

ENGEOActions

THE NEW BRUNSWICK SOURCE FOR ENGINEERING AND GEOSCIENCE NEWS

MEET APEGNB'S DIVERSITY & INCLUSION COMMITTEE

A conversation on the importance of diversity, equity and inclusion as it relates to engineering and geoscience

PLUS:
Inspiring the
next generation
of geoscientists



From left, Maggie Stothart, P.Eng., APEGNB President and Co-Chair of the D&I Committee ;
Christine Plourde, P.Eng., FEC, Chair of the D&I Committee

EXCLUSIVE

BECOMING MORE INCLUSIVE

A conversation with U de M's Dean of Engineering about professional responsibilities, closing the gender gap, and creating a more inclusive and welcoming environment for underrepresented groups

A GUIDE TO BECOMING A

Professional Engineer / Professional Geoscientist

IN NEW BRUNSWICK



STEP 1



Be academically qualified.



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STEP 2



Gain work experience.



You must demonstrate 48 months of acceptable engineering or geoscience experience. Twelve months of this experience must have been acquired in a Canadian environment (or equivalent).

STEP 3



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STEP 4



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STEP 5



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STEP 6



Applications and references are submitted to the Board of Admissions for review.

STEP 7



Once approved, you will be provided with a certificate and professional seal.

WWW.APEGNB.COM/REGISTRATION

ENGEOActions

Editor Lauren Nicholson, Director of Communications, APEGNB

Copy Editor Jocelyne LeGresley, Administrative Assistant, APEGNB

Translation Bourret Translation Inc.

Contributors

Maggie Stothart, P.Eng.
Lia Daborn, CEO
Carol MacQuarrie, P.Eng.
Christine Plourde, P.Eng., FEC

Toon Pronk, P.Geo., FGC
Gabriel Cormier, ing., Ph.D., SMIEEE
Margot Allain Bélanger, P.Eng.
Jaclyn Currie, P.Eng.

Brian Moreau, P.Eng.
Engineers Canada
EngiQueers Canada
WISEatlantic (Drew Burchill)

APEGNB Executive and Council

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Vice-President

Michelle Paul-Elias, P.Eng., FEC

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Lise Landry, LLB

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Maryse Doucet, P.Eng.

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APEGNB Staff

Chief Executive Officer

Lia Daborn, CAE

Administrative Assistant

Jocelyne LeGresley

Director of Communications

Lauren Nicholson

Director of Finance and Administration

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Director of Professional Affairs & Registrar

Carol MacQuarrie, P.Eng.

Director of Registration

Kate Sisk

Program Coordinator

Stamatia Baker

Manager of Strategic Outreach

Beth Arsenaault

Software Developer

Bruce Wallace



info@apegnb.com | www.apegnb.com

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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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A message from Christine Plourde, P.Eng., FEC, Chair of the Diversity and Inclusion Committee



AS SEEN ON THE COVER: The Progress Pride Flag adds five arrow-shaped lines to the six-colored Rainbow Flag, which is widely recognized as the symbol of lesbian, gay, bisexual and transgender community. The progress flag includes black and brown stripes to represent marginalized LGBT communities of color, along with the colors pink, light blue and white, which are used on the Transgender Pride Flag. It was designed by Daniel Quasar, [quasar.digital](https://quasar.digital/shop/progress-initiative) - Read more about the Progress Initiative: <https://quasar.digital/shop/progress-initiative>.

Editor's Note



This issue of ENGEOActions is focused around diversity, equity and inclusion.

Over the past several decades, the nature of our membership has undergone many changes. We have seen increases in registrants who are non-resident to New Brunswick. We continue to see an increase in our internationally trained members. The number of female registrants also continues to grow.

The world we live in today is not the same as it was ten, even five, years ago. Increasing diversity in terms of gender, race, and culture, helps ensure professional engineers and geoscientists take into account a wide variety of public needs and interests that will ultimately improve our service to the public.

APEGNB recognizes the importance of diversity, equity and inclusion and strives to make efforts to ensure programming is as inclusive as possible as it supports the regulation of the professions.

I felt it particularly significant that we dedicate an issue of our industry magazine to the topics of diversity, equity and inclusion. Throughout this issue, you will read about initiatives from around the province and beyond that are working to improve life for all underrepresented groups, learn more about the work of the APEGNB Diversity & Inclusion committee, and hopefully gain a better understanding of how the professions, individuals and employers, play a role in creating better, more equitable working environments for all.

As professionals, you are designing solutions that affect many. A key to accomplishing well-rounded plans is to recognize the diverse range of views within your teams as an initial first step.

As always, I welcome your feedback. Please feel free to reach with any suggestions, improvements or ideas for this publication.

Take care,

A handwritten signature in cursive script that reads "Lauren Nicholson".

LAUREN NICHOLSON

Director of Communications, APEGNB
lauren@apegnb.com

"The Association of Professional Engineers and Geoscientists of New Brunswick is committed to fostering a culture of equity, diversity and inclusion within our professions as we work to protect the public interest. Together, we share responsibility for creating a sustainable, equal-opportunity environment where everyone can achieve their full academic and professional potential."

APEGNB STATEMENT ON DIVERSITY, EQUITY & INCLUSION

Message from the CEO



**“IN DIVERSITY
THERE IS
BEAUTY AND
THERE IS
STRENGTH.”**

Maya Angelou

I admit I am not the biggest sports fan. However, Team Canada's performance at the recent Tokyo Olympic Games captured my attention. Three things in particular caught my eye.

1. Canada's female athletes were profiled early and widely.

In fact, three quarters of Canada's medals were won by women. The impact of winning these medals will ripple across the country as young female athletes consider the potential for their success in sport.

How can we learn from this example? Engineers Canada and, by extension, APEGNB, has been focused on the 30 by 30 goal, which aims to ensure 30% of newly licensed registrants identify as female by the year 2030.

APEGNB Council currently has ten women out of a total 15 and approximately one-third of committee volunteers are female. In terms of female leadership and representation, we are doing well.

That being said, it is important to recognize that diversity, equity and inclusion is a long-term and ongoing process. We continue to work toward that goal through the initiatives of the Diversity & Inclusion Committee and other strategic partnerships, but there is also work to be done by employers as well. This could include initiatives such as:

- pairing new female employees with senior practitioner female leaders in your organization;
- encouraging these employees to become involved in projects that will challenge their mindset and allow for growth and learning opportunities; and
- allowing them to “own the podium” within your organization.

2. The Olympics are more inclusive than ever before.

Canadian soccer midfielder Quinn made history as the first openly transgender and nonbinary athlete to win an Olympic medal. In addition, New Zealand weightlifter Laurel Hubbard was the first openly transgender woman, and American skateboarder Alana Smith, was the first nonbinary athlete to participate in the Games.

Diversity can be considered in a variety of ways. Definitions abound, which is why it is important to be clear about what you wish to accomplish. As the Olympics have had to accommodate individuals in new ways, so do our own organizations.

So how, as companies, managers and team leaders, do you ensure that you promote an inclusive environment that attracts the best talent and provides better results?

Our mandate is to protect the public, but we have a responsibility to ensure there are no barriers within the regulatory process that would prevent a qualified individual from becoming licensed. Our registrants have training from all over the world and this brings significant value to New Brunswick as a whole.

How can APEGNB support the professionals who are seeking to be licensed in New Brunswick? The introduction of Competency-Based Assessment early in 2022 will be one step. Committee composition is another: ensuring that the committees responsible for reviewing applications or experience include individuals with diverse backgrounds and experience.

3. Canada's athletes were proud to support each other.

They attended competitions and cheered; they were a team that worked together with a common goal, no matter the sport, their individual background or experience.

Teamwork, no matter the environment, is key. As any project manager knows, the successful completion of a project depends on the work of the team. A diverse team will bring more skills, more knowledge and a better result.

As noted by Canadian Olympic Committee Chief Sport Officer Eric Myles, “it takes a village, province and country to provide opportunities in the form of programs, coaches and facilities”.

Message from the CEO

For engineering and geoscience, it will take professional development, mentors and opportunities to ensure that the professions are both diverse and inclusive.

This is a long-term commitment that will likely outlast any one individual. Rather than a simple checklist printed in an annual report, commitment begins with leadership providing resources and internal support that, in turn, leads to meaningful and sustainable practices.

As a source of exchange, innovation and creativity, cultural diversity is as necessary for humankind as biodiversity is for nature.



LIA DABORN
CEO, APEGNB
lia@apegnb.com

Council and Committee Nominations are now open!

**ARE YOU INTERESTED IN BECOMING INVOLVED
WITH APEGNB? NOW IS THE TIME TO
CONSIDER PUTTING YOUR NAME FORWARD.**

Council nominations are currently open for four positions (Fredericton, Moncton, Northwest and At Large [1]), and other APEGNB Committee appointments also take place at the beginning of 2022.

Information and Terms of Reference are posted on the APEGNB website or you may contact Lia Daborn, CEO, APEGNB at lia@apegnb.com.

www.apegnb.com/about-us/committees/



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Message from the President

It has been a very busy and productive first half term as the APEGNB President. With COVID-19 restrictions beginning to lift in New Brunswick, finally, I am starting to attend events in person and able to meet people face to face.

The progress of New Brunswick's Professional Engineers and Geoscientists never stops, even during a global pandemic. Engineers and Geoscientists have been leading and guiding the change required to battle the COVID-19 pandemic and it has been exciting to see publications and news stories showcasing the innovation and excellence of our professions.

Over the last six months, I can attest to Council's dedication to working on the Association's strategic plan and completing items which may have been put on hold during COVID-19. A lot of work has been done so far by Council and our tireless volunteers, and I look forward to sharing that work with you.

APEGNB strives to support all registrants in feeling valued and respected for their contributions to our shared mission and goals. As President, I am focused on the promotion of inclusive excellence, recognizing the important role that identity, background and perspective play in harnessing creativity and innovation in all that we do.

As a personal story, the first APEGNB committee I joined was the Diversity and Inclusion (D&I) Committee. The work I have done with this committee over the years has been a passion of mine and continues to grow. As a female Engineer, there have been times in my professional career where I found myself in uncomfortable situations with contractors simply because of my gender. I believe together as an association our focus on diversity, equality and inclusivity should be an organizational effort which challenges us to apply a critical lens to our policies and processes and foster a communal approach that is based on dignity, respect and inclusion for all.

It has been an immense honour to be part of the APEGNB D&I committee, which, over the years, has taken a variety of steps to help build a strong culture of inclusion and support. Of course, just one committee cannot do this alone. We welcome input from all our registrants into what we could be doing better.



Together, with you, our registrants, our employees and APEGNB as the regulatory body, we can create a place where each of us feels safe and proud to belong, and where we know that our contributions matter. I encourage you to take time to reflect on how you, as an individual, could play a role in incorporating acknowledgement, respect and representation of others into your daily actions.

Let's ensure our shared journey of growth is meaningful and significant for all. In all that we do, our professions of geoscience and engineering exist to protect the public's well-being. That is our purpose as Professionals - to ethically create products, designs, plans or services that protect the life of people of all backgrounds.

A handwritten signature in black ink that reads "Maggie Stothart". The signature is fluid and cursive.

MAGGIE STOTHART, P.ENG.

President, APEGNB 2021
president@apegnb.com

GETTING TO KNOW THE APEGNB DIVERSITY & INCLUSION COMMITTEE

ENGEOActions asked some of the APEGNB Diversity and Inclusion committee members several questions to gather their thoughts on the Association's EDI initiatives and to get to know them a bit better.

Q: What inspires you about Engineering/Geoscience?

MS: I've always enjoyed problem solving. As a student I pushed myself to be focused and efficient. I wasn't aware of a career in engineering until it was time to apply to university. After some research and many aptitude tests, I found that my strengths were very much in line with engineering. Now, over ten years into my professional career, I find myself still pushing to be focused and efficient in solving problems, but with more of a focus on how to best serve the public interest. I love being able to use my strengths to help people and that inspires me to continually grow. I want New Brunswick to thrive and grow for future generations of engineers and geoscientists.

MAB: What inspires me the most are the opportunities we have as engineers to make this world a better place, and the impact that we have on everyday life.

Q: What is the most exciting thing about your job?

MAB: I love to share my passion and love for all things engineering with students and future engineers.

JC: Every day brings a new set of challenges. I am motivated by a challenge, and enjoy working with my colleagues to solve them!

Q: What challenges do women/people of colour/LGBTQ face in the Engineering/Geoscience professions/academia?

MAB: I think the biggest challenge is the perception that these professions are more geared toward males. This is definitely not the case, and little by little that perception is changing and becoming more inclusive.

Featuring:

CP = Christine Plourde, P.Eng., FEC, Chair of the APEGNB Diversity & Inclusion Committee

MS = Maggie Stothart, P.Eng. Vice-Chair of the APEGNB Diversity & Inclusion Committee, President of APEGNB

MAB = Margot Allain Bélanger, P.Eng., Committee member

JC = Jaclyn Currie, P.Eng., Committee member

JC: As a female engineer I have found that I do a lot more work than some of my colleagues to establish trust with new contacts. It takes longer to build relationships, and those natural opportunities to be introduced and build your brand are less readily available.

MS: In my opinion, I am your typical engineer; I am motivated, hard working, dedicated, passionate and timeline driven. All of these qualities are great for getting the job done, but in some cases I have come across individuals who have used negative terms to describe my work ethic. If I were a man, I would be described as assertive and/or a great leader but in some cases, I am labelled as bossy or controlling. In my opinion, the biggest challenge underrepresented groups face while working in a professional career is inequality. As such, it's important to educate our colleagues about inequalities so we can all work together in creating a solution that is equal and comfortable for everyone, free of discrimination.

Q: What is the ratio of female to male in your workplace/faculty?

MAB: At U de M's Faculty of Engineering, the female to male ratio is approximately 1: 4.

CP: Globally, Wood has embedded diversity and inclusion goals into our Sustainability Framework. This includes goals to "Educate and inspire 100% of our colleagues to be inclusive every day by 2021", and to "Improve gender balance with 40% female representation in senior leadership roles by 2030". Within our Resilient Environments business group in Canada, we currently have a total of 1630 employees, of which 32% are women, 22% visible minorities, 2% Indigenous Peoples and 1.4% persons with disabilities. Amongst our supervisors, 25% are women. We are working on a variety of strategies to increase diversity and inclusion within our workplaces and to encourage action within our professions.

MS: In my current role with North Shore Mi'kmaq District Council (NSMDC), we have four professional engineers on staff and the ratio female to male is 50/50. If you look at our staff overall, we are more heavily weighted in female employees and our portfolios range in all disciplines (technical services, health, education, finance, governance, etc.). I am extremely proud to work at NSMDC and the professional relationships I have built here compare to no other company I have worked for in the past.

JC: For me, at Stantec the ratio is 25 : 144 in the business center where I work. (1 female to 5.76 males)

"I dream of the day when a position like mine is no longer necessary. When student recruitment happens naturally and the diversity of engineering students represents the diversity of the general population."

*-Margot Allain Bélanger, P.Eng.
Outreach Coordinator, Faculty of Engineering U de M*

Q: What kind of impact would bring you great satisfaction in your work?

CP: I help clients manage contaminated properties by focusing on what matters - impacts that potentially cause risk to human and ecological health. It is very rewarding to work with a team to solve issues and protect human and environmental health.

MAB: I dream of the day when a position like mine is no longer necessary. When student recruitment happens naturally and the diversity of engineering students represents the diversity of the general population.

JC: Knowing my work brings value to other people. I strive daily to be a part of the growth and development of my colleagues and ensure that my clients are happy.

Q: What are your hopes for the future of your profession?

MAB: That engineering be viewed as a career by everyone, and that the diversity of engineers reflect the diversity of the general population.

MS: I believe together the association and its diverse membership, share the responsibility of creating awareness and providing opportunities for the public to learn about the professions and how we serve the public. I am also invested in the Engineers Canada 30 by 30 initiative whose goal is to increase the percentage of newly licensed engineers who are women to 30% by the year 2030.

CP: I see the future of engineering and geoscience as being diverse, collaborative and forward thinking, with inclusion and sustainability woven into our problem solving processes, unlocking our innovation potential.

Q: What would you say to young women in school/university who may be considering Engineering/Geoscience as a career choice/study option?

JC: Being an engineer takes independence and drive. You can be anything you dream to be. And, most importantly, be yourself and trust yourself.

MAB: Go ahead, go for it! The career of an engineer is stimulating, and offers incredible opportunities of all kinds.

CP: We need you! If you have an aptitude for math and science, a love of learning and a desire to work collaboratively to solve real-world problems, Engineering/Geoscience is the perfect career for you! Bring along your unique perspectives and help us shape the future!

MS: I want to encourage young women to explore and have confidence in their abilities as they complete their education and move into their professional careers. I've always been vocal with sharing my story in hopes to encourage the next generation of female engineers to get involved and take control of their professional careers.

GEOLOGY AND THE ULTIMATE CLASSROOM

A PERSONAL PERSPECTIVE

By Antonius (Toon) Pronk, P.Geo, FGC, New Brunswick Geological Survey

I started my first year of study in Physical Geography at the Institute for Earth Sciences at the Free University in Amsterdam in the mid-70s. My first year of field school, which was taught in a rural area, was as remote as you can get in the Netherlands. This was before any classroom instruction had taken place and I loved it. It taught me a couple of things:

- Hands-on earth science will get your hands and feet dirty, and sometimes cold.
- Before you dive into the theory, it is helpful to understand why you need to learn the underlying scientific principles and the importance of good observational and methodological skills.

Most geoscientists truly love the fieldwork aspect of their jobs, regardless of bugs, weather, etc. and the work often allows them to visit remote and/or exotic places. Many children love to be outside and many studies have shown that they learn better in an outdoor setting.

Outdoor ‘classrooms’ are the perfect environment for learning endeavors. Studies have shown that education is most effective when it happens outside, on the move, and in a dynamic environment. For these reasons, outdoor classrooms are the perfect place to teach science.

As earth scientists we study the links between geology, soil and land use. This is what first fascinated me when I took geography in high school; when my teacher underscored all the links between the ‘natural’ and man-made world. I had always loved being outdoors, and as I learned more, I started seeing the connections and understanding the processes that are responsible for those connections. The value of outdoor classrooms is found in those processes and in the landscape, both of which stretch over different scales of time. Geological processes span tens to hundreds of thousands, to hundreds of millions of years and human interaction with the landscape extends over the last hundreds and thousands of years.

One way to get (more) students interested in earth science fields of study is to provide them with the opportunity to be exposed to the sense of excitement you felt when you took your first field school trip, and found out how earth processes work and how everything in the natural world experiences cause and effect. Many geology students come to the field of study by way of a ‘Geology 101’ course and then realize “this is what I want to study”.



Toon showcasing the natural beauty of Odell Park as an outdoor classroom.

Not every school is lucky enough to have small parks or forested areas nearby. However, you can get creative with learning! During the COVID-19 pandemic, an adventurous elementary teacher at Hartland Community School and I went out on a limb because my annual visit to grade 4, 6, and grade 9/10 science classes could not happen indoors. On the fly, we created a geo-hike from the school to Hell’s Eddy on the Becaguimec (“where salmon lie”) Stream through a small, forested park.

Outdoor classrooms (like Odell Park in Fredericton) contain many treasures; bedrock outcrops, glacial markings and erratics, soil profiles, landscape history, erosion features, and opportunities to link the land to water-level changes, First Nation history/archeology, landscape boundaries (by vegetation or human actions), and even to climate change. For example, a soil profile provides an opportunity to discuss geology, hydrology, atmosphere, and biosphere all in one location because of all the physical, chemical, and biological interactions taking place right there in the top layer of the Earth’s crust.

A career in earth science is rewarding in many ways by making meaningful contributions to society, working with like-minded people, and, if you are lucky and opportunistic (like me!), you get to work in beautiful natural settings.

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THE EVOLUTION OF BECOMING A MORE INCLUSIVE PROFESSION

COMMENTARY BY GABRIEL CORMIER, ING., PH.D., SMIEEE
DEAN OF ENGINEERING, UNIVERSITÉ DE MONCTON



As Professional Engineers we have a responsibility to be social and environmental activists. The Code of Ethics of the Association requires members to “safeguard human life and welfare and the environment”, and “hold paramount the safety, health, welfare of the public and the protection of the environment and promote health and safety within the workplace”. This requirement is section 1.1 of the Code of Ethics. It also requires engineers to “treat equitably and promote the equitable and dignified treatment of people in accordance with human rights legislation”, and “treat equitably and promote the equitable treatment of all clients, colleagues and coworkers, regardless of race, religion, gender, sexual orientation, age, physical or mental ability, marital or family status, and national origin.”

These things have changed over the years. Social and environmental concerns evolve, and the profession must change as society changes. As engineers, we have a responsibility to protect the environment and ensure the health and safety of the public and our colleagues and coworkers. As Dean of the Faculty of Engineering, it is also my responsibility to ensure the learning environment at the faculty is safe- a place where all students can fully achieve their potential regardless of background, origin, sexual orientation, religion, or gender. Students must feel the faculty is free of discrimination, bullying, and that they are all treated fairly.

We must also teach our students to be stewards for the environment, to always ensure environmental concerns are well considered, that First Nations are properly consulted when necessary, and that they promote responsible use of our natural resources. This must be a central tenet to our approach to teaching engineering. Environmental aspects must be fundamental to their work, and not simply an add-on or supplemental concern.

As engineering teachers, we must also make sure all social aspects are properly taught, for example by making sure people with disabilities are considered in designs. Sometimes, these things are parts of codes or regulations, but often they are not, and we must be creative in our solutions to complex problems. There are always many aspects to consider in our designs, and we must teach our students to be as inclusive as possible, to think “outside the box”, to innovate in their approach to engineering.

So is it time for engineering to be seen as a more “compassionate” profession? Would this help to close the gap and create a more inclusive and welcoming environment for women in particular?

This would certainly help put a bit more focus on the social aspects of engineering and may encourage more women to enroll in engineering and remain in the profession. The social aspects of engineering must also be reinforced in engineering schools. For example having different color options when designing a user interface (adding considerations for people with visual impairments) or considering people with mobility issues when designing products. Solving complex engineering problems is much more than simply solving technical issues; human and societal factors must not be neglected.

" Solving complex engineering problems is much more than simply solving technical issues; human and societal factors must not be neglected."

However, increasing social aspects or adding more “compassionate” aspects is only one piece of the puzzle. There are many actions to be taken in the profession (and many other professions!) to create a more inclusive and welcoming workplace for women. We need champions to stand up and support change. This means men must show support for diversity in the workplace.

A recent study in the US highlighted the impact a male supportive ally can have on women in STEM in a traditionally male-dominated workplace. We all have our role to play in creating a more diverse, inclusive engineering profession.

From the Desk of the DPA

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



In accordance with the APEGNB *Guideline for use of Professional Seals*, all **final** engineering/geoscience work products (hardcopy and electronic drawings, plans, reports and other documents) must be authenticated (sealed) by the person who prepared or directly supervised the work. Only documents that are signed and dated by hand or, that have been digitally signed/certified are authenticated originals.

A digital signature is an encrypted electronic signature that can guarantee the origin, integrity and authenticity of an electronic document. Digital signatures use certificate-based digital IDs to verify the signer's identity.

Here are some FAQs on Digital Signatures:

What is an APEGNB Digital Signature?

APEGNB has a formal agreement with the Certificate Authority, Notarius, to issue digital signatures to our registrants through a fee-based subscription service. The digital signature held by registrants of APEGNB confirms the identity and professional designation of our registrants at the time of signing. It serves as proof that the signer has the right to practice in New Brunswick, in addition to ensuring the integrity of the signed documents and preventing their falsification.

What is the difference between an electronic signature and a digital signature?

An electronic signature is typically an electronic image (scan) of a handwritten signature. A digital signature is a secure type of electronic signature that binds the signature to the document using cryptography.

Who can apply a digital signature?

A digital signature can only be used by the holder of a digital certificate. It cannot be reproduced by anyone who does not have access to the password-protected digital certificate.

Is Notarius the only accepted digital signature by APEGNB?

Yes, Notarius is the only approved certificate authority. Any digital signature technology other than Notarius must first be authorized by APEGNB.

What is the cost?

There is a one-time sign-up fee of \$140 and a yearly subscription of \$185. Pricing and subscription details can be found at: <https://www.notarius.com/en/certifio/pro/apegnb>

What is Certifio?

Certifio is the name of the digital certificate issued by Notarius.

What is ConsignO?

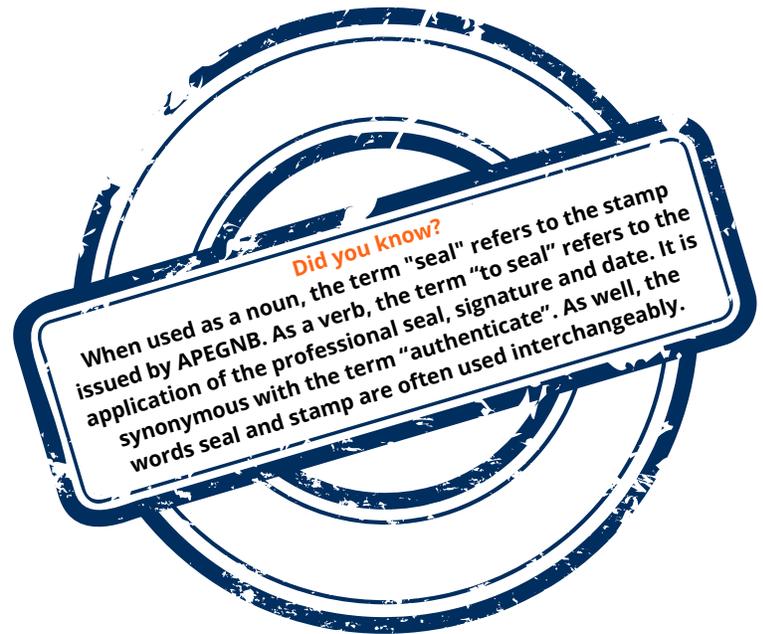
ConsignO is the name of the Notarius software which can be used to prepare and digitally sign documents. Other pdf readers such as Adobe and Bluebeam can also be used.

Where can I learn more?

Notarius provides a variety of training tools and supports including a live webinar every Wednesday at 2pm AST. For additional information check out the link at <https://support.notarius.com/en/>

A handwritten signature in blue ink that reads "Carol MacQuarrie".

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





An interview with EngiQueers Canada

An excerpt of an interview with
EngiQueers Canada President,
Trestan Elsea

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Engineers Canada



For many years now, Engineers Canada has been proud to partner with EngiQueers Canada, a national organization that advocates for LGBTQ2+ rights among engineering students.

We reached out to EngiQueers Canada during the summer of 2021 to tell us more about EngiQueers work, upcoming events, and advice for being a better LGBTQ2+ ally.

Our interview with Trestan Elsea, EngiQueers Canada President, is below.

Engineers Canada: What has EngiQueers has been working on over the past year?

Trestan Elsea: Last year's executive team shifted our focus from organizing in-person events and presentations to answering the question 'what can we improve while in this virtual situation?' We decided to take the time to completely revisit our constitution, make the roles of our team more clearly defined, and add three new positions: marketing officer, services officer, and finance officer. Until we could get those roles ratified at our annual general meeting, we hired a marketing consultant to strengthen our online presence. We also took the time to improve our EDI training modules to better explain and describe the racial tensions happening currently and include anti-racism, as well as create additional, more advanced, training modules such as Online Inclusivity and Allyship in Action. To strengthen our connections within the student community, we tried to hold more online de-stress events as well as speaker panels. It has been a very busy and interesting year of growth for us.

EC: The COVID-19 pandemic has certainly been top of mind for many organizations over the past year. What has been the impact of the pandemic on your organization and your members?

TE: A large portion of what EngiQueers Canada does is attend conferences to provide equity, diversity, and inclusion (EDI) training. COVID-19 has unfortunately prevented us from being able to give that service in-person, making it more difficult to keep people's attention and have open discussions during these trainings. Additionally, EngiQueers Canada participates in Pride Parades every year, to represent Canadian LGBTQ2+ engineering students. Unfortunately, almost all parades have had to be converted to a digital platform, meaning that many students who participate in EngiQueers Canada or one of our 30 student groups have not had a chance to meet in-person. On the bright side, the rise of virtual events during the past year and a half have made connecting with all of our student groups simpler. We've created an online community using the platform Discord, which is similar to Slack, to be able to casually talk and get to know each other more effectively.

EC: What advice do you have for people looking to become stronger LGBTQ2+ allies in the engineering profession?

TE: There are an endless amount of ways to make a workplace or service more inclusive and welcoming to LGBTQ2+ people, you might just have to get creative. For example, my local EngiQueers student group, Ryerson EngOut, hosts an annual Industry Night for companies with inclusive workplaces. We really appreciate when professionals get involved in our events. People can also advocate for their company to have an effective policy on EDI. Sometimes a real impact can be made simply by advocating for asking people's pronouns on company forms, including the ability to check off multiple sets of pronouns, and accepting gender-neutral pronouns. There is a lot of work that can be done, once you've done a little research. And if you're still at the research stage of being an ally, that's fantastic too! New allies are always needed and welcome. If someone has any specific questions, they're welcome to reach out to info@engiqueers.ca or president@engiqueers.ca.

The Full interview can be found here:
<https://engineerscanada.ca/news-and-events/news/pride-month-an-interview-with-engiqueers-canada>

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² Statistics Canada, "Household spending, Canada, regions and provinces," November 25, 2019.
³ CMHC, "Mortgage and Consumer Credit Trends National Report - Q4 2019," December 2019.

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CPD PROGRAM UPDATE

Submitted by:
Brian Moreau, P.Eng.
Chair, APEGNB CPD Committee

We all know that 2020 was a tough year, so on behalf of the CPD committee, a big thank you to all of you who submitted your CPD. Note that all Active Members are required to submit 80 PDH each year. Even though the usual professional development opportunities were not always available, we were encouraged to see the number of online and alternate methods of CPD submitted. The audit process for those selected is currently underway and so far we are pleased with the quality of submissions.

The Association recently launched *myAPEGNB*, a new member portal to make your annual renewal and CPD record submission even easier. You'll be able to log in to update your contact info, input your CPD records, check your balance owing and pay your dues all in one convenient platform.

We've also recently refreshed & updated our CPD Guidelines. The requirements have not changed, but additional examples and clarifications have been added. If you have any other questions about the CPD program, don't hesitate to check our FAQ or reach out to the staff at info@apegnb.com.

As always, we are continually reviewing the best practices from other jurisdictions to ensure our offerings for registrants meet and exceed expectations.



2SLGBTQ+ STEM Professionals' Experience

*Article reshared with permission from WISEatlantic
and author Drew Burchell, WISEatlantic Research Assistant*

Diversity in STEM (Science, Technology, Engineering, and Math) drives innovation and creative ideas in the field, because people with different backgrounds and perspectives can find new ways to solve problems. Increasing representation and inclusion of marginalized groups in this field would increase opportunities for these groups and advance equity. Moreover, increasing participation of different groups in this field would grow the field overall, contributing to the economy and scientific advancement. However, STEM fields have historically been male-dominated and associated with masculinity in the minds of many. While there is a substantial body of literature on women's inclusion in science, LGBTQ+ representation in STEM is something we know less about.

A new study by Cech and Waidzunas (2021) details the disparity in STEM experiences between LGBTQ+ people and their straight counterparts in the US. In surveying a sample of 25,324 full-time STEM professionals, 1,006 of whom were LGBTQ+, they found LGBTQ+ individuals were having worse experiences in STEM across a number of dimensions. The factors they examined were career opportunities, harassment, professional devaluation (colleagues devaluing or discrediting their STEM expertise), social exclusion (not "fitting in" or being invited to things), health and wellness, and intentions to leave STEM.

LGBTQ+ individuals in the sample had fewer perceived career opportunities and less resources. They were also less comfortable "whistleblowing" (i.e. reporting harassment or discrimination without retaliation). Significantly more LGBTQ+ individuals in their sample were experiencing professional devaluation and social exclusion. LGBTQ+ respondents were more likely to experience harassment and negative mental health effects, and significantly more LGBTQ+ respondents were considering leaving STEM than their non-LGBTQ+ counterparts.

These authors also did an intersectional analysis and found that transgender and gender non-binary respondents reported more health and wellness issues, and were more likely to consider leaving STEM than their cisgender sexual minority counterparts. Similarly, LGBTQ+ women and LGBTQ+ individuals of colour were more likely than LGBTQ+ men and LGBTQ+ white individuals, respectively, to experience harassment and professional devaluation at work.

Though North America has come a long way in terms of marriage equality and other LGBTQ+ rights, this evidence shows us there is still more work to be done to include LGBTQ+ individuals equally and equitably across all sectors of society. Moreover, more research needs to be done in Canada, as most of the current literature is based on US samples. WISEatlantic is currently conducting research with Canadian LGBTQ+ postdocs in STEM, so stay tuned!

There are several organizations focused on LGBTQ+ inclusion and visibility in STEM, which can be checked out at these links!

- <https://qatcanstem.github.io/> (Atlantic Canada)
- <https://Prideinstem.org>
- <https://500queerscientists.com/>
- <https://lgbtqplusstem.ca/>

WISEatlantic aims to shift gendered STEM stereotypes. We empower girls to consider Science, Technology, Engineering and Math (STEM)-based careers by raising their awareness of the diversity of jobs within these fields, and enabling them to visualize themselves working in these fields. WISEatlantic also supports early career women in STEM through professional development and networking opportunities.

Learn more: <http://wiseatlantic.ca/>

References : Cech, E. A., & Waidzunas, T. J. (2021). Systemic inequalities for LGBTQ professionals in STEM. Science Advances, 7(3), eabe0933

News Release - Government of New Brunswick
Regional Development Corporation
Transportation and Infrastructure

Eleven communities receive provincial and federal funding for infrastructure projects

The provincial and federal governments announced on August 5, \$8.3 million in funding for 11 infrastructure projects across the province that are intended to provide residents with safe and reliable infrastructure and better position their communities for growth.

“Investments of this type help equip communities with the infrastructure they need for both population and economic growth and help ensure they will continue to flourish for generations to come,” said Environment and Climate Change Minister Gary Crossman, who is also minister responsible for the Regional Development Corporation.

Projects include road improvements in Oromocto and Gagetown as well as a wellfield expansion in McAdam. In addition, maintenance depots in Debec, Centreville, Petitcodiac, Woodman’s Point, Gagetown, Hampton, and Hanwell will receive structural upgrades. These upgrades include removing hazardous material, new roofing and windows, and improved heating and plumbing. A sand dome in Grand Manan will also be upgraded.

“These investments will extend the life of important department facilities,” said Transportation and Infrastructure Minister Jill Green. “The upgraded facilities will help us to effectively manage our large network of roadways, bridges and infrastructure.”

The federal government is investing more than \$6.6 million in these projects through the COVID-19 Resilience Stream of the Investing in Canada Infrastructure Program. The provincial government is contributing \$980,000 while municipalities and other funding partners are contributing more than \$686,000.

“The Government of Canada is taking strong and quick action to protect the health and safety of all Canadians, to stabilize our economy, and support communities across Canada. These projects will extend the lifespan of important community infrastructure across New Brunswick and create energy efficient cost saving benefits,” said Fredericton MP Jenica Atwin. “Canada’s infrastructure plan invests in thousands of projects, creates jobs across the country, and builds cleaner, more inclusive communities.”

Atwin spoke for federal Infrastructure and Communities Minister Catherine McKenna.

A complete list of projects is available here: www.canada.ca/en/officeinfrastructure/news/2021/08/backgrounder-canada-and-new-brunswick-invest-in-covid-19-response-infrastructure.html



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A man and a woman are looking at a small robot on a table. The man is on the left, wearing a light blue hoodie, and the woman is on the right, wearing a light blue plaid shirt. They are both smiling and looking at the robot. The background is a blurred indoor setting.

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A woman with short blonde hair and glasses, wearing a black top and a necklace, is smiling and holding a large rainbow flag. The background is a wall with several framed photographs.

*A message from Christine Plourde, P.Eng., FEC
Chair, APEGNB Diversity & Inclusion Committee*

PROGRESS PRIDE FLAG RAISING

Over the past several decades, the nature of our membership has undergone many changes. We have seen increases in registrants who are non-resident to New Brunswick. We continue to see an increase in our internationally trained members. The number of female registrants also continues to grow.

APEGNB recognizes this and continues to make efforts to ensure that it is as inclusive as possible in support of the regulation of the professions. As such, the adoption of the APEGNB statement on diversity, equity and inclusion was a significant milestone for the Association. This statement was approved by Council and reads as follows: *The Association of Professional Engineers and Geoscientists of New Brunswick is committed to fostering a culture of equity, diversity and inclusion within our professions as we work to protect the public interest.*

Together, we share responsibility for creating a sustainable, equal-opportunity environment

where everyone can achieve their full academic and professional potential.

Diversity in engineering and geoscience means engaging the best minds and bringing many perspectives and experiences to each of the challenges and opportunities that the professions must address.

As Chair of APEGNB's Diversity & Inclusion Committee, I stand proud with the Association's decision of displaying the progress pride flag at its main office as a way to formally recognize the importance of creating a welcoming space for all peoples who walk through our doors in pursuit of professional licensure.

Raising this flag at APEGNB must mean more than a simple checkbox of diversity and inclusion efforts, but rather symbolize the guiding principle of ensuring that APEGNB considers diversity equity and inclusivity in all programming.

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