller**, P.Geo., curator of geology and palaeontology at the New Brunswick Museum, travelled to Britain to examine specimens at the natural History Museum in Scotland and at the Royal Museum of Scotland.

Miller has been working on fossils from the Campbellton Formation for

years. Among his recent discoveries was a giant Eurypterid or sea scorpion. The six-foot monster looked something like a cross between a scorpion and a lobster.

Models of this creature may be seen at the New Brunswick Museum, Saint John and the Restigouche Regional Museum in Dalhousie. A third model was also shown in a temporary exhibition at the Restigouche Gallery, Campbellton.

Among the specimens in the museums in Britain are remains of other sea scorpions, fishes and other life forms.

As Miller explained, many of the original descriptions of fishes from this formation were based on these specimens, so they are important to his work.

Although he has borrowed material from these collections from time to time, shipping is always a concern. Some of the fossils are very heavy while others are quite fragile.

"It's easier to ship a palaeontologist," he said.

Although the deposits along the Restigouche have been studied for over a century, they still draw scientists from across Canada and from institutions in other parts of the world. From time to time, new species are still being found in the area. ☺



Calithumpians Theatre Company and FrOST

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Thanks For Your Support

Dear APEGNB members:

Thank you for your sponsorship of the Fredericton Outdoor Summer Theatre's 2003 play, **Tibbets' Two-Bits**, about Fredericton inventor, Benjamin Franklin Tibbets who designed and built the world's first practical compound marine engine in 1845.

The summer may be over and FrOST is on the pumpkins, but the Calithumpians Theatre Company doesn't stop.

- Test your mettle against the legendary ghosts of New Brunswick; ask about a group booking for **The Haunted Hike**, available until Halloween.
- Contact us about **Dinner Theatre** for your Christmas party or other special events. We offer mystery theatre or revue-style adult entertainment with a little fun content included specific to your audience. Let us entertain you!

CCPE Releases Final Results of 2002 Survey

Last spring, nearly 40 percent of APEGNB members responded to the National Survey of the Canadian Engineering

Profession sponsored by the Canadian Council of Professional Engineers (CCPE). The overall national average response rate was 28 percent.

Here are a few highlights from the survey

National Highlights

- ▶ In 2002, there were **172,000** engineering association/ordre members across Canada—compared to **165,000** in 1997.
- ▶ **12%** of members hold a membership from more than one provincial/territorial engineering associations/ordre.
- ▶ **5%** of members are licensed outside of Canada.
- ▶ The top employment occupations among members continue to be civil (**20%**), electrical/electronics and mechanical (**16%**).
- ▶ **86%** of engineers are satisfied with their job.
- ▶ Over half of members are below the age of **43**.
- ▶ One in six members are under **30** years of age.
- ▶ The overall proportion of female members is **9%**—an increase of **2%** over 1997.
- ▶ Women represent **18%** of those working in the field of environmental engineering.
- ▶ The median income for members in 2001 is **\$78,000**—almost **\$20,000** more than that of technicians and technologists.
- ▶ The highest incomes are reported among members working in petroleum engineering and engineering management.
- ▶ **30%** of Canada's engineers believe they need more negotiation skills.
- ▶ **64%** reported that they have undertaken additional training since 1999.
- ▶ Members in New Brunswick and the Northwest Territories reported the highest incidence of training.
- ▶ Women engineers make less than men—even if age and experience are taken into account.
- ▶ Members in New Brunswick and Quebec report the lowest personal incomes. (Members with the highest personal incomes tend to be located in the Yukon and Northwest Territories.)

APEGNB Highlights

- ▶ Around two-thirds of members are middle-aged (**32 to 51** years) and a total of **7%** are women—consistent with the national average.
- ▶ Most APEGNB members are working in permanent positions.
- ▶ New Brunswick engineers report working longer hours per week and more days at home than the national average.
- ▶ One-third of APEGNB members report personal incomes of less than **\$60,000**.
- ▶ A higher than average proportion of APEGNB members work in civil engineering.
- ▶ The average age of female engineers in New Brunswick is **34**. The average age of male engineers is **43**.
- ▶ Nearly one-quarter of APEGNB members hold two degrees.
- ▶ **36%** of APEGNB members took **10 to 19** days of training during the past three years.
- ▶ **65%** of APEGNB members ranked "promoting the professions to the general public" as the most important activity for the Association to focus their efforts. Licensing and enforcement ranked second.

Could these events actually have happened?



Contest Corner

Engenuity's summer contest received an overwhelming response—with many readers missing out on the prizes by just a matter of minutes.

Since Engenuity is distributed by mail, not all of our readers receive the magazine on the same day. To ensure a level playing field, we've decided to modify the submission guidelines and give more readers the opportunity to win.

All contest entries e-mailed to info@apegnb.com before noon on **Thursday, November 6, 2003**, will be placed in a ballot box. The first five correct answers drawn will receive fabulous back-to-school accessories including an APEGNB cotton t-shirt and orange translucent Engenuity pen.

Congratulations to the winners listed at right for correctly identifying "C: Dolph Lundgren", action star, as a former graduate student in chemical engineering at MIT.

- **Coleen Gorman-Asal**, P.Eng. NB Department of Environment & Local Government Fredericton, NB
- **Andrew Cusack**, P.Eng. Aliant—Voice Solutions Engineering Saint John, NB
- **Troy Hayes**, P.Eng. NB Power Lepreau, NB
- **Pierre McIntyre**, P.Eng. Dieppe, NB
- **Stephanie Pierce**, EIT Bell Canada Saint John, NB
- **Douglas J. Watson**, P.Eng. NB Department of Supply and Services Fredericton, NB

Fact or Fiction?

Which statement is false?

- A. In July 1950, a patent was issued for an automatic spaghetti-spinning fork.
- B. Excluding mirror images and peripheral vision, you can only see a rainbow if the sun is in front of you.
- C. Isaac Newton was an Anglican minister.
- D. Natural propane gas has no odor.



Left: APEGNB Outreach Program Director **Becky Geneau**, EIT, says wearing the APEGNB t-shirt improves her aerodynamic efficiency by 2.3%

Right: **Connie Corrigan**, APEGNB's administrative assistant, says her Engenuity pen increases the quality of her penmanship by at least 1.9%.

News, Views and You

Did your company or one of your staff members receive an award?

Have you recently completed a project you think would interest your colleagues?

Is there a topic that you would like to see covered in the next issue of *Engenuity*?

Did your branch host an interesting guest speaker and you'd like to write an article about it?

I'd like to hear from you! The next issue of *Engenuity* comes out in winter so please send your information by November 7, 2003.

Melissa Mertz, Editor
Engenuity
535 Beaverbrook Court, Suite 105
Fredericton, NB E3B 1X6
melissa@apegnb.com

"I really enjoy the new format of the newsletter. It's much more enjoyable to read than the earlier version. By the way, I don't know if you were involved in the publishing of newly registered P.Eng.'s in the newspapers of the province, but a surprising number of people have approached me and mentioned they saw my name. I guess it's pretty effective advertising."

Coleen Gorman-Asal, P.Eng.
New Brunswick Department of
Environment and Local Government

EDITOR: The newspaper ads announcing New Brunswick's newest professional engineers and geoscientists now appear each spring and fall. Expect to see another ad within the next four weeks!

"I enjoy the magazine very much. Keep up the good work."

David Spear, P.Eng., CET, SC
Fredericton, NB

UNB Technology At Centre of Wood Evolution

With the public becoming more aware of the toxicity of creosote and conventional pressure-treated wood products, a safer alternative has been introduced as bans on copper arsenate (CCA)-treated wood have spread.

Now, the University of New Brunswick, Fredericton campus (UNBF) and its spin-off company, Woodtech Incorporated, have announced the signing of technology transfer agreements for its wood modification and treatment technology with the Norwegian firm, Wood Polymer Technologies ASA (WPT).

The agreements will permit WPT to proceed with its plan to open the world's first commercial plant to use the technology. The plant will conduct business under the name Kebony Products at the Heroya Industriepark in

Porsgrunn—the largest industrial site in Norway.

WPT's chairperson, Steinar Paulsen, says he expects a rapidly increasing number of plants to be established and operate under WPT licences in the months and years to come.

First developed in 1992, and based on a chemical formulation, the technology involves impregnating wood products with wood polymer composites. The process results in major improvements in the strength, hardness, lifespan, water and environmental decay resistance, environmental friendliness and colour penetration of wood.

In addition to using the technology to replace CCA, the other major opportunity is in the tropical hardwoods market. The process can be used to produce wood products from maple, birch and beech trees that have

the beauty, durability and hardness of ebony.

"This is a case of a market catching up to a research discovery," said UNB vice-president (research), Gregory Kealey. "The technology was first invented in 1992, although the market for non-toxic products has only developed recently."

Earlier this year, the United States Environmental Protection Agency moved to prohibit virtually all residential use of CCA-treated wood after December 30, 2003. The European Union has a similar ban in place while in Canada, chemical manufacturers who hold CCA registration have agreed to voluntarily phase out CCA-treated wood for residential purposes.

Marc Schneider, from UNBF's faculty of forestry and environmental management, is the technology inventor and president of Woodtech Inc.

He said the next step for the company includes seeking investors for the Canadian and American markets.

"Our initial focus was on the northern European markets because we thought it would be the first to develop," said Dr. Schneider. "It appears the market for this technology is rapidly developing in Canada and the U.S." ☺



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A workshop covering the fundamentals of analytical geochemistry and its application in the exploration for hidden deposits.

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David Lentz, Mike Parkhill, Toon Pronk
Cliff Stanley and Nicholas Susak

Monday, November 3rd, 2003
Hugh John Flemming Forestry Complex
\$25.00 (includes lunch)

For Reservations Contact:

Sean McClenaghan
email: n542@unb.ca

Fax: (506) 453-5055

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University of New Brunswick
PO Box 4400

Fredericton, NB E3B 5A3



The Construction Technology Centre Atlantic is seeking a qualified individual to fill a full time position as **Executive Director**.

The Construction Technology Centre Atlantic (CTCA) is a non-profit organization with a mandate to transfer technology and broker innovation within the Atlantic Canadian Architectural, Engineering and Construction (AEC) industry.

The Executive Director is responsible for the daily operations of the Construction Technology Centre Atlantic and reports to the Executive Members of the Board of Directors. Applicants must have a related professional degree and extensive experience in the AEC industry at middle to senior management level

For detailed information on this position, the organization and how to apply please visit <http://ctca.unb.ca>

150 Years of Engineering at the University of New Brunswick



The Faculty of Engineering
cordially invites you to attend
a dinner to honour 150 years
of Engineering at UNB.

When: Wednesday, February 11th, 2004
Where: Sheraton Hotel, Woodstock Road, Fredericton
Time: Reception 6:30 pm - Dinner 7:30 pm
Dress: Black Tie (optional)
Price: \$50.00 per person

For more information or reservations contact:
Office of the Dean of Engineering
Telephone : (506) 453-4570
Fax: (506) 453-4569
E-mail: engineer@unb.ca

As part of the New Brunswick Wellfield Protection Program, the wellfields in the communities of Charlo, Grand Falls and Saint-Leonard will receive their designation under the Wellfield Protected Area Designation Order - Clean Water Act, Environment and Local Government Minister **Brenda Fowlie** announced. The designations took effect on October 1, 2003.

"Once a groundwater supply is contaminated, chances are it may never be used again for drinking water," Fowlie said. "By adopting the designation order, municipalities are taking a proactive step to providing greater protection for their drinking water supplies."

The Wellfield Protected Area Designation Order, which came into effect in October 2000, prohibits or limits chemical storage and activities within wellfield recharge areas. The protection provisions vary

Three new designations under Wellfield Protection Program

according to levels of sensitivity in three zones: A, B and C, with Zone A being the most sensitive to contamination. The approach is based on the level of risk associated with different activities, and the nature of contaminants, which have different rates of movement and persistence in the environment.

Extensive studies were conducted in all three municipalities to determine the origins of the groundwater supplies, and if any contaminants could possibly impact on the water source. Throughout the designation process municipal officials were consulted, public meetings were held to address concerns, and all three municipal councils passed a motion requesting the Wellfield Protected Area Designation Order.

"The Wellfield Protection Program is essential to strengthening our environment," Fowlie said. "The program provides greater protection and preservation of the quality and quantity of drinking water and ensures its continued supply for present and future generations."

The Wellfield Protected Area Designation Order made New Brunswick the first province in Canada to introduce such comprehensive province-wide protection measures for municipal groundwater supplies. Eleven municipalities in the province that rely on groundwater for their primary source of drinking water have received designation.

More information about New Brunswick's Wellfield Protection Program is available online at:
<http://www.gnb.ca/0009/0371/0001/index.html>



OPTIMIST: The glass is half full

PESSIMIST: The glass is half empty

ENGINEER: The glass is twice as big as it needs to be

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Awards Dinner

Dinner d'honneur 2003



Join us for an evening of celebration as we honour our newest life members and recipients of this year's scholarships and prizes.

Friday, October 24, 2003
Delta Beauséjour, Moncton, NB

Reception: 6:00 pm
Dinner: 7:00 pm

Friends and Family Welcome!
\$45 per person

For **dinner reservations**, please contact APEGNB by October 17, 2003

at **506-458-8083**
or e-mail rachael@apegnb.com

Nous vous invitons à être des nôtres pour rendre hommage aux nouveaux membres à vie et aux lauréats des bourses d'études et des récompenses de cette année.

Vendredi 24 octobre 2003
Delta Beauséjour, Moncton, (N.-B.)

Réception : 18 h
Repas : 19 h

Les parents et amis sont les bienvenus!
45 \$ par personne

Réservations :
AIGNB
au plus tard le 17 octobre 2003

506 458-8083
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Congratulations To This Year's Life Members!

Félicitations aux membres à vie de cette année!

- | | |
|----------------------------------|-----------------------------------|
| Kenneth F. Agnew, P.Eng./ing. | Patrick R. Hickey, P.Eng./ing. |
| Leslie A. Ashfield, P.Eng./ing. | William M. Jones, P.Eng./ing. |
| Kirk A. Bavis, P.Eng./ing. | Kenneth H. Lawson, P.Eng./ing. |
| Paul H. Blanchet, P.Eng./ing. | Ronald B. MacQuarrie, P.Eng./ing. |
| Claude L. Bourgeois, P.Eng./ing. | Thomas McSorley, P.Eng./ing. |
| Richard A. Burpee, P.Eng./ing. | Walter M. Nason, P.Eng./ing. |
| Glen G. Carson, P.Eng./ing. | R. Brian O'Blenes, P.Eng./ing. |
| Thomas G. Crowley, P.Eng./ing. | Maurice A. Pettigrew, P.Eng./ing. |
| George B. Dayton, P.Eng./ing. | Frank C. Robinson, P.Eng./ing. |
| John A. Dixon, P.Eng./ing. | W. Dana Wasson, P.Eng./ing. |
| Edward A. Dunham, P.Eng./ing. | Alan H. Wilson, P.Eng./ing. |
| Jim E. Garrett, P.Eng./ing. | David J. Wilson, P.Eng./ing. |
| James K.D. Hayden, P.Eng./ing. | W. Huntley Wishart, P.Eng./ing. |

Registrations:

ALLEN, DAVID, P.Eng.
 BERLINGUETTE, LUC-DENIS, P.Eng.
 BOONE, JAMES R., P.Eng.
 BOUDREAU, PATRICK, P.Eng.
 DeMERCHANT, RYAN S., P.Eng.
 DESROSIERS, MARC R., P.Eng.
 ENGLISH, ANGELA H., P.Eng.
 GOULD, KEVIN D., P.Eng.
 HOWIE, JEFF, P.Eng.
 KITCHEN, JEFFREY A., P.Eng.
 LeBLANC, KYLE, P.Eng.
 McMAHON, BRIAN W., P.Eng.
 MITCHELL, R. RYAN, P.Eng.
 MOCKLER, STEPHEN A.
 RUSSELL, PATRICK, P.Eng.
 SHARMA, AJAY, P.Eng.
 SMITH, RICHARD N., P.Eng.
 VAUTOUR, SERGE, P.Eng.
 VIBERT, NEIL A., P.Eng.
 WANG, HUI (FRANK), P.Eng.

Transfers-In:

BÉLANGER, MICHEL DENIS, P.Eng.
 BOUDREAU, BLAIR R., P.Eng.
 BOUDREAU, CHRIS, P.Eng.
 FORSYTHE, ANDREW, P.Eng.
 GHOULI, JAMEL, P.Eng.
 HILTZ, RONALD, P.Eng.
 JOHNSON, MARK R., P.Eng.
 KIRKHOPE, KENNETH J., P.Eng.
 LABERGE, SOLANGE, P.Eng.
 PHAM, JOHN DINH CHUONG, P.Eng.
 PHILLIPS, JONATHAN G., P.Eng.
 STEPHENSON, RICHARD, P.Eng.
 VERREAULT, MARTIN, P.Eng.
 WAIBEL, WALTER, P.Eng.
 WALLACE, STEPHEN, P.Eng.
 WOODFORD, GLENN, P.Eng.

Engineers & Geoscientists-in-Training:

ADAMS, MATTHEW, GIT
 ALBERT, WESLEY J., EIT
 AUCCOIN, SHAWN, EIT
 BAILEY, JOE J., EIT
 BELLEFLEUR, MARK J., EIT
 BISHOP, TINEKA, EIT
 BOOTH, JAMIE R., EIT
 BOUCHER, STÉPHANE, EIT
 BOYLE, KEVIN, EIT
 CHOI, EVA V., EIT
 COMEAU, GILLES R., EIT
 DAWE, MELISSA R., EIT
 DeSAULNIERS, EDWARD L., EIT
 DIAMOND J. LYNN, GIT
 DUFFY, PATRICK, EIT
 HAGLUND, ANDREW, EIT
 HARALAMPIDES, KATY, EIT
 HARGROVE, ZAKARY J., EIT
 HÉBERT, CINDIE, EIT
 HOEKSMAN, PAUL, EIT
 KELLOCK, JASON A., EIT
 KIERSTEAD, KRISTOPHER R., EIT
 LANDRY, PHILIPPE, EIT
 LeBLANC, LUC R., EIT
 LEVESQUE, SHEILA, EIT
 LUTZ, STEPHANIE S., EIT
 MacEWAN, JEFFREY, EIT
 MacFARLANE, KENNETH, EIT
 MacNUTT, WADE M., EIT
 MARSHALL, ANGELA S.
 MOORE, AMY E., EIT
 NASH, M. CARA DAWN, EIT

June & August 2003

PATTERSON, SEAN C., EIT
 POND, GEOFFREY T., EIT
 PRYSTAWSKI, BARRY, EIT
 RIBY, WILLIAM, EIT
 RICHARDSON, SEAN, EIT
 ROBINSON, ERIKA, EIT
 ROSE, MARLO R., EIT
 SKAARUP, JONATHAN M., EIT
 STILES, MARK, EIT
 VAIL, GEOFF W.N., EIT
 WHALEN, PATRICK, EIT

Licences:

ARGUE, LARRY W., P.Eng.
 BLOUIN, DOMINIQUE, P.Eng.
 COLE, ROBERT J., P.Eng.
 COROIU, MIHAI, P.Eng.
 CUDNY, PAWEŁ, P.Eng.
 DERWORIZ, RONALD T., P.Eng.
 DUDZINSKI, PAUL J., P.Eng.
 GREFLUND, KELD, P.Eng.
 HALABURA, STEPHEN P., P.Geo.
 HARLAND, TOM, P.Eng.
 HELSTEN, ALLAN J., P.Eng.
 LANCE, GAIL, P.Eng.
 MacDONALD, JOHN B., P.Eng.
 McCORMICK, JOHN W., P.Eng.
 McDONAH, KEVIN L., P.Eng.
 McQUAID, LARRY J., P.Eng.
 O'BRIEN, KENNETH, P.Eng.
 O'CONNOR, BYRON, P.Eng.
 SAVARIA, CHANTAL, P.Eng.
 SILBER, GHEORGHE, P.Eng.
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Resignations:

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 BOURQUE, ROGER J.
 CHAMBERLAND, J.C. MARTIN
 COMEAU, GUY
 DAVAR, KERSI S.
 DAWKINS, CLAIR E.
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 GREEN, JILL E.
 HABER, JOSEPH H.A.
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 KEIRSTEAD, HAZEN
 LEE, TING-HSIANG
 LIU, YI
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 MOGLEVSKY, EARL
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 OGDEN, DANIEL
 PIERCE, ARDEN
 SAUERTEIG, HORST
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 SMALL, GORDON T.
 TRZOP, STANLEY F.
 WELCH, RALPH B.

Transfer-Out:

BOURGEOIS HIGGINS, SYLVIE
 CARTER, CHRIS
 GILLINGHAM, DARRYL
 FISHER, DARRELL
 MAILLET, CAROLE

Deceased:

BEATTIE, IRA
 KERR, W. DAVID
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To request a résumé or more information on any candidate listed below, simply fax your organization's name and contact information along with the alpha-numeric code at the beginning of each listing to:

Michelle Westall
 Fax: 506-451-9629

CHEMICAL

SE03-700 B.Sc. Chemical UNB 2000; M.Sc. Chemical 2003 (University of Alberta); E.I.T. APEGGA. Experience in: biological systems and their application to industrial processing; bitumen and heavy oil processing; engineering-support of 24-hour manufacturing, project management, customer/vendor liaison, troubleshooting processing problems under strict time constraints; efficiency measurements of washers of pulp & paper mill; wastewater balances on coal-fired power plant; working/volunteering abroad. I am a team player with strong interpersonal skills, strong written and verbal presentation skills. I am looking for a challenging career committed to providing effective solutions to industrial pollution.

SE03-701 B.Sc. Electrical UNB2002; Highly motivated recent Electrical Engineering graduate seeking employment in the engineering field. Main area of study in analog, digital, and fiber optic communication systems. Excellent verbal and written communication skills. I enjoy working in a group environment as well as individually. I am confident in my problem solving skills and look forward to putting them to work for you.

CIVIL

SE03-J251 B.Sc. Civil Université de Moncton2000; Reg'd E.I.T. APEGNB. Background includes design of highways and drainage systems, traffic management and construction cost estimate. Good knowledge of Autocad2002. A team player with strong interpersonal skills, looking for a challenging career ; willing to relocate. Fluently bilingual (French & English).

ELECTRICAL

SE03-702 B.Sc. Electrical UNB 2003, EIT registration pending. Seeking employment in any area of engineering. Presently Research Assistant at the UNB Fibre Optic

Lab. PEP term in Maintenance Department, St. Anne-Nackawic Pulp Company Ltd. I was solely responsible for the full implementation of an HMI main project which included Training, PLC's, Interfacing, Design and Wiring. Technical Electives: VLSI 1 and 2 , DSP 1 and 2 , Fibre Optics, Instrumentation/Electronic Circuit Design, Data Communications and Multimedia Design Bilingual French and English (Written and Spoken).

OTHER

SE03-J651 B.Sc. Computer UNB 2003; Reg'd EIT APEGNB; Practical experience with several programming languages including C, C++, Java, Verilog, VHDL, Matlab, and Assembler as well as experience using such programs as Xilinx, Capture, Autocad and Pspice. My thesis focused on redeveloping a temperature sensor and pressure sensor into one device that was more cost efficient. It involved research, selecting components to work together, interfacing sensors, and writing a program in Matlab to connect the device to a computer. Other areas of work include programming a FPGA, DMA, MSOffice, Corel Suite, etc. ☺



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Submitted by Dallas Davis, P.Eng., President, Dalmin Corporation

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Some of the diamonds recovered from Jackson Inlet.

In 1998, a Canadian helicopter pilot found a very large rough diamond about 12 km from Jackson Inlet on Nunavut's Brodeur Peninsula.

The pilot's discovery set off a chain of far-reaching events that eventually brought APEGNB's Dallas Davis, P.Eng., north to Baffin Island in May of 2000.

Since then, he has made four other trips to Canada's Arctic to perform due diligence studies and exploration work on behalf of Twin Mining Corporation—a Toronto-based mineral exploration and development company. In this issue's Postcard, Dallas describes his diamond exploration work and his love of the frozen, desert-like landscape

have been recovered by Twin Mining in the course of early stage evaluation sampling) is referred to as kimberlite. The name is taken from Kimberley, the South African town where mining the same diamond-bearing rock made the fortune of Cecil Rhodes and underpinned the DeBeers empire.

Like the Kimberley area, Canada's Brodeur Peninsula has more than one preserved ancient volcanic lava conduit containing diamondiferous kimberlite. (These funnel-shaped conduits are known as "pipes.") The volcanic pipes are mined to extract diamonds. It often

takes about 250 tonnes of ore to produce a one-carat gem quality polished diamond.

Based on the experience in evaluating other diamond fields, the cost to bring the first prospective mine site through the feasibility study stage will exceed \$20 million. An endorsement of Twin Mining's assessment of the area has come from Kennecott which has

So far, Twin Mining has found two other pipes and enough strong evidence to have justified staking 5,107 square kilometres (1.3 million acres) of claims. Approximately \$8 million has been spent on geological and geophysical surveys, sampling, drilling, shipping, and, processing for recovery of diamonds.

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On the diamond trail...

As the Boeing 727 of Canada's Inuit-owned airline, First Air, approached the gravel runway of the Nanisivik-Arctic Bay airport on July 30, 2003, I had a few moments to reflect on a remarkable series of coincidences that allowed me to be part of this historic quest for Arctic diamonds.



A supply plane lands at the Jackson Inlet camp.

It all started with a chance conversation between Fred Tatarnic, the helicopter pilot who had found a three-quarter carat diamond, and a lab manager with connections in the diamond mining business. Tatarnic told the lab manager he wanted to option his discovery mineral claim, Freightrain, to a junior company rather than to a large company like DeBeers.

The lab manager contacted Hermann Derbuch, P.Eng., a former New Brunswick resident who is now CEO of Twin Mining. He struck a deal with Tatarnic and his backers.

I had known Hermann for more than 30 years so when he called me to assist with the due diligence work, I thought it was the ideal opportunity for my son, Adrian, and I to do a little geological 'adventureing' together. (Adrian had just been accepted into the Geological Engineering Technology program at Sir Sanford Fleming College and was eager to add practical experience to that which he had just gained on another Twin Mining diamond project in the Torngat Mountains of Quebec.)

Kimberlite

The rock in which the Freightrain diamonds are found (some 50 carats



A blast creates a trench and exposes kimberlite for sampling.



The dark circular features are kimberlite of the Freightrain diamond discovery.

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acquired large claim blocks in close proximity and is carrying out a major survey and drill program. (Kennecott is a subsidiary of RTZ, the world's largest mining company, and is the principal owner of Diavik, Canada's second diamond mine which opened earlier this year.)

Now a bit about the non-diamond aspects of Baffin Island...



Dallas Davis, P.Eng.

by steep-walled canyons near the coast.

The lack of biting or sucking insects as well as a paucity of vegetation are what makes the

A polar bear southwest of Jackson Inlet



A typical canyon near the coast of Brodeur Peninsula



Brodeur Peninsula a most pleasant place to work outdoors when compared with southern Baffin or almost anywhere else in Canada.

Auyuittuq National Park, on the mountainous eastern coast about 300 km north of Iqaluit, is extremely scenic and offers excellent hiking and rock climbing on some of the highest sheer cliffs in the world. And, one does not have to worry about crowds of tourists or local people. The population of the whole island is under 15,000, with half in Iqaluit and the rest scattered in small hamlets of 700 to 1500 persons. Judging from the many pods of narwhal observed when crossing Admiralty Inlet by helicopter to catch my flight at Arctic Bay on August 9, 2003, I concluded that they must outnumber people by a considerable margin. But, considering the awakened tourist interest and the desire of local people to earn money by selling their unique spiral tusks, one wonders how long the population ratio will favour the narwhal?

Baffin Island, already famous for its narwhals, polar bears and heavenly landscape, may also prove to be Canada's next biggest source of diamonds.



Twin Mining Corporation is a Toronto-based company listed on the Toronto and Berlin Stock Exchanges. Its New Brunswick connections are Hermann Derbuch, P.Eng. and his wife, Roswitha, who lived in Bathurst for 17 years until



The Inuit hamlet of Arctic Bay, 100 km east of Jackson Inlet.

1987 when they moved to Toronto. At that time, Hermann was promoted to Director of Mining with the Noranda organization after serving in progressively responsible engineering and management roles with Brunswick Mining and Smelting. At Twin Mining, he is Chairman, President and CEO. Roswitha is responsible for investor relations. Their son, Arnulf, who designed and maintains the company web site is an engineering graduate of the University of New Brunswick. The latest company news, maps and many photos can be seen at the web site, www.twinmining.com.



Diamond Details



30 gem-quality diamonds from Jackson Inlet

- Of all the diamonds mined in the world each year, less than half are gem quality; the rest fall into two other main categories known as near-gem quality and industrial quality diamonds. The 51 carats of diamonds extracted at Jackson Inlet are considered gem-quality.
- Diamonds are not unbreakable. A diamond's crystal structure has "hard" and "soft" directions. A precise blow of sufficient force can crack, chip, split or even shatter a diamond.
- In medieval times, people thought diamonds could cure sickness if they were ingested. In 1532, Pope Clement VII was supposedly given 14 spoonfuls of diamond powder which resulted in death for the patient—as well as a very high bill for his treatment!
- At 530.20 carats, the Cullinan I or Star Africa diamond is the largest cut diamond in the world. Pear-shaped, with 74 facets, it is set in the Royal Scepter and kept with the other Crown Jewels in the Tower of London. Other famously large diamonds include the Excelsior, the Great Mogul, the Darya-i-Nur, the Koh-i-Nur and the Hope.

Another crater is likely to be added to the World Crater Database courtesy of **Dallas Davis, P.Eng.**, and his colleagues.

In May 2000, as Davis selected locations for staking mineral claims within the Jackson Inlet area of the Brodeur Peninsula (see p.27), he examined some government aerial photographs for evidence of circular lakes and aligned streams or lakes.

He was hoping to find some diamond-bearing rock. What he found instead were meteor craters.

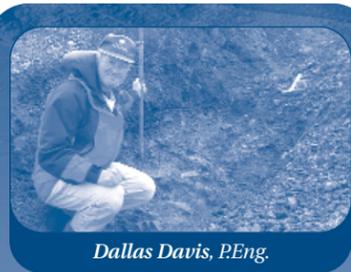
In one area, near a chain of circular lakes Davis had selected for staking, he noticed two "out-of-place" circular ponds on a beach. When flying over the area in August 2000, he took some photos that he later showed to project geologists and suggested they examine the beach in their spare time.

His suggestion was taken up by **Antoine Fournier, P.Geo.**, a project geologist from Quebec. Fournier reported that one pond (which hadn't been noticed on the aerial photograph) definitely looked like a crater, but that the two larger ones

New Meteor Crater Discovered by New Brunswicker!

did not have raised rims as one would expect if they were impact craters.

In August 2002, Twin Mining Corporation's field manager, **Richard Roy, P.Geo.**, made a brief examination on the ground and photographed one of the smaller craters below. This crater is unique in that it is relatively recent, well-preserved and not masked by vegetation or erosion.



Dallas Davis, P.Eng.

Last October, Davis showed his photos to **Dr. James Whitehead** of the Planetary and Space Science Centre at the University of New Brunswick. Since Dr. Whitehead's impact research group maintains the World Crater Database, he was able to verify that there were no records of Davis' craters on the confirmed list of Canadian craters. Dr. Whitehead also suggested some "ground truthing" be done before any definitive conclusions are drawn. In September 2003, Davis was pleased to learn that Dr. Whitehead received a grant from National Geographic to assess and further investigate the Baffin Island craters.

"I suspect the researchers will decide this three-crater cluster may have been created by one meteor which exploded or broke up when passing through the atmosphere," says Davis.

Visit the World Crater Database!

www.unb.ca/passe/ImpactDatabase

Helicopter pilot Marcel stands on the rim of the 60-metre crater.

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