



In the Spotlight: New Book & New Regional Field Guide

Feature Article: **Regulatory Update: Members Portal**

8 HI

2 📾 🏦 🧑 😒

S 5

* e

INGÉNIEURS GÉOSCIENTIFIQUES

ENGINEERS **GEOSCIENTISTS**

New Brunswick

Just the facts

about Engineers Canada-sponsored Term Life Insurance



The average mortgage balance in Canada is \$198,781¹

The cost of raising a child to 18 in Canada is \$253,947²



Canadians spend an average of **\$62,183** per year on goods and services³

Engineers Canada-sponsored Term Life Insurance can help

The fact is, if your family lost its primary source of income, times could be tough. But **Engineers Canada-sponsored Term Life Insurance** can help protect your family's financial future.

Manulife

- 1 thestar.com, "Average amount owing on mortgages rises 5 per cent, TransUnion Canada says," August 22, 2017.
- 2 moneysense.ca, "The real cost of raising kids," April 15, 2015.
- 3 Statistics Canada, "Average spending on goods and services and shares of spending of major categories by province, 2016," 2017.
- 4 See full First-Time Applicant Offer eligibility and offer details at www.manulife.com/springfree.

Manulife, Manulife & Stylized M Design, and Stylized M Design are trademarks of The Manufacturers Life Insurance Company and are used by it, and by its affiliates under license. All rights reserved. © 2019 The Manufacturers Life Insurance Company. Manulife, P.O. Box 670, Stn Waterloo, ON N2J 4B8.

Accessible formats and communication supports are available upon request. Visit **manulife.ca/accessibility** for more information.

Underwritten by The Manufacturers Life Insurance Company

Here's what it offers:

- + Exclusive coverage and rates
- An additional \$50,000 in coverage at no extra cost for up to two years for first-time applicants⁴
- 10%-15% savings on volume purchases
- Your choice of coverage up to \$1.5 million

Learn more and apply:

□ manulife.ca/apegnbTL
S 1 877 598-2273







Fall 2019



Publisher:

Association of Professional Engineers & Geoscientists of New Brunswick 183 Hanwell Road Fredericton, NB E3B 2R2

Tel: 506.458.8083 Toll Free: 1.800.458.808 Fax: 506.451.9629 info@apegnb.com www.apegnb.com



Editor: Heather MacLean Chief Communications Officer

Contributions:

Serge Dupuis, PEng Lia Daborn Carol MacQuarrie, PEng Kate Sisk Stamatia Baker Michelle Paul-Elias, PEng Jeff Underhill, PEng Laura Douglass Nathan Tozer Francois Duguay, M. Ing Phil Lamey, PEng Thomas Chenard, EIT Emilie Pellerin, PEng Dibyendu Debnath, PEng Ray Ritchie, PEng Martha Hickman Sandra M. Barr Alexandra Gray Gisele Rudderham Matthew Clark Jennifer Day David Trask, PEng Marienna MacDonald, PEng Peter Crowe, PEng, Stantec Darren White

Graphic Design: John Christenson Design

Cover Photo: Steven MacGillvarery

Translation: Optimum Translation

APEGNB Staff:

Chief Executive Officer Lia Daborn lia@apegnb.com

Chief Communications Officer Heather MacLean, MBA heather@apegnb

Director of Professional Affairs & Registrar Carol MacQuarrie, PEng macquarrie@apegnb.com

Director of Registration Kate Sisk kate@apegnb.com

Director of Administration Rachael Christenson rachael@apegnb.com

Program Coordinator Stamatia Baker stamatia@apegnb.com

Diversity and Inclusion Coordinator Laura Douglass laura@apegnb.com

Consultant Bruce Wallace wallace@apegnb.com

Administrative Assistant Stéphane Cormier reception@apegnb.com

APEGNB Executive and Council

President Serge Dupuis, PEng

Vice-President Marlo Rose, PEng

Engineers Canada Representative Jean Boudreau, PEng, FEC

Geoscientists Canada Director Mike Parkhill, PGeo, FGC

Fredericton Councillor Spencer Devereaux, PEng

Moncton Councillor Maryse Doucet, PEng

Saint John Councillor Jeffrey Underhill, PEng

Northwestern Councillor Keith Brideau, PEng

Northeastern Councillor Stéphanie Doucet-Landry, PEng

Geoscience Representative Matt Alexander, PGeo

Public Representatives Lise Landry, LLB Vasu Sivapalan, LLB

At Large Councillors Michelle Paul-Elias, PEng Holly Young, PEng

ENGEOACTIONS THE NEW BRUNSWICK SOURCE FOR ENGINEERING AND GEOSCIENCE NEWS

CONTENTS

Message from the President	3
Message from the CEO	5
Editor's Message	6
Feature Article: Regulatory Update: Members Portal	8
From the Desk of the DPA	9
New Members	. 10
Registration FAQs	. 11
Continuing Professional Development	12
2020 Centenary Update	. 13
Outreach Update	14
1:1 Thought-Leadership Interview	15
Université de Moncton Robotics Group	
Take Part in Eurobot 2019 Contest	. 17
Canadian University Software Engineering Conference:	
A Student's Perspective	. 18
Branch Update:	
Fredericton	. 20
Northwestern	. 21
Moncton	. 22
Saint John	. 23
Northeastern	. 25
Congratulations	. 26
2020 Nationl Professional Practice Exam Dates	26
In the Spotlight: New Book and New Regional Field Guide	27
UNB Earth Sciences: Silver Standard -	
McAllister 2019 Field Trip to Spain and Portugal	28
Project Updates:	
Canadian Nuclear Laboratories	30
Stantec	. 32
New Brunswick Well Represented at the	
2019 Canada Wide Science Fair	34
Membership Survey Highlights	35
APEGNB Inspirational STEM Teacher Awards Recipients 2019	36
Important Dates	36



ENGEOActions is published by the Association of Professional Engineers and Geoscientists of New Brunswick (APEGNB). All content, copyright 2019, APEGNB. All rights reserved.

This publication may not be reproduced, all or in part, without written consent from the publisher. Every effort has been made to ensure the accuracy of all content in this publication, however, the publisher will not be held responsible for omissions or errors.

Articles, reports and information contained herein reflect the views of the individuals who wrote or prepared them and do not necessarily represent the position of the publisher. The material herein is intended for educational and informational purposes only.

Please address all editorial and advertising inquiries to APEGNB, Email: heather@ apegnb.com.

APEGNB will not give or rent your name, mailing address, or other contact information to third parties.

Discipline

Information on any disciplinary matters will now be available on our website.

Message from the President Serge Dupuis, PEng



elcome to the new *ENGEOActions*! A lot has certainly transpired over the last several months since becoming President.

Of course, things kicked off with our AGM in February when I took the helm as the Association's Council President. One of the first tasks I had to focus on was finding a new CEO after our longest serving CEO, Andrew McLeod, retired. We formed our selection committee, which was comprised of myself, Jean Boudreau and Darryl Ford. To round things off, we hired an HR Consultant to handle the processes and the screening. After a few months, we announced in July, that Lia Daborn was our new CEO. Lia has extensive executive director experience and has joined us after several years leading the New Brunswick Dental Society and before that, the Canadian Bar Association and she has a Masters Degree from Dalhousie University. Lia officially started with APEGNB on July 15th and we put her right to work with our strategic planning session.

And of course, during that time we also had a few other exciting developments. Jean Boudreau, Council representative and director for Engineers Canada was voted in as President-Elect for the national body. And, right on her heels, Michael Parkhill, Council representative and director for Geoscientists Canada was voted in as President-Elect for that national body. It would seem that New Brunswick is taking over.

It has certainly been a busy first six months. I have been travelling the province and the country to attend our branch AGMs, AGMs for our sister regulators and national meetings for both engineers and geoscientists. It has been both a learning experience and also one that is reaffirming. It has been good to see first-hand that New Brunswick is doing some very good work as your regulator. Naturally, there is always room for improvement and change because as we all know, continuous learning and execution is very much what our professions must do. Self-regulation will continue to be in the spotlight and ensuring that we do the right thing is paramount. As we move forward into our next 100 years, the focus on self-regulation will be even more apparent. We continue to watch and learn what is happening both here in the province as well as across the country as self-regulation is under the microscope.

We continue to prepare for our Centenary celebration next April. I hope that you all have April 25th marked off in your calendar. We will celebrate 100 years of self-regulation at a special event at the Delta in Fredericton. Tickets will go on sale in the New Year and are first-come, first-serve.

Another exciting development this year is our new member portal. It plays such a pivotal resource and tool for our members that we made it the cover story of *ENGEOActions*. Updating your information and keeping track of your professional development hours is now easier than ever. The goal for the portal is to give you the power to manage your information in one central location. As soon as we launch be sure to sign up.

And speaking of managing your information, we are coming up to license renewal time. Please keep October and January 1st in the forefront of your planning. Invoices are mailed out in October and <u>must be paid by January</u> <u>1st to be in good standing</u>. It's critical that all practicing members renew by January 1st. Practicing and not being in good standing means that you are practicing illegally.

Going back to our Centenary and our first 100 years under our belt, it is incumbent upon us to look to the future and plan for our next 100 years of self-regulation. For the remainder of my term that will be my focus. You are receiving this update just after we finished an extensive strategic planning session with Council and staff. It really is the time to step back, evaluate and pivot. Naturally our focus will continue to be on regulating the professions, but what is it that we can do differently? How do we raise the bar? How is technology changing how the professions work? How does technology change the way the Association performs its duties and charges? These are the ideas and concepts that I am thinking about and will continue to focus on for the remainder of my term.

Finally, and certainly not last in my mind is the addition of our Chief Communications Officer, Heather MacLean. We changed our communications role a bit to have more of a strategic focus versus a tactical/transactional focus, thus the change from Director of **Communications to Chief Communications** Officer. Heather joined us just after our AGM in February. Heather has extensive experience in strategic communications and marketing as well as business operations having worked in public sector and private sector, including a publicly traded company. You will continue to see changes to how we communicate, which are based on a member survey that Heather sent out in April.

This are just some of the highlights over the first six months. Stay tuned for more updates in the coming months.

Serge Dupuis, PEng APEGNB President 2019

ANNUAL Members Reception

Thursday, December 5, 2019 4:30 - 7:30

St. James Gate Event Room 14 Church Street Moncton, NB

All members and members-in-training are invited to join APEGNB President Serge Dupuis, PEng, and Council for an evening of good cheer.



RSVP: reception@apegnb.com

Message from the CEO Lia Daborn, CEO



am honored to be writing this first message to you as the new CEO of APEGNB. Having only just started in this role, I have very limited information to share with you at this time but stay tuned because I know that big things are on the horizon!

In August I was pleased to attend the annual strategic planning session. This critical activity sets the course for key activities over the next year and helps to set the stage for the subsequent two years. As we approach our Centenary, this is the perfect time to step back, reflect and set the objectives and priorities for our next 100 years of regulatory excellence. APEGNB has a lot to be proud of, and a great foundation upon which to build. There are dedicated members across the province, working on behalf of the professions they represent. Such engagement by our members only adds to my excitement about becoming part of this dynamic organization.

My professional career has been focused on working with memberbased, self-regulating professions. With a designation as a Certified Association Executive, I learned the elements of running an association and have applied those skills as a board member for several other groups, including my own professional body: the Canadian Society of Association Executives – essentially, the Association for Associations. I served as Chair of the national Board from 2016-2017.

Over the past few years I have been engaged at the national level of the Canadian Dental Association through my job at the New Brunswick Dental Society. One of the projects that I worked on related to the future of the profession and it was a very detailed examination of the future of dentistry but also the changes in self-regulated professions that are occurring around the globe. I am aware that the Engineering and Geoscientist community is facing a similar challenge. During my nine years working with the Canadian Bar Association (NB Branch), I watched the evolution of self-regulation of the legal profession, particularly in the United Kingdom where government created an oversight body for many different groups. There are definitely changes afoot in Canada for many organizations and it is something that I believe we need to continue to be vigilant about.

I am thrilled to be a part of APEGNB where I can focus on working for you, the members, and supporting your needs. Over the coming months I hope to meet many of you, whether through committee work or at a branch meeting.

If you have any questions, ideas or just want a chat, please feel free to reach out.

Lia Daborn, CEO lia@apegnb.com

Editor's Message Heather MacLean, CCO



elcome to the new eMagazine: ENGEOActions!

As some of you know, I joined APEGNB just after the AGM in February. I know some of you from my previous professional lives, have met some of you since February and for the rest, I look forward to meeting you. I thought I would tell you a little about my professional background to put some context to "me."

My career actually started at NB Power in what was once called the Engineering and Construction Division. And let me qualify that I am not an engineer or a geoscientist. I had the pleasure of calling Elwood Maxwell and Gordon Hare, both bosses and mentors. I was humbled to work for these two gentlemen, and I learned a great deal from both of them. I am sure that some of you will recognize those names and that they were/are Professional Engineers. Under their leadership, I worked on the mega projects for Dalhousie and Belledune, first staffing up and managing the engineering consultants for about a year. After that and for several more years I wrote tenders and contracts and carried out contract administration for those projects, and more. At the time, I was the only non-engineer to do that. I can also attest to being inside every plant that NB Power has or used to have. And, I wish I had photographic proof that I was in some interesting spaces, including *inside* boilers. I wouldn't trade those experiences for anything.

After NB Power, I worked in several different sectors including geographic/hydrographic software, online education, SaaS, cybersecurity skills and workforce development and more, here at home, nationally and internationally in more than 20 countries. I even returned to NB Power for a few years in a much different capacity to head up their Corporate Communications and Relations Department. And most recently I lead an incredible team of talented people who helped me execute Canada's only cybersecurity skills and workforce development Programme. In fact, I would say that the work we were doing was leading internationally, as I discovered while in Israel earlier this year. Over the years, I also had the honour to serve on numerous Boards of Directors, as well as national and international committees. And in one case I was the only regional representative on a Five Eyes Committee where only national governments were represented. (Five Eyes is an alliance between federal government agencies and government departments of Canada, the United States, the United Kingdom, Australia and New Zealand.)

The common denominators in all these roles, as diverse as they are, is strategy, business acumen and the ability to communicate. A strategist at heart I love looking at the art of the possible and bringing it all together – sometimes in unexpected ways - and then executing.

And that's why one of my first objectives as Chief Communications Officer for APEGNB, was to conduct a fulsome audit of not only

(continued on next page)

what communications we delivered, but also how we approached 'engagement' from a strategic versus tactical standpoint. Part of that process was getting feedback from you, the members. In April, I issued a Members' Survey specific to communications. There were great insights from the membership, so thank you for that. For more information on those results, please see *Membership Survey Highlights* later in *ENGEOActions.*

The end result? This eMagazine is the first in the transition to include content that you asked for. And some content that used to be in



The Engineers Canada – Manulife Scholarship

To explore more big ideas, apply for 1 of 3 **\$12,500 scholarships** from Engineers Canada and Manulife.

Eligibility:

- Canadian citizens or permanent residents of Canada
- Professional engineers returning to university for further study or research in an engineering field

Visit **engineerscanada.ca/scholarships** for more scholarship details and applications.

Deadline to apply: March 1, 2020.





Manulife, Manulife & Stylized M Design, and Stylized M Design are trademarks of The Manufacturers Life Insurance Company and are used by it, and by its affiliates under license. © 2019 The Manufacturers Life Insurance Company. All rights reserved. Manulife, PO Box 670, Stn Waterloo, Waterloo, ON N2J 4B8. **Engenuity** will move to be online or to other APEGNB Channels. In addition, we are moving away from calling it a newsletter. This is a professional publication – an eMagazine – for professionals in a regulated environment. It will continue to evolve over the coming year. Please note that we will be continuing with the online version to reinforce our commitment to the environment as well as to be fiscally responsible.

Also, I wanted to set a standard cadence for *ENGEOActions* so that you know when to expect it in your Inbox. The standard publications will be January, June and September. And you can expect to see it in your Inbox the first two weeks of those months. I have two qualifications to make as well. If content or topics warrant it, there could be a special edition; however, it will be labelled as such. Additionally, for more timely information, we do recommend following our social media channels Twitter, Facebook and LinkedIn, if you don't currently.

Email communications also remain a significant channel for important regulatory information. As your Regulator, we do need to be able to send you important information via email. We ask that you always have an updated <u>primary</u> email with us. The implementation of your new Members Portal will play an important role in keeping your information up-to-date. You can learn more about that in our Cover Story – *Regulatory Update: Members Portal.*

And as always, if you have ideas for content, would like to contribute an article, or suggest someone to be interviewed for our 1:1 Thought Leadership Series, please reach out to me for content guidelines.

> Heather MacLean Publisher & Editor Heather@apegnb.com

Regulatory Update: Members Portal

Coming Soon: New Member Portal to Facilitate Single Source of Information Management

The engineering and geoscience professions, like all professions, are operating in a world of expanding knowledge and rapid technological change. As a result, keeping track of professional development information and hours can sometimes become an onerous task. In fact, continuous improvement and learning have become a lifelong process and professionals are called upon to maintain continued competency, and to be able to demonstrate that competency, either through an audit and/or as part of required regulatory practices. In fact, more Regulators are moving to a required and mandatory reporting for all members of the professions versus the need to provide only upon audit.

What if you had a single source to help you manage your professional development? Rather than track your professional development hours in a spreadsheet, a document or even in a journal or notebook, you can log your hours and manage the information when it is convenient to you. You can access anywhere, anytime as long as you have access to the internet. And, with your requirements to maintain your competency and have the information available to your Regulator, this single source will save you time and effort.

What if that single source also empowered you to manage your personal information on file with your Regulator? Do you need to change your name? Have you changed employers and need to update your contact information? The members' portal makes it easy for you to manage your information.

The members' portal was recently tested with members from the Northwest Branch and we wanted to share some feedback we received:

"I used the portal to update my home address and upload some training information. The application was very intuitive and easy to use. It took me five minutes to set up my account, make the updates and save them. Much easier than what I would have done before, make a call to update my information."

Karl Le Gal, Technical Operations Advisor, J. D. Irving

"The APEGNB Northwest branch has been chosen to test the new Members Portal for the last couple of months, I can state that entering my Professional Development hours in the new Members Portal is very easy. It keeps all my data organized and I can easily enter new information or edit any entered data. I found that this a lot easier than keeping my data on my own on a personal Excel Spreadsheet or on a piece of paper. I also like that all the definitions of the different Professional Development categories are there and are easily accessible."

Keith Brideau, Certification Environment and Quality Supervisor, Pattison, Sign Goup



More information on the launch will be forthcoming. We will be sharing rollout information via email. Stay tuned!

The Engineering and Geoscience Professions Act and the By-Laws, including the Code of Ethics, require that engineers and geoscientists practise only in areas in which they are competent. Engineers and Geoscientists are also required to maintain and enhance their own competence, to contribute to the advancement of knowledge and to encourage employees to improve their knowledge and education.

From the Desk of the DPA Carol MacQuarrie, PEng, Director of Professional Affairs and Registrar



Requirements for Use of Professional Seal

The most visible symbol of registration with APEGNB is the professional seal. PEng and PGeo titles tell the public that the individual has the specialized training, experience, continuing education and commitment to ethical behavior required by the professions. The professional seal further illustrates acceptance of professional responsibility for the work product to which the seal is affixed.

Two recent discipline cases in British Columbia demonstrate the ethical considerations around the use of the professional seal. The full text of these cases can be found on the Engineers and Geoscientists BC's website.

As background, Mr. Singh and Mr. Jatana are partners in an engineering firm. Both are registered Professional Engineers with the Association of Professional Engineers and Geoscientists of the Province of British Columbia (the "Association"). Mr. Singh is a mechanical engineer and Mr. Jatana is an electrical engineer.

A client of Mr. Singh's and Mr. Jatana's came to their office and wanted his paperwork to submit for a building permit application. The project design was completed, and no further reviews were required prior to proceeding with that application. Mr. Jatana was away from the office that day. Mr. Singh was unable to reach him by phone. The client placed a great deal of pressure on Mr. Singh to seal the documents. If this was not done, the project construction would be delayed which would negatively affect his client's business. Mr. Singh affixed Mr. Jatana's seal without his consent and forged Mr. Jatana's signature.

Shortly afterwards, the Association received a communication from a former employee of Mr. Singh's inquiring about potential misuse of a

(continued on next page)



New Members

(continued)

colleague's signature and stamp. Following investigation, the Association laid charges against Mr. Singh for unprofessional conduct. Mr. Jatana was charged with failing to report unethical behavior of a fellow professional engineer.

Instead of proceeding to a disciplinary hearing, Mr. Jatana agreed to a Consent Order in which he will undergo a practice review, complete the Professional Practice Exam and Online Seminar, pay legal and investigative costs.

A disciplinary hearing was held for Mr. Singh. The panel of the Disciplinary Committee concluded that Mr. Singh's conduct violated the values of truth and honesty in the Code of Ethics and that Mr. Singh demonstrated unprofessional conduct and negligence.

The panel noted "The purpose of the seal is to authenticate documents. It is to provide a mark of reliance and it signifies to the public that they can rely upon the opinions, judgments, and designs that are contained in the sealed documents. A sealed document is visible commitment to the standards of knowledge, skill and ethics. An engineer affixing his or her seal is accepting professional responsibility for the matters under seal. Mr. Singh's misuse of his colleague's seal and signature to keep his client happy disregarded the purpose and significance of the seal."

In assessing penalty, the panel identified among other factors, the need for general deterrence and the need to ensure the public's confidence in the integrity of the profession. It ordered the suspension of Mr. Singh's membership for two months, that he undergo a practice review, complete the Professional Practice Exam and the Online Seminar, pay a fine and costs.

Mr. Singh has filed an appeal to the BC Supreme Court.

Could the same situation happen in New Brunswick? You bet. It is critical that practicing professionals know the regulatory and ethical obligations of the Act. The use of seal is outlined in our Guideline for the Use of Professional Seal.

For specific guidance on professional practice issues, please contact me, Carol MacQuarrie, PEng, Director of Professional Affairs & Registrar at 506 451-9628. The Regulator Acknowledges the following New Members for the Period of April to June 2019:

Christopher D. Aaen, PEng Antonio V. Almeida, PEng C.G. Barbosa Lis, PEng Batzava Bold, PEng Marc H. Boucher, PEng Aaron M. Boudreau, PEng Natalie H. Boudreau, PEng Christopher A. Bowie, PEng D. Cody Bradley, PEng Robyn P. Del Vecchio, PEng M.A. Electricwala, PEng Jason J. El-Khoury, PEng Jason R. Elliott, PEng Bradley R. Fanjoy, PEng Samuel D. Girouard, PEng Thomas J. Guyette, PEng Gregory J. Healy, PEng, PGeo Matthew R.V. Hussey, PEng Oluwaseun O. Ijaola, PEng Jemma D.A. Johnson, PEng N.C. MacGillivray, PEng Stéphane Maillet, PEng Mathieu B. Malone, Peng Zakaria Mechri, PEng M.F. Mora Cavazos, PEng Jennifer A. Murray, PEng Blake J. Nice, PEng Jonathan T. Oliver, PGeo Oluranti A. Oyedepo, PEng F.E. Pérez Sánchez, PEng M.-E. Rodrigue, PEng S.K. Sampathkumar, PEng M. Alyssa Savoie, ing Daniel G. Sénéchal, PGeo Serena I. Silliker, PEng Jamie A. Smith, PEng Denver P. Smyth, PEng Lucas J. Storey, PEng Rachel A. Van Wart, PEng Matthew T. Vienneau, PEng Monica Wachowicz, PEng C.C.F. Whitcomb, PEng Zhen Yong Yang, PEng

Registration FAQs Kate Sisk, Director of Registration



Frequently Asked Questions

As professionals you are busy. Keeping your information up-to-date or knowing where to go for specific information can be a challenge. Below is your go-to-guide for frequently asked questions we get.

Moved? Changed employers? New mobile phone or email? Be sure to check out your Regulator's online *Information Update form* to quickly and easily provide your new details. And after the portal is live, you can update your information therein.

Currently unemployed? On Parental Leave? Enrolled as a full-time student? You can apply to have your annual dues reduced. Complete the *Reduction of Dues Request form*, and submit it to Kate Sisk, Director of Registration.

No longer practicing in New Brunswick? You can resign your membership. Complete the *Resignation/Transfer of Membership form,* and submit it to Kate Sisk, Director of Registration.

Need to pay your annual dues? Each October, renewal invoices for the following year are sent out to all members, licencees, MITs and Certificate of Authorization holders. Payment is due January 1st. Those who have not renewed by this date will be considered *not in good standing* and will *not be eligible* to use the title or practice the professions in NB. Those not paid by January 31st will be removed from the Register. Reinstatement fees will apply. Annual dues can be paid through our website.

Not sure if you have paid your dues? Need to check if someone is a member in good-standing? Our member rosters are available on our website.

Participated in Professional Development that is relevant to your practice? The launch of our Members Portal will make it easy to submit your Continued Professional Development (CPD) Program logs through our Member Portal. *See our Cover Story for more details.*

Want to know what qualifies as Professional Development? You will want to check out this article in this eMagazine: APEGNB'S New Continuing PD Program: 3 Things You Need to Know.

Want to get involved? Volunteer for one of the Regulator's many committees by contacting our CEO, Lia Daborn or 1-888-458-8083.

Interested in a digital seal/stamp? Your Regulator has partnered with *Notarius* to offer members and licencees a secure digital signature/ electronic seal.

Lost your seal/stamp? Need a replacement certificate? Complete the General Order Form and submit it to info@apegnb.com

Wish to purchase a frame for your professional certificate? Your Regulator has partnered with Frames4Diplomas.com to provide you with a stylish frame and customized mat.

> Note - If you have an older, larger certificate, but you would like to display it in one of these frames, email your name, member number and mailing address to info@apegnb.com, and we will send you a letter-sized certificate at no additional charge.

Lost your Iron Ring? Need to re-size? Contact one of the two Camps in New Brunswick:

Iron Ring Camp IX, Fredericton

Iron Ring Camp XIX, Moncton

Continuing Professional Development Stamatia Baker, Program Coordinator



APEGNB's new continuing Professional Development Program: 3 things you need to know

It's coming, folks. No, not winter (although that is coming too, I'm sorry to say) – big changes to our Professional Development Program, and not a moment too soon. What's so big about these changes?

Well, first things first is the name – the Continued Competency Assurance Program is out, and the Continuing Professional Development Program is in. The new name better captures the whole process. Plus "CPDP" just has a nice ring to it, don't you think?

Secondly – and this is a big one – everyone **must** submit their records. As you already know, your Regulator requires that everyone must retain their professional development (PD) records. Previously you would produce these upon demand when audited. We know that it adds requirements to what you do, and I know that's why I get so many extension requests for the audit ("I've just been so swamped at work lately; I just need another week"). To be honest, it's why I'm writing this article so close to the deadline – I'm a procrastinator too. Wouldn't it just be much easier if you could record your PD activities as you did them, bit by bit, and the Regulator could see that and you didn't have to cobble it all together or whenever you are sent an audit notification? The new member portal will have a space for you to log your PD activities whenever you want – same day, end of the month, end of the year, whatever. *(See Cover Story for more information.)*

For example, did you go to the complimentary PD sessions at the APEGNB Annual General Meeting? Easily record these hours in the Portal - three hours of talks works out to 1.5 PDH under the "Informal Study" category. Did you recently obtain your first patent? Congratulations! Add that for 15 PDH under "Contributions to Knowledge"! Those MBA courses earn you 10 PDH per credit hour, so add those in under "Formal Study" at the end of the semester. Things like volunteering or reading various journal articles, books, etc. might be better tracked in a list and then claimed as a group at the end – just make sure you hang onto your list for supporting evidence. We might also want to know why you felt the need to read something, so don't just throw together a random list, be sure to have the "why" available. You'll also want to hang onto things like certificates and other documentation in case you are asked for them. Currently there is no set deadline; however, all information should be available to the Regulator by January 1st.

The Continued Competency Assurance Program is out, and the Continuing Professional Development Program is in.

Thirdly, the consequences are a bit different. In the past, a non-compliant member's file would be forwarded to the Complaints Committee for review. As of the most recent update to the Bylaws (February 2019), members who do not comply within 30 days will be struck from the Register and will not be able to practice. This is not necessarily the end of the road: members who have been struck from the Register can apply for reinstatement once they've met the program requirements. Members who have submitted records that are found to be deficient do not fall into this category.

How do you meet the requirements? Members need to have 80 PDH per year: most will get at least 40 PDH from their full-time employment; the rest comes from formal and informal study (courses, reading, listening to presentations), participation (volunteering), presentations (sharing knowledge with others outside of your 9-5), and contributions to knowledge (advancing knowledge in your field of study). Members who have been audited in the past know that we have traditionally

(continued on next page)

asked for 240 PDH spread over three years – an average of 80 PDH/year, but having some lean years was OK so long as you made up for it elsewhere. Now we are adhering to 80 PDH per year to simplify things for the upcoming mandatory reporting, but if you are short at the end of the year, we will work with you to help you get up to par by the end of next year.

To help you make up for the shortfall, we may suggest activities that you might have done but might not have thought to include (many members think only formal courses are worth reporting), sessions you can attend (like the complimentary PD at the AGM I mentioned above), and ways you can get involved with the Association (I'm always looking for more volunteers for the Internship Committee!). We may even suggest that you develop a Professional Development Plan, so you can figure out what kind of Professional Development you need – do you want to broaden your horizons, or become a specialist? Are there soft skills that would make you more well-rounded? New software or equipment you want to learn?

That said, we have found over the years that most members are already doing lots of PD; the program isn't about making you do unnecessary work, it's about making sure that you have thought of and planned out appropriate activities relevant to you and your practice to ensure your growth as a professional.

2020 Centenary Update

By Michele Paul-Elias, PEng and Jeff Underhill, PEng, Committee Co-Chairs

The planning and preparations are underway as we move closer to our 2020 celebrations! The kick-off begins with our Regulator working with our province's school children by sponsoring **STEM Fest** (Science, Technology, Engineering and Math) for the school year 2019-2020. **STEM Fest**, which is for students in K-12, will allow our Branches to engage in this province-wide initiative.

Many of our members had a sneak peek of our <u>Centenary video</u> at our AGM in Fredericton. We have been continuing to capture past presidents, their thoughts and stories and cannot wait to share the final project with our members.



We are working on another type of project to commemorate the Centenary. In addition to the projects and **STEM Fest**, our committee will be working over the upcoming months planning our Centenary Banquet set for April 25, 2020, at the Delta Fredericton. Stay tuned for more information on tickets! But, be sure to mark your calendars now.

Outreach Update Laura Douglass, Diversity and Inclusion Coordinator



Two of the strategic priorities for APEGNB include focusing on diversity and inclusion along with sustainability of the professions. Our Outreach Program specifically focuses on these two priorities and 2019 is off to a great start. First off, we are so proud of the work of our volunteers and we are thrilled with the reception we have received when in the community. Here are the highlights from the last several months!

In March, the Association and our volunteers were invited to run activities at a STEM activity day for 120 Guides, Pathfinders and Rangers in the Tidewater area called "Full STEAM Ahead". This event was hosted at Mount Allison University in partnership with the Physics, Math and Computer Science Departments. The Girl Guides participated in an activity called "Strengthening a Paper Bridge" where they learned principles like weight distribution and forces. The Pathfinders and Rangers participated in an activity called "Building a Space Tool" and used their creativity and household objects to build a tool that could pick-up items using levers and elasticity. It was a great opportunity to speak with these girls

about engineering and geoscience, and all 120 participants got to take home their engineering badge.

In May, the STEM Expo came to Fredericton as part of the Canada Wide Science Fair. APEGNB exhibited throughout the three-day Expo during which we hosted competitions all day to see who could build the tallest tower out of plastic building toys. It was a great chance to connect with the kids and teachers and talk to them about geoscience and engineering. More than 9,000 people attended the Canada Wide Science Fair and STEM Expo. Both events will be hosted in Ottawa next year and will return to Fredericton in 2022.

July presented us with an incredible opportunity in terms of outreach. We partnered with the Anglophone sector of the NB Department of Education and Early Childhood Development and the Centre for Ocean Ventures and Entrepreneurship to provide a professional development institute for teachers. This three-day intensive, immersive experience was hosted at the Huntsman Marine Science Center in St. Andrews and focused on how the ocean environment can be incorporated into STEM teaching. Twenty-three New Brunswick teachers attended. The activities for the teachers included an introduction to the "Maker" pedagogy as well as maker design sessions focused on engineering design, a session on how this pedagogy can be translated to the ocean curriculum with a focus on careers in marine engineering and sustainable development goals. There was also a guest speaker from LifeTrack – a company creating a GPS tracking lifejacket for fishermen, a shipbuilding activity with blueprints from Irving Shipbuilding and a tour of a Cooke Aquaculture processing facility. The Institute ended with the teachers working through a participatory design session collaborating in groups to create grade appropriate design challenges for their students.

One final project that we're very proud of, is the video we created to celebrate some of our female members for International Women in Engineering Day. We interviewed seven different women from around the province to learn what made them decide to pursue engineering and what their career has given back to them. We have so many incredible members with amazing stories to tell. You can find the video as well as more information about women in engineering here: English and French.

Interested in volunteering? Want to learn more about our Outreach Program? Please reach out to me at laura@apegnb.com.

1.1 Thought -Leadership Interview Heather MacLean



Jean Boudreau, President-Elect, Engineers Canada

Welcome to the 1:1 thought-leadership series. In each edition of the eMagazine, we will bring you interviews with a variety of people – members or not, who have insights to share. To kick things off, I had a chance to catch up with APEGNB Council member Jean Boudreau, who this past May became President-Elect for Engineers Canada.

MacLean: You have been deeply involved in APEGNB over the years, tell me about that?

Boudreau: It started many years ago when I was asked to serve on the Scholarship Committee. To be honest, I can't even remember who asked me. Huntley Wishart was the Executive Director and the office was on York Street, right across the street from where I was working at the time. Then I was asked a couple of times to consider running for Council. In 2008 I was asked again. I had just completed serving time on the Board of Directors for the Research and Productivity Council (RPC), so I agreed to let my name stand. Then I was really hooked – It's work but it's interesting, educational and rewarding as you do feel like you are accomplishing something. I've met many engaged, enthusiastic individuals and developed friendships along the way, so it's also been personally rewarding.

MacLean: You are the Engineers Canada representative on the APEGNB Council and just this past May, you were elected President-Elect for Engineers Canada. For Members-In-Training (MITs) or others who aren't familiar with Engineers Canada, in your own words, what is the role of the organization?

Boudreau: Well, Engineers Canada (EC) was established by the various provincial and territorial regulators (the Members) to help the regulators do their job. Where the provincial and territorial associations are the regulators of the profession(s) with the primary purpose of protecting the public, EC is there to serve the regulators.

MacLean: When you become President next May, will you be the first engineer from New Brunswick to take on that role?

Boudreau: I will be the 8th President for EC from New Brunswick. The first President at EC - then called Dominion Council of Professional Engineers - was C.C. Kirby from NB.

MacLean: You have been involved with Engineers Canada for several years now, tell me about that.

Boudreau: The Board is the governing body of EC responsible to the provincial and territorial regulators. As a member of the EC Board, I attend board meetings (usually four face-to-face meetings as well as an annual workshop and two regular conference call meetings) as well as serve on at least one board committee which usually involves conference calls and possibly face-to-face meetings scheduled around Board meetings. The Board sets direction and provides oversight to ensure EC is meeting the needs of the members. Having Board members from all the regulators ensures input from across the country.

MacLean: Based on your knowledge, experience and expertise, what are the top three issues that you would like to see Engineers Canada focus on when you take the helm in 2020?

Boudreau: I see the top three issues being: Accreditation Improvement Program, 30 by 30 and ensuring that self-regulation reflects the significance and professional merits for protecting the public.

MacLean: Speaking of 30 by 30, Engineers Canada has taken on a significant project to help increase the number of women in engineering with the intention of having newly licensed engineers -who are women - to be 30 percent by the year 2030, versus the current 17.9. That is ambitious. What can you tell me about that?

Boudreau: Thirty percent is held as the tipping point for sustainable change. In the last year, EC has conducted preliminary research, held

consultations, engaged with regulator staff and champions on progress and promoted 30 by 30 with external stakeholders, both nationally and internationally. To be honest, I'm walking a thin line on this one because I do want to encourage women and girls to consider engineering as a career, but I would also like us to move past the "female engineer" mentality. I am an engineer; I am not a female engineer. We need to focus on people working to make a difference versus focusing on females in a male dominated profession. I want it to be, what it is: an opportunity for young women to say, "Someone else has done this, I can too!" versus them thinking that it is something that they would prefer not to deal with.

MacLean: I like that! You are an engineer! You don't need any other qualifier. That's a wonderful message to share with any person investigating what their career could be. Now, changing the subject a bit, what would you like your legacy to be?

Boudreau: I have been fortunate to have been a part of Engineers Canada for several years now. When I think about our 10 core purposes, I like to summarize them as bringing together the voices of the regulators from coast-to-coast-to-coast. There's power in unity. There's power in one larger collective voice. When we come together as an entity with a single focus, we help foster interest and value in our profession. This is what will spark interest in the generations that follow us. This is what will ensure that – collectively - we work together for the right outcomes. This is what I would like my legacy to be – the continuation of the spirit and objectives of our 10 core purposes. **MacLean**: In 2020, APEGNB celebrates 100 years of regulatory excellence, what does it mean for you to also be the President for Engineers Canada during that prestigious year?

Boudreau: It's the icing on the cake – it doesn't really make our celebration in New Brunswick any better. I'm already excited about this prestigious milestone and am involved with the team planning our celebrations. In fact, I won't yet be President of EC when we have our big gala in April, but I may get to share with some of the five other associations that are also celebrating 100 years of regulation in 2020.

MacLean: I want to thank Jean for taking the time to be our first 1:1 Thought-Leadership interview. I think that we will continue to have a significant number of things to look forward to with Jean at the helm of Engineers Canada. Stay tuned to learn more.

If you have a suggestion for the 1:1 Thought-Leadership series, be sure to reach out to me directly (heather@apegnb.com)! I would love to get your suggestions.

TD Insurance

An exciting benefit for you as an APEGNB member.



Endorsed by



You **save** with **preferred insurance rates**.

Take advantage of your member privileges.

You have access to the TD Insurance Meloche Monnex program. This means you can get preferred insurance rates on a wide range of home, condo, renter's and car coverage that can be customized for your needs.

For over 65 years, TD Insurance has been helping Canadians find quality insurance solutions.

Feel confident your coverage fits your needs. Get a quote now.

HOME | CAR | CONDO | TRAVEL





The TD Insurance Meloche Monnex program is underwritten by SECURITY NATIONAL INSURANCE COMPANY. It is distributed by Meloche Monnex Insurance and Financial Services, Inc. in Québec, by Meloche Monnex Financial Services Inc. in Ontario, and by TD Insurance Direct Agency Inc. in the rest of Canada. Our address: 50 Place Crémazie, 12th Floor, Montréal, Québec H2P 186. Due to provincial legislation, our car and recreational insurance program is not offered in British Columbia, Manitoba or Soskatchewan. Wide Horizons Solution[®] travel insurance is administered by RSA Travel Insurance Inc. and is underwritten by Royal & Sun Milance Insurance Company of Canada. Medical and claims payment and administrative services are provided by the administrator described in the insurance policies. All trade-marks are the property of their respective owners. [®] The TD logo and other TD trade-marks are the property of The Toronto-Dominion Bank. Université de Moncton's Robotics Group Takes Part in the Eurobot 2019 Contest By: Jean-Francois



From left to right : Marcel Robitaille, Brandon St-Cœur, Andrée-Maude DeGrâce, Samuel DeGrâce, Jean Christophe Dupuis, Jean-Luc Bastarache, Alain Doucet, Jesse Thibodeau, Damien LaRocque.

The *Groupe de robotique* at the Université de Moncton (GRUM), comprised of students in the Faculty of Engineering, recently took part in the 26th Eurobot 2019 engineering competition. The contest was organized by *Planètes Sciences* and was held in La-Roche-sur-Yon, France, from May 30 to June 1, 2019.

The Eurobot competition was created in 1998 to encourage the practice of engineering in a friendly atmosphere. Every year, organizers provide participating teams with a list of new challenges on a specific theme. The challenges must be completed by an autonomous robot and an optional second autonomous robot, which have been entirely designed and built by the participating team. The theme of Eurobot 2019 was "Atom Factory," in honour of the 150th anniversary of Dimitri Mendeleev's publication of the periodic table of elements.

This year, the autonomous robots created had to accomplish the following missions: classify atoms, weigh atoms, create a new element, predict unknown elements, as well as be able to carry out their own experiment. Two teams and four robots at a time played against each other on the playground, or game site. The photo shows the GRUM team members with their two robots behind one of the playgrounds. This was the fifth consecutive year that the GRUM team has participated in Eurobot. Team members had approximately six months to design their robots, raise funds, make the various parts of the robots, assemble their robots, write the code for the software, and put their robots through tests and trial runs. At the end of the competition, the Université de Moncton team ranked 23rd out of the 33 teams that participated.

In addition to activities related to the competition, the students volunteered their time at community events. Moncton Museum at Resurgo Place formed a partnership with GRUM to present an interactive robotics exhibition. GRUM members also volunteered at *Place aux robots 2019*, providing technical assistance to the high school teams taking part in the competition.

If you would like to keep up-to-date with GRUM's activities, you can follow the group on social media or on the website at: www.grumoncton.ca.

Canadian University Software Engineering Conference: A Student's Perspective

By: Nathan Tozer, UNB Software Engineering Student



Editor's Note: Networking is an invaluable experience for all students. Seeing the tangible outcomes is particularly rewarding. APEGNB is pleased that we were able to contribute to this experience.

I first heard of the Canadian University Software Engineering Conference (CUSEC) in the summer of 2018. That was the first year University of New Brunswick (UNB) students attended the conference. This was due to an upper year software engineering student, Jacob Smith, who organized the first UNB CUSEC Delegation. Those who attended, spoke highly of the conference and appreciated the opportunity to attend. With more than 500 students, 150 professionals from industry and academia, and 20 top tech companies from across Canada ranging from startups to large corporations, each of the nine students raved about their experiences during the three-day event.

Whether it was networking with other passionate students or getting to talk to representatives from companies they had never thought to apply to, each person had a unique experience and recommended anyone interested in tech to attend. It was after hearing these anecdotes that I knew I wanted to be a part of this conference. When the time came to choose an organizer for the 2019 UNB CUSEC Delegation I put my name forward and a few weeks later, I became responsible for the UNB delegation.

As the organizer of the UNB Delegation, one of my responsibilities was acquiring funding to help cover some of the costs. Doing so would make

UNB

it more accessible for any student to attend. For the last two years APEGNB has been one of our sponsors. This support played an important role in having an increased delegation size, from eight students last year to 12 this year.

Day One

For me, the first day of CUSEC would be adequately described as, a blur. I remember my day started with meeting people whom I had been working with remotely for the past four months, to organize the conference. From there the UNB delegation spent the majority of the morning listening to talks about research using technology allowing for detection of Alzheimer's in early stages, the decision-

(continued on next page)

making processes for software engineers in R&D, along with a few more technical talks such as running applications using serverless architecture.

The afternoon was spent networking with company representatives at the career fair and with other students from across Canada. Additionally, there were technical workshops where companies would delve more deeply into a technical topic and explain how they leveraged that technology within the company. By the end of the day it was certain that we had all met a ton of interesting people and learned a lot. Some members of the delegation were offered on-the-spot interviews from the companies at the career fair.

Day Two

My most memorable experience came at the end of the official CUSEC events. This was a time when UNB delegates had a chance to share their experiences from the first two days. Inspired by the experiences and opportunities CUSEC offered the UNB Delegation, a conversation began about creating a UNB society that could create these same opportunities locally, within the UNB community. The goal of this society would be to improve the professional capabilities of UNB students interested in pursuing a career in the technology industry, through events such as talk nights, resume reviews, job application nights, and hackathons. I'm proud to say that this idea has since materialized as the *UNB Developer Society (UDS)*. The Society held it's first hackathon with more than 25 students and professionals from local tech companies in attendance just three months after CUSEC.

Day Three

What resonated with me was just how wellreceived we were. It became clear that not only had the UNB students made the most of the conference, through attending talks. workshops, career fairs, and participating in other CUSEC events, but that they had also left a lasting impression on the conference organizers. From having a UNB student actively participate in discussions during the diversityin-tech panel, to having three students participate in the conferences five to 10-minute student talks, the UNB student representatives made their presence known. So much so that the co-chairs of the conference came to me and complimented the UNB delegation. They also asked what processes UNB used to select delegates and how it could be expanded and implemented at other universities.

CUSEC was an amazing experience for those of us who had the opportunity to participate. The 2019 attendees are excited at the prospect of attending the event next year, and hopefully an even larger delegation.

Inspiring Careers Deserve Inspiring Minds! APEGNB Foundation for Education Scholarships are now Open!



Do you know someone looking to enter the professions of engineering or geoscience?

APEGNB Foundation for Education has the following scholarship opportunities:

- Two scholarships valued at \$5,000 each for the APEGNB Advanced Studies (Masters/Doctorate) in engineering or geoscience.
- One scholarship valued at \$5,000 for the Ottis L. Logue Graduate Scholarship (Masters/ Doctorate).

For eligibility, deadlines and application forms, visit: https://www.apegnb.com/about-us/awards-scholarships/

ENGEOActions-

Branch Updates Fredericton Branch Update - Phil Lamey, PEng, Chair



The Fredericton Branch has had an interesting start to the year. Our Ski Trip had to be cancelled, our annual curling event was indefinitely postponed as the curling rink was no longer available and then our curling event had to be postponed until the fall because the weather was not cooperating in May. Unfortunate, but these things happen.

Highlights of Recent Events

We did manage to send a couple of teams the **Atlantic Engineering Hockey Tournament** in Moncton. The "more seasoned team" actually won a couple of

games this year; that was nice. The "younger team" made it all the way to the finals. A great showing by our teams. Thanks go out to Moncton for hosting a great tournament. I will let the readers decide which team is depicted in the picture.



The *Branch* also took part in a technical tour of TRACC Tire Recycling (https://www.tracc.ca/). Twenty members took part in the tour. It was a full house! We are very grateful to the staff at the facility for the tour and highly recommend it to any other Branch looking for an interesting tour.

Up-Coming Events

11th Annual Haunted Tour – Yes, we are getting things started already. More information at https://hauntedtour.ca/

We look forward to the events coming up and hope to see you soon!

Have any questions, comments, concerns? The executive can be easily reached:

Chair: Phil Lamey Vice-Chair: Melissa Steeves Treasurer: Melissa Dawe Secretary: Tracey Germon Communications: Coady Cameron

Full executive list and all our events can be found here: https://engineersfredericton.ca/







Branch Updates Northwestern Branch Update - Thomas Chenard, EIT, Chair



For my second year as President of the *APEGNB Northwestern Branch*, I would like to thank all our members for entrusting this role to me. I am honoured and proud to be here to represent them today.

Highlights of Recent Events

Our eighth golf tournament was held in Edmundston on August 24. It was an

amazing event. The system for distributing prizes was the same as in previous events. Approximately 20% of the members of our

Branch gathered for the occasion, making this the event with the most participation. It's a great opportunity to see old friends and have a good time.

This year, we made a donation of \$2000 to the Francophone North-West School District. These funds go to scholarships for the winners of two competitions organized by the district: *Défi Apprenti Génie* (Engineering Apprentice Challenge) and *Défi Génie inventif* (Inventive Engineering Challenge). Several of our members also volunteer to help organize and to judge these competitions.



We also gave a donation of \$2000 to Saint Mary's Academy, as a contribution to their interactive "Lû" playground. This equipment will enable young people to become more familiar with technology in a fun and interesting way.

As usual, we held our traditional Christmas dinner, on November 29, 2018, at the restaurant in the Grey Rock Casino. It was a fantastic activity with a festive holiday atmosphere. Unfortunately, we did not do an industry visit this year, but we plan to visit a wind farm and one or two businesses in the region over the next year.

We also had our Poker Night. We would like to see more people join us for this event as it is an important group event.



Overall, we organized slightly fewer activities this year. Next year, however, we should be able to have two or three industry visits and training sessions for members who are interested.

To close, I'd like to thank all our members for being involved; without you, we wouldn't be here. We look forward to seeing you next year, when we will make even more progress together.

With sincere thanks!

Executive:

- President: Thomas Chenard
- Vice-President: Dari Beaupré
- Treasurer and Provincial Councillor: Mariette Savoie
- Secretary: Emanuel Hébert
- Councillor: Martin Benoit
- Councillor: Alain Pelletier
- Councillor: Karine Savoie
- Councillor: Gabriel Bossé
- Provincial Councillor: Keith Brideau

Branch Updates Moncton Branch Update - Emilie Pellerin, PEng, Chair



Highlights of Recent Events

The APEGNB Moncton Branch finished 2018 with a professional development session held at Université de Moncton on December 5, 2018. Around 50 members attended the presentation on NB Power – Smart Grid. We will be looking at hosting at least two professional development sessions in the upcoming year and we will be attempting to livestream the sessions in partnership with the Université de Moncton. Stay tuned to get some information on these sessions!

We began 2019 with a **Member's Reception** at Cavok Brewing Co., a new

microbrewery that opened in the last year in Dieppe. It was a good night of networking with a great turnout of members and of course a few door prizes.

The *Branch* AGM was held on April 4, 2019, at La Teraz, with 35 members attending the dinner and meeting. Two scholarships were awarded to engineering students. The \$1,000 *APEGNB Moncton Branch* scholarship was awarded to Brandon Saulnier, a first-year mechanical engineering student at UNB, and the \$1,000 VC Blackett Scholarship was awarded to Jana Giles, a third-year chemical engineering student at UNB. We are also excited to have new faces joining the executive committee for the 2019-2020 year.



The Atlantic Engineering Hockey Tournament

was held in Moncton on April 5th and 6th. The organizing committee hosted twenty teams from across all Atlantic Provinces. The Brunswick Crane Rentals and Hatch teams won the recreational divisions and the competitive division was won by Moncton Blacks. Kudos to the organizing committee for organizing such a great event and thanks again to all the sponsors who made this event possible.

We returned to La Teraz this year for our Annual Lobster Supper and more than 70 members attended. It was highlighted by our 50/50 draw and a draw for six lobster at the end of the night all fundraising for the *Branch Scholarship*.

The **Annual Golf Tournament** and dinner was held August 23, 2019, at Mountain Woods Golf Club.

Last but certainly not least, our annual signature event, **The Soapbox Derby** will be held Sunday September 22, 2019, on St. George Street in front of Centennial Park. It is never too late to start building your cars for the event. If you are interested in participating, please visit the <u>APEGNB Soapbox Derby</u> <u>Facebook</u> page. Hope to see you all there!

Executive:

- Chair: Emilie Pellerin
- Vice-Chair: Julien Caissie
- Treasurer: Siggy Stott
- Secretary: Jacqueline Jordan
- Past Chair: Shawn Amberman
- Communication: Richard Lebreton
- Signature Event Chair: Dani LeBlanc
- Signature Event Vice-Chair: Jérémie Aubé
- Social Committee: Michel Bourgouin
- Social Committee: Stéphane Richard
- Professional Development: Arsham Ahmadi
- Branch Concillor: Serge Doucet
- Branch Concillor: Tina Levesque
- Outreach Coordinator: Francois Duguay
- Provincial Councillor: Maryse Doucet

Branch Updates Saint John Branch Update - Dibyendu Debnath, PEng, Chair



APEGNB Saint John Branch had an eventful 2019 giving back to the community as well as creating common platforms for our members to connect and thrive. Our committed volunteers have been dedicating their time, energy, and resources in bringing the essence of engineering and geoscience closer to the communities in Saint John, Kennebecasis Valley, Sussex, Hampton, Saint Andrews, Saint Stephens and other areas of southern New Brunswick. I sincerely thank all the volunteers and councillor members for their constant contributions.

Highlights of Recent Events

One of the most cherished community involvement moments is the school out-reach program. This year, this initiative covered a total of 42 presentations, in front of 1,551 grades 6-12 students, from 16 different schools, between the areas from St. Stephen to Sussex. An army of 52 engineers and EITs graciously dedicated their time for this mega project to become.



The "Annual Saint John Soap-box Derby" held on May 25, 2019, has a big out-reach to the Saint John community. The APEGNB Saint John Branch is involved in this event as one of the title sponsors, and many of our members volunteer in different capacities to make this fundraising event

successful in support of PALS in the Park. In this year's derby, Caiden Beam secured the first place in the Stock Division with the car sponsored by the *APEGNB Saint John*.

The *Branch* is also deeply invested in facilitating various opportunities for the engineering student community and we sponsored engineering students from UNB Saint John to participate at the "**Atlantic Engineering Competition**" in Halifax, from January 24-27, 2019. For the first time, our *Branch* sponsored eight engineering students from the UNB Saint John campus to participate at the ACES Engineering Leadership Summit in April 2019. *Branch* members volunteered as subject matter expert speakers for different engineering streams at the UNBSJ E-night event on November 28, 2018. For the members and members-in-training, the *Branch* has facilitated and organized numerous events to promote networking between fellow members and members-in-training. These *Branch* events are designed to cover the spectrum of both social aspects and technical acumen.



On February 16, 2019, our *Branch* hosted a curling event for members and members-in-training at the Thistle St. Andrew's curling club. A super-fun event, this has brought immense joy among those who were able to join.

(continued on next page)





participation of more than 50, this Saint John uptown event created a wonderful atmosphere of networking for the attendees.

Up-Coming Events

A technical tour of the newly built Saint John water treatment plant is currently in the works. The goal of this tour will be to enlighten attendees about the newly built, high-tech, water treatment plant; which should provide adequate drinking water supply, meeting the national standard, for the residents of the city of Saint John.

(continued)

We also sponsored a hockey team of fellow engineers at the **Atlantic Engineering Hockey Tournament** on April 5-6, 2019, in Moncton. Our team competed with 19 other teams from the Atlantic provinces and we reached the tournament finals! We would like to congratulate the players, and everyone involved for their amazing achievement.

For the young and young-at-heart, *APEGNB* Saint John Branch hosted the 4th **Annual Young Professional Night** on June 22, 2019. With





Preparation for a golf tournament, jointly hosted with the *APEGNB Fredericton Branch* has been completed and is scheduled to take place in the fall of 2019.

Overall, this has been an exciting year at the *APEGNB Saint John Branch*. We look forward to the coming days of opportunities to promote engineering and geoscience to the communities of southern New Brunswick.

Branch Updates Northeastern Branch Update - Ray Ritchie, PEng, FEC, Chair



The executive of the *North East Branch* has been busy over the past few months, organizing and carrying out the winter & spring events.

Highlights of Recent Events

The **Curling Funspiel** kicked-off our winter season on February 15th at the Bathurst Curling Club. With 20 participants, the turn-out was fantastic. We were particularly pleased to see so many young geoscientists participating – looks like a good crop coming-up through the ranks!

Our premier winter event – the **MIT**

Night - was once again held in conjunction with the Acadie-Bathurst Titan Hockey game at the K.C. Irving Arena in Bathurst, on February 22nd. With a near record turnout of 40 people, including 12 MITs, it really demonstrates the importance of personal invitations! As usual

the venue was great, we had a ton of prizes, and Danny's Catering provided great food! We were treated to great hospitality and the fact that the Titans chose to go dormant that night, didn't curb the groups enthusiasm. Hats off once again to Marc Losier, PEng, Claude Mallet, PEng, Nicole Landry, MIT, and Kevin Gallant, PEng, for their exemplary performance in coordinating this event.

Discovery Innovation Day was held on May 25th at Max Aitken School in Miramichi, with a towering salute to all things STEM and a nod to the Arts as well – for the entire Anglophone North School District. Approximately 200 students, parents and teachers were in attendance. Our Branch provided four teachers awards of \$250.00 each and encouraged a reinvestment of these funds into the STEM classrooms in our region. We also helped fund the facilitator T-Shirts with our logo prominently on display. *We are a STEM powerhouse*! And again, this year, we decided to combine our **AGM** with a "**Foodie**" **outing**, this time at the Four Rivers Microbrewery in Bathurst, on June 6th. In an effort to provide an incentive for strong attendance at this important gathering, we had a special presentation by Mike Doucette, MSc of CCNB in Grand Falls, whose "Brewing Delicious Recipes - History of Brewing" session was very enlightening. Who knew that "Beer Saved Mankind?" Of course, we all knew that!

We were also thrilled to award our *Iris Auclair-Bernard Bursary* to a very deserving, Andrew MacDonald, UNB Mechanical student, who was blown away when Iris, matched our \$1,000.00 contribution. Sincere thanks to Iris for her fantastic generosity!

(continued on next page)



Congratulations!

(continued)

It was an added bonus for us to have the presence of Heather MacLean – APEGNB's new *Chief Communications Officer* attend our Annual General Meeting – and bring news of next year's 100th Anniversary of the Association and selfregulation. It will be a big deal for all of us.

Up-coming Events

On July 19th, 2019, will see our triumphant return to Gowan Brae Golf & Country Club in Bathurst, where it is said that engineers & geoscientists are "Far Above Par". We expect a huge turnout since we are heavily subsidizing participation at this high-class course.

As part of the *Northeast Branch's* continuing effort to rebrand and improve our *Signature Provincial Event – 2019 Pumpkin Fling*, we continue to partner with the Anglophone School District – North, to cohesively engage students and teachers in this and other STEM related exercises. Thanks to our Kevin Gallant, PEng, a recent recipient of the APEGNB Provincial Citizenship Award, for spear-heading this event. The *Pumpkin Fling* will be held this coming fall at Miramichi's Waterford Green on September 28th. The student's **Mini-Trebuchet School Challenge Contest** will be the highlight at the intermission this year!

Once again, our collective hats go off to you, our members, who are such strong supporters of our local *North East Branch of Engineers & Geoscientist NB*.

Please contact a *Branch* executive member to let us know your concerns and interests, or better yet, show your support at one of your events.

Newly Elected Members

Chairperson: Ray Ritchie, PEng Vice Chair: Kevin Gallant, PEng Treasurer: Maggie Stothart, PEng Secretary (Prov. Councillor): Joey Nowlan, PEng Provincial Councillor: Stephanie-Doucet Landry, PEng Councillor Northumberland: Antoine Legresley, PEng Councillor Restigouche: Michel Cotton, PEng Councillor Gloucester East: Lisa Albert Theriault, PEng Councillor Gloucester West: Raphael Roy, PEng PGeo Rep. (& Nat. PGeo President): Mike Parkhill, PGeo Communications Officer: Kathleen McConnell, MIT MIT Councillor: Nicole Landry, MIT Consulting Engineer Rep: Claude Mallet, PEng



Congratulations to Gilles C. Roy, PEng and to the Université de Moncton for being appointed as the next Vice-President, Academic and Research.

Congratulations!

Congratulations to Gérard J. Poitras, PEng. Mr. Poitras was recognized by the Journal of Solar Energy Engineering (JSEE) as their 2018 Reviewer of the Year.

2020 National Professional Practice Exam Dates

Registration/booking deadline

December 16, 2019 February 28, 2020 May 1, 2020 July 17, 2020 October 2, 2020

In the Spotlight: New Book and New Regional Field Guide

Geology of New Brunswick and Prince Edward Island By: Martha Hickman Hild and Sandra M. Barr



Sixteen thousand kilometres. That's how far we travelled gathering content for our latest book. We didn't cross the country or venture abroad, though. We racked up the distance right here in the Maritimes, travelling the length and breadth of New Brunswick and Prince Edward Island. Our mission: to find the very best sites available for illustrating the region's complex geological history in a new field guide, Geology of New Brunswick and Prince Edward Island.

At the core of the book is a set of 44 sites distributed across the two provinces. The sites provide concrete examples of key events and processes that shaped

the region's bedrock. We wanted the guide to be usable by tourists and provincial residents with no special training in Earth sciences, so in selecting the sites, we focussed on publicly accessible locations that are safe, attractive, and well maintained. We also include further information for professionals too.

"History buff? Seasoned Geologist? Aspiring Geologist? Tourist looking for memorable nature- and history-oriented outings? If you answer yes to any of these, this book would make a fascinating read."

For each site the book provides geological background, unambiguous travel directions, a detailed outcrop description, and related information of interest, such as explanations of research findings, relevant geological processes, or the rocks' larger regional context. Thanks to our extensive travels with camera in hand, the text is illustrated with more than 200 photos, in addition to more than 150 maps and diagrams.

The book includes features targeting professional geologists who may be unfamiliar with the region, but whose interest goes deeper than that of a tourist. Formal rock unit names, bedrock map references, and an Exploring Further feature allow professionals to quickly access extensive online resources provided by New Brunswick's Department of Energy and Resource Development.

How to present the complex geology of this region to non-specialists provided a fascinating challenge. Because New Brunswick and Prince Edward Island lie at such a complex geological nexus—with a history that extends from the ancient origins of Appalachian terranes through the break-up of Pangaea to form the Atlantic Ocean—there's a lot to explain. To provide a manageable learning curve, we crafted a series of four introductory geological narratives, which are cross-indexed to each site and easy to look up, thanks to the book's graphic design.

In addition to its geological narratives, the book features a geoheritage theme that emerged from our encounters with local bedrock as a building material in areas such as St. George, the Acadian Peninsula, and Charlottetown. Through further field encounters and research, the theme expanded to include other historically important resources such as grindstones, coal, gypsum, and albertite.

To supplement our collection of 44 individual sites, we travelled up and down Routes 1, 2, and 7 in New Brunswick, logging GPS waypoints for highway kilometre markers so we could construct a set of geological highway maps keyed to marker locations. The accompanying text explains the roadside exposures in terms of the book's four geological narratives. It also provides descriptions and GPS waypoints for notable highlights. An index map facilitates quick online access to 1:50,000 provincial bedrock maps along the highway routes.

This complex project would not have been feasible without grants from the Atlantic Geosciences Society and the Canadian Geological Foundation, whom we sincerely thank for their support.

The field guide is scheduled for release early 2020. Visit boulderbooks.ca for details and to order.

UNB Earth Sciences: Silver Standard – McAllister 2019 Field Trip to Spain and Portugal

by Alexandra Gray, Gisèle Rudderham, Matthew Clark, and Jennifer Day



This past May, six undergraduate and six graduate Earth Sciences and Geological Engineering students from the University of New Brunswick attended the biennial Silver Standard – McAllister Field trip. The students, along with two faculty supervisors, Dr. David Lentz and Dr. Jennifer Day, travelled to the Iberian Pyrite Belt and other geologically significant areas in Spain and Portugal. The trip focused on observing the and travelled through the Spanish cities of Toledo, Córdoba, Seville, and Aracena, where we visited many significant cultural and historic landmarks. In between these cities, we visited several notable geological sites, including the

(continued on next page)

geology of the region, genesis of volcanogenic massive sulphide (primarily zinc and copper) ore deposits, mining processes involved with extracting various mineral resources, environmental remediation associated with mine closure, and rock mechanics aspects of surface and underground excavation construction. During the trip, the group visited historic and active mine sites, significant deposits and outcrops, and sites of impressive geological engineering feats. All of this was immersed in the fabulous cultures of Spain and Portugal. Prior to the trip, each student was assigned a presentation topic of one of the sites to be visited. Each student researched their topic and prepared a brief presentation for the group in the field.

Beginning the Silver Standard – McAllister Field trip in Madrid, the group travelled south through Spain and west into southern Portugal. During the first leg of the trip through Spain, we visited



ENGEOActions

historical Almadén mercury mine (a UNESCO World Heritage Site), Gibraltar, Minas de Cala iron skarn deposit, and the active Rio Tinto open pit mine (*Figure 1*) before heading into southern Portugal.

In Portugal, we stayed in the major cities of Albufeira, Lisbon, and Porto. While traveling through Portugal, we visited the active Neves-Corvo zinc-copper underground mine. Here, eight students were selected to go underground to see the ongoing operation and mining of the massive sulphides and stockwork systems. This was a fantastic experience for the students, and the first-time underground for some, who visited two active mining fronts, a drill rig, and a drill core facility. The students also visited inactive open pits including Tharsis and Sao Domingos, and toured the Minas do Lousal. These historic mine sites are accessible to the public and have educational exhibits about the mining cycle



(including exploration, extraction, and environmental reclamation) and the importance of mineral resources to modern lifestyles and technologies. As the trip progressed northwards in Portugal, we left the Iberian Pyrite Belt for the active Panasqueira tungsten underground mine. Eight students went underground to see the unique, subhorizontal vein-hosted wolframite deposit (*Figure 2*). This tour included visiting several active mining fronts, a drill rig drilling blasting holes, observing different types of ground support, and the mining cart system in operation. Between our two underground site visits, all of the students had the opportunity to go underground at least once, which for all was a particularly exciting experience after spending years learning about mines in the classroom! Our final site visit in Portugal was a tunnel engineering tour with Jorge Quelhas in a completed section of the Porto Metro to discuss the engineering design and construction of the subway tunnels and stations in the city.

Upon returning to Spain across the northern border of Portugal, we first visited the rock mechanics research group led by Dr. Leandro Alejano at the Universida de Vigo to see advanced geomechanical rock laboratory testing equipment and to go on a field visit to the precariously perched Equilibrium Stone (*Figure 3*). From Vigo, we continued our journey to visit the towns of Santiago de Compostela, Salamanca, and San Lorenzo de El Escorial, on our route back to Madrid. A highlight of our geological site visits in the northwestern region of Spain is Las Médulas, which is an ancient Roman paleo placer gold mine and another UNESCO World Heritage site. Our final site visits before Madrid included the longest preserved ancient Roman aqueduct in Segovia, and one of the best preserved historic walled cities in Europe, Ávila. Both of these sites are fantastic examples of engineering using rock materials that have stood the test of time through hundreds of years.

Overall, the trip was a resounding success! Students in the group came from different academic backgrounds, mainly economic geology and rock mechanics, and it was clear that all were eager to learn and share their knowledge with one another. The exposures that this trip gave to all the students were broad, ranging from historic Roman mines to active modern mines and from the famous Iberian Pyrite Belt to other geologically impressive regions. This field trip will certainly leave a lasting impact on all of the students and what they have learned will be invaluable as they move forward in their academic and industrial careers.

Acknowledgements: The technical success of this trip would not have been possible without our site hosts and staff in Spain and Portugal from the active mines Neves Corvo and Panasqueira, Spanish Geological Survey, Portugese Geological Survey, Metro do Porto, Universida de Vigo, Almaden Mining Museum, and Lousal Mining Museum. We are also very grateful for the generous donations that made this trip financially possible, from APEGNB, Galway Metals, Klohn Crippen Berger, Wolfden Resources Corporation, BGC Engineering Inc., and the Silver Standard – McAllister Mineral Deposits Study Fund. Gracias y Obrigado!

Project Updates Canadian Nuclear Laboratories

Innovating Cyber Security Solutions for Industrial Facilities

Dave Trask, PEng and Marienna MacDonald, PEng, Canadian Nuclear Laboratories

In the past, industrial facilities were designed with safety and physical security in mind, but with the explosion of the digital age, cyber security has become a growing and urgent concern. In addition to an increase in targeted cyberattacks on industrial control systems such as TRISIS, CRASHOVERRIDE, and STUXNET, collateral attacks on industrial systems are also increasing in likelihood such as the ransomware attack named WannaCry that indiscriminately targeted unpatched Windows

Operating Systems. With the evergrowing threat landscape, industry must continue to strengthen their defenses with a focus on achieving resilience to the inevitable attack, to ensure that the safe and reliable operation of their industrial systems are not impacted by cyber events.

While there is a large commercial industry catering to the cyber security of information technology (IT) systems such as those handling personal information, financial data or intellectual property, the cyber security of operational technology systems (OT) – the industrial equipment operating our nuclear power plants, refineries

and pulp mills - draws far less attention. A large industrial facility typically has thousands of digital devices distributed among a wide array of important systems (e.g., plant process control, HVAC, fire suppression, physical security, electrical power), all requiring consideration for cyber security vulnerabilities. Unlike IT systems, OT systems are often bound by strict regulatory requirements and rigorous change controls that introduce complexities, risks and costs that are substantially higher for any modernization or modification effort, and therefore requires specialists in OT systems with cyber security expertise. For example, the practice of software patching is an effective means of deploying security upgrades to IT systems and patches are deployed on a regular basis. However, OT systems are typically operating 24/7 and require rigorous, time consuming and costly processes to ensure that any software patches that are introduced are safe and don't have undesired impacts on plant processes. When IT practices are applied to OT system, undesirable things can happen! NASA experienced this firsthand when it deployed a patch intended for an IT system to a computer that was connected to a large scale oven that contained spacecraft hardware. When the computer was rebooted the control software stopped running, resulting in the oven temperature rising, a fire, and the destruction of the spacecraft hardware. The fire went undetected for 3.5 hours because the patch also impaired the alarm function.

There are many other differences between IT and OT systems as illustrated in the figure below:



Cyber Security Myths and Realities

There are also several myths regarding industrial systems and why they may be immune to a cyberattack:

- "System is not connected to the internet": The Shodan Intelligence Extraction project that began collecting data in 2012 by scanning the internet looking for attached industrial devices, has identified over 600,000 SCADA or control systems devices or related software products. There are many examples of "work arounds" or temporary changes where network connections are made for good reasons but may be left in place or improperly secured.
- 2. A system that is "air-gapped" is protected: This is true only if the

system has no connectivity capability (i.e., no ports, no wireless capability), no drives that support external storage (e.g., CD drive), and no means to support software or configuration updates. If any of these attributes is true, then there is opportunity to compromise the system without having a connection to the internet. The infamous Stuxnet attack was spread via a USB flash drive, effectively defeating the protection an air-gap offers by exploiting security holes related to the handling of removable media by humans. Eventually every digital device will require some interaction for maintenance or configuration and if the tools or media used to interact with device are compromised then the device itself can be compromised.

- 3. "Security by obscurity" Attackers are specifically attacking Industrial Control Systems (ICS) systems, including older technology. For example, recent attacks have occurred against the Ukraine Power Grid, causing a widespread power outage during winter for up to six hours and required at least two months for the control centres to fully recover. No system is immune to an attacker's interest, nor are attacks perpetrated on a tight, predictable timeline.
- "System is protected by a firewall" Unfortunately, a firewall can only block unwanted network traffic but offers no protection against malware that is communicated via legitimate services.

Solution Path

It becomes quickly apparent that cyber security is not achieved by technology alone. An effective cyber program has a wide mandate that needs to consider cyber security in supply chain, installation, operation, maintenance and decommissioning activities. The program requires an understanding and analysis of cyber risk and substantial investment to manage the risk, thus involving executive support, strong policy development and engagement across organizational boundaries. Participation is required not just from information technology (IT) and process control departments, but also from physical security, information security, engineering change control, supply chain, human resources, the training department, and so on.

Canadian Nuclear Laboratories (CNL), formerly Atomic Energy of Canada Ltd. (AECL), is among the many organizations in New Brunswick focused on developing cyber security solutions for the nation. CNL is Canada's premier nuclear science and technology laboratory, dedicated to developing peaceful and innovative applications from nuclear technology. It is headquartered in Chalk River, Ontario on a 9,000 acre site that is home to 17 nuclear facilities and over 3,000 employees.

CNL has long had a presence in Fredericton, where the team has a strong background in developing and deploying plant display systems for mission critical applications. Now, CNL is focused on helping industry partners achieve the necessary cyber security posture for their ICSs, supported by CNL's new state-of-the-art facility that provides the physical equipment and network infrastructure for modelling real plant processes.



Project Updates Stantec

Bringing Innovative Ideas to Life

Peter Crowe, PEng, Senior Principal, Region Leader (Atlantic Canada)

Nothing great ever happens by accident. Or in isolation. Great things happen when smart people with equal parts talent and determination come together to create what couldn't be done alone. At Stantec, we don't just know this—we live it.

As one of the largest professional consulting firms in Atlantic Canada, our seven office locations are home to 700 staff, including 265 in New Brunswick. We are a community partner in enhancing experience through design and sustainable solutions. Together, we contribute to New Brunswick by designing infrastructure, shaping our province's landscape, respecting our local environment, and giving back in our local communities.

We care because we live here. From large-scale developments to challenging neighborhood projects, we've had the opportunity to serve the communities we're personally invested in throughout New Brunswick for over 55 years.

Most recently, our inventive and collaborative approach to problem solving has helped us bring some innovative ideas to life.

Fundy Isle Submarine Cables Replacement Design



The Transmission Fundy Isles Submarine Cables form part of 69 kV Line from Deer Island to Campobello (3.4 km) and from Campobello to Grand Manan (16.4km) in New Brunswick.

The undersea cables, installed in 1978, were approaching the end of their 40-year life. To continue providing power to the Islands, NB Power required replacement cables to be installed while existing cables remained in service – to be decommissioned at later date.

Stantec partnered with Teshmont Consultants and Marenco Engineering to provide a cost-effective solution that would be environmentally sound, and delivered within a quick timeframe. Presenting a single cable with a 3-core design allowed for the project to limit impact on local fisheries, marine wildlife, migratory birds, and species at risk in the area. Partnering with multiple groups allowed for the leveraging of diverse skills for this challenging project.

Route 105 Two Nations Crossing Roundabout

The intersection of Route 105 and Two Nations Crossing in Fredericton presented traffic safety problems, with serious collisions occurring, and the layout of roadways contributing to significant traffic congestion during peak periods on the City's northside.

Design changes were required to improve safety to motorists and pedestrians and to improve traffic flow. Stantec came up with a solution that would alleviate these problems while anticipating the communities' traffic needs for decades to come.

Our design not only increased traffic safety, it assisted the City's transit authority and enhanced emergency response times by providing better traffic flow to the area. A future connection for pedestrian traffic from the nearby retail area to the residential area to the west of the roundabout was also considered in the design.

(continued on next page)



PEI-NB Interconnection Upgrade Environmental Impact Assessment (EIA)

An improvement and modernization to the electrical power transmission system between Prince Edward Island and New Brunswick was required due to an increasing power demand and the existing cables nearing the end of service life. To install, and operate, two new high voltage submarine cables between the provinces an environmental impact assessment was required.

Stantec worked with Maritime Electric and PEI Energy Corporation to collect the necessary data and prepare permit applications and an

environmental assessment to meet multijurisdictional regulatory requirements.

In consultation with First Nations and provincial archaeological departments, we provided a permitting strategy, a solid and defensible environmental assessment, as well as technical support for the project which received multijurisdictional approvals and licenses within 20 months of commencing the environmental permitting phase of the project.

Our team received the 2018 ACEC-NB Pinnacle Award as the top ranked entry for our work on this project.

Tesla Canadian Supercharger Network Deployment

In their aim to make electric vehicles more consumer-ready, Tesla began building a network of 480-volt, fast-charging supercharger stations that would allow for quick vehicle charging. With a network of high-powered superchargers located across the US, Europe, and Asia, they were ready to further expand into Canada.

Tesla retained our integrated team of engineers to provide design, engineering, and utility coordination services for this fast-paced project, which includes several superstation site installations across New Brunswick. The supercharger is a proprietary direct current (DC) technology that provides up to 120-kilowatts of power per car.

Our scope for each site includes complete electrical, structural, civil, and landscape engineering as well as coordination with the electrical utilities.

Have a project update that you would like to share with ENGEOActions readers? Send along concept ideas to our Publisher/Editor Heather@apegnb.com.

New Brunswick Well Represented at the 2019 Canada Wide Science Fair by Darren White, Science Coordinator, ASD-South

If your memory of science fairs is baking soda volcanoes and glitter filled poster boards, you owe it to yourself to check out some of the amazing projects from the <u>Canada Wide Science Fair</u> (CWSF). On May 12th-17th, 2019, 450 of the brightest young scientists from across Canada gathered to showcase their innovations, studies and experimental data on topics from Psychology to Mathematics.

Among the participants were 15 students from New Brunswick who spent the week sharing their projects with researchers, professors, industry professionals, as well as with the thousands of elementary, middle and high school students that came to Fredericton to see the Fair.

Team NB arrived in Fredericton on Sunday, May 12th, and after settling into their dorm rooms, they spent some time setting up their projects, alongside students from across Canada. Monday, the students presented their projects to the judges. That evening they were treated to "Freddy Fest" at Science East at the Fredericton Market site. Music, inflatable games, and lots of food were the order of the evening as students unwound after a long stressful day of presenting.

On Tuesday, CWSF participants got to step away from their projects for a bit and become tourists. Students and chaperones divided up into groups and travelled to various points along the Bay of Fundy, taking in sites such as Hopewell Rocks, the Reversing falls and the Chocolate Museum in St. Stephen!

On Wednesday and Thursday, the students were back at their projects, presenting to nearly 8,000 students from across New Brunswick who

were able to make the trip to UNB to take in the fair. Thursday evening, a gala celebration was held, and awards were given out.

Seven NB projects were recognized, including a Junior Gold Medal to Neila Selouani for her project "ARim: A New Tool to Help Diagnose Diabetic Retinopathy", and a Senior Gold Medal to Peter Zhu for his Project "Development of an Al-Based Acute Promyelocytic Leukemia Classification System". As part of his prize, Peter travelled to China this summer to compete in the China Adolescents Science and Technology Innovation Contest. A complete list of team NB projects and awards can be found at: http://bit.ly/CWSFteamNB.

Fredericton has established itself as one of the best host cities for the CWSF. The Fair will be returning to the University of New Brunswick campus in 2022 and 2025. With such great New Brunswick representation at the Fair, and the continued opportunity for large numbers of New Brunswick students to experience their peers' scientific work and take-home ideas for their own projects, the future of science in the province looks bright.



2nd Row, Left to Right: Bryan Clarke, Leo Cui, Cloé Robichaud, Samuel Lefrançois. Front Row Left to right: Neila Selouani, Alicia Gammon, Cynthia Cui, Alicia Gammon, Rassim Ahmia.

Membership Survey Highlights

In April of this year you had the opportunity to participate in a Members' Survey for Communications. Some great insights were collected from your input and they are now being applied to our communications. The following are the highlights of what you said you wanted in terms of APEGNB communications.

1 Regulatory Information Expected (in order of importance):

- a. Professional Development Information/Opportunities
- b. Professional Standards
- c. AGM Information
- d. Complaints and Disciplinary Information
- e. Risk Management Information.



2 (Non-Regulatory) Information Wanted:

The top two requests were information on projects & project updates of members, followed by outreach updates.

3 If you are not reading Engenuity, why not?

The number one answer for members was that the content doesn't match your needs.

4 What information do you want to see on our website?

- a. Professional Development Opportunities
- b. Regulatory & Compliance Information
- c. Method to pay dues
- d. Publications
- e. Events

5 When looking for general information, unrelated to APEGNB, what are your go-to sources (channels)?

The number one source for Francophone members was Facebook. The number one source for Anglophone members was online news sites.

The second source was the daily news paper

6 Demographic Information

The representation of survey respondents was very interesting. The number of respondents within the age brackets of 25-34, 35-44, 45-54 and 55-64 were very similar in each category and made up 85 percent of the total responses. Respondents in the age bracket of 65-74 represented 13 percent and 75+ made up two percent of the total responses.

So, what does this mean for you, the member?

The results of this survey gave us first-hand responses for your expectations and thus, they are tangible actions for us. For example, we can add more and different information to our website. Two immediate changes are the additions of more information on Professional Development (PD) Information/Expectations and Disciplinary information on our website rather than being included herein. We will continue to share PD opportunities on our social media channels to match the need for timeliness, however. And for the latter, having Disciplinary information on our website better aligns with the Association's Objects under the Act with respect to meeting our requirement to ensure that "the public interest may be served and protected".

Finally, we know that surveys help collect information from members in an expedited manner and we will continue to seek your ideas/input in this format. Inspirational teachers can change lives and that's why the Association of Engineers and Geoscientists of New Brunswick believe it is critical to recognize teachers who go above and beyond, inspire and demonstrate excellence," stated Serge Dupuis, President, APEGNB. "Creating interest and inspiring our youth to pursue Science, Technology, Engineering and Math (STEM) is perhaps more important now than it ever has. Career opportunities for students who have this background are endless.



Amy Peters – Kennebecasis Colleen Logan – Kennebecasis Maura Tait - Kennebecasis Charles MacTavish – Geary Kendra Breau – Tabusintac



Important Dates

Annual General Meeting

February 20th and 21st Hilton Saint John/ Saint John Trade & Convention Centre

2020 Centenary Celebration

April 25, 2020 Delta Fredericton

FINANCIAL SECURITY PROGRAM for engineers, geoscientists, students and their families

EXCLUSIVE

RRSP, non-registered savings plan, TFSA, RRIF, LIF or annuities

Sponsored by Engineers Canada



How much more?

\$35,526 more*

with an Engineers Canada-sponsored RRSP

Program participants get free investment guidance

Start today – contact Angela Harvey at 1-866-788-1293 ext. 5786 or angela.harvey@gwl.ca, or visit www.infosite.grs.grsaccess.com/engineers-canada





*Assumes no further contributions for ease of calculation, interest on the initial \$25,000 investment compounded annually. Based on a 25-year investment at a group plan rate of return (which includes fees) of eight per cent and a bank rate of return (which includes fees) of seven per cent. / Great-West Life and key design are trademarks of The Great-West Life Assurance Company (Great-West Life), used under licence by its subsidiaries, London Life Insurance Company (London Life) and The Canada Life Assurance Company (Canada Life). As described in this advertisement, group retirement, savings and income products are issued by London Life and payout annuity products are issued by Canada Life).

APEGNB CENTENARY CELEBRATION



SAVE THE DATE APRIL 25, 2020 Delta Fredericton

Mark your calendars now!