April 2021



ENGEOACTIONS THE NEW BRUNSWICK SOURCE FOR ENGINEERING AND GEOSCIENCE NEWS





### MEET OUR 2021 EXECUTIVE

A conversation with our leadership team about guiding APEGNB through the next centenary



PLUS: A recap of our 2021 AGM and professional development sessions

**PROJECT UPDATES:** Read about exciting project updates from Moncton, Fredericton and Shediac



### A GUIDE TO BECOMING A **Professional Engineer / Professional Geoscientist**



IN NEW BRUNSWICK

equivalent).



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# **ENGEOActions**

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**OUR MISSION** 

To protect the public interest by regulating practice and to maintain public confidence in the professions.

#### **OUR VISION**

The Association of Professional Engineers and Geoscientists New Brunswick leads the professions as a trusted, integral resource in regulatory matters.

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## **Editor's Note**



For several months now the concept of resiliency has been going through my head. While it's similar to the same idea as the buzz words we hear lately such as "pivoting" or "adapting", I think largely, the idea of resiliency has taken on a whole new meaning for me, the work I do and the work I am seeing from Professional Engineers and Geoscientists.

2021... even though we are a third of the way through the year, the ramifications and fallout of 2020 still, I think, have a hold on a lot of us. Every time I say out loud the year "2021", I am really hearing myself say "2020 won", which brings thoughts of uncertainty and doubt to the forefront of my brain. As much as I don't want to go there (and I don't think any of us want to repeat the year that was 2020) it's hard not be a little bit jaded by the happenings of the past.

Change is never easy but logically, you can understand why it's needed. Still, that doesn't make the concept less stressful. Far too often in the past, I found myself taking small and cautious steps forward, not resisting, but approaching situations in what I felt was a comfortable manner and at a pace where I felt in control. Then 2020 changed all of that.

To quote Charles Darwin, "It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change." The fallout from 2020 showed us that major societal shifts were needed, whether we wanted them not, especially when it came to technology and leadership in the workplace.

Suddenly we were relying more on technology than ever before to help us navigate virtual meetings and manage our teams remotely. Softer skillsets like communication, empathy and multi-tasking became just as critical as technical expertise and workplace experience. While change can be scary it also became necessary. It was during this time that I saw how Professional Engineers and Geoscientists were able to adapt and pivot their roles to helping those cope and combat the pandemic crisis. From shifting their day to day focus by using their technology to create face shields to designing rapid testing kits, innovation was all around us, and you as a registrant of this Association played a large part in helping to get New Brunswick and its residents where we are today.

I used to just shake my head at the phrase "we are all in this together" because, at times, I did feel far out in left field by myself. However, to our credit as resilient humans, we did in fact all learn and grow stronger together. While things might not be as they were before, this is our "new" normal and I've realized (and seen proof) that myself, the Association and the professionals we serve have moved forward together and continue to flourish and thrive.

Take care,

Laugen Nicholson

LAUREN NICHOLSON Director of Communications, APEGNB lauren@apegnb.com

"It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change."

CHARLES DARWIN

# Message from the CEO



### "ALL IS FLUX, Nothing Stays Still"

Plato

Whoever thought that things would simply come to a halt in a pandemic, thought wrong.

Not only did the pandemic mean that we had to adapt and re-imagine our annual meeting as an online event, it became the catalyst for identifying opportunities to pivot and do things differently. Luckily for us, APEGNB was already able to hold elections with electronic ballots, and we were already creating an on-line application form for new registrants.

As it turns out, for 2020, our registration numbers were higher than before. Our Members in Training are submitting log books more regularly and our committees are working even harder in this virtual environment.

Closing our office to outside visitors has also caused us to look at our own internal processes. As a result, we are working to replace our old database infrastructure in favor of something that is cloudbased and mobile friendly. This will mean that the next time you pay an invoice, you can do it online and see your receipt immediately. This will eliminate double payments and potential confusion with your membership file and will allow for easy access to your invoices, receipts and your professional development hours.

COVID-19 impacted our strategic plan in a number of ways. Some items, such as virtual branch professional development opportunities, were accelerated. Others, such as the further development of school classroom visits, were curtailed. Many of those items now need to be re-examined with a new lens to determine the best approach to moving forward in this new environment.

Following the Provincial Election last fall, we worked to build our government relations strategy and also took advantage of the opportunity to meet with the new Minister of Transportation and Infrastructure and the Premier, both of whom are engineers. We have also participated in opportunities to directly engage with the Minister of Finance following the provincial budget presentation, and have engaged with various other cabinet Ministers and MLAs on other topics.

While the proposed changes to the *Engineering Technology Act* are not pandemic-related, the project has occupied a lot of staff and volunteer resources. You can read more about that on page 17. In a larger sense the proposed amendments to the *Act* are an opportunity to examine what the future might hold for the broader engineering and geoscience community. I hope you will engage with us on this discussion and provide input on our strategy moving forward.

2021 promises to continue to remain busy. Our first large scale public awareness campaign will be rolled out in a few weeks and it will focus on the role that our professionals play in society, the value of the "P.Eng." and "P.Geo" designations and the purpose of a regulatory body such as APEGNB. Stay tuned for more updates on this over the next few weeks.

Remember, your feedback is encouraged and can be directed either through your regional Council representative or directly to me at the APEGNB office. I look forward to seeing you in person soon!

La Datom

LIA DABORN CEO, APEGNB lia@apegnb.com

## **Message from the President**

I am very honoured to be the 2021 APEGNB President and the 9th female APEGNB President. I am following in the footsteps of some great leaders who have shaped this organization into what I am proud to be part of today. Our Association is in a unique position in that our Past President, President and Vice President are all strong and confident women. There's an old saying that I think is appropriate to share here called the power of three – one is a token, two is presence and three is a voice. APEGNB members have used their voice to elect the three of us and I'm excited to see what we can accomplish and where we go from here.

One of my main goals as your President during my term will be to strengthen our presence within New Brunswick through transparent communication and relationship-building. Over the past few years our Association has made it a priority to strengthen our relationship with the New Brunswick Government. A silver lining (if we can call it that) from the COVID-19 pandemic are the conversations that have been started with the different government departments regarding our members as well as public safety. Our professions are at the forefront to guide the change required to conquer the COVID-19 pandemic and lead our organizations through this unprecedented time. Our association was strong before 2020 and I believe we can be stronger in 2021 by allowing our members to use their full potential and think outside the box.

As another priority, I would like to increase awareness of diversity within our membership. One of the first APEGNB committees I joined was the Diversity and Inclusion Committee and my work with this committee has been a passion of mine. I believe together as an association with a diverse membership, we share the responsibility to create awareness and provide opportunities for the public by showcasing the diversity of the professions we regulate. It's important for our own members to continue to promote diversity within our professions and to promote our colleagues who come from diverse backgrounds that could help raise awareness.

Lastly, I have a vested interest in the Engineer's Canada 30 by 30 initiative. The goal of the initiative is to raise the percentage of newly licensed female engineers 30 per cent by the year 2030. This initiative has received national support across all provinces



and territories and I would like to plan a few awareness programs for our youth regarding this initiative in New Brunswick. This has been challenging across the nation with the COVID-19 pandemic, as outreach programs planned with schools and hands-on activities were put on hold. As part of the council's strategic plan, we have invested in an awareness campaign that will help to highlight all of these priorities and more. Stay tuned in the coming weeks for more information around this!

As always, if you have any questions or concerns, please do not hesitate to reach out to me directly.

Maggie C

MAGGIE STOTHART, P.ENG. President, APEGNB 2021 president@apegnb.com

### VIRTUAL AGM AND PROFESSIONAL DEVELOPMENT SESSIONS

February 16 - 19, 2021

Whether you watched from the comfort of your home or a quiet office, from your desktop or your tablet, the 2021 APEGNB annual meeting was unlike no other. We offered nine professional development sessions which drew between 130-170 participants for each event and 150 registrants participated in the annual meeting itself.



#### **Results of the 2021 election:**

President Vice-President At-Large Councillor Saint John Councillor Northeast District Geoscientist Councillor Maggie Stothart, P.Eng. Michelle Paul-Elias, P.Eng., FEC Shawn Amberman, P.Eng. Bill Woodhouse, P.Eng. Michelle Roy, P.Eng. Adrian Davis, P.Geo. 758 ballots cast

16%

participation rate

# Congratulations to the 2021 Award Recipients!

Learn more about our winners by visiting www.youtube.com/APEGNB

David Crandall P.Eng., FEC C.C. Kirby Award



Darryl Ford P.Eng., FEC President's Award

Paul Campbell P.Eng., FEC Community Leadership Award





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ENGEOACTIONS

### **MEET YOUR EXECUTIVE**

#### A CONVERSATION WITH APEGNB'S EXECUTIVE LEADERSHIP ON WHAT MOTIVATES THEM, WHAT SUCCESS LOOKS LIKE AND THE FUTURE OF THE ASSOCIATION

#### ENGEOActions sat down virtually and asked the 2021 Executive Council several questions to get to know each of them a bit better and gather their thoughts on where the Association is heading over the next year and beyond.

#### Q: How long have you been volunteering with APEGNB?

MPE: I had some exposure to the Association prior to graduating from UNB. I wanted to get involved, have my voice heard and give back to the profession. Now here I am, 17 years later, and still enjoying it very much.

JB: I started back in the 80's (I think!) serving on the Scholarship Committee. I was asked a couple of times to put my name forward for Council but wasn't able to make the commitment until 2008 and have been involved since.

**MR**: I started volunteering with our local APEGNB-SJ branch when I graduated from UNB and moved to Saint John. I decided to get involved to get to know other members and give back to my profession. Fast forward and I have been a member of the provincial council for the past 8+ years.

From L-R : Michelle Paul-Elias, P.Eng., FEC, Vice President; Michael Parkhill, P.Geo., FGC, Director (and President) Geoscientists Canada; Maggie Stothart, P.Eng., President; Jean Boudreau, P.Eng., FEC, Director (and President) Engineers Canada; Lia Daborn, CAE, CEO APEGNB, Marlo Rose, P.Eng., FEC, Past President

#### Q: What motivates you?

LD: I am a very goal-oriented individual, motivated by clear goals that best serve the members and our stakeholders. Goals help to outline a shared vision of leadership within the organization, and as a result, the energy and enthusiasm of the entire team provides me with the motivation to accomplish what needs to be done.

MPE: I am motivated by my peers and my own interest in being a part of keeping New Brunswick a great place to live and work.

JB: There is certainly a feeling of satisfaction in being a part of the work of self-regulation but there are other benefits as well: continual learning and education, meeting new people and extending your professional network and have a bit of fun along the way. There are many people I now call friends who I met through my volunteer work with APEGNB.

### Q: What is leadership and how do you apply it to your work with APEGNB?

MS: Leadership is motivating people, building teams and trust, communicating effectively and leading change to meet desired goals. This can be applied to both personal and work goals set by yourself or others. As a leader within APEGNB, I hope to inspire and encourage our members to volunteer and/or become an effective leader in their own community.



**MPE:** Leadership is doing what is right, regardless of the difficulty. I often think about that philosophy, as it ensures that our work keeps our mission and values in mind. We need to do what is right as leaders for the Association and for New Brunswick.

MR: Great question. Leaders have the ability to drive change by inspiring others. We have some big challenges and opportunities currently underway, such as the future of regulation within our professions at the APEGNB level. I would like to think that I have inspired other members to want to carry the torch and volunteer their own time to give back to our professions and our communities.

#### Q: What makes our mission meaningful to you?

MR: Our mission is meaningful to me because it embodies a few of the many reasons why I am proud to be a Professional Engineer. Our mission is "our" (APEGNB) reason for being. It should be what drives all of us, to do what we do, each and every day.

MS: Last year I became a Mom. A switch was flipped and now I am even more vested in the public interest, protecting our province and pushing innovation forward in our association. I want New Brunswick to thrive and grow for future generations of engineers and geoscientists and for my own future little engineer (but no pressure!).

#### Q: What do you want to accomplish over the next year?

LD: I have spent two decades working in organizations where I focused on ensuring that the professional members were best equipped to do their 'day jobs'. This year's strategic plan has a number of goals. We will implement a new database which will improve members' renewal process and create significant opportunities for greater efficiency in the APEGNB office. In addition, we are moving forward with the implementation of Competency-Based Assessment which will mean Members-in-Training will have a more modern way to capture their work experience, and which will also allow verification in a more efficient manner. We are building stakeholder awareness about APEGNB and our professionals through our government relations strategy and a public awareness campaign. All of these activities will keep us busy for the coming months and I am excited about each one.

MS: I would like to work on diversity and inclusion within our professions as we all continue to work to protect the public interest. I believe together as an association with a diverse membership, we share the responsibility to create awareness and provide opportunities for the public to know the role of Professional Engineers and Geoscientists and recognize that our mission is to regulate the practice and maintain public confidence in the professions.

**MPE:** I want to build on the work that the previous Executive has started and keep moving forward as a strong advocate for our professions.

#### **Q: What makes APEGNB resilient?**

MP: In the last four years, I have been witness to the dedication and professionalism of the members of the provincial council as well as the staff at APEGNB in educating and protecting the public. It is a great team to be a part of. I am proud that APEGNB is well respected at the national level.

MS: To me, being resilient means the ability to withstand or recover quickly from difficult conditions. Over the last 100 years, APEGNB has been able to withstand change that has helped shape and push our profession forward. An excellent example of APEGNB's resilience has been this past year's COVID-19 pandemic and our ability to survive a crisis and continue to regulate in a world of uncertainty.

JB: That's easy – the people involved! Our staff is dedicated, hard-working and focused. Our volunteers deserve huge credit as well. All of these dedicated people are putting time, commitment and their heart and soul into the good of the professions and the well-being of this organization.

**MR**: Our profession is made up of a large diverse group of individuals: educators, entrepreneurs, environmentalists, researchers, project managers, cost controls... you name it. It's through our diversity of knowledge and experience combined with our desire to make New Brunswick a better place to live and that makes APEGNB resilient to challenges. Our ability to quickly react and adapt was evident by the contributions of our members during the COVID-19 pandemic.

#### "Last year I became a Mom. I want New Brunswick to thrive and grow for future generations and for my own future little engineer."

#### -Maggie Stothart, P.Eng., President

### Q: What lasting lesson have you learned from working with APEGNB?

JB: Sometimes we have to step outside our comfort zone. Who among us can say they really enjoy strategic planning sessions? I'm assuming that is not a large number. Or who among us is really willing to stick their neck out for the good of something when they are doing it in a volunteer capacity? In my opinion, it is the sense of accomplishment, the personal growth and the benefits to the cause that keeps you engaged – these are huge rewards for the effort that each person has contributed to the good of the whole. MR: This past year in particular has taught me that engineers and geoscientists thrive when given the most difficult problems to solve. I am inspired by the contributions our members made during the pandemic and I am proud of everything our association has accomplished during my time as President.

MP: I am impressed with the way the two professions respect each other and collaborate on the issues that we are faced with and strive to resolve. I know when I bring reports from Geoscientists Canada to council and staff that what we are doing with projects and publications at the national level is needed and used by APEGNB and its members.

#### Q: What excites you most about the future of APEGNB?

MS: This is a tough question. There are many things that excite me about being President of APEGNB and the future of our association. I feel it is extremely important that we continue to pursue an inclusive culture for our current members and the future generations of engineers and geoscientists to truly reflect New Brunswick's diversity. Our council has a structured strategic plan to help accomplish this but we still have a significant amount of work to do and I am excited to lead this challenge.

LD: I am excited about the opportunities that are in front of us to become more efficient and streamline our activities, while expanding the ways in which we provide our regulatory services. The past year has shown us that we can be effective without working physically within the same space. This means that our committees can be drawn from members throughout the province; we can provide education to members in a virtual setting; branches can connect with each other to share resources and we continue to meet our mandate as a regulatory body, no matter where we are located.

JB: I am excited to see new faces at Council. It is important to have continuity and experienced voices at the table but it is also important to have new perspectives and experiences to address all issues. We are also seeing more people taking advantage of virtual meetings such as our recent AGM. It is good to have as many members as possible hearing and understanding what is happening with our Association and our professions.

**MR**: I'm excited to think about the opportunities we have to grow as an organization and tackle complicated social and economic problems. We have accomplished so much in the past 100 years...and I am confident Professional Engineers and Geoscientists will continue to be essential in the near and distant future in our own province and beyond.

#### Q: Any final thoughts?

JB: I know what it's like to be stretched to the limit with life activities – career, family, and all the commitments that go with these, but on the same note, you will find great rewards in making some time to get involved with APEGNB either through Council, committees or the branches. Even a little bit of time to attend some events or to volunteer to help even with a one-time project or event – this could inspire you to commit a little more the next time you are asked. The rewards are great – both personally and professionally.

MP: If members of APEGNB think they have something to offer, I encourage them to get involved with APEGNB either through council, the Branches, or one of the committees. It is rewarding and interesting to work to accomplish the goals of the association. I have developed a skill set through volunteer work that has served me well in all walks of life.

"I know what it's like to be stretched to the limit with life activities – career, family, and all the commitments that go with these but on the same note, you will find great rewards in making time to be involved with APEGNB."

- Jean Boudreau, P.Eng., FEC, Director (and President) Engineers Canada **PROJECT UPDATE - CITY OF MONCTON** 

# Connecting the MCA MONCTON NORTH NORD COMMUNICATION NORTH NORD

Submitted by: Sherry Trenholm, FCSCE, P.Eng., FEC Director of Facilities, City of Moncton

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A new satellite YMCA opened in September in Moncton's North End to serve the growing population in the area as well as the community at large.

"We're extremely pleased with the result of this unique development," says project manager Dany Duguay of Acadian Construction, construction manager for the build. "Despite the challenges of the pandemic, the project was completed on time and on budget, and is really a state-of-the-art facility."

The City of Moncton was asked to partner with the YMCA of Greater Moncton to construct the community centre after more than a decade of lobbying efforts by residents for a community centre in the area. In December 2017, Moncton City Council unanimously voted to approve proceeding with the building, and worked with the YMCA on the design and construction. The Y will own and operate the facility, which will be accessible to people of all ages, backgrounds, abilities, and stages of life. Federal and provincial governments each committed \$4 million, while the City of Moncton is contributing \$6 million (including \$2 million allocated to road development) to the \$17 million project. The YMCA is committed to raising the remaining \$3 million through its '*Building What Matters*' Campaign.

Construction of the new YMCA Moncton North began in April 2019. The building – a satellite facility of the main YMCA at 30 War Veterans Ave. in Moncton – was erected on a former undeveloped site along Twin Oaks Drive.

The 35,000-square-foot, two-storey building features a bright, spacious lobby/reception area; a main gym with six basketball nets and synthetic flooring for varied activities; a large, vaulted-ceiling fitness centre; as well as a multi-purpose room on the main floor. Two of the unique features of the first floor include a universal change room and an indoor playground/splashpad, the first of its kind east of Ontario.

A key feature of the second floor is an indoor track with built-in incline/decline slope. The track – available for walking, running, and wheeling – will be open to all, both Y members and the public. One of the other innovative elements of the building is an all-ages slide that provides a fun alternate mode of transport from the second floor to the first. (Stairs and an elevator are also available.)





"This YMCA was meant to complement the main Y, which is only about six kilometres' away," says Duguay. "Since Y members will be able to use both facilities, the Y wanted to minimize duplication of amenities and services and I think they've achieved that. This facility was also built with expandability in mind so there is the potential to add more amenities in the future."



The project was designed by Architecture 49 in conjunction with MCW Maricor, RSEI Consultants Ltd., Crandall Engineering Ltd. (a Division of Englobe Corp.), J.M. Giffin Engineering Inc., and Viridis Design Studio Ltd.

Officials from the YMCA of Greater Moncton are thrilled with the project's outcome.

"This will be an incredible gathering place for the entire community," says the local YMCA's CEO Zane Korytko.

#### 2021 ATLANTIC GEOSCIENCE SOCIETY LAING FERGUSON AWARD

#### Honouring Antonius (Toon) Pronk (P.Geo.), New Brunswick Geological Survey

Nominated by Michael Parkhill, P.Geo., FGC, Quaternary Geologist, Northern New Brunswick Member and Past-President of the Atlantic Geoscience Society

I am pleased to announce that my friend and colleague Antonius (Toon) Pronk, P.Geo, of the New Brunswick Department of Natural Resources and Energy Development, is the 2021 recipient of the Atlantic Geoscience Society's Laing Ferguson Award for distinguished service. He has been a member of the society since the late 1980s and has always been actively involved in AGS. Toon is a native of Soest in the Netherlands and received his M.Sc. in Quaternary Geology from the Free University of Amsterdam. He started working for the New Brunswick government in 1983 and currently is the provincial Geochemist.

Toon has been a longstanding member of the AGS Education Committee and has been involved with putting on "eight" EdGEO workshops in New Brunswick.

His outreach work is unparalleled by geologists in New Brunswick and he never turns down a request to do school presentations and field trips as part of the AGS Education Committee's outreach goals.

He has introduced thousands of students of all ages to the world of geology over his 35-year career. Toon is especially proud of the dozens of university students he has mentored over the years, many who are still working in New Brunswick, including yours truly.

His current manager, Serge Allard, is another geologist who was mentored by Toon, and relayed the following "Nearing retirement, Toon can look back on his career with pride. Not only has he made significant scientific contributions, he has dedicated so much of his time and effort to mentorship, outreach

and education. He is already planning on staying involved with outreach, post-retirement".

In addition to his outreach work, Toon has also been on the organizing committee for several AGS Colloquiums and helped organize and host several workshops and special sessions. He is a well-respected scientist who has presented many papers and judged student presentations as part of his work with AGS, and published and reviewed papers for our journal, Atlantic Geology.

He was involved in the first edition of the Last Billion Years and is presently a co-author of the second editions ice age chapter. He recently was one of the co-authors of the Canadian Federation of Earth Sciences (of which AGS is a member) Climate Change Statement which is currently in the review process. He was also on the Executive of the Canadian Quaternary Association for 12 years from 1989 to 1999.

Toon has also co-supervised many UNB thesis projects alongside Professor Bruce Broster, P.Geo., FGC.

He continues to advise industry, prospectors, and the public on the geology of New Brunswick.

The criteria say that "this Award shall be given in recognition of exceptional and altruistic contributions to the Atlantic Geoscience Society and/or to foster public appreciation of Atlantic geoscience over a long period of time".

It is evident from his outstanding work on behalf of the Atlantic Geoscience Society and supporting letters from colleagues, that Toon Pronk is a most deserving recipient.



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ENGEOACTIONS



### ETHICAL DILEMMAS IN GEOSCIENCE

Mark Priddle has been practising environmental geoscience for 35 years in Ontario and elsewhere in Canada.

APEGNB was delighted to have him as a guest speaker during our Professional Development sessions leading up to our Annual Meeting. These questions are a follow up to his presentation.

Mark Priddle, P.Geo., FGC Senior Consultant , McIntosh Perry

#### What do you recommend for a member who is struggling with an ethical situation in terms of reaching out to others for support?

It is important to have a trusted member in your organization (company, department, faculty etc.) who is also a licensed professional. This does not have to be a superior, but someone with similar values and concern for ethics. This is the best type of person to reach out to. If they are in a management position, they may be more able to address the situation, but having a similarminded person is also very valuable if a situation needs to be confronted.

#### Within municipalities, we often see submissions that are insufficient and require much rework – although once submitted, drawings should be at a 'final' stage. How would you suggest that we handle these situations?

I feel that governmental organizations need to "get tough" and stop accepting sub-par submissions. A combination of withholding payment because the product is not as required (does not meet specifications of standards as per the contract), in combination with reporting would go a long way to reducing the frequency of this.

#### Do you think ethical dilemmas are dealt with by employers through termination rather than reporting to the engineering/geoscientist regulator?

Unfortunately, I do. I think this is the "easier" option as it is over and done with quickly. Unfortunately, it might just kick the problem down the road.

### Do you notice that certain areas of practice have more ethical issues than others?

Yes, in my field the issues are related mostly to getting work done for private bodies attempting to get projects completed quickly and cheaply – timing is sometimes more important than cost and moving through regulatory channels for approvals is slow. It would seem that engineering/geoscience with site work such as construction sites are obvious examples.

#### Over the last few years, there has been a growing distrust of socalled 'experts'; as professionals, how do we work to improve this trust?

This is a tough one! Experts need to provide a more balanced approach to their reviews. In theory, any expert would come to the same conclusion, not matter which side they were attained by in a legal dispute for example.

#### In the ASBOG survey, gift-giving/receiving was ranked as the least serious ethical infraction. Knowing that this is a clear conflict of interest, why do you think this is?

I think this is simply because it was a survey of practicing geoscientists, who are less likely than engineers and other professionals to be in a position to give or receive gifts.

### Do we have an overconfidence in our ability to make ethical decisions?

I think we do. I have looked back over my career and questioned decisions that I had made, even though I thought they were simple decisions at the time.

#### In an effort to prevent dilemmas and confrontations, what type of awareness efforts would you recommend doing with your clients prior to accepting a contract?

Lately, all of my proposals have clauses stating something like: "the successful completion of this work in no way guarantees the approval/acceptance/completion of your project". This tempers the expectation of clients and provides a chance to discuss how following all the rules and doing the work correctly does not mean success (soils may be unsuitable, planning regulations may prohibit development, endangered species may be encountered, public may oppose, water may not be potable etc.) and that ethically we are not allowed to "fudge" anything to make it work.

### Would you recommend doing some awareness prior to entering into business with a new client?

Yes, with new clients it is a good to discuss your role as a professional and the standards (ethics) that you must follow in order to work on a project. Some companies have a list of clients they cannot work with because of past ethical challenges.

# From the Desk of the DPA

#### CAROL MACQUARRIE, P.ENG. DIRECTOR OF PROFESSIONAL AFFAIRS AND REGISTRAR

Under the Engineering & Geoscience Professions Act, all individuals practicing engineering or geoscience independently or for application in New Brunswick who use the titles Professional Engineer / P.Eng. / Engineer / Professional Geoscientist / P.Geo. / Geoscientist, must be registered with APEGNB. Additionally, all corporate entities practicing engineering or geoscience in New Brunswick, must be registered with the Association.

A Certificate of Authorization (C of A) is the licensing of a partnership, association of persons or a corporation to practice the professions. It gives the organization the right to practice, and gives APEGNB the ability to regulate group practice of the professions.

In accordance with the APEGNB By-Laws, "Partnerships, associations of persons and corporations that offer services to the public in their own name must hold a Certificate of Authorization". This is interpreted to apply to organizations where the public reasonably expects that the entity performs engineering / geoscience work. Typically, this involves firms doing fee-forservice work for the public but it can apply to manufacturing and other entities if field engineering is required.

Certificates of Authorization protect the public by:

- ensuring that qualified entities are listed on APEGNB's public register;
- requiring firms to identify the persons who are responsible for the organization's professional services;
- ensuring that firms can be held responsible and accountable for any practice done on their behalf including adherence to all relevant regulations, standards and codes.

The primary requirements for licensure are at least one full time employee (P.Eng. or P.Geo.) who can take professional responsibility for the work done by the organization and, proof of professional liability insurance. C of A holders must submit proof of insurance at the time of application, and, at the time of annual renewal. Note, that there is no professional seal associated with the Certificate.



Similar to individual registrants, C of A holders are subject to the disciplinary procedures of the Act. Likewise, APEGNB can take legal enforcement actions against organizations who have "engineering / geoscience" in their title or offer services without holding a valid Certificate.

To find out if an organization is licensed to practice in New Brunswick, visit our website at www.apegnb.com and click on the Member Directory tab at the top of the page.

Carol MacQuarrie CAROL MACQUARRIE, P.ENG MACQUARRIE@APEGNB.COM

#### **DID YOU KNOW?**

- **1956:** Engineering Profession Act specifically precludes licensure of firms (does allow co-partnerships).
- **1960's:** The Act was amended to recognize incorporation of professional practice.
- **1970:** The *Act* included licensure of firms if the "principal" function was the provision of engineering service (Engineering Qualification Certificates).
- **1986**: The *Act* included licensure of firms if "one of its functions" was the practice of engineering (Certificate of Authorization).



# TECHNOVATION GIRLS N.B.

ENGEOActions spoke with Neena Gandhi, P.Eng., and Club Ambassador of Technovation Girls N.B.

Technovation Girls NB is an educational not-for-profit that is focused on fostering the growth of our future technology creators and entrepreneurs. The volunteer-based program teaches young women, aged 10-18, valuable technical skills while instilling confidence in their abilities and career dreams.

The Founder of Technovation Girls NB, Neena Gandhi, is a professional mechanical engineer from Saint John, New Brunswick. She discovered Technovation after attending Women TechNetwork, a virtual international technology conference, and was passionate about bringing the program to Atlantic Canada.

"The pandemic has changed the way I look at the world. There are so many possibilities available. That is why I am so excited to provide this free virtual opportunity for young women in our community," she explains.

January 2021 marked the launch of the very first offering of this program in Atlantic Canada. Following the model provided by the international organization Technovation, the curriculum highlights local businesses and success stories in the region such as the Hotspot App and Eggcitables.

To kick off the program, 30 passionate young women from New Brunswick and Nova Scotia work together to identify challenges in their local community and develop apps that would help solve these problems. While developing their apps, they learn about marketing and entrepreneurship including how to develop a winning pitch. At the end of the 14-week program these innovative young women will submit their apps, business plan and pitch video to an international competition, where their work will be judged against other participants from around the world!

"I know when I was that age I never knew what was out there career wise," says Gandhi. "The Technovation program offers a fun way to learn practical skills, which I can appreciate as an engineer."

She goes on to explain that the program is a great way to introduce the next generation to future mentors who are working in Atlantic Canada in a number of different careers from engineering and software development to marketing and venture capital funding.

The program relies on female leaders who work in the technology sector or at a local business to volunteer their time as mentors and educators. These leaders provide mentorship to teams of up to five young women, and coach them on how technology can be used to support the UN Sustainable Development Goals to build stronger local communities, right here at home.

#### **COMPANY PROFILE**

Nikki Falavena is the Director of Marketing for InteliSys Aviation and says she was very excited about all of the programs' possibilities, including becoming a mentor.

"As a mentor, it has been incredible to see the growth of many young women in this program as they build confidence in themselves, their ideas, and their ability to create meaningful and lasting change in their communities," she said.

"This program provides girls with so much more than just the technical skills; it provides them with a strong network of role models from a multitude of career fields and connects them with other like minded youth who are all passionate about making a difference and supporting one another, even after the program concludes."

Based on this year's success, Technovation Girls NB is hoping to expand their offering next year and is looking for sponsors and volunteers with a passion of supporting innovative experiential learning experiences and building a foundation for growth in their communities.

To learn more about how you can get involved visit https://technovationchallenge.org/ or send an e-mail to technovationnb@gmail.com.

"The Technovation program offers a fun way to learn practical skills, which I can appreciate as an engineer." - Neena Gandhi, P.Eng.



### Update on proposed amendments to the Engineering Technology Act

#### BY LIA DABORN, CAE CEO, APEGNB

In July 2020, proposed changes to the *Engineering Technology Act* were presented to APEGNB. Initially, they were explained as a simple change to a definition along with minor housekeeping. Our Association was advised that the changes would not go forward without our support and after a review by APEGNB Council, we responded, indicating that the changes could not be supported as drafted.

In October 2020, we were advised that the draft legislation was to be presented as a private member's bill in the Spring session of the Legislature in its original form. Since that time, we have been working alongside the Architects Association of New Brunswick (AANB) (who have similar concerns) to encourage NBSCETT to consider modifications to their proposal.

#### Why the Concern?

APEGNB feels NBSCETT's proposed scope of practice for "Engineering technology" is overly broad and overlaps the existing scope of practice for Professional Engineers. Using similar language in overlapping definitions blurs the boundary between the work of engineers or engineering technologists or technicians and will create confusion around who is ultimately responsible and accountable for that work.

There is no precedent in Canada where two distinct bodies regulate the practice of engineering and the practice of engineering technology. In fact, there are many Canadian examples of a single regulator overseeing several professions and their associated technology professionals.

Creating a new regulatory regime that is unprecedented and unique to New Brunswick, has the potential to cause confusion regarding mobility across the country. NBSCETT's scope of practice will be inconsistent with all other provinces and has the potential to negatively impact Technicians/Technologists when they seek to work in other provinces and in turn negatively impact Technicians/Technologists from other provinces when they seek to work in New Brunswick. This is contrary to the Canadian Free Trade Agreement. NBSCETT has not identified any public-harm issues under the existing legislation that would support the need for a change in the definition of engineering technology nor by creating an independent scope of practice for technicians and technologists. With the proposed amendments, they are extending independent practice rights, which has the potential to put public safety at risk, if those rights expand the list of tasks that the individual feels qualified to do but without any additional training or experience.

The proposed legislation creates a requirement that anyone using the titles, "engineering technician", "engineering technologist", "certified engineering technician", "certified engineering technologist", "professional technologist", "certified technician" and numerous other terms, can only use those titles if they are registered with NBSCETT. This will impact many individuals who are currently working in this capacity and will certainly impact employers across the province.

#### What's Next?

APEGNB and AANB have spent the past number of months speaking with government officials about the proposed legislation and we have requested that NBSCETT establish a full consultation on the proposed changes where we will be able to provide meaningful feedback and arrive at an agreed resolution. We have asked NBSCETT for clarification but have been unable to have our questions answered. APEGNB continues to be available to discuss the Act and we continue to be focused on amendments that serve the best interests of the public and are acceptable to all stakeholders involved.

Across the country, concern continues to be raised around this issue and what it may mean if the changes are accepted in New Brunswick. The potential ripple effect is significant. This issue is a standing item on the APEGNB Council agenda and Council recognizes that APEGNB's response needs to be more than a simple refusal – rather, we need a long-term solution to ensure that those individuals who have the skills, training and ability to work in a specialized field of engineering or geoscience technology, have the ability to be licensed and regulated in a manner that meets all of the hallmark requirements of a selfregulated profession. This would entail a well-defined and controlled mechanism for the protection of the public; requirement for liability insurance; continuing competency monitoring; and provisions for discipline.

APEGNB recognizes that technicians and technologists are vital members of the engineering or geoscience team but allowing practice rights without oversight by a professional engineer or geoscientist who takes responsibility for the work has the potential to put the public at risk.

#### How you can help

- Consider the implications of this change on your practice, your office and your work environment.
- We encourage you to speak to the technicians and technologists in your office to clarify their understanding of the issue. If you believe that the changes will have an impact, ask them to ensure a proper consultation process is established that allows for all views to be heard in a fair manner.

• Contact us and let us know that you are interested in this issue; we have resources available for you to use in your discussions with your colleagues, your government representative and others.

To our members who have already been engaged and spoken to their public representative: thank you. Your conversations have had an impact, and we hope that you will continue to keep them informed as this issue unfolds.

We will continue to inform you through our communications, in particular through *Regulatory Matters* as this is where the most updated information will be shared.

#### CURRENT ENGINEERING TECHNOLOGY ACT

"engineering technology" means the application of technical knowledge and skill by certified engineering technicians and certified engineering technologists.

#### PROPOSED ENGINEERING TECHNOLOGY ACT

"engineering technology" or "practice of engineering technology" means the design, analysis, planning, development, evaluation, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, works, designs, plans, specifications, systems and services, accomplished by the professional application of appropriate applied science and engineering technical principles, codes, standards and generally recognized procedures and practices by a certified member in the discipline in which the certified member is qualified and entitled to practice.

#### ENGINEERING AND GEOSCIENCE PROFESSIONS ACT

"practice of professional engineering" means any act of planning, designing, composing, evaluating, advising, reporting, directing, or supervising that requires the application of engineering principles and concerns the safeguarding of life, health, property, economic interests, the public welfare or the environment, or the managing of any such act. PROJECT UPDATE - CITY OF FREDERICTON

# GARRISON SKATE PARK

Submitted by: Sean Lee, P.Eng. Assistant Director of Engineering & Operations City of Fredericton Photos submitted In 2019, Fredericton City Council approved construction of an "All Wheel Sports Plaza" in Fredericton's Historic Garrison District within the heart of the city's downtown. The Garrison District is a treasured community gathering space that serves as home to the Harvest Jazz and Blues Festival as well as Fredericton's popular summer night market.

The City worked with local skaters and New Line Skateparks, a company specializing in the development of integrated concrete skateparks, was hired to provide a turn-key development solution as part of a design-build contract in 2020.

The proposed location did not come without its challenges. It had to be built in a busy parking lot, on fill material placed over silty clays, in an area that had extensive flooding in 2008, 2018, and 2019. Additionally, the proposed location required the realignment of a large storm sewer system that was prone to surcharging, causing downtown streets to flood.

Recognizing that a collaborative approach was required, city Engineers split the project into two distinct phases. Phase one involved the realignment and valving of the storm sewer system, reconstruction of the adjacent lane and sidewalk, and the construction of the granular structure and drainage system to support the plaza. Phase two involved the construction of the 15,300 square foot integrated concrete skatepark that would become a landmark within Atlantic Canada. Design and construction management for the first phase of the project was undertaken by exp's Fredericton office and construction, including the storm sewer realignment and was completed by Fredericton's Charmac Construction. The second phase of the project was completed by New Line Skateparks.



Coordination between New Line Skateparks, exp, and the City was critical early on to ensure that the work started and was completed in the 2020 construction season. The team developed clear construction scopes, limits, and timelines to ensure all contractors could plan and complete their work without impacting each other.

The COVID-19 pandemic added even more complexity to the project as New Line's construction team mobilized to Fredericton and were required to isolate upon arrival in New Brunswick. To meet the deadlines New Line Skateparks rose to the challenge and developed several innovative solutions to begin construction while isolating on site without compromising safety of their workers or others within Fredericton.



The newly named "Garrison Skate Park" opened in December 2020, with an official opening planned for the Spring of 2021. Overall, this project represents a successful collaboration between multiple disciplines including Engineers, Landscape Architects, and construction professionals.

While the original scope of the project was to construct a "destination level skatepark" in a central downtown location, the result was much more. The realignment and increased capacity of the storm sewer will help reduce flooding of downtown streets during periods of heavy rainfall. The newly installed storm sewer valves will improve Fredericton's resilience to major river flooding.

The "Garrison Skate Park" is a landmark park with world class plaza terrain, a large enclosed bowl, and a one-of-a-kind 'organic flow zone'. The quality and craftsmanship of the construction are industry leading. The park sets a new benchmark for similar facilities in Atlantic Canada and provides Fredericton residents and visitors a vibrant community space to gather and connect for many years to come.



# **North Eastern Branch Update**

#### RAY RITCHIE, P.ENG., CHAIR

Following the provincial Annual General Meeting, things have been busy with regard to members reactions to NBSCETT's proposed Private members' Bill, and our correspondence with local MLAs. Special thanks go out to Raphael Roy, P.Eng., for his diligence in translating documents and conversing with various MLAs in our Region. Kevin Gallant, P.Eng. has also been busy hosting the Living Shorelines & Clean Energy Initiative seminars which raised \$820 for our Branch. Kathleen McConnell, MIT, also deserves praise for hosting our first Virtual Trivia Night on March 11th, with a fun and successful evening's entertainment.

Events coming in the near future include Kevin Gallant's Living Shorelines 102 Virtual Seminars tentatively scheduled for early May. We will also be looking at our Northeast Branch 19th Annual Pumpkin Fling, with a tentative date of September 25th, 2021. We will need to assess the evolving Covid-19 situation, to determine if we proceed with our annual Golf Tournament during the Summer.

#### 2021 EXECUTIVE

Ray Ritchie, P.Eng. Kevin Gallant, P.Eng. David Henderson, P.Eng. Joey Nowlan, P.Eng. Kathleen McConnell, MIT Michelle Roy, P.Eng. Jean-René Cormier, P.Eng. Consulting Engineer Rep. Dominique Bérubé, P.Geo. Geoscience Rep. North Chrissy Williston, P.Geo. Mohamid Hossin, P.Geo. Antoine LeGresley, P.Eng. Raphael Roy, P.Eng. Michel Cotton, P.Eng. Maxime Thériault, MIT

Chair Vice-Chair Treasurer Secretary **Communications Director** Provincial Councilor Geoscience Rep. South Northumberland Co. Rep. Gloucester East Rep. Gloucester West Rep. Restigouche Rep. MIT Rep.

## Saint John Branch Update

#### GREG DONOVAN, P.ENG., CHAIR

APEGNB Saint John Branch held our 2020 Annual General Meeting (AGM) on Thursday February 25. The AGM was held The Branch remains open to holding some of the more virtually, a first for the Saint John Branch. As part of the meeting, a question and answer session on the APEGNB Continuing Professional Development Program was held and resulted in a productive and engaging discussion. Thirty-one members and MITs attended the AGM.

Shortly following the 2020 AGM, Public Health restrictions came into effect and significantly limited branch activities. Given the reduced expenditures to the branch, council agreed to provide support to four local charities to assist their organizations during the early days of the pandemic.

The 2020 APEGNB Saint John Soapbox Derby was unable to proceed due to Public Health restrictions. Thank you to our members who participated on the organizing committee and as volunteers. Planning the event had been well underway - that work is much appreciated. We are happy to share that PALS in the Park, the charity supported by the Soapbox Derby, was able to continue to enable students from local schools to participate in recreation and education enrichment activities in Rockwood Park this year. We remain optimistic that the APEGNB Saint John Soapbox Derby will return soon.

Now that we have experienced hosting virtual meetings, stay

tuned for future virtual Professional Development Sessions. traditional events later in the year if it is safe to do so.

#### 2021 EXECUTIVE

Greg Donovan, P.Eng. Brian Dugie, P.Eng. Rachel Van Wart, P.Eng. Theresa Winslow, P.Eng. Alex Bardsley, P.Eng. Kelsey Cronin McKenna, EIT Mark Guest, P.Eng. Lipika Nath, EIT Bryna McMurtrie, EIT Michelle Paul-Elias, P.Eng., FEC APEGNB Vice-President Marlo Rose, P.Eng., FEC Bill Woodhouse, P.Eng. Dr. Perry Riley, P.Eng. Abby Snodgrass Ethan Hovey

Chair Vice-Chair Treasurer Secretary Communications Rep. Councilor Councilor Councilor Councilor **APEGNB** Past President APEGNB Saint John Rep. UNBSJ Faculty Rep. UNBSJ Student Rep. UNBSJ Student Rep







### SEEING GREEN

Fifth year U de M engineering students are focusing on environmental sustainability and making their community a better place to live, one project at a time.

Complied by Lauren Nicholson with files from Emilie Savoie and Janelle Melanson *Photos submitted* 

Emilie Savoie, a mechanical engineering student and Janelle Melanson, a civil engineering student competed in the recent Engineering Communications category at the Canadian Engineering Competition. The goal of the competition was to describe an engineering topic (i.e., process, product, device, issue) in terms that the public could understand and assess the social, environmental, political, and economic impacts. They thought, what better project to present than the revitalization of a local Moncton landmark, the Botsford Creative Commons. Once a former hat factory, the 108 year-old building is currently going through some substantial renovations and is home to one of Moncton's most important social innovation centers, La Station, a collaborative workspace.

The team is using the Leadership in Energy and Environmental Design (LEED) and Living Building Challenge green building rating systems as guidelines to renovate the building. The goal of their project was not necessarily to obtain these certifications, but rather to influence eco-responsible decisions. So far, the roof was redone and designed to equip solar panels and a future community garden.

The buildings windows were replaced with double glass weatherproof windows recycled from the now-demolished Vanier School. Other recycled items include chairs, tables, new windows and lights from restaurants, businesses, and schools nearby. The ceiling was insulated with cellulose (recycled newspapers and boron salt to prevent rodents and chance of fire) with a heat flow resistance (R-value) of R60.

These renovations help to reduce heat losses and increase the energy efficiency of the building, thus making it more environmentally friendly.

To reduce water consumption, a rainwater capture system will be installed and used to irrigate the community garden and the toilets.

The final goal of their project is to extend the third floor workspace.

" We wanted to promote sustainability through our presentation at the Canadian Engineering Competition," explained Janelle.

"We often talk about the climate crisis and the urgency to change; however, we do not often talk about how we can address the crisis and what we can do to make changes on a smaller scale."

For both Janelle and Emilie, they feel the revitalization of the Botsford Station is a great initiative to promote ecofriendly renovations at the national level and show that it is possible to renovate old buildings and give them green and sustainable upgrades, instead of simply demolishing them.

Emilie and Janelle on the third floor; the rainwater system ; cellulose (insulation)



"New" recycled windows.

"Environmental sustainability for infrastructure is important because the world is changing, and we need to start using more renewable energies and implement high-performance systems that comply with more sustainable standards," says Emilie.

Research has shown that the construction and renovation of buildings is one of the main sources of carbon emissions and the use of primary materials. By adopting healthier building construction and renovation habits, the impact on the environment is significantly reduced.

Emilie and Janelle both agree that sustainable initiatives, including their revitalization project, is a great place to start and by doing so, may attract a younger population to the province.

"Let's remember that the environment is at the heart of youth's concerns. We have older buildings that could be upgraded, and it would be a step forward to show leadership in green engineering in Canada by using these critical thinking skills," said Emilie.

For these students the importance of environmental sustainability and its impact on society is key. They say that Professional Engineers should keep in mind how much of an impact each of their decisions could have on the environment.

Janelle speaks about the benefits of researching new and accessible greener technologies. She also says that working with Indigenous Communities and learning from them would go a long way to educating a person about respecting the environment and conserving resources. So what does the future look like for these future Professional Engineers?

For Janelle, she says she would like to work in the structural field.

"It would be ideal to try and implement sustainable engineering in my future designs. I still have a lot to learn, and my career is just beginning, but as engineering students we are trained to solve problems and we need to use our education to make an impact."

Emilie is proud of her work on the revitalization of the Botsford Station and feels it was a great way to wrap up her degree in Mechanical Engineering.

"It was an eye-opening experience to see the potential for sustainable engineering in New Brunswick. Next year, I will be doing a Master's in Environmental Studies at Université de Moncton and will continue to volunteer in my community, helping others make eco-responsible decisions that create a positive impact for generations to come."

"Environmental sustainability for infrastructure is important because the world is changing, and we need to start using more renewable energies and implement high-performance systems that comply with more sustainable standards."

- Emilie Savoie, 5th year mechanical engineering student

# An update on Shediac's Smart Energy Community Project

Submitted by: Marc Cormier, P. Eng., PMP Director of Municipal Operations Town of Shediac

The Town of Shediac's Multipurpose Centre is a 17,100 square foot building constructed in 2011. It is a very important building for the town and its citizens – including community groups, businesses, individuals, and other organizations who use the space for meetings, conferences, events, shows and celebrations.

The Multipurpose Centre, along with an adjacent federal government building, were identified as key buildings for smart grid related retrofits in the Town's 2017 Smart Grid Pilot Plan. This pre-existing vision is now coming to life in the Shediac Smart Energy Community Project.

The Centre's renovations, as part of the net-zero project, include energy efficiency upgrades, new smart energy technologies, and a new roof. The smart energy technologies include 37 kW of solar panels on the south-facing roof and a 74 kWh energy storage battery outside the building. Both the solar PV system and the storage battery will have direct communication capability with NB Power.

These upgrades to the Centre, along with a 1.8 MW community solar farm and battery storage system being developed on municipal land south of Highway 15, will ensure the Centre and the adjacent federal government building reach net-zero emissions.



Town of Shediac's Multipurpose Centre

Photo Submitted

Moncton-based CBCL Limited has been responsible for the mechanical and electrical building upgrades, as well as the PV and battery storage system integration. Dieppe based JOMA Engineering Group designed the new roof anchorage system and structural upgrades.

The work on the building upgrades and rooftop PV is complete. The onsite battery storage system, as well as the community solar farm, are scheduled for completion later this year. Net-zero building operation is currently scheduled to be achieved by late 2021.

The Town of Shediac is thrilled to be included in the Smart Grid Atlantic project and to reach carbon neutrality at its Multipurpose Centre. This is a great long-term initiative that promotes a sustainable infrastructure within the municipality.

# **ENGINEERS HAVE SPOKEN.**

# **79.7%**

FEEL WELL-PREPARED FOR THE FUTURE BECAUSE OF OUR FINANCIAL SECURITY PROGRAM.\*

### WE CAN HELP YOU FEEL MORE CONFIDENT TOO. TELL US ABOUT YOUR FINANCIAL GOALS. CANLIFE.CO/EXCLUSIVE

\*Survey conducted by us in June 2019 with participants of the Engineers Canada-sponsored Financial Security Program.





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