

MARCH/APRIL 2021

ENGINEERING DIMENSIONS

Why
DIVERSITY
matters



Professional Engineers
Ontario



NATIONAL
VOLUNTEER
WEEK
April 18–24,
2021

THE VALUE OF ONE. THE POWER OF MANY.

In honour of National Volunteer Week, PEO recognizes and thanks our volunteers, including those who serve on Council, committees and their subcommittees, task forces and the Government Liaison Program; and PEO chapter leaders and volunteers, as well as those who represent PEO on external boards and advisory groups and participate in chapter-sponsored programs.

THANK YOU.

ENGINEERING DIMENSIONS



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Professional Engineers
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To protect the public, PEO investigates all complaints about unlicensed individuals or companies, and unprofessional, inadequate or incompetent engineers. If you have concerns about the work of an engineer, fill out a Complaint Form found on PEO's website and email it to

complaints@peo.on.ca.

If you suspect a person or company is practising engineering without a licence, contact PEO's enforcement hotline at 800-339-3716, ext. 1444, or by email at enforcement@peo.on.ca.



LET'S BEGIN THE CONVERSATION HERE

By Nicole Axworthy



A discussion about diversity in engineering could go many ways. We could tackle the topic as an equity issue in terms of fairness, which could resonate with some people.

We could talk about it in terms of numbers, repeating the familiar argument that white males dominate the engineering workforce and that there is a need for more women and under-represented minorities. And an angle I think is not often covered within the discussion is the benefit diversity brings to the quality of engineering. Simply put, a lack of diversity of culture, ethnicity, life experience, gender, age and abilities, among many other intersecting social identities, could result in engineering solutions not produced or designs not thought of.

If you're currently a practising engineer, I'd like you to pause for a moment and think about your professional engineer colleagues. Do they represent the diversity of the communities to which they serve? If not, how do we improve that diversity? It's a simple question, but the answer is much more complicated. Diversity, in the true sense of the word, means *difference*. In this issue, we're tackling how and why we should be welcoming difference in the profession.

In "Where we all fit in: An inside look at how PEO is embracing equity, diversity and inclusion" (p. 16), Associate Editor Marika Bigongiari shares PEO's own efforts in this area, which include implementing an equity and diversity policy, incorporating mandatory training for staff and volunteers in an effort

to foster a more inclusive workplace and the recent approval by Council of an Anti-racism and Anti-discrimination Exploratory Working Group. And in "Defining diversity: 5 Ontario engineers tell their story" (p. 30), Associate Editor Adam Sidsworth profiles engineers who make their differences visible in an effort to promote diversity and inclusion within engineering.

The intent is to start a conversation and raise awareness. Some readers will be convinced—or were already convinced—of the importance of diversity, equity and inclusion. Others will not and, perhaps, never will be. However, the profession cannot shy away from these difficult conversations because they make us feel uncomfortable. To progress, we must address any potential vulnerabilities that exist to make the profession a more welcoming place for all.

In other news, a few weeks ago Council approved a motion that allows for implementation of a mandatory continuing professional development (CPD) program for PEO licence holders. This notable decision builds on the existing voluntary Practice Evaluation and Knowledge (PEAK) program, which served as a framework for mandatory CPD following a years-long trial phase. Further details of Council's decision can be found on page 41. *Engineering Dimensions* will continue to report on the evolution of this initiative as information becomes available.

Also note PEO's upcoming virtual events, including the Ontario Professional Engineers Awards gala on April 22 and Annual General Meeting on May 15. For more information, visit opeawards.ca and peo.on.ca, respectively. [e](#)

THIS ISSUE Ontario's professional engineers are as diverse as the population they serve. This issue is all about how PEO strives to promote equity, diversity and inclusion. And we profile five engineers who, through their careers and outspokenness, exemplify the benefits of difference in professional engineering.

REIMAGINING PEO TOGETHER...IN A GLOBAL PANDEMIC

By Marisa Sterling, P.Eng., FEC



In the year leading up to my presidency, engineers would ask what I wanted to accomplish. My answer: I wanted to help better protect the public interest by reimagining PEO together. For close to 30 years, I have used my engineering knowledge to help society. My PEO roles on staff, committees and Council deepened my understanding of engineering regulation. My involvement in collaborations like the Engineering Change Lab and Engineering Deans Ontario stretched the boundaries of my thinking. What became clear to me on this journey was that my presidency would need to bring together individual actions and voices toward one purpose—safeguarding public well-being—to effect change within the complexities of PEO, and that single purpose is what I like to call PEO's north star.

To foster transformation over the last year, I have inspired all levels of the organization to question our paradigms; valued each others' strengths and contributions as members, volunteers, staff and councillors; and empowered everyone to make small, incremental steps to increase PEO's contributions to society. The pandemic added urgency to this work and challenged me to make gains through a virtually led presidency.

PROGRESS IN THREE AREAS

I am proud of the significant outcomes we have delivered this year on three fronts. The first is operational changes that mirror the best regulators. To simplify and speed up licence applications, PEO moved to an email applications process, a digital work experience assessment, a remotely proctored National Professional Practice Examination and online application and renewal of certificates of authorization. PEO issued a COVID-19 practice advisory notice and adopted the Notarius digital certification service to tamper-proof engineering documents and help the public verify who sealed them. Council began exploring alternative licensing pathways for applicants who are unable to work under a P.Eng. supervisor because they are entrepreneurs or work in emerging disciplines, and we are making continuing professional development mandatory. Discipline hearings continued virtually, resulting in Dominico Cugliari's licence being revoked and 10948411 Canada Inc. (formerly Construction Control) being fined for professional misconduct in the 2012 Radiohead stage collapse.

The second is governance changes that improve how Council functions. By 2022, councillors will no longer serve on regulatory committees and will instead focus their time on board responsibilities. Structured training will be mandatory for all volunteers and management, and Council will be selected based on a diversity of competencies and identities. Formalized annual evaluations will support con-

tinuous improvement and the organizational culture will be healthy, respectful, inclusive and professional. This year, my President's Message columns have been published in English and French to recognize Ontario's regionalized bilingualism. I chose to acknowledge the Indigenous lands where I live, work and impact on at Council meetings to lay the foundation for future nation-to-nation relationships between PEO and Indigenous communities. And Council will be receiving recommendations this May on how it can identify, study and address any issues of systemic racism and discrimination within its work.

The third is strategic directions to becoming a modern and agile regulator. Council has been holding monthly in-camera strategic conversations in addition to public Council meetings and agreed to adopt a risk model and approve strategic priorities focused on PEO's north star.

ACKNOWLEDGING THE TRAILBLAZERS

I am grateful to everyone for their confidence to bring me along on our collective journey to reimagine PEO together. It is hard to find people who look like me in PEO—today, only about 11 per cent of Ontario's licensed engineers are women. With March being National Engineering Month, and International Women's Day having just passed, serving you and the public as the eighth woman president in PEO's 99-year history has been extremely meaningful towards building inclusion in engineering.

I thank the trailblazing and visionary women and their allies who came before me, took on the burden to advocate for change and removed barriers and changed stereotypes so that women like me could have access to the PEO presidency. In chronological order, I wish to acknowledge Claudette MacKay-Lassonde, P.Eng., M. Jane Phillips, P.Eng., FEC, Christine Bell, P.Eng., FEC, Catherine Karakatsanis, P.Eng., FEC, Diane Freeman, P.Eng., FEC, Annette Bergeron, P.Eng., FEC, and Nancy Hill, P.Eng., LLB, FEC. I also wish to thank dean, engineer and professor Chris Yip, PhD, P.Eng., and the University of Toronto for supporting me and accommodating the over 900 hours I have volunteered to PEO this year. Merci. Migwetch. Niawen. [e](#)

RÉIMAGINER PEO ENSEMBLE ... DANS UNE PANDÉMIE MONDIALE

Par Marisa Sterling, P.Eng., FEC

L'année précédant ma présidence, les ingénieurs me demandaient ce que je voulais accomplir. Ma réponse : Je voulais contribuer à mieux protéger l'intérêt public en ré-imaginant ensemble le PEO. Pendant près de 30 ans, j'ai utilisé mes connaissances d'ingénieure pour aider la société. Mes rôles de PEO au sein du personnel, des comités et du Conseil ont approfondi ma compréhension de la réglementation en matière d'ingénierie. Ma participation à des collaborations comme l'Engineering Change Lab et l'Engineering Deans Ontario a repoussé les limites de ma réflexion. Ce qui m'est apparu clairement au cours de ce parcours, c'est que ma présidence devrait rassembler les actions et les voix individuelles dans un seul but - la protection du bien-être public - pour apporter des changements dans les complexités de la PEO et ce but unique est ce que j'aime appeler l'étoile du nord de la PEO.

Pour favoriser la transformation au cours de l'année dernière, j'ai incité tous les niveaux de l'organisation à remettre en question nos paradigmes, j'ai valorisé les forces et les contributions de chacun en tant que membre, bénévole, employé et conseiller et j'ai donné à chacun la possibilité de faire de petits pas progressifs pour accroître les contributions de PEO à la société. La pandémie a rendu ce travail encore plus urgent et m'a mise au défi de faire des progrès grâce à une présidence virtuelle.

PROGRÈS DANS TROIS DOMAINES

Je suis fière des résultats significatifs que nous avons obtenus cette année sur trois fronts. Le premier concerne les changements opérationnels qui reflètent les meilleurs régulateurs. Pour simplifier et accélérer les demandes de permis, PEO est passé à un processus de demande par courrier électronique, à une évaluation numérique de l'expérience professionnelle, à un examen national de pratique professionnelle surveillé à distance et à la demande et au renouvellement en ligne des certificats d'autorisation. PEO a publié un avis de pratique COVID-19 et a adopté le service de certification numérique Notarius pour rendre les documents d'ingénierie inviolables et aider le public à vérifier qui a apposé les sceaux. Le Conseil a commencé à explorer des voies alternatives d'octroi de permis pour les candidats qui ne peuvent pas travailler sous la supervision d'un ingénieur parce qu'ils sont entrepreneurs ou travaillent dans des disciplines émergentes, et nous allons rendre obligatoire le développement professionnel continu. Les audiences disciplinaires se sont pratiquement poursuivies, ce qui a entraîné la révocation de la licence de Domineco Cugliari et la licence 10948411 Canada Inc. (anciennement Construction Control) s'est vu infliger une amende pour faute professionnelle lors de l'effondrement de la phase Radiohead en 2012.

Le second est un changement de gouvernance qui améliore le fonctionnement du Conseil. D'ici 2022, les conseillers ne feront plus partie des comités de réglementation et consacreront plutôt leur temps aux responsabilités du conseil

d'administration. Une formation structurée sera obligatoire pour tous les bénévoles et la direction et le conseil seront sélectionnés sur la base d'une diversité de compétences et d'identités. Des évaluations annuelles formalisées favoriseront l'amélioration continue et la culture organisationnelle sera saine, respectueuse, inclusive et professionnelle. Cette année, les colonnes de mon message de présidente ont été publiées en anglais et en français pour reconnaître le bilinguisme régionalisé de l'Ontario. J'ai choisi de reconnaître les terres autochtones où je vis, travaille et sur lesquelles j'ai un impact lors des réunions du Conseil afin de jeter les bases des futures relations de nation à nation entre PEO et les communautés autochtones. Et le Conseil recevra en mai prochain des recommandations sur la manière dont il peut identifier, étudier et traiter tout problème de racisme et de discrimination systémiques dans le cadre de son travail.

Le troisième front est celui des orientations stratégiques pour devenir un régulateur moderne et agile. Le Conseil a tenu des conversations stratégiques mensuelles en plus des réunions publiques du Conseil et a convenu d'adopter un modèle de risque et d'approuver des priorités stratégiques axées sur l'étoile du nord de PEO.

RECONNAÎTRE LES PIONNIERS

Je suis reconnaissante à tous ceux qui m'ont fait confiance pour m'accompagner dans notre voyage collectif visant à ré-imaginer PEO ensemble. Il est difficile de trouver des personnes qui me ressemblent dans PEO - aujourd'hui, seulement environ 11 % des ingénieurs agréés de l'Ontario sont des femmes. Le mois de mars : Mois national de l'ingénierie et Journée internationale de la femme venant de s'achever, le fait de vous servir, vous et le public, en tant que huitième femme présidente de PEO en 99 ans d'histoire a été extrêmement significatif pour l'intégration de l'ingénierie.

Je remercie les femmes pionnières et visionnaires et leurs alliés qui m'ont précédée, qui ont assumé la charge de plaider pour le changement et qui ont supprimé les obstacles et changé les stéréotypes afin que des femmes comme moi puissent avoir accès à la présidence du PEO. Par ordre chronologique, je tiens à remercier Claudette MacKay-Lassonde, P.Eng., M. Jane Phillips, P.Eng., FEC, Christine Bell, P.Eng., FEC, Catherine Karakatsanis, P.Eng., FEC, Diane Freeman, P.Eng., FEC, Annette Bergeron, P.Eng., FEC, et Nancy Hill, P.Eng., LLB, FEC. Je tiens également à remercier le doyen, ingénieur et professeur Chris Yip, PhD, P.Eng., et l'Université de Toronto pour m'avoir soutenue et avoir pris en charge les 900 heures et plus que j'ai consacrées bénévolement à PEO cette année. Merci. Migwetch. Niawen. [e](#)

BRINGING ORGANIZATIONAL ROLES INTO FOCUS

By Johnny Zuccon, P.Eng., FEC



As PEO continues its transformation into a modern regulator, our most important asset and critical component to our success is our people—the staff and volunteers at all levels providing the necessary vision, leadership and flexibility that will ultimately determine to what extent we achieve our objectives.

At the staff level, work continues to address the recommendations from the organizational review conducted by Western Management Consultants, including a comprehensive functional analysis. This work is key to streamlining our processes and becoming a more progressive organization. To this end, we hired a vice president, governance in January—a role that was prioritized to complement Council's commitment to the multi-year Governance Roadmap. I'm pleased that Liz Maier will now lead the governance strategy behind our organization's cultural change and restructuring of our secretariat office. The aim is to ensure that the mindset, structures, processes, practices and behaviours needed to support PEO's statutory mandate and our ability to serve and protect the public interest are sufficiently maintained. Further, the recruitment process continues for a vice president, operations to oversee the areas including, but not limited to, communications, finance and IT. This position is another key component as we move forward in the transformation plan.

Of course, PEO's transformation is not limited to our organizational structure. Indeed, ours is enterprise-wide, extending to Council, committees and volunteers as outlined in our Council-approved Action Plan to address the recommendations from our 2019 external regulatory performance review.

ADOPTING A GOVERNANCE BOARD MODEL

As part of its commitment to governance renewal, Council approved at its November 2020 meeting the adoption of 11 formal governance directions and pledged to take the necessary steps to implement these directions by May 2022 as part of its commitment to completing the Governance Roadmap. Key among these directions is that Council will cease to be an operational and intervening-type board and adopt and follow a governance board model—one that primarily directs (sets strategic vision and direction) and controls (monitors and evaluates actual results to gain confidence PEO is moving in the direction set), delegating substantive operations to staff, supported by committees as appropriate. This shift will help to clearly define and distinguish the roles of Council and the CEO/registrar, along with the related accountabilities of each, which is essential to achieve our change vision.

In further support of its governing-type board status, Council also approved a directive that councillors will serve only on board (governance) committees. Staff are now



I'M ENCOURAGED BY THE TOP-DOWN APPROACH TO CHANGE MANAGEMENT, WITH COUNCIL LEADING BY EXAMPLE THROUGH ITS GOVERNANCE RENEWAL INITIATIVES.

collaborating with Council to determine how to best implement this transition with the least amount of interruption to each committee's work. There are no current legislative requirements for Council members to serve on statutory committees, with the exception of the Discipline Committee, on which an elected councillor shall serve as currently stipulated in the *Professional Engineers Act*.

In a similar vein, Council endorsed a direction that PEO will use regulatory committees that add net value to its regulatory role. Committees with regulatory functions will be reviewed to assess the value they add to the regulatory process. These include committees currently prescribed by statute: the Executive, Academic Requirements, Experience Requirements, Registration, Complaints, Discipline and Fees Mediation committees.

ADDING VALUE TO PEO'S REGULATORY ROLE

In relation to PEO's ongoing change process, these decisions help to ensure Council maintains a high-level focus on governance and policy rather than operations and places greater authority and accountability for regulatory outputs on the CEO/registrar. From a public-interest perspective, it provides assurance that committees with regulatory roles will perform those roles independently, pursuant to the legislative framework.

Perhaps most critical to PEO's transformation process, these decisions provide valuable and necessary clarity between the work of Council and the CEO/registrar. Fundamentally, they help to reduce the blur between oversight and operations while reaffirming the role of the CEO/registrar, whose work proceeds from Council's direction to ensure PEO, as an organization, has the capacity and talent to modernize so that all vehicles, staff and volunteer committees have the appropriate tools to deliver on the key regulatory outputs.

Although I appreciate that there is still significant work ahead of us on our journey of transformation, I'm encouraged by the top-down approach to change management, with Council leading by example through its governance renewal initiatives. Being open to change is critical to the success of any transformation and is required of us to ensure that all discussions, actions and accountabilities are directed towards the public interest. [e](#)

PEO HONOURS 7 THROUGH 2021 ORDER OF HONOUR AWARDS

By Nicole Axworthy



This year, PEO will induct one Companion, three Officers and three Members into its Order of Honour (OOH). The Order is an honorary society that recognizes professional engineers and others who have rendered outstanding service through the association. The honorees will be recognized at a virtual ceremony on June 14, where PEO will celebrate the 2020 and 2021 OOH recipients. For the list of 2020 recipients who will also be honoured, see page 9 of the September/October 2020 issue of *Engineering Dimensions*.

COMPANION

For 23 years, including eight on PEO Council, **Bob Dony, PhD, P.Eng., C.Eng., FIEE, FEC**, has provided exceptional leadership to the engineering profession. During his term as PEO president in 2017–2018, Dony oversaw several important achievements, including revising recommendations for Council term limits and succession planning; amendments to the *Professional Engineers Act* providing PEO with authority to establish a continuing professional development program; and endorsing Engineers Canada's 30 by 30 initiative. An engineering professor at the University of Guelph, Dony has been a committed member of the Academic Requirements Committee since 1998, serving stints as vice chair and chair. He has also served on a wide range of PEO committees and task forces, as a member or leader, including the Licensing, Discipline, Legislation, Human Resources and Finance committees and the Emerging Disciplines, Evolution of Engineering Admissions and 30 by 30 task forces. Dony has also served on the Canadian Engineering Qualifications and Canadian Engineering Accreditation boards for over two decades.

OFFICERS

A passionate volunteer with both PEO and the Grand River Chapter, **Roydon Fraser, PhD, P.Eng., FEC**, has demonstrated his commitment to the growth and development of the engineering profession. Fraser started his volunteer service for PEO in 1994 as an executive member of the Kitchener-Waterloo Chapter (later amalgamated into the Grand River Chapter), where he served as chair in 1996. He was also elected to Council as a regional councillor, and then councillor-at-large, the nine times he ran for Council since 1998, retiring from Council in 2019. He has served on PEO's Academic Requirements Committee since 1998, serving as chair twice, and has been an active member of the Canadian Engineering Qualifications Board. Fraser has also served on a wide range of PEO committees and task forces, including the Licensing, Discipline and Legislation committees and the PEO National Framework, Code of Ethics, Licensed Special-

ties, Joint Engineering and Natural Science, and Evolution of Engineering Admission task forces.

For over 20 years, **Sean McCann, MAsc, P.Eng., FEC**, has demonstrated dedication to improving and promoting the engineering profession at both the chapter and provincial levels. Since being inducted as a Member of the Order of Honour in 2006 while serving as Windsor-Essex Chapter chair for a third term, McCann has taken positions on a PEO committee and a task force. As a chapter executive, McCann served the last 10 years as treasurer and has had some level of involvement in most chapter events during his 23-year continuous term as an officer of the Windsor-Essex Chapter. As a PEO volunteer, McCann has served on the Advisory Committee on Volunteers since 2015, including a three-year stint as chair. He was also an active contributing member on PEO's Continuing Professional Development, Competency and Quality Assurance Task Force during its full term of existence.

For over 30 years, **Helen Wojcinski, MBA, P.Eng., FEC, FCAE, CMC**, has been a passionate advocate for advancing gender equity in the engineering profession. In 1990, only a year after obtaining her licence, Wojcinski joined PEO's Women in Engineering Advisory Committee, becoming its third-ever chair in 1994. Under her leadership, Wojcinski spearheaded a National Survey of Workplace Conditions for Engineers that identified challenges women engineers were facing and influenced changes to the *Professional Engineers Act* to include sexual harassment as part of the definition of professional misconduct. In 2016, Wojcinski was appointed to Engineers Canada's Equitable Participation in the Profession Committee and was a key contributor to advancing Engineers Canada's 30 by 30, an initiative to raise the national percentage of newly licensed engineers who are women to 30 per cent by 2030. In 2018, she was appointed chair of PEO's 30 by 30 Task Force with the mandate to launch an action plan for Ontario and develop metrics to measure progress annually. Wojcinski also served 10 years as a member and chair of PEO's Awards Committee.

MEMBERS

Since becoming a PEO volunteer in 2011 as an engineering intern, **Annabelle Lee, P.Eng., FEC**, has been a tireless contributor to the ongoing success of PEO's York Chapter and capable engineering ambassador to the local community. Lee's first volunteer role was on the chapter's Education Committee to help promote math and engineering to high-school students at the 2010 Athletics competition. Since then, she has been elected to the chapter board every year since 2011, and spearheaded the EIT Committee as communications director and as vice chair. After serving multiple senior chapter roles, Lee became chapter chair in 2020, preparing to oversee the organization of the up to 50 events

per year the chapter produces for members and the community. When COVID-19 hit and cancelled all in-person events, Lee led the chapter to continually engage members virtually. In 2020, York Chapter hosted close to 30 webinars and events, including a virtual licensing ceremony and children's facial covering design challenge.

Through her dedicated contributions as a volunteer and leader, **Stacey McGuire, P.Eng., FEC**, demonstrates intense passion for the engineering profession and community. McGuire first joined the Windsor-Essex Chapter board in 2009 as an engineering intern and took on the EIT Subcommittee chair position. After obtaining her P.Eng., McGuire branched into many other roles, including volunteering for the Education and Scholarship subcommittees and the Government Liaison Program, and judging the Windsor Regional Science, Technology and Engineering Fair and Innovation Station. In 2015, McGuire became only the second woman to chair the Windsor-Essex Chapter board after two years serving as vice chair. Since then, she has focused her efforts across several areas, including women in engineering (in which she created a new Empowering Women in Engineering Subcommittee), developing relationships with the Ontario Association of Certified Engineering Technicians and Technologists and continuing to take the lead on organizing social events.

Over three decades of volunteering with multiple chapters and the Engineering Innovation Forum, **Pasquale (Pat) Scanga, P.Eng., FEC**, has been a key leader and a tremendous asset to the engineering profession. Beginning as a volunteer with the former Toronto Dufferin Chapter and later for the West Toronto Chapter, Scanga has held several executive roles, including chapter CFO/treasurer and vice chair. Since 1991, he has also been treasurer and fundraising director for the Engineering Innovation Forum Committee, which focuses on promoting engineering creativity and innovation. As a dedicated and trusted engineering professional with an engaging personality, Scanga is a sought-after mentor. He is well known for sincere encouragement and thoughtful advice, and throughout the years he has been instrumental in positively affecting chapter executives, members and students.

PEO ANNOUNCES RECIPIENT OF 2021 G. GORDON M. STERLING ENGINEERING INTERN AWARD

Shengdi (Sharon) Chen, EIT, has been named this year's recipient of the G. Gordon M. Sterling Engineering Intern Award. An environmental engineering graduate of the University of Waterloo and a member of PEO's York Chapter, Chen is a designer in the Conveyance Group at WSP, where she models wastewater infrastructure to assess its capacity and helps safeguard public safety through mitigation of urban flooding. In 2020, she completed WSP's highly competitive Infrastructure Rotational Program to build cross-disciplinary experience. At WSP, she actively looks for leadership opportunities, including leading project assignments and championing health and safety within her team.

Chen has been active as a volunteer leader within the community. Beginning in university, she implemented many sustainability initiatives on campus, including a second-hand clothing program, which diverted over 500 kilograms of textile waste from the landfill, and an electronic-waste recycling program. At PEO's York Chapter, she stepped in as deputy communications director in 2018 and revitalized the chapter's online presence through creative use of social media—notably, she increased public engagement with the chapter by 78 per cent through LinkedIn. To respond rapidly to COVID-19, she provided digital communications expertise to establish a new digital strategy for traditionally in-person events. She was elected to the chapter board in 2019 and co-organized the 2019 Engineering Symposium, featuring over 20 panelists and 100 attendees. Currently, she is the awards and recognition director and an active member of the Joint-Chapters Committee for the 30 by 30 initiative with all East Central Region chapters. After gaining sufficient experience at the chapter level, Chen wants to volunteer on PEO committees, such as the Awards Committee. Eventually, she plans to run for a PEO Council position to represent licence holders and serve the profession at a higher level.

The G. Gordon M. Sterling Engineering Intern Award promotes leadership development and is available to engineering interns in good standing with PEO's EIT program. Those chosen for the award demonstrate a commitment to their profession, an interest in assuming leadership responsibilities within it and a readiness to benefit from a leadership development experience.

SIX UNIVERSITIES LAUNCH \$100,000 FELLOWSHIPS FOR INDIGENOUS AND BLACK ENGINEERING PHD STUDENTS

By Adam Sidsworth

In a bold new multi-million-dollar fellowship program, six Ontario universities have committed to sponsoring Indigenous and Black students wishing to pursue doctorate degrees in engineering.

The Indigenous and Black Engineering and Technology (IBET) Momentum Fellowships were announced earlier this year in a coordinated media release by the engineering faculties of the University of Toronto (U of T), Western University, the University of Ottawa, Queen's University, McMaster University and the University of Waterloo (U of W), whose mathematics faculty is also participating.

The five-year IBET PhD Project is a pilot project that will see each engineering faculty award to two PhD candidates self-identifying as Indigenous or Black \$25,000 each year for all four years of their study to pursue doctorate degrees and specialized engineering degrees. Each faculty will award two fellowships per year to two incoming doctoral students for the five years of the program, with the first scholarships awarded for the 2021–2022 academic year.

"The Momentum Fellowships are a central pillar of the new IBET PhD Project, which aims to change the academic landscape within the next five to 10 years by increasing the number of Indigenous and Black engineering professors teaching and researching in universities across Ontario," states a media release issued by Queen's University. "The project will also create a pipeline of students who will increase diversity in Canadian technology industries as they enter the workforce with graduate degrees from STEM programs."

According to the U of W, qualifying students need to be a Canadian citizen or permanent resident of Canada who self-identifies as Indigenous or Black, meet the minimum admission requirements for their chosen faculty of engineering program and be admitted into the PhD program in spring 2021 or later. Each university is administering the scholarship program separately, and all of them will automatically include the scholarship as part of their PhD application processes.

"Seeing is believing," says Mary Wells, PhD, P.Eng., FEC, dean of the faculty of engineering at U of W, who initiated the program. "How can we encourage Indigenous and Black students to come to our engineering schools if they don't regularly experience Indigenous or Black professors teaching and undertaking research in the schools and programs we want them to attend? The IBET PhD Project is a step in the right direction to increase diversity in universities."

A COORDINATED EFFORT

"U of T is excited about the six-university collaboration," notes Marisa Sterling, P.Eng., FEC, the assistant dean and director of diversity, inclusion and professionalism at U of T and current PEO president. "We have a few Indigenous and Black faculty who make excellent contributions. At the same time, we need more representation, and we need to ensure there is nothing preventing Black and Indigenous faculty and students from coming into and succeeding in our system. We're open-minded and committed to examine any of the systemic barriers and remove them."



Tiz Mekonnen, PhD, assistant professor of chemical engineering at U of W and inaugural director of the IBET PhD Project, estimates that there are fewer than 15 Indigenous and Black engineering faculty members across Ontario. He thinks this may play a part in the low retention rates of Indigenous and Black students in engineering schools. "When they come to university, we want them to see somebody who looks like them so they can get motivated [and] feel they can do it as well," he said. Mekonnen notes that the IBET Momentum Project draws inspiration from the PhD Project, founded in the United States in 1994 to attract Indigenous, Black and Hispanic students into graduate business programs.

"Each university is giving a million-dollar commitment," Sterling adds. "And after five years, you have at least, across six universities, 10 students in each [engineering faculty], 60 students overall." (U of W's mathematics department will award scholarships to an additional 10 students over the five-year period.) Because of the extensive program, Sterling says her team at U of T will continually strive to improve the program to ensure it is designed in collaboration with the Indigenous and Black communities and is welcoming, citing the program's self-identification format of the application as a correct first step. "We need to be able to trust applicants that they will identify in an honest way. We typically don't scrutinize if people identify in other ways, so why would we in this situation?"

A FOCUS ON EQUITY, DIVERSITY AND INCLUSION

Sterling adds that an important part of the IBET Project is ensuring the university is training existing engineering faculty and staff to be more cognizant of equity, diversity and inclusion. "Mentorship and training are important to be able to cultivate the environment where the student is going to be successful," she says. "Through lab rotations, the student will be able to assess how supportive the research team will be and choose the one they feel most comfortable with. For example, is the principal investigator trained in diversity, equity and

inclusion, and will the research topic consider Black and Indigenous people in society?" Importantly, though, Sterling hopes that other engineering and STEM-focused faculties across Ontario and Canada adopt the IBET Project. "It would be wonderful to have a provincial or national sponsor," observes Sterling, "and have even more universities on board. It would be a phenomenal national program."

BITS & PIECES



The Brockville Railway Tunnel, located beneath Brockville City Hall in downtown Brockville, ON, is the first railway tunnel built in Canada. The tunnel, which is 4.5 metres wide, 4.3 metres high and 525 metres long, was constructed from 1854 to 1860 in three sections, including a segment that required blasting through solid granite with gun powder. The last train passed through in 1969. Today, it's a local attraction.
Photo: Wladyslaw

ENGINEERS AND GEOSCIENTISTS BC BEGINS ENTITY REGULATION

By Marika Bigongiari

British Columbia's *Professional Governance Act* came into effect on February 5, and with it, Engineers and Geoscientists BC (EGBC) was given the legislative mandate to regulate engineering and geoscience firms in the province. "This new authority will enable Engineers and Geoscientists BC to improve oversight, protect the public interest and provide opportunities for firms to improve processes and reduce risk," said Ann English, P.Eng. (BC), FEC, EGBC's CEO and registrar. "Our regulatory framework was designed in consultation with government and registrants to meet the legislative requirements without undue administrative burden on firms. In most cases, it's about formalizing responsible practices that are already in place."

Registrant firms will be required to have a representative attend training and will also need to have documented policies and procedures in place that illustrate how they meet quality management, ethics and continuing education requirements within 12 months of registering. Virtual training will be offered this spring to provide engineering and geoscience firms and sole practitioners with information on the new requirements before mandatory regulation begins and to support a seamless registration process.

A NEW REGULATORY MODEL

The new entity regulation is built on a model that is based on three pillars: quality management, continuing education and ethics. EGBC first began developing a model for the regulation of firms in 2015, an endeavor that was spearheaded by its Advisory Task Force on Corporate Practice. After extensive consultation with registrants and stakeholders, the task force evolved a regulatory model to improve regulatory oversight, protect the public interest and provide opportunities for firms to improve processes and reduce risk. The model was approved by EGBC Council in June 2019.

The new model requires all public- and private-sector engineering and geoscience entities, including sole practitioners, that engage in the practice of professional engineering or professional geoscience to register with the regulator. However, in the event that the primary business activity of a firm does not involve the practice of professional engineering or geoscience, the firm may not be required to register. As such, an exemption application process for firms that don't fall within the parameters of the regulatory program is set to be put in place. Under the new rules, entities that engage in the practice of professional engineering or professional geoscience will be required to apply for a permit to practise, with registration opening on July 2. Firms must complete their registration before September 30.

The timeline for entity regulation and key steps to apply for a permit to practise, as well as firm requirements organized by industry sector, are outlined on the "Permit to Practice" page of EGBC's website. Relevant sectors include but are not limited to consulting firms; ministries, crown corporations and agencies; local government, which includes municipalities and similar entities; manufacturers, which include fabricators, processing plants, mills, maintenance facilities or any firm utilizing engineers and/or geoscientists in any part of their operations; and sole practitioners, which are defined as individuals who practise on their own and may be incorporated or unincorporated.

COMPLIANCE IS A KEY FACTOR

Ensuring compliance is an important part of the new program, which includes audits and accountabilities for firms. In fact, 12 months after receiving a permit to practise, firms will become eligible for a compliance audit. The purpose of the audit is to assess the firm's compliance with the *Professional Governance Act* and the regulations, bylaws, guidelines, practice advisories and policies of EGBC, including quality management, continuing education and ethics standards. EGBC plans to audit all firms within the first three years of the program. After a firm's initial compliance audit, subsequent audits will be conducted on a three- to five-year cycle and will be based on the results of the firm's initial compliance audit.

MANITOBA BILL COULD REQUIRE ENGINEERING REGULATOR TO ADOPT ADMISSIONS POLICY CHANGES

By Adam Sidsworth

In a bid to improve the registration process for internationally trained graduates, the province of Manitoba introduced Bill 24, *The Fair Registration Practices in Regulated Professions Amendment Act*, requiring self-regulating professions in Manitoba to meet deadlines when processing applications for licensure and clarify the registration process.

The act, if passed, would amend the 2009 *The Fair Registration in Regulated Professions Act* and affect all 30 regulatory bodies in Manitoba, including Engineers and Geoscientists Manitoba (EngGeoMB). Under the proposed changes, Manitoba's director of fair registration practices could set timelines to shorten regulatory bodies' registration process. Other proposed amendments would, among other things, require regulatory bodies to:

- Prove that their registration requirements and assessments are necessary for potential licensees to practise;
- Work with post-secondary schools and employers to ensure internationally trained applicants meet registration requirements;
- Notify the director of fair registration practices of any changes to their registration requirements and assessments to allow for feedback; and
- Face issue compliance orders for serious issues of compliance with the fairness legislation.

"Our goal is to remove barriers so qualified, internationally educated applicants can practise their profession in Manitoba sooner and are treated fairly when they apply for a licence to practise," Economic Development and Training Minister Ralph Eichler says. "Many newcomers to Manitoba are highly educated and possess in-demand skills and experience, and we want to help them keep their skills up to date so they can rejoin their professions more quickly after arriving in Manitoba and help grow our economy."

The proposed changes were introduced in the provincial legislature by Eichler at the request of Premier Brian Pallister, who, in a March 3, 2020 directive, asked Eichler to develop legislation to allow for "faster credential recognition and fair processes for assessment of skills and abilities for individuals trained abroad entering Manitoba's workforce." The bill, which passed first reading on the day it was introduced in the Manitoba legislature, is scheduled to continue through the

legislative process during the legislature's spring session, which began on March 3.

C. Scott Sarna, EngGeoMB director of government relations, points to EngGeoMB's 2020 adoption of a competency-based assessment process that, he says, "will greatly benefit all applicants, especially the senior, international engineer with 10 or more years of professional practice experience." Consequently, Sarna suspects the proposed changes that could most directly affect EngGeoMB are the requirement for regulators to check admissions policy changes with the director and fines and compliance orders for violators, since EngGeoMB already licenses internationally trained graduates at a higher rate than many Manitoba regulators. "The Manitoba government conducted consultation sessions with the 30 self-regulated professions; Engineers Geoscientists Manitoba participated in the consultation process and views the legislative changes as fair," Sarna says. "They will bring positive changes to the self-regulated admissions process in Manitoba."

EngGeoMB CEO and Registrar Grant Koropatnick, P.Eng. (Manitoba), FEC, notes: "Our association is fully compliant with the fairness legislation and looks forward to working on any recommendations for improving the registration process for professionals in Manitoba." However, Sharon Sankar, P.Eng. (Manitoba), FEC, director of admissions for EngGeoMB, notes: "Since this legislation is new, we are not yet seeing the impact of the legislation on our association at this time; however, we have confidence that our robust admissions process will be able to handle any challenges that may arise due to the new requirements. We believe, and always have believed, in fairness, openness and transparency when dealing with all applicants."

PEO ADOPTS ONTARIO FAIRNESS COMMISSIONER REQUESTS

In Ontario, PEO reports to a provincial fairness commissioner, who overlooks fair access to regulated professions in Ontario. In recent years, PEO has been working to address concerns made by former fairness commissioner Grant Jameson, such as the mandatory 12 months of supervised Canadian engineering experience requirement, the review processes of PEO's Academic Requirements Committee (ARC), the lack of guidelines concerning potential bias and conflict of interest for decisions of the Experience Review Committee (ERC) and a lack of psychometric testing to confirm the validity of PEO's Professional Practice Exam (PPE). In 2018, PEO adopted new processes to improve the performances of both the ARC and ERC and in 2020 replaced the PPE with the National Professional Practice Exam, an online exam that includes questions designed to psychometrically validate the exam (see "PEO adopts National Professional Practice Exam," *Engineering Dimensions*, July/August 2020, p. 13).

MCMASTER OFFERS NEW SCHOLARSHIP FOR BLACK ENGINEERING STUDENTS

By Adam Sidsworth

In a move to help attract and retain Black students in engineering, the McMaster University chapter of the National Society of Black Engineers (NSBE) is sponsoring an entrance scholarship for Black students beginning their undergraduate engineering degree at McMaster University.

The NSBE McMaster Chapter Entrance Award is a \$2,500 entrance scholarship offered to self-identifying Black students entering a first-year engineering program at McMaster University. Criteria for applying for the scholarship include short essay questions detailing applicants' impact on their community and what they hope to accomplish at McMaster, along with considerations of applicants' financial situation. The scholarship will be first offered to students entering McMaster for the 2021–2022 school year.

"It's something we've always wanted to do," says Feyisayo Enuiyin, 2020–2021 president of the NSBE chapter of McMaster University, where she is a final-year student in chemical engineering. "I said, 'Why don't we have a scholarship?' Every executive before me has also been pushing for that same thing. For us, it's less about the money and more about getting more Black people enrolled in engineering."

NSBE was founded in 1971, when two undergraduates at Purdue University in Indiana started a student organization to help improve the recruitment and retention of Black engineering students. NSBE has since grown to more than 21,000 members and 700 active chapters in the United States and abroad, including several Ontario universities, such as McMaster, the University of Toronto and Queen's University.

Enuiyin says the events of last year spurred the sponsoring of the scholarship: "With George Floyd's death, it became apparent to the

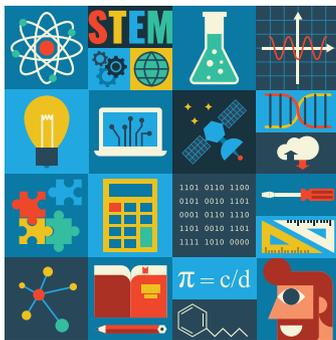
world there is a lot of injustice done towards Black people, whether it's police brutality or always facing this bias within your community. This was something a lot of Black students at McMaster tend to think about and sometimes experience."

The NSBE McMaster chapter hopes to raise \$62,500 to ensure it has enough funding for at least the first academic year. Enuiyin notes that although the NSBE McMaster chapter is campaigning and setting the criteria for the award, McMaster is administering the scholarship and its funds as part of the university's entrance awards.

The NSBE McMaster Chapter Entrance Award comes as engineering faculties across Ontario recognize that Black students are neither enrolling nor graduating with engineering degrees in high numbers. Some schools have begun outreach and retention programs to attract Black students, notably Queen's University, whose Black Youth in STEM launched just last year (see "Queen's engineering faculty begins diversity initiative for Black students in STEM," *Engineering Dimensions*, November/December 2020, p. 14).

REPORT SAYS SUPPORT PROGRAMS HELP INDIGENOUS STUDENTS ACCESS STEM

By Adam Sidsworth



As part of a multi-year study on Indigenous Peoples' access to science, technology, engineering and math (STEM) programs and how Canada's education systems impact Indigenous Peoples, the Conference Board of Canada recently released a report that found that universities and colleges that have developed STEM-focused access and retention programs for Indigenous students have a strong record of helping them adequately meet the university STEM entry requirements.

The Conference Board of Canada's *Indigenous STEM Access Programs: Leading Post-secondary Inclusion* findings were released in light of often negative experiences of Indigenous students from high schools in under-resourced northern and remote regions of Canada. Specifically, the report found that:

- Indigenous students from under-resourced rural and remote areas are less prepared for post-secondary students than students from urban areas;
- STEM-focused access and retention programs create a more inclusive, welcoming environment for Indigenous students because they

- have adaptable admissions requirements, student assessments, teaching methods and program delivery; but
- Despite the successes of STEM-focused access and retention programs, Indigenous students are still more likely to be constrained by a lack of widespread education system reforms at the K-12 level.

“The access programs are doing amazing work, but they’re fighting an uphill battle because the school system, especially in northern and remote schools, is not preparing them well enough to compete with kids coming out of urban schools,” Jane Cooper, Conference Board of Canada senior research associate and the study’s co-author, said in an interview with *Engineering Dimensions*. “The northern and remote schools are not providing good-quality education, often because they’re quite small schools. They can’t provide a wide range of courses. The majority of students can’t access the courses they need to get into science and engineering [post-secondary programs].”

The Conference Board of Canada is a not-for-profit organization that conducts research and offers economic insights to develop an understanding of Canada’s economy within multiple political and social contexts. Its exploration of Indigenous access to STEM education is a part of Future Skills Centre (FSC), designed to help Canadians prepare for, transition and adapt to a changing labour market. The FSC receives funding from the federal government and is a partnership between Ryerson University, the Conference Board of Canada and Blueprint ADE. The ongoing focus on the lack of Indigenous representation in STEM is a response to the reality that Indigenous Peoples account for 4 per cent of all adults in Canada yet account for only 2 per cent of people working in STEM occupations.

THE SUCCESS OF ACCESS AND RETENTION PROGRAMS

The Conference Board of Canada’s study found that despite the inadequate education that Indigenous students, particularly from northern and remote schools, receive, STEM-focused access and retention programs often find success because they:

- Have tailored and interconnected supports covering numerous personal, social, academic and career needs that recognize Indigenous students, who often come from low-income families or rural communities;
- Acknowledge that Indigenous students are often the first generation to go to post-secondary school and have parents or grandparents who experienced the residential school system;
- Recognize the unique financial challenges Indigenous students face by offering specialized financial advice and negotiate with funders on their behalf;
- Offer health and wellness training and personal development teachings that cover topics like nutrition, healthy relationships and parenting skills;
- Help create and foster a sense of community among Indigenous students, who may be overwhelmed from being in a new urban setting with a different culture and language; and
- Tailor job-finding skills, such as resume writing and how to find relevant summer jobs.

The report notes that much of the success comes from offerings unique to the Indigenous experience, including:

- Elders-in-residence programs;
- Opportunities to make practical contributions to inclusion and reconciliation;

- Accepting Indigenous students with less-than-competitive marks while offering complementary academic support;
- Allowing Indigenous students to take bridging and upgrading courses; and
- The establishment of dedicated spaces for Indigenous students to come together.

REPORT RECOMMENDATIONS

The report makes four recommendations, including:

- Using access and retention programs on a continuum of strategies to increase Indigenous inclusion;
- Developing more STEM-specific access and retention programs—there are only seven specific engineering access programs across Canada—that supplement the general supports for Indigenous students found at most post-secondary institutions;
- Funding for existing STEM-specific access and retention programs should be continued; and
- Importantly, tackling the staffing and resourcing issues that affect how rural, northern and remote schools deliver STEM subjects in K-12.

Interestingly, the report investigated two access and retention programs already profiled by *Engineering Dimensions*: Queen’s University (see “Queen’s engineering faculty begins diversity initiative for Black students in STEM,” *Engineering Dimensions*, November/December 2020, p. 14) and the University of Saskatchewan (U of S) (see “University of Saskatchewan launches Indigenous access to engineering program,” *Engineering Dimensions*, July/August 2019, p. 23). The report praises U of S for its “holistic package of supports,” including academic programs, financial advice, emotional support and cultural activities, and Queen’s for accommodating Indigenous students with less-than-competitive averages into certain programs while offering academic support programs.

Cooper hopes the report will inspire more post-secondary institutions to help Indigenous students successfully transition into STEM programs. “I hope that university and college administrators can read this report and support Indigenous access and retention and funding,” Cooper says. “University administrators who decide to fund programs are the ones we hope will be inspired to create programs or increase the ones they already have.”

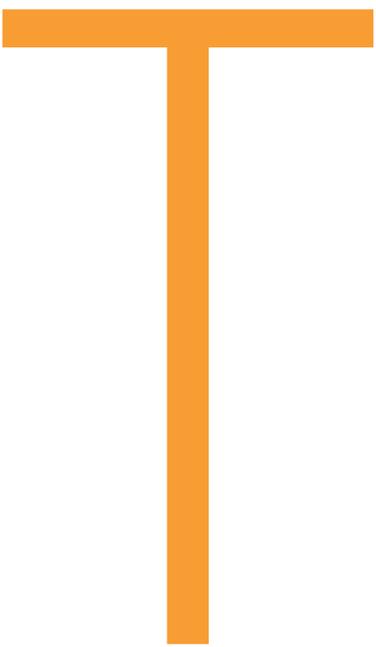




WHERE WE ALL FIT IN

An inside look at how PEO
is embracing equity, diversity
and inclusion

By **MARIKA BIGONGIARI**



he events of the past year—specifically the high-profile killings of Black men and women at the hands of police in the United States and the subsequent surge in urgency of the Black Lives Matter movement—have shined an especially bright light on the inequities that exist for many racialized people and other marginalized groups. As Ontario’s engineering regulator, PEO oversees a diverse profession within a diverse province and is sensitive to increasing public concern over systemic racism and discrimination. The organization is committed to doing its part to help eliminate systemic racism and racial bias, as well as actively promoting equity, diversity and inclusion (EDI) in all its activities.

IMPLEMENTING STRONG POLICIES

PEO has several programs in place to address issues related to EDI, but the cornerstone of its philosophy is its equity and diversity policy: “PEO’s environment is one in which all stakeholders are treated equitably and where members of diverse groups are recognized, welcomed and valued.” The policy, which was developed by PEO’s Equity and Diversity Committee (EDC), applies to all PEO staff and any individuals acting on behalf of the organization, including volunteers, licence holders and applicants. It is also designed to inform the expectations of values held by consultants, contractors and other stakeholders in the communities served by PEO and includes mechanisms for complaints and redress. The policy outlines that:

1. Council demonstrate leadership regarding equity and diversity, including reviewing its own processes and training programs;
2. PEO deliver ongoing information, training and support to help all staff, volunteers and committee and Council members understand their rights and responsibilities and that such training be a fundamental part of orientation for new volunteers and staff;
3. PEO provide guidance to staff and volunteers in incorporating specific, measurable equity and diversity provisions into their annual work and human resources plan;
4. Plans for outreach to prospective licensees be analyzed for sensitivity to the diversity of Ontario’s culture as defined by the Ontario Human Rights Code;
5. PEO actively solicit viewpoints from diverse groups, as defined by the Ontario Human Rights Code;
6. PEO’s activities in recruitment and retention of staff and volunteers have a focus on achieving equity and increasing diversity within the engineering profession; and

7. PEO seek to identify and work to remove barriers that limit access to its services and programs in areas such as information dissemination, human resources, physical space and cultural difference.

The policy defines equity as the result of a comprehensive proactive strategy designed to ensure all members of society have fair and equal access to opportunities in PEO processes, procedures or activities. Diversity is defined in the policy as the characteristics that make people different from each other, and it references the Ontario Human Rights Code to highlight differences that include race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, age, marital status, family status or disability.

MANDATORY STAFF AND VOLUNTEER TRAINING

PEO’s EDC was created in 2004 to help integrate equity and diversity values and principles into the general policy and business operations of PEO. In addition to developing PEO’s equity and diversity policy and continually monitoring its compliance and effectiveness, the EDC’s duties include recommending mechanisms to ensure no groups are excluded from the structural life of PEO and that communicate PEO’s commitment to the values and principles of equity and diversity. It is also responsible for ensuring regulatory procedures for licensing, complaints, discipline and enforcement reflect the values set out in the policy and that there is equity and diversity training for everyone involved in PEO’s operations.

Further to fostering an inclusive workplace, earlier this year PEO launched mandatory comprehensive training for all staff. The training was developed in partnership with the Canadian Centre for Diversity and Inclusion and introduced by PEO’s human resources department as part of an organization-wide initiative to move PEO forward from an EDI perspective. PEO staff have so far participated in two online training sessions that focused on diversity and inclusion fundamentals and unconscious bias in the workplace.

PEO members who are interested in volunteering for the regulator on chapters, committees or task forces or running for a position on Council are required to complete PEO’s volunteer orientation. Part of the orientation includes mandatory customer service training under the *Accessibility for Ontarians with Disabilities Act*, which teaches volunteers how to serve and communicate with

people who have different disabilities. Volunteers are also required to complete several online modules, one of which is *Engineers Make a Difference for Equity and Diversity*. This module explains why PEO has a policy on equity and diversity and teaches practical ways to reduce barriers to participation and engagement by making the most of volunteers' diverse mix of skills, experiences and perspectives. The training module also highlights the power equity, diversity and inclusion have to make a difference for the engineering profession, as well as the impact engineers can make through their work, and it invites volunteers to develop their own action plan in response to the policy as part of their responsibilities as active members of PEO.

THE EFFORTS OF A NEW ANTI-RACISM WORKING GROUP

In response to increased public concern about systemic racism, PEO recently embarked on a promising new project: the launch of an Anti-Racism and Anti-Discrimination Exploratory Working Group (AREWG). The new group, which was initiated by Peter Cushman, P.Eng., East Central Region councillor and chair of the AREWG, was approved by Council in November 2020 (see "Council approves anti-racism and anti-discrimination strategy," *Engineering Dimensions*, January/February 2021, p. 46). It has been tasked with scoping vulnerabilities to systemic racism and discrimination within the engineering profession and range of activities overseen by PEO, as well as proposing best-practice methodologies for identifying, studying and addressing any vulnerabilities that exist. The group is currently working with a qualified consultant to devise a workplan and is expected to report back to Council before PEO's 2021 Annual General Meeting in May.

Cushman proposed the working group because he believes it's important that PEO formally addresses any potential issues of discrimination and systemic racism as they relate to the organization and the engineering profession. "There are those who dismiss the notion of racism and discrimination; there are those who are busy with their work and lives; and there are those who don't want to get involved," Cushman says. "But if we stay silent, aren't we actually complicit?" Cushman further asserts that PEO's rules, policies and procedures



have not evolved with the times. "There is a desperate need to renew and rewrite many of the rules in order to meet current societal expectations," he explains.

As soon as it received Council approval, the AREWG hit the ground running, issuing a request for proposal to hire a consultant in December and reviewing bids in January. PEO's immense responsibility and the risk it assumes as a regulator dictate a pressing need for an expert opinion, Cushman says, making the exploratory working group a welcomed and timely exercise. As the largest engineering regulator in Canada, and as an organization he views as one of the best in the world, Cushman strongly believes PEO should be a leader in all aspects, including equity, diversity and inclusion.

Although Cushman acknowledges previous letters sent to PEO's CEO/registrar by the Office of the Fairness Commissioner (OFC)—which conducts annual reviews of the registration practices of all regulatory bodies in Ontario, including PEO—regarding concerns about some of PEO's licensing and registration processes, he reassures licensees that PEO is working to ensure it complies with all relevant legislative requirements, such as the *Fair Access to Regulated Professions and Compulsory Trades Act*. Notably, PEO adopted the online National Professional Practice Exam last year as a replacement for the PEO-administered Professional Practice Exam in an effort to remove a potential element of bias and to comply with a recommendation from the OFC (see "PEO adopts National Professional Practice Exam," *Engineering Dimensions*, July/August 2020, p. 13).

"PEO needs to be seen as an impartial, unbiased regulator," explains Western Region Councillor Wayne Kershaw, P.Eng., FEC, who volunteered to join AREWG because he strongly supports its mandate. For PEO to continue to be taken seriously as a regulator, he asserts that the organization must do everything possible to ensure diversity at all levels is being recognized. "This working group is the first step towards that

goal,” he says. “Continuous vigilance is required to ensure systemic racism and discrimination doesn’t sneak into our organization.” Although Kershaw recognizes that efforts have been made to, for example, address the representation of women in the profession through the Engineers Canada–led 30 by 30 initiative—which aims to increase the percentage of newly licensed women engineers to 30 per cent by 2030—he stresses the importance of diversity efforts extending to other areas, including race and gender identity. “PEO doesn’t track inclusivity outside male/female,” Kershaw points out. “This, to me, indicates a potential blind spot within our organization.”

While acknowledging that the number of internationally trained engineers in Ontario has increased, Lieutenant Governor-in-Council Appointee (LGA) Qadira C. Jackson Kouakou, LLB, explains that it doesn’t mean there’s equality or an absence of racism: “There’s a difference between internationally trained licensees and racialized licensees. If we say we are doing well on the equity, diversity and inclusion front simply because a large percentage of PEO licensees are foreign trained, it is flawed reasoning. Someone who is foreign trained may not be racialized. If they are racialized, they may experience racism or may have trouble finding a job in a particular field.” Until recently, Jackson, who also joined the AREWG, hadn’t heard much talk about discrimination around the Council table, but she points out that it is an important consideration, especially for PEO’s licensing process, where there could be claims of cultural bias.

WHY REPRESENTATION MATTERS

Jackson, who’s running for nomination as the Liberal member of provincial parliament representing Scarborough Southwest, believes it’s important for PEO to remain mindful about who sits on Council to ensure they represent as many different perspectives as possible. “Being a woman of colour, I believe it is important to have a seat at the table, especially when discussing issues pertaining to equity and diversity—it’s also why I am currently running for nomination in the Ontario Liberal Party,” Jackson says. “Any organization should have a board that reflects the members they serve. Diversity of thought—and that’s not just race—is important. That refers to practice areas, professions, age... that kind of diversity will help PEO shed the image of being an old boys’ club.”

Jackson already has experience working on equity and diversity initiatives for other Ontario regulators. From 2013 to 2014, she participated in the Law Society of Ontario’s (LSO’s) Challenges Faced by Racialized Licensees Working Group, which undertook a four-year study that culminated in the report *Working Together for Change: Strategies to Address Issues of Systemic Racism in the Legal Professions*. “It was progressive in terms of putting together this very intensive project, with paid consultants and volunteers,” Jackson says of the report. “It provided statistics but also included anecdotal evidence of discrimination, which is important, so people understand what it is. But the com-

munity wasn’t ready for it.” Although the endeavor was a proactive one that resulted in 13 solid recommendations and was, in many ways, ahead of current trends, Jackson says there was significant pushback from members of the legal community, leading to some recommendations being repealed and compromising others.

One of the recommendations to come out of the LSO working group that stood out to Jackson was a call to collect detailed demographics, a concept that PEO President Marisa Sterling, P.Eng., FEC, has echoed during her tenure. “We have to first establish that there’s a problem, and we can’t do that until we gather the data,” Jackson explains. She also supported an LSO requirement born from the report’s recommendations known as the Statement of Principles, which she describes as a simple requirement to check a box to acknowledge an obligation to promote equality, diversity and inclusion. However, an organized group of LSO members known as StopSOP argued that the statement amounted to compelled speech and was unconstitutional. This led to the LSO ultimately repealing its requirement for the statement and instead approving a motion that requires licensees to acknowledge their responsibility as a lawyer or paralegal to respect the requirements of Ontario human rights laws and to honour the obligation not to discriminate in their annual report filing, leaving Jackson shaking her head.

Jackson asserts that the legal community’s pushback demonstrated that the exercise was even more necessary than people thought because it brought existing bias and resistance to change to the forefront. “At this stage we’re trying to identify if there’s a problem,” Jackson says of the PEO AREWG’s work. “Given the law society’s pushback on the Statement of Principles, would it be received differently by engineers?”

As an organization charged with regulating in the public interest, PEO is committed to providing an open, dynamic and inclusive culture, as well as doing its part to support meaningful and sustained change in society at large. Although it has established a strong foundation of progressive policies and initiatives, the organization continues to investigate paths forward. Establishing the AREWG represents a step towards meaningful change. [e](#)

DECISION AND REASONS

In the matter of a hearing under the *Professional Engineers Act, R.S.O. 1990, c. P.28*; and in the matter of a complaint regarding the conduct of A MEMBER of the Association of Professional Engineers of Ontario.

The panel of the Discipline Committee heard this matter on December 2, 2020, by means of an online video conference platform that was simultaneously broadcast in a publicly accessible format over the internet. All participants in the proceedings, including counsel for the Association of Professional Engineers of Ontario (the association or PEO), the member and their legal counsel attended via videoconference.

The association provided the panel with the tribunal's Amended Notice of Hearing dated September 8, 2020, and the decision of the Complaints Committee dated September 11, 2019, referring the matter to the Discipline Committee. The parties also provided the panel with an Agreed Statement of Facts signed December 1, 2020.

AGREED STATEMENT OF FACTS

Counsel for the association advised the panel that the association and the member had reached agreement on the facts. At the conclusion of the hearing, and due to the nature of the penalty ordered by the panel, the panel requested that the parties submit a revised and redacted form of Agreed Statement of Facts solely to ensure confidentiality of the member's identity for the publication of this decision in the official publication of the association. Counsel for the parties accordingly submitted to the panel a form of the Agreed Statement of Facts with certain information redacted, notably the member's name, on December 4, 2020. The redacted Agreed Statement of Facts is as follows:

1. The member is, and was at all material times, a professional engineer licensed in good standing pursuant to the *Professional Engineers Act* (the act).
2. Two individuals filed formal complaints regarding the matters in issue. As the complaints dealt with factually similar issues, the complaint of Ralph Martin, manager of secretariat of PEO (Martin), was deferred by the Complaints Committee pending the outcome of this matter.

The only complainant in this matter is Allison Elliot, PEO's chief elections officer (Elliot), and Martin is a witness.

3. In 2017, the member ran as a candidate in the election to become a member of PEO Council. PEO Council is the body of elected professional engineers and individuals appointed by the office of the Attorney General of Ontario responsible for the overall direction of PEO. The member was ultimately not elected to a seat on PEO Council.
4. The member did not register to be a candidate in the 2019 PEO Council elections. However, on December 10, 2018, during the campaign period for the 2019 elections, the member sent an email to Elliot regarding the possible use by candidates of certain material that the member had produced during the 2017 campaign. The member's email stated as follows:

Chief Elections Officer,
A few years back I ran as a candidate for [PEO Council]. I had the material on my website, my platform sent during various Candidate messages [sic]. This is to inform you I have copyrighted that material. The website is still active.
Please let every candidate know, if they use my campaign material in their campaign, I will go after that candidate and/or you.
Don't make excuses afterwards. You have been informed upfront.
Thank you,
Member
5. Elliot felt personally threatened by the member's email but did not respond to the member directly other than in her email on December 13, 2018.
6. Further, in or about January 2019, the member posted a number of comments in response to a LinkedIn posting by another candidate for PEO Council in the 2019 election campaign. These comments contained various allegations regarding the electoral process against PEO, PEO Council and Ralph Martin, PEO's manager, secretariat, including:
 - a. that PEO Council is a "deep state" and that PEO adopted "deep state" policies;
 - b. that the 2017 PEO Council election was "fixed" by the manager of the secretariat and others within PEO;

- c. that PEO “rigged” the PEO Council elections in 2017 and 2019;
 - d. that PEO denied the member their “fundamental right to vote”; and
 - e. that PEO / the “deep state” sought to ensure that certain candidates won the election.
7. The member provided no evidence to support their allegations. The comments were made in a public forum, visible to non-members of PEO, and identified PEO members and other individuals by name, as set out in the postings. The comments were deeply troubling to Martin and had the potential to undermine public confidence in PEO and the integrity of its electoral process.
8. The member and the association agree that based on the preceding facts, the member is guilty of professional misconduct as follows:
- a. Conduct or an act relevant to the practice of professional engineering during the said election of 2019 that, having regard to all the circumstances, would reasonably be regarded by the engineering profession as unbecoming and unprofessional, contrary to section 72(2)(j) of Regulation 941.

PLEA

The member admitted the allegations set out in the Agreed Statement of Facts. The panel conducted a plea inquiry and was satisfied that the member’s admission was voluntary, informed and unequivocal.

DECISION

The panel considered the Agreed Statement of Facts. It finds that the facts, as agreed, support findings of professional misconduct against the member. In particular, the panel finds that the member committed acts of professional misconduct as set out in subparagraph 8(a) of the Agreed Statement of Facts.

REASONS FOR DECISION

When presented with a guilty plea and an Agreed Statement of Facts, the panel must still satisfy itself whether the facts presented support a finding with respect to each of the acts of professional misconduct alleged by the association.

Further to the decision of the Discipline Committee in *The Matter of a Complaint Against Engineer A* cited in the November/December 2002 edition of the PEO Gazette (page 32) cited in the hearing by counsel for the association, the panel is of the view that the conduct alleged in subparagraph 8(a) of the Agreed Statement of Facts constitutes acts of professional misconduct under section 72(2)(j) of Regulation 941 under the *Professional Engineers Act*, R.S.O. 1990, c. P.28 (the act), and that the member committed such acts is amply made out on the facts as agreed to by the member and the association and accepted by the panel.

Specifically, the panel finds that the member’s conduct during the 2019 PEO Council election campaign period was inappropriate, unprofessional and disparaging to both Elliott and Martin. The member’s comments as against PEO Council and PEO generally were also inappropriate and unduly disparaging.

PENALTY

Counsel for the association advised the panel that the member and the association were making a joint submission on penalty and provided a Joint Submission on Penalty dated December 1, 2020.

The Joint Submission on Penalty provided, in part, as follows:

1. Pursuant to subsection 28(4)(f) of the *Professional Engineers Act*, the member shall be orally reprimanded, and the fact of the reprimand shall be recorded on the register for a period of six months;
2. There shall be no order with respect to costs; and
3. The issue of publication shall be determined by the panel at the hearing of this matter.

Counsel for the association submitted that the association is not taking a position in regard to publication.

Counsel for the member provided an expert medical report that found that the member had been undergoing difficult health challenges during the relevant period and beyond. Counsel for the member requested that the report be entered as an exhibit and that the panel consider sealing it from the public record. Counsel for the association acknowledged that the report contained medical information personal to the member and did not object to it being made subject to a confidentiality order. The panel found that the desirability of avoiding public disclosure of this report in the interest of any person affected or in the public interest outweighs the desirability of adhering to the principle that hearings be open to the public. This panel thus ordered that the report shall be treated as confidential, sealed and shall not form a part of the public record under section 30(5.1) of the act or otherwise, pursuant to section 30(4.1)2 of the act and sections 9 and 25.0.1, among others, of the *Statutory Powers Procedure Act*, R.S.O. 1990, c. S.22, unless and until otherwise ordered, as it contains personal medical information. (Footnote: See, in a different context, *Toronto Star v. AG*

Ontario, 2018 ONSC 2586 (CanLII) at paragraphs 89, 90 and 138, and the decisions cited therein. The panel adopts the reasoning in that case as applicable herein.) Any non-party who wishes to obtain access to this exhibit must do so by motion to the Discipline Committee on reasonable notice to the parties.

Counsel for the member also submitted that the member had fully co-operated with the association's investigation, has no prior disciplinary history and expressed remorse and apologized for their conduct. The panel also notes that the member has voluntarily sent letters of apology to Martin and to Elliott. Counsel for the member further read out a number of letters of reference written by certain of the member's employer, colleagues, community friends and family, some of which explained the adverse impact that the stress of these proceedings have had on the member both personally and professionally. Counsel for the member concluded that these facts and evidence supported a finding against publication and that, given that this case has already attracted some attention, publication could inadvertently cause further stress and reputational harm to the member.

PENALTY DECISION

The panel carefully considered the Joint Submission on Penalty. It is a well-established principle of law that a disciplinary panel should not interfere with a joint submission on penalty except where the panel is of the view that to accept the joint submission would bring the administration of the disciplinary process into disrepute or would be contrary to the public interest. In the circumstances of this case, the panel is of the view that an oral reprimand and publication of the panel's findings and order in the official publication of the association is a reasonable outcome in this matter. A lesser penalty would fail to appropriately serve the aims of general deterrence, protecting the public and maintaining the public's confidence in the regulation of the profession. A more severe penalty has the potential to cause the member continued stress and reputational harm which, in the circumstances of this case, the panel views as unnecessary.

The panel also acknowledges the member's co-operation and good faith conduct with the association as expressed in the Agreed Statement of Facts, the recitals to the Joint Submission on Penalty, their statement of remorse and the issues

identified in the expert medical report. These considerations, combined with their lack of a prior disciplinary history, are mitigating factors in determining an appropriate penalty.

Public trust is at the core of what it means to be a professional. Members of the public must have confidence that professionals are held to high standards of conduct and that serious breaches of those standards are dealt with appropriately. Failing to take a proportionate response to protect the public in the face of professional misconduct undermines that trust and harms both the reputation of the profession and the legitimacy of professional regulation.

The panel notes that publication of its findings and reasons without names serves to promote general deterrence of the profession and reinforce the public confidence in the regulation of the profession. Far from bringing the administration of the disciplinary process into disrepute, publication demonstrates, both to the profession and to the public, the seriousness with which the Discipline Committee regards significant lapses of professional standards and the penalties for engaging in such misconduct. However, in this matter the member's actions are sufficiently addressed in this penalty by publication of the facts found and the penalty such that the principle of general deterrence will still be served.

Accordingly, the panel accepts the Joint Submission on Penalty for the member, together with publication of the panel's findings and reasons but without the member's name, and orders as follows:

- a. Pursuant to subsection 28(4)(f) of the *Professional Engineers Act*, the member shall be orally reprimanded, and the fact of the reprimand shall be recorded on the register for a period of six months;
- b. Pursuant to subparagraph 28(5) of the *Professional Engineers Act*, the findings and order of the Discipline Committee shall be published, together with reasons therefore, without reference to the member's name.
- c. There shall be no order as to costs.

The panel pronounced its determinations as to convictions and penalty at the conclusion of the hearing on December 2, 2020, and advised that its reasons were to follow. At the hearing, after the pronouncement of the penalty, the member waived their right to appeal and the panel administered the oral reprimand.

SUMMARY OF DECISION AND REASONS

On allegations of professional misconduct under the *Professional Engineers Act* regarding the conduct of HARJINDER SINGH, P.ENG., a member of the Association of Professional Engineers of Ontario, and MEM ENGINEERING INC., a holder of a certificate of authorization.

The Decision and Reasons was signed on January 15, 2021, by the panel chair, Glenn Richardson, P.Eng., on behalf of the panel, which was composed of Lorne Cutler, P.Eng., and Reena Goyal, JD. The panel of the Discipline Committee (the panel) of the Association of Professional Engineers of Ontario (the association or PEO) convened a hearing remotely via Zoom to hear this matter on July 9, 2020, and October 1, 2020. The association was represented by Leah Price. Harjinder Singh (Singh) and MEM Engineering Inc. (MEM) were unrepresented.

STATEMENT OF ALLEGATIONS

PEO alleged that Singh and MEM are guilty of professional misconduct, in contravention of the *Professional Engineers Act*, R.S.O. 1990, c. P.28 (the act) and Regulation 941, R.R.O. 1990 as amended (Regulation 941) as described in a Statement of Allegations dated November 20, 2019.

SUMMARY OF AGREED STATEMENT OF FACTS

1. Singh has at all material times been licensed under the act. MEM has at all material times held a certificate of authorization issued under the act. Singh is identified under the certificate as the person accepting professional responsibility for the engineering services provided by MEM.
2. Singh's practice focuses on structural engineering. He does not have training in electrical or mechanical engineering.
3. In or about June 2017, Singh and MEM were retained by the complainant, Mark Kasper (Kasper), to provide professional engineering services in connection with the design of a two-storey rental building.
4. The quote for the services was provided on behalf of MEM by Raman Sandhu, whose email signature identified him as "Project Engineer." Raman Sandhu is not licensed under the act.
5. In or about March 2018, MEM provided Kasper with a set of drawings signed and sealed by Singh and dated March 6, 2018 (the Drawings).
6. Kasper submitted the Drawings to the City of Thunder Bay (the City) as part of an application for a building permit.
7. On April 12, 2018, the City advised Kasper, with respect to the building permit application, that "[t]here is a substantial amount of information missing as well as some design concerns" and recommended that he "resubmit architectural drawings completed by an architect or registered small buildings designer with a more proficient understanding of the Ontario Building Code." In addition, the City explained that it required an electrical engineer to complete the electrical design and a mechanical engineer to complete the mechanical design.
8. On April 20, 2018, the City advised Kasper that the structural specifications appeared to have been copied from a different site, as they referred to "existing building conditions and openings over swimming pools." The property had no existing buildings and no swimming pools.
9. On or about May 3, 2018, Kasper provided to MEM a set of plumbing drawings prepared by Allied Plumbing and Drains North.
10. On or about May 14, 2018, MEM made minor revisions to the Drawings, and returned them to Kasper. The revised drawings still bore Singh's stamp and seal dated March 6, 2018. Kasper submitted the revised drawings to the City.
11. On May 24, 2018, the City emailed Kasper stating that the plans had "not been adequately revised" and encouraging Kasper "to find a designer who has thorough knowledge of the Ontario Building Code."
12. On May 31, 2018, the City emailed Kasper explaining that, given the proposed size of the Building, which had a gross floor area exceeding 600m², he was required to have drawings for the relevant components prepared by an architect, "as well as engineers for each of the structural, mechanical and electrical components of this project." The City continued: "...[as the drawings] do not meet the minimum standards required by our office, we will not accept these drawings for any of the disciplines."

13. Kasper ended the contract with MEM.
14. PEO retained NORR Architects and Engineers Limited as independent experts to review the work done by the Respondents. NORR concluded:
 - a) In the matter of whether or not Singh and MEM failed to comply with any standards applicable to the design, review and signoff of drawings and construction details, it is our opinion that the design drawings authenticated for building permit submission were missing a significant amount of information. The drawings do not provide sufficient level of information for us to consider whether or not the design met applicable codes and standards, nor do they include construction details.
 - b) In the matter of errors, it is our opinion that the referenced drawings do not provide sufficient level of information for us to consider design implications. There were only a limited number of errors identified in the documents. A reasonable and prudent practitioner would have provided a more complete set of documents.
 - c) In the matter of whether or not Singh and MEM failed to meet the standard expected of a reasonable and prudent practitioner, it is our opinion that the documentation submitted did not meet the expected standard.
15. For the purposes of these proceedings, Singh and MEM accept as correct the findings in the NORR Report. Singh and MEM admit that they failed to meet the minimum acceptable standard for engineering work of this type, and that they failed to maintain the standards of a reasonable and prudent practitioner.
16. The parties agree that Singh and MEM are guilty of professional misconduct as follows:
 - a) They signed and sealed inadequate design drawings, amounting to professional misconduct as defined by sections 72(2)(a), (d) and (j) of Regulation 941;
 - b) They signed and sealed design drawings without having the necessary competency or competencies to do so, amounting to professional misconduct as defined by sections 72(2)(h) and (j) of Regulation 941;
 - c) They signed and sealed draft or preliminary drawings, and then failed to sign and seal revised final drawings, amounting to professional misconduct as defined by sections 72(2)(g) and (j) of Regulation 941; and
 - d) They allowed an employee to use the title “engineer” when the employee was not a holder of a licence to practice engineering, amounting to professional misconduct as defined by section 72(2)(j) of Regulation 941.

SUMMARY OF ORIGINAL JOINT SUBMISSION AS TO PENALTY AND COSTS

The Joint Submission as to Penalty and Costs (Original Joint Submission as to Penalty) submitted on the first day of the hearing stated the following, in relevant part:

- a) Pursuant to s. 28(4)(f) of the act, Singh and MEM shall be reprimanded, and the fact of the reprimand shall be recorded on the register permanently;
- b) The findings and order of the Discipline Committee shall be published in summary form under s. 28(4)(i) of the act, with names;
- c) Pursuant to s. 28(4)(b),(d), and (k) of the act, it shall be a term or condition on Singh’s licence that he shall successfully complete PEO’s Professional Practice Examination (PPE) within eighteen (18) months of the decision of the Discipline Committee, failing which his licence shall be suspended for a period of ten (10) months, or until such time as he successfully completes the PPE, whichever comes first.
- d) Pursuant to s. 28(4)(d) and (e) of the act, there shall be a term, condition and restriction on Singh’s licence, prohibiting him from practising:
 - (i) electrical engineering, unless and until he successfully completes two (2) of PEO’s advanced electrical engineering examinations of his choice from the list attached [to the Original Joint Submission as to Penalty] as Schedule “A”; and further prohibiting him from practising;
 - (ii) mechanical engineering, unless and until he successfully completes two (2) of PEO’s advanced mechanical engineering examinations of his choice from the list attached [to the Original Joint Submission as to Penalty] as Schedule “B”;
- e) Pursuant to s. 28(4)(h) of the act, Singh shall be required to pay a fine in the amount of one thousand dollars (\$1000) within thirty (30) days of the decision of the Discipline Committee; and
- f) There shall be no order with respect to costs.

SUMMARY OF SUBMISSIONS OF COUNSEL FOR THE ASSOCIATION / ADVICE OF ILC

Counsel for the association stated that a joint submission should not be rejected unless the panel concludes that to adopt the joint submission would bring the administration of justice into disrepute (*PEO v. George William Meyer, P.Eng., and Quartz Holdings Limited*, PEO Gazette, *Engineering Dimensions*, March/April 2010, and *R. v. Anthony-Cook*, [2016]

2 S.C.R. 204 (Cook)). However, on the panel's request for submissions, independent legal counsel David Jacobs (ILC) advised the panel, among other things, that paragraph 3(c) of the Original Joint Submission as to Penalty would not meet the test set out in Cook. In particular, paragraph 3(c), which states that Singh must complete the PPE within 18 months failing which his licence is suspended for 10 months or until he completes the PPE, whichever comes first, is contrary to public interest. ILC advised that this is because the panel does not have the authority to impose a penalty for a future event that has not yet occurred.

In support of the above penalty, counsel for the association relied on section 28(4)(k) of the act. It was ILC's view that section 28(4)(k) allows the panel to impose a penalty and then suspend the imposition of that penalty on completion of a course of study. In this case it was proposed to impose a penalty (i.e. passage of the PPE) and then impose a further penalty (i.e. suspension) if the member failed the PPE. ILC submitted that this is not permitted under the act.

The panel determined that the original penalty proposed under paragraph 3(c) of the Original Joint Submission as to Penalty was unlawful but the rest of the Original Joint Submission as to Penalty was acceptable. The parties agreed to revise the Original Joint Submission as to Penalty and the hearing was adjourned until October 1, 2020.

SUMMARY OF AMENDED JOINT SUBMISSION AS TO PENALTY AND COSTS

An Amended Joint Submission as to Penalty and Costs (Amended Joint Submission as to Penalty) was submitted by the parties on October 1, 2020. It was identical to the Original Joint Submission as to Penalty, with the exception of paragraph 3(c) which deleted paragraph 3(c) of the Original Joint Submission as to Penalty and now reads:

- (c) Pursuant to s. 28(4)(d) of the act, it shall be a term and condition on Singh's licence that he shall successfully complete PEO's Professional Practice Examination within twelve (12) months of the decision of the Discipline Committee;

ILC advised the panel that given paragraph 3(c), above, no longer provides a penalty and suspends it for a future event that has not yet occurred, it is no longer contrary to public interest.

SUMMARY OF PLEA BY SINGH AND MEM AND DECISION ON MISCONDUCT

Singh and MEM admitted to the allegations. The panel conducted a plea inquiry and was satisfied that Singh and MEM's admissions were voluntary, informed and unequivocal.

The panel considered the Agreed Statement of Facts and found that the facts supported a finding of professional misconduct and that Singh and MEM committed acts of professional misconduct as alleged therein.

SUMMARY OF PENALTY DECISION

The panel accepted the Amended Joint Submission as to Penalty. It was the view of the panel that the penalty was reasonable and in the public interest. The panel was satisfied that adopting the Amended Joint Submission as to Penalty would not bring the administration of justice into disrepute.

The panel ordered the following as per the Amended Joint Submission as to Penalty:

- a) Pursuant to s. 28(4)(f) of the act, Singh and MEM shall be reprimanded, and the fact of the reprimand shall be recorded on the register permanently;
- b) The findings and order of the Discipline Committee shall be published in summary form under s. 28(4)(i) of the act, with names;
- c) Pursuant to s. 28(4)(d) of the act, it shall be a term and condition on Singh's licence that he shall successfully complete PEO's Professional Practice Examination within twelve (12) months of the decision of the Discipline Committee;
- d) Pursuant to s. 28(4)(d) and (e) of the act, there shall be a term, condition and restriction on Singh's licence, prohibiting him from practising:
 - (i) electrical engineering, unless and until he successfully completes two (2) of PEO's advanced electrical engineering examinations of his choice from the list attached [to the Amended Joint Submission as to Penalty] as Schedule "A"; and further prohibiting him from practising;
 - (ii) mechanical engineering, unless and until he successfully completes two (2) of PEO's advanced mechanical engineering examinations of his choice from the list attached [to the Amended Joint Submission as to Penalty] as Schedule "B";
- e) Pursuant to s. 28(4)(h) of the act, Singh shall be required to pay a fine in the amount of one thousand dollars (\$1000) within thirty (30) days of the decision of the Discipline Committee; and
- f) There shall be no order with respect to costs.

REPRIMAND

The panel administered an oral reprimand immediately after the hearing.

Charles McDermott, P.Eng., signed the Decision and Reasons for the decision as chair of the discipline panel on October 22, 2020, and on behalf of the members of the discipline panel: Alisa Chaplick, LLB, and Rishi Kumar, P.Eng.

COMPLAINTS COMMITTEE: VOLUNTARY UNDERTAKING UNDER SUBSECTION 24(2)(C) OF THE PROFESSIONAL ENGINEERS ACT

In the matter of a complaint regarding the actions and conduct of a member of the Association of Professional Engineers of Ontario.

BACKGROUND

1. The complaint relates to the member's actions and conduct in relation to the expansion of waterworks for a town in Saskatchewan (the town).
2. At all material times, the member held a licence to practise professional engineering with both the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS) and Professional Engineers Ontario (PEO).
3. In or about 2012, the town sought to expand its waterworks to accommodate projected future growth.
4. The town engaged the services of a Saskatoon-based engineering firm, and the member became the consulting engineer in charge of the project.
5. Construction commenced without a permit, and the majority of work was completed before a permit was acquired.
6. Water was pumped through the town's altered waterworks using the newly installed equipment without proper disinfection.
7. Any known or anticipated upset condition, bypass condition or event at or affecting the waterworks that could adversely affect the quality of water was not immediately reported to the Water Security Agency.
8. A Precautionary Drinking Water Advisory was issued due to the unknown water quality in the town's distribution system that may have resulted from the new waterworks reservoir and related equipment construction.
9. E. coli was later detected in a point-of-use water sample, and an Emergency Boil Water Order was issued.
10. The Water Security Agency initiated an investigation, and as a part of their investigation, interviewed the member. The member replied "no" when asked if the reservoirs had been installed, if the filters had been installed, and whether any piping or valving had been installed.
11. The member told town representatives and persons involved with the project not to talk

to anyone from the government during the Water Security Agency's investigation, but to contact him instead.

12. On April 25, 2014, a complaint was filed with the Association of Professional Engineers and Geoscientists of Saskatchewan.
13. On November 4, 2017, the member pleaded guilty to two counts of professional misconduct under the *Geoscience Professions Act of Saskatchewan* before a panel of the Discipline Committee of the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS). The penalty imposed after joint submissions included: a suspension for one year, successful completion of the Law & Ethics seminar and the Professional Practice Exam, publication of the decision without names, and costs to a maximum of \$25,000, of which 50 per cent was to be paid by the member. The panel's decision noted that the member acknowledged that he is retiring and not intending to practise in the future.

THE COMPLAINT

14. The complaint raised issues concerning the actions and conduct of the member with regards to the delivery of water without proper disinfection or notice, misinforming the Water Security Agency about the construction of the waterworks and impeding the investigation by the Water Security Agency.
15. The Complaints Committee (committee) received a response to the complaint from the member, which included a number of explanations and clarifications relating to the member's actions, knowledge and scope of work on the project.
16. The member stated that he had retired, and he had let his Ontario licence lapse and did not intend to renew it.

THE CONSIDERATION OF THE COMPLAINTS COMMITTEE

17. The committee considered the complaint on September 11, 2019, and November 20, 2019. The committee considered the response received and carefully considered the issues raised in this matter. The committee considered whether a referral to the Discipline Committee was warranted in all the circumstances and whether it was in the interest of the public and the profession to proceed with the matter.
18. The committee considered that the member had retired and indicated that he did not intend to continue to practise. The member had no prior disciplinary history. The conduct underlying the complaint was the subject of a discipline hearing in the Province of Saskatchewan before APEGS. The committee noted that the member had co-operated throughout that process, acknowledged responsibility and pleaded guilty. A penalty was imposed

after a joint submission, and the member indicated that he was retired and did not intend to resume practice. As part of the penalty, the panel's decision was published in Saskatchewan without reference to names.

19. The committee decided that if the issues raised by the complaint were addressed through a voluntary undertaking, as well as the publication of a summary of this matter, that the public interest issues raised by the complaint would be addressed.
20. The committee decided that the member should be given the opportunity to provide a voluntary undertaking that would include that:
 - a. The member would voluntarily tender the resignation of both himself and his firm;
 - b. The member would voluntarily surrender to PEO his licence certificate, seal and the certificate of authorization for his firm;
 - c. The member would voluntarily commit to never apply for licensure in Ontario again; and
 - d. The member would voluntarily agree that a summary of this matter and the voluntary undertaking would be published in the Gazette without reference to names.

VOLUNTARY UNDERTAKING

The member voluntarily agreed to undertake all the actions listed above and subsequently provided all requested documentation and completed all required actions as outlined above.

The voluntary undertakings described above were accepted by the committee as a dispositive measure, and pursuant to its powers under section 24(2)(c) of the *Professional Engineers Act*, the committee decided that this matter would not be referred to the Discipline Committee.



NOTICE OF 2021 ANNUAL GENERAL MEETING

PEO 2021 VIRTUAL AGM

Date: May 15, 2021

Time: 10 a.m. EST

Location:

Webcast information will be posted at: www.peo.on.ca/about-peo/annual-general-meetings/2021-annual-general-meeting

In accordance with section 20 of By-Law No. 1, which relates to the administrative affairs of PEO, the 2021 Annual General Meeting (AGM) of the Association of Professional Engineers of Ontario will be held on Saturday, May 15, 2021, at 10 a.m.

As noted in section 17 of By-Law No. 1, the AGM of PEO is held for the following purposes:

- To lay before members the reports of the Council and committees of the association;
- To inform members of matters relating to the affairs of the association; and
- To ascertain the views of the members present at the meeting on matters relating to the affairs of the association.

IMPORTANT: PEO will not hold an in-person meeting. Instead, PEO's AGM will be using a virtual meeting format, in compliance with the order of the provincial government prohibiting organized public events and social gatherings amid concerns surrounding the COVID-19 pandemic. This means proceedings will be conducted solely via live webcast. The meeting will be in listen mode only. Members will have the opportunity to submit questions online during the meeting and to provide submissions in advance, as discussed below.

Members interested in participating in the meeting, including voting on business properly brought before the meeting, will need access to an internet-connected device for the full duration of the meeting.

VOTING

Prior to the meeting, eligible members will be sent unique and secure log-in credentials by email from FMAV, our

official AGM agent. The email will include a link, username and password. If you have not provided an email address to PEO, please ensure you do so by April 22, 2021, through our online portal at: secure.peo.on.ca/ebusiness.

SUBMISSIONS

Members of PEO can make submissions on matters of importance to the work of PEO. Submissions must be emailed to agmsubmissions@peo.on.ca at least 10 days before the date of the meeting (May 4) using the template available on PEO's website at: www.peo.on.ca/sites/default/files/2021-02/2021AGM-SubmissionGuidelines-fillable.pdf. Submissions received after this time will not be considered at the AGM. Once received, submissions will be posted on the PEO website.

Since the AGM will be conducted in listen mode only, members making submissions are being given the opportunity to pre-record a brief introduction to their submission. The recording will be played during the meeting. Those interested in scheduling such a recording should indicate their interest when emailing their submission. Members will be contacted to schedule the recording.

PEO President Marisa Sterling, P.Eng., FEC, will preside and present her report to the AGM. President-elect Christian Bellini, P.Eng., FEC, and CEO/Registrar Johnny Zuccon, P.Eng., FEC, will also provide remarks. The president-elect, officers and councillors for the 2021–2022 term will officially take office at the conclusion of the meeting.



**DEFINING DIVERSITY:
5 ONTARIO
ENGINEERS TELL
THEIR STORY**



Ontario's over 92,000 licensed engineers and holders of a certificate of authorization are not a monolithic entity. Rather, they are a group of professionals who are as diverse as the province they serve, and some make a point of representing lines of diversity that cross barriers of sexuality, gender, ethnicity, race, physical abilities and country of origin. Here, we're profiling five members of Ontario's professional engineering community who make themselves visible so that others like them realize they, too, can aspire to be engineers.

KAELLA-MARIE EARLE, EIT
ENGINEER IN TRAINING AND
CONSTRUCTION PROJECT MANAGER,
ENGINEERING CONSTRUCTION,
SYSTEM IMPROVEMENT,
ENBRIDGE GAS



AT THE END OF HER interview for her co-op position at Enbridge Gas, Earle was asked where she saw herself in five years. "I didn't think about the question," Earle admits. "I said, 'I'd really like to try to drive the company in the direction where we're championing low-carbon energy and renewable projects like biofuels and carbon captures.' I launched into this speech about energy transition and innovation." Luckily, Earle fit right into Enbridge Gas' culture of renewable energy and was subsequently hired on full time, responsible for leading integrity projects and large natural gas transmission lines and storage. Paradoxically, though, as a student, Earle was an anti-pipeline and environmental activist, leading anti-pipeline demonstrations in northern Ontario and even travelling to Seattle, WA, to meet former US vice president Al Gore, founder and chairman of the Climate Reality Project. But since joining Enbridge, Earle has expanded her world view. "I noticed that everyone I worked with cared for their families, their communities and held themselves and their work to a very high standard," she says. "They completely changed my world and challenged what I previously thought about oil and gas. This was the pivotal moment in my career when I decided there is a way to bridge that gap between Indigenous communities and the energy industry."

Indeed, Earle aspires to be an ambassador for Indigenous Peoples looking to enter STEM. Earle's role model was her father, who was an electrician before an injury ended that career, prompting him to earn his electrical engineering degree. "Some of my earliest memories are being at the university with him while he was working on a project," Earle

observes. "He designed a lighting system for a small town. And he and his teammate designed a robotic arm that could pick up blocks." After her father became a professional engineer, he would bring back photographs of nuts and bolts from his business trips. The photos, in combination with father-daughter trips to science museums and a bring-your-kid-to-work day at her father's employer, Bruce Power, cemented Earle's decision to become an engineer.

Earle decided to pursue a chemical engineering degree at Laurentian University, where she admits she initially struggled. "Indigenous students need very different types of support in educational [settings]," Earle explains. "I'm the first in my family not to go to a residential or day school, which was a system of genocide that was imposed upon Indigenous Peoples by the Canadian government. When Indigenous Peoples are going through school now, schools need to provide extra support to climb over that legacy." Earle initially left Laurentian to earn an advanced diploma in chemical engineering technology at Cambrian College, where, she says, the college offered support for Indigenous students. She then returned to Laurentian to finish her degree, stating that the second time around was much more positive. "It had an Indigenous student centre, where they had elders and culturally relevant teachings and supports," Earle says. "They had a councillor who was an Indigenous person specifically for Indigenous students who understood the unique trauma that Indigenous people have faced. Because of the supports, I was able to succeed."

Earle aims to successfully register with PEO as a P.Eng. "I'm planning on writing the [National Professional Practice Exam] this year," Earle says. "To me, the P.Eng. is really important because it's a public accountability for everything I do as a professional...It's my way of setting an example for other Indigenous people who are interested in engineering. If young Indigenous people are thinking of what they want to do, they'll feel more confident in a profession where more people like them are practising. They'll think, 'She came from my community. She's Ojibwe too. I can do it.'"

Indeed, Earle became more visible in August 2020, when she was appointed as an inaugural member and vice chair of the Indigenous Advisory Committee (IAC), which advises the Canada Energy Regulator (CER) on the involvement of Indigenous Peoples with CER-regulated infrastructure projects, including pipelines, power lines, offshore renewable energy projects and abandoned pipelines. "The focus is on helping the CER build stronger relationships with Indigenous communities in the energy process and advance reconciliation," says Earle, noting that the experience so far has been incredible and humbling. Earle remembers an impactful meeting with Minister of Natural Resources Seamus O'Regan, formerly the minister of Indigenous services, who reiterated the IAC's important role. "It's one of the most pressing national issues of our time," Earle notes. "It's historical. We're setting an example for the rest of the nation. There are going to be opportunities for other regulatory bodies to follow our lead, including, maybe, PEO."

JULIA BROWN, P.ENG.
TEAM LEAD, GEOTECHNICAL, WSP



"I GRAVITATED TOWARDS engineering when I was young," Brown admits, "tinkering and math and science. It's how my mind works, and it's what I like doing." Brown is now a team lead, geotechnical at WSP, a Canadian-based engineering firm with a footing in many engineering sectors and with offices across the globe. Brown's engineering career has focused on geotechnical engineering for the 14 years since she earned her degree in civil engineering from Western University. Throughout the early part of her career, Brown spent a lot of time in the field, mostly at bore drilling sites. However, because she is now team lead at WSP, Brown's more often at a desk, although she supervises a team of engineers who are out in the field. "I like supervising," Brown admits. "It's a challenge I've grown into."

Challenges are something that Brown doesn't shy away from. A private person by nature, Brown chooses to make herself more visible in hopes of helping others who also identify as transgender. "If I had earlier in my career known somebody who had transitioned, it might have allowed me to do it earlier," Brown concedes. "That's why I'm visible; that's why I do it. The visibility brings me happiness because I enjoy helping people. Until we get to a point in society where we don't have to be [visible], I think it is the way we have to go."

Brown admits that the decision two years ago to transition—mid-career—was a scary and daunting experience, particularly because her children were young and Brown's spouse was a stay-at-home parent. But Brown admits that her employer, WSP, was quite supportive of her journey. "[Human resources] reached out and found a consultant

who gave presentations to my colleagues," Brown explains. "It was a 'Trans 101'—the do's and don'ts. They supported me at the workplace, as well." (Indeed, WSP has even published a mini profile on its website of Brown in support of LGBTQ2+ diversity.) Since Brown transitioned while working at WSP, other employees transitioned, although Brown concedes that it was likely independent of her trailblazing. (They work in separate offices.) Nevertheless, Brown notes that they have been able to support each other throughout their transitions. "We talk and provide support to each other," Brown says. "Any support that you have is great." And, luckily, Brown is also blessed to have a supportive network of friends and family outside of work.

Brown says that since she transitioned, she has noticed subtle differences in how she is treated. The differences she attributes to unconscious bias: "It's harder for a woman to grow her career, and it's even harder for a trans person. It's harder to be included in the social aspects of work. That's where careers can grow. It goes back to the old boys' club...there are still those conversations; those social aspects that are harder to be incorporated into." However, Brown concedes that most of her colleagues at work have been supportive. The hardest part, she admits, is constantly having to come out to those who knew her prior to her transition. "You get tired of coming out and reintroducing yourself," Brown says. "It's really hard to say, 'I worked with you before. I presented as a different gender then.' It's really hard, and it hurts to do that."

But Brown reminds herself that her increased visibility is good for the engineering profession: "If we continue to be a cisgender white male industry, we aren't going to innovate. We can do much better than we are. We have to attract diversity." Brown's advice for the next generation of engineers? "Be proud of yourself. It takes a lot to be visible. Be aware that there are a lot of visible people in your industry. As scary as it is, there are a lot of very good, supportive people."

A private person by nature, Brown chooses to make herself more visible in hopes of helping others who also identify as transgender. "If I had earlier in my career known somebody who had transitioned, it might have allowed me to do it earlier," Brown concedes.

ALEXANDER DOW, EIT
JUNIOR PROJECT MANAGER,
DAVID SCHAEFFER ENGINEERING



"I'VE ALWAYS BEEN hyperactive, and some people tell me I don't make time for myself," Dow admits. Restless and determined may be a more appropriate description of Dow's ability to balance school, then work, with his volunteerism and commitment to help the LGBTQ2+ community. At McGill University, where he graduated with a major in civil engineering and a minor in construction engineering and management, Dow was an engineering student senator for the Students' Society of McGill University, for which he was awarded the 2017 Volunteer of the Year Award, while also giving his time to the Engineering Undergraduate Society's Queer Engineering Club. It was through his volunteer work with the latter organization that he met Vanessa Raponi, EIT, who was then completing her engineering degree at McMaster University. Together they founded EngiQueers Canada, a Canada-wide engineering society supporting diversity in engineering, particularly for LGBTQ2+-identified engineering students (see "She's a diversity warrior, engineering champion and voice for change," *Engineering Dimensions*, January/February 2019, p. 25). "We decided to incorporate," Dow says. "Vanessa should be the face of the organization while I focused my efforts on making the business model sustainable. Having worked with McGill's student unions, I knew accounting and business expertise to get the corporation off the ground. When you're starting from scratch, you need to have people you can trust."

Since graduating, though, Dow has focused on his career in land development. "I'm part of a team designing and constructing Canada's largest privately funded infrastructure projects," Dow says proudly. Notably, Dow's responsibilities have increased since his manager went on parental leave. "I work closely with our designers," Dow says, "to understand

why our engineering strategy is the best and then explain to approval agencies across the Greater Toronto and Hamilton Area how the design meets their requirements and best suits their needs." Dow predicts that once he's fully licensed as a professional engineer, he will be sealing documents on a frequent basis.

Dow maintains that his sexual orientation as a gay man has not factored into his ability to develop a professional engineering career. In part, Dow attributes this to his outwardly appearance: "I am a cisgender white man. That background carries a different set of life experiences than a person of colour or someone who is transgendered. I blend in with what's expected in engineering—your typical white bro. It's part of what makes it easy for me to walk into a room, present my ideas and get heard." Dow adds: "There was no coming out to my employer. I'm here to work. If you have any personal questions, we can chat after work. The water cooler isn't a place for that discussion."

Dow admits that he is also at an advantage due to his outgoing, social personality, which he admits to toning down a bit while at work. Yet his expressive personality is an asset. Since high school, Dow has volunteered his time doing project management roles and planning events. "I have coordinated 100- to 1000+-person events since Grade 10," he points out. More recently, Dow took his skills to Pride Toronto, where he helped coordinate and support the event's volunteers. Dow hopes that as 2021 progresses and the pandemic hopefully subsides, he'll be able to volunteer more of his time to causes that mean much to the community. "The people who have been impacted the most by the pandemic are the ones we don't see," Dow observes. "Looking at homelessness, there is a significant portion on the street who are queer youth...There are so many ways to help within the queer community, and for me, volunteering my time is one of the most valuable things I can spare." Dow aspires to be a role model, much like his uncle William Robinson, a former PEO member who died just last year, was to him. "I'm positive new graduates starting their engineering careers will continue to encourage anyone who is curious about what we do," Dow says. "All it takes is supporting one's interests, like my uncle did for me."

Dow maintains that his sexual orientation as a gay man has not factored into his ability to develop a professional engineering career. In part, Dow attributes this to his outwardly appearance: "I am a cisgender white man. That background carries a different set of life experiences than a person of colour or someone who is transgendered."

RÉJEANNE AIMEY, P.ENG.
PRESIDENT AND CHAIR, ONTARIO
SOCIETY OF PROFESSIONAL ENGINEERS



"I AM CANADIAN BORN, but I was raised under the British education system in the Caribbean," says Aimey, the 2020–2021 president and chair of provincial engineering advocacy body the Ontario Society of Professional Engineers (OSPE). "I didn't come into the Canadian [educational] system until I started university. Prior to that, I went to schools where everybody looked like me and where my friends went to engineering schools throughout the United States and Europe. When I landed at Western [University], I was the only Black female enrolled in engineering. I didn't understand why. I was shocked."

Aimey credits her solid educational background in Trinidad and Tobago to giving her an edge when she pursued her mechanical engineering degree in Canada: "I was the one helping people with assignments. From that perspective, I had the advantage." Yet Aimey regrets not getting involved in more extracurricular activities at Western Engineering. "Looking back, I get it," Aimey admits. "I didn't get how important it was for me...how they bond people together. If I had been more involved in things back then, I think my network would be much larger." Aimey's main network of friends at Western were students from outside the engineering faculty, principally because they shared similar cultural backgrounds that made Aimey feel comfortable.

Aimey was employed in various engineering capacities in the automotive and nuclear industries for over 15 years, including at General Motors, Fiat Chrysler and Atomic Energy of Canada, before transferring to a technical consulting role in the accounting industry. Working at an office tower, Aimey was initially surprised that even outside the engineering profession, she was often the only Black woman: "I had been told that we just don't go into engineering, that we're not

in STEM. But I came to realize over the years that non-STEM fields also significantly lack representation. Every time I went in this building, I saw only myself in the elevator, in the hallways and in any extracurricular teams I was on. I began to realize something was terribly wrong and that this wasn't just an engineering problem."

Aimey's change of career paths happened just as she was beginning to volunteer her time on various OSPE committees. Aside from her current president and chair role, she has been on the Research and Innovation and OSPE-PEO Joint Relations committees, as well as chairing its Equity, Diversity and Inclusion Committee. During Aimey's term as president and chair, the organization began its #EngineeringForChange campaign, complete with its four-point action plan to increase diversity in Ontario's engineering community. Notably, it includes a plan to convene a summit this year to develop an industry-wide action plan. "Unless the economics allow for a mass hiring of under-represented groups, some hard decisions are going to have to be made in order to determine how you are going to achieve a diverse and inclusive mix," Aimey predicts. "It's not just a matter of hiring 100 people into a company. Diversity must exist throughout the organizational structure so that all people feel supported."

Aimey credits her solid educational background in Trinidad and Tobago to giving her an edge when she pursued her mechanical engineering degree in Canada.

Although Aimey is frustrated that the engineering profession appears to be slow at embracing diversity, particularly of women, people of colour and internationally trained engineering graduates, she understands why some people may hesitate at embracing action plans like the Engineers Canada–led 30 by 30 initiative, which aims to increase the representation of newly licensed women engineers across the country. "The average engineering graduate has toiled throughout their careers," Aimey notes. "They've developed their skills. They live their lives, and they haven't done anything wrong. The question becomes, 'What is all this sudden talk about diversity, and why is it important for engineering?' Then I think they may believe they are being accused, that they may have done something wrong when, in fact, most haven't." Aimey notes that there is an unconscious bias that pushes some people, notably women, out of the engineering profession: "We all want to live our lives pursuing what we are passionate about. Discrimination can come in the form of a person at their first co-op or their first job after school, and they're told something that would be considered inappropriate by a third party...The thought of these interactions on a daily basis is enough to walk away, despite the years spent pursuing an engineering education and working towards a professional engineer's [licence]."

RENAN ORQUIZA, P.ENG., PMP, QPESA
SENIOR ENVIRONMENTAL SPECIALIST,
ENVIRONMENTAL REMEDIATION, PUBLIC
SERVICES AND PROCUREMENT CANADA



IF ANY WORD CAN summarize how Orquiza entered the engineering profession in Canada, it's "quick." Orquiza was born and raised in the Philippines, where he also obtained his undergraduate degree in civil engineering. He came to Canada via Singapore in 2013 and within a year was fully licensed to practise engineering in Ontario. "I had my goals set and worked hard to make sure I was able to obtain the licence," Orquiza admits. "Thankfully, I was able to get into [a] company and work under a P.Eng. and fulfill the one year of supervised Canadian experience requirement." Additionally, Orquiza's five years of overseas experience counted towards his work experience.

Orquiza admits that he was able to become quickly employed and licensed as a professional engineer in Canada in part because of his niche engineering expertise. "After I graduated, I got into the environmental sector [in the Philippines] within the contaminated sites (soil and water) industry," he explains. "My civil engineering background helped me to easily adapt to the principles related to hydrogeology, as well as construction methods and management that are necessary to fulfill my job." Appropriately, Orquiza now works for Public Services and Procurement Canada. "We look after the assessment and remediation of contaminated sites in Ontario for the federal government," Orquiza says. "We apply several technologies in cleaning up contaminated lands and abatement of structures, and it includes some engineering aspects that we, as project managers, have to evaluate and review. We're basically the subject-matter experts to

reduce environmental and health risks from contaminated sites and associated federal financial liabilities."

Orquiza notes that it was far from certain when he first came to Canada that he would find employment as an engineer. "I knew I was going to be immigrating and building my family, but I didn't really start looking for opportunities until I got here," he admits. "[When I landed in Canada], I started to prepare myself and do the research and realized that I had to register with PEO in order to practise my profession." Orquiza panicked, since he was unable to get job interviews. "That's when it hit me," Orquiza says. "I had to do something different in terms of job searching. I did my research and determined that I had to improve my soft skills, do a lot of networking, customize my resume and further understand the Canadian workplace culture. I did that, and I applied for the engineering skills enhancement program at Humber College. At the same time, I also got a paid internship at a geo-environmental firm company, where I was later permanently hired, through Career Edge (a social services employment agency). They served as my networks to connect with local firms and be more competitive in the job market. That's where it all started." It was through that experience Orquiza was able to obtain his one year of experience supervised by a Canadian-licensed engineer.

Because of his success, Orquiza wanted to give back: "I started doing a lot of volunteering to assist organizations and mentor other internationally trained engineers. By doing so, it also helped me expand my network to easily integrate into the local Canadian culture, as well as understand and smoothly navigate the industries I wanted to be in." In 2019, Orquiza served as the president of the Association of Filipino Canadian Engineers, which helps Filipino engineers who immigrated or who are planning to immigrate to Canada find engineering work and obtain their P.Eng. Additionally, Orquiza volunteered for over six years at PEO's Mississauga Chapter, including a stint as its vice chair, stepping down in 2020 to find much-needed time to raise his young family.

Orquiza still teaches at the same engineering skills enhancement program at Humber College that he attended, teaching a career planning and business communication course to internationally trained engineering and architectural professionals. "Our students are provided with the knowledge, skills and attitudes to market themselves to an employer," Orquiza says, "and to effectively gain rewarding employment through resume writing support, interview practising, technical presentation practice and developed networking skills." Importantly, Orquiza encourages Canadian employers to consider hiring internationally trained professionals: "They are highly skilled and motivated. If you give them the opportunity, they'll be grateful and will be very eager to succeed. And they'll often work twice as hard and do their best to help your company prosper." **e**

Attend Virtually

The following events can be attended via videoconferencing (see individual websites for details).

March 2021

MARCH 28–29

International Conference on Recent Innovations in Engineering and Technology
theiier.org/Conference2021/Canada/1/ICRIET/



APRIL 27–29

Mari-Tech Virtual Conference and Exhibition: Vision, innovation and trending in the marine sector
mari-techconference.ca

May 2021

MAY 15

PEO 2021 Annual General Meeting
peo.on.ca



April 2021



APRIL 22

Ontario Professional Engineers Awards Gala (to honour 2020 recipients)
opeawards.ca

APRIL 28–29

International Conference on Chemical and Biochemical Engineering
researchworld.org/Conference2021/Canada/1/ICCBCE/



MAY 25–28

Engineering Mechanics Institute Conference and Probabilistic Mechanics & Reliability Conference
emi-conference.org



Read



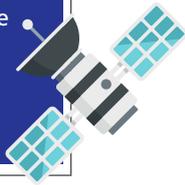
Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor, by Virginia Eubanks, 2018: A powerful investigative look at data-based discrimination, as well as how technology affects civil and human rights and economic equity

Data Feminism, by Catherine D'Ignazio and Lauren F. Klein, 2020: A new way of thinking about data science and data ethics informed by the ideas of intersectional feminism

Design Justice: Community-Led Practices to Build the Worlds We Need, by Sasha Costanza-Chock, 2020: An exploration of how design might be led by marginalized communities, dismantle structural inequality and advance collective liberation and ecological survival

APRIL 22–23

International Conference on Aerospace Communications and Electronics
waset.org/aerospace-communications-and-electronics-conference-in-april-2021-in-new-york



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Aerospace Engineering Podcast

Exploring new technologies that have ushered in a new era in aerospace engineering
aerospaceengineeringblog.com/aerospace-engineering-podcast

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anchor.fm/hnasr

Smart Buildings Academy Podcast

Weekly building automation lessons to help advance smart building careers
podcast.smartbuildingsacademy.com

The Structural Engineering Channel

A podcast that keeps structural engineering professionals up to date on technical trends in the field
engineeringmanagementinstitute.org/tsec-podcast

Watch



How Does Permeable Pavement Work?

Some pavement can let water in and keep everything else out.
youtube.com/watch?v=ERPbNWI_uLw

Tesla Model 3's Motor: The Brilliant Engineering Behind It

Tesla shocked everyone when it abandoned the versatile induction motor in its Model 3 cars.
youtube.com/watch?v=esUb7Zy5Oio

MPP ENCOURAGES PEO TO CONTINUE PROMOTING DIVERSITY

By Howard Brown

Diversity is one of the defining strengths of Canada, and reflecting that in our government and professions is key to ensure a range of experiences, perspectives and skills. In 2018, Ontario made history with the highest number of women in its provincial legislature, with 49 women representatives (39.5 per cent). Additionally, there are now more than 20 members of provincial parliament (MPPs) who are visible minorities. We spoke with Laura Mae Lindo, PhD, MPP (Kitchener Centre), to get her thoughts on the importance of diversity in politics and the professions. As chair of the first-ever New Democrat Black caucus and opposition critic for anti-racism, and the former director of diversity and equity at Wilfred Laurier University, Lindo says having engineers with diverse backgrounds represent the profession has its benefits.

Engineering Dimensions (ED): Why do you think it is important for the legislature and professions like engineering to be diverse?

Lindo: We are a group that has been elected to support the needs of communities—and we know how diverse our communities are across the province. It stands to reason that we want the people to be reflected among those who are in positions of power. If I take that as the backdrop and think about a profession like engineering, look at all the work engineers have done to tackle issues of community safety. Well, if you're going to tackle these issues, you'd want to engage with people from roots that feel safe in the traditional ways that communities are set up.

ED: One of the issues MPPs have raised with self-regulated professions is ensuring there's no discrimination in licensing, and an Ontario fairness commissioner was created in 2007 to address this. Do you think it's the type of issue we should continue to monitor?

Lindo: I totally do. We've got engineers from countries all over the world who come to Ontario and then they're not able to use their skillset in their chosen profession. It's a great thing to know we can introduce into our space people who have different ideas [about] what engineering can bring to a community. That's the joy of getting diverse people into the profession and into the conversation about what engineering can look like here.

ED: PEO is part of a 30 by 30 initiative, which aims to have 30 per cent of newly licensed engineers in Canada be women by 2030. Do you think this is a good initiative and why?

Lindo: All types of initiatives like that—that work diligently to try and bring women into spaces that traditionally women are not found—I hugely admire. There are pitfalls to a lot of initiatives; we look at women separate from ethnicity or race,



PEO Grand River Chapter GLP Chair Gabe Tse, P.Eng., FEC (left), with Laura Mae Lindo, PhD, MPP (Kitchener Centre), NDP critic for anti-racism, at a community event last year.

from folks with disabilities [and] from Indigenous realities in the province. One of the cautions I always have for people when they're doing these kinds of initiatives is to pay attention to the intersections.

ED: PEO has a Government Liaison Program (GLP) with local chapters. The chapter point of contact for an MPP is a role that is often held by diverse representatives. Do you think this allows for a stronger relationship when MPPs have constituents liaising with them who best reflect the demographics of their riding?

Lindo: Absolutely. Every time a profession actively ensures the leadership is diverse, they remind other professions about the importance of diversity. You've got a profession that says, "Look at all our diverse representatives. We are trusting them to encourage more people to participate in engineering; we are trusting them with liaising with government." I think it's hugely important and often has a bigger benefit than one might think.

ED: What do you think PEO GLP members should know about the importance of having a diverse legislature when it comes to implementing legislation and protecting the public interest?

Lindo: I think it's one thing to know what you want to liaise for because you understand your profession, but it's also important to understand the context that you're trying to do your changemaking in. Within that context, there is a lot of diversity. While the PEO GLP looks to continue to build strong relationships with MPPs, it's important those liaising with them best represent the demographic makeup of Ontario. This will ensure effective communication, continued respect from members of the legislature and the assurance that all voices are accounted for. [e](#)

Howard Brown is PEO's government relations consultant and the president of Brown & Cohen Communications & Public Affairs Inc.

THE PRACTITIONER'S DUTY TO EXPLAIN CONSEQUENCES

By Jennifer Whang, P.Eng., PMP



Similar to doctors with patients, professional engineers have a duty to explain risks and potential consequences to their employer or clients, especially when their professional advice is not being heeded.

When we go to our local clinic for an annual flu shot, the doctor explains the risks and asks us questions, such as if we are allergic to eggs, because the flu shot is traditionally manufactured using egg-based technology. Physicians have a duty to explain to their patients any potential side effects associated with a drug or treatment, as well as the potential consequences of not taking a prescribed drug or treatment. Similarly, professional engineers have a duty to explain risks and potential consequences to their employer or clients. Refer to section 72(2)(f) of O.Reg. 941 under the *Professional Engineers Act*:

- (2) For the purposes of the act and this regulation, "professional misconduct" means,...
- (f) failure of a practitioner to present clearly to the practitioner's employer the consequences to be expected from a deviation proposed in work, if the professional engineering judgment of the practitioner is overruled by non-technical authority in cases where the practitioner is responsible for the technical adequacy of professional engineering work...

Professional engineers may face a challenging situation when their professional engineering judgment on projects affecting public safety is overruled by a non-technical authority, such as their client.

Consider this example: Emma is a professional engineer who works for XYZ engineering. She is currently working on a swimming pool enclosure design for their client, ABC Hotels. Emma prepares a design that optimizes cost and quality and promotes safety. Because of the corrosive environment of the swimming pool, Emma has prepared a material list with galvanized steel structural elements, instead of plain steel elements, in order to minimize the risk of potential corrosion leading to structural failure. In addition, using galvanized

steel materials complies with the local municipal bylaws on swimming pool enclosures. However, client ABC insists on using plain steel elements to save costs. Consequently, Emma must explain to the client the consequences of using plain steel elements, since people who will use the swimming pool in the future could be exposed to a potential collapse of the enclosure. Furthermore, Emma must explain to ABC that not following municipal bylaws could potentially place ABC in a problematic situation with the municipality.

Emma decides to take a diplomatic approach, like a physician, by simply explaining potential consequences to ABC with no judgment. She does not threaten to quit or to speak with the municipality. However, Emma is aware that, in an extreme case, she may have no other choice but to speak with the municipality. Fortunately, in this situation, thanks to Emma's clear explanation, ABC changes their mind and decides to use galvanized steel elements for the swimming pool enclosure. Had ABC refused to use galvanized steel elements, Emma would have had to discuss this situation with her employer's management team at XYZ, and they would have likely needed to contact their legal counsel and professional liability insurance provider for advice on how to manage this potentially unsafe situation.

Because the duty to explain consequences falls under professional misconduct, engineers who do not follow this duty might face allegations of professional misconduct. To avoid any potential allegations, it is wise for engineers to put their advice in writing and follow up with clients and employers to ensure their advice has been received and is being considered. Final decisions in these matters are often made by the client or employer, not the engineers. Consequently, engineers do not have an obligation to change the minds of their clients and employers; rather, they have only a duty to explain the consequences when their advice is overruled by a non-technical authority.

PRACTICE GUIDELINE REVISION

Recently, PEO's Professional Standards Committee revised the *Professional Engineering Practice* guideline to fix some incorrect terminology. For example, the use of the term "whistleblowing" was removed from the guideline because there is no whistleblowing duty. As explained above and in the revised guideline, professional engineers have a duty to clearly explain the consequences to their employer when their professional judgment is overruled by a non-technical authority. Furthermore, the guideline also explains engineers' duty to report involving safety and the common law duty to warn in some extreme unsafe circumstances—but these are completely different concepts from whistleblowing. For more information on the duty to report and the duty to warn, the updated *Professional Engineering Practice* guideline can be found at peo.on.ca/sites/default/files/2020-12/PEPGuideline_Nov2020.pdf.

PEO's practice advisory team is available by email at practice-standards@peo.on.ca and is glad to hear from practitioners looking for more information on PEO's practice guidelines. [e](#)

Jennifer Whang, P.Eng., PMP, is PEO's standards and guidelines development coordinator.

ONTARIO ENGINEERS WIN AWARDS FROM HOME AND ABROAD

By Marika Bigongiari



University of Toronto engineering professor Elizabeth Edwards, PhD, P.Eng., has been named an Officer of the Order of Canada. Edwards is also the Canada research chair in anaerobic biotechnology. Photo: Sara Collaton/University of Toronto Engineering

Ning Yan, PhD, P.Eng., a distinguished professor in forest biomaterials engineering and principal investigator, Yan Lab, at the University of Toronto has been named a fellow of the Engineering Institute of Canada. Photo: Tyler Irving/University of Toronto Engineering

University of Toronto (U of T) engineering professor **Elizabeth Edwards, PhD, P.Eng.**, has been named an Officer of the Order of Canada—one of the country's most prestigious honours—as part of the second cohort of new appointees for 2020. Edwards is the Canada research chair in anaerobic biotechnology, princi-

pal investigator of the Biodegraders Research Group, director of the BioZone Centre for Applied Bioscience and Bioengineering and is cross-appointed with the department of cell and systems biology. Edwards, a pioneer in advancing the understanding of anaerobic microbial transformation processes and translating that knowledge into technologies for groundwater bioremediation, is developing new microbial processes for wastewater treatment, such as anaerobic digestion to recover methane for energy. Her contributions have been recognized with multiple research awards, including the Killam Prize in engineering. "Professor Edwards' cutting-edge research, as well as her leadership in creating unique cross-disciplinary research and training initiatives, have made U of T a leading hub for the development of novel biotechnologies to address urgent environmental challenges," said U of T Engineering Dean Chris Yip, PhD, P.Eng. "On behalf of the faculty, my warmest congratulations to her on receiving the Order of Canada, one of the country's highest civilian honours."

Lakehead University electrical engineering professor **Mohammad Nasir Uddin, PhD, P.Eng.**, has been named a fellow of the Institute of Electrical and Electronics Engineers (IEEE) for his outstanding contributions to control techniques for alternating current motor drives and is the first IEEE fellow to represent Lakehead University. Uddin serves as coordinator of the electrical engineering program with the Lakehead-Georgian partnership and is the director of the Renewable Energy, Power Systems and Drive Research Lab in Barrie, ON. His research is focused on motor drives, renewable (solar and wind) energy, power electronics and hybrid electric vehicles. **Alireza Bakhshai, PhD, P.Eng.**, a professor in the department of electrical and computer engineering at Queen's University, has also been named an IEEE fellow. Bakhshai, who conducts research at the Centre for Energy and Power Electronics Research, was elected for his groundbreaking work in the development of synchronization techniques for power electronics converters. The IEEE is the world's leading professional association for advancing technology for humanity and is a leading authority on a wide variety of areas ranging from aerospace systems, computers and telecommunications to biomedical engineering, electric power and consumer electronics. Fellowship is the IEEE's highest grade of membership and is recognized by the technical community as a prestigious honor and an important career achievement.

The Engineering Institute of Canada (EIC) has named 24 new fellows for their exceptional contributions to engineering in Canada. The 2021 fellowship recipients will be inducted at an awards gala, which, due to current COVID-19 restrictions, is set to take place in spring 2022 and include **Marco Amabili, PhD, P.Eng.**, mechanical engineering professor and Canada research chair in vibrations and fluid-structure interaction at McGill University; **Rick Lovat, P.Eng.**, president, Lovat Inc.; **Natalia Nikolova, PhD, P.Eng.**, professor in the department of electrical and computer engineering and Canada research chair in high-frequency electromagnetics, McMaster University; **Andrew Small, P.Eng.**, senior geotechnical consultant at Klohn Crippen Berger; **Ning Yan, PhD, P.Eng.**, distinguished professor in forest biomaterials engineering and principal investigator, Yan Lab, at U of T; **Brian Amsden, PhD, P.Eng.**, professor, Donald and Joan McGeachy chair in biomedical engineering and department head at Queen's University; **Moncef Nehdi, PhD, P.Eng.**, civil and environmental engineering professor at Western University; **Gamal Refai-Ahmed, PhD, P.Eng.**, fellow and chief thermo-mechanical architect at Xilinx and visiting professor (honorary appointment) Binghamton University; **Jinjun Shan, PhD, P.Eng.**, professor and departmental chair of space engineering at York University; **Xiao-Ping Zhang, PhD, P.Eng.**, professor of electrical and computer and biomedical engineering and director of the Communication and Signal Processing Applications Laboratory at Ryerson University; and **Saeed Zolfaghari, PhD, P.Eng.**, professor and vice provost of faculty affairs at Ryerson University. The EIC's mission is to develop and promote continuing education, initiate and facilitate interdisciplinary activities and services, lead member societies in defining and building the future of engineering and advocate the values and benefits of engineering. [e](#)

PEO TO MOVE FORWARD WITH MANDATORY CPD PROGRAM

By Nicole Axworthy

538TH MEETING, FEBRUARY 26, 2021

At its February meeting, Council passed a motion to rescind a previous Council motion that was passed at its September 2015 meeting regarding mandatory continuing professional development (CPD). The 2015 motion affirmed Council's intent to ask the PEO membership to ratify in a referendum any plan to implement a CPD program. However, since then, it has been recommended in several reviews and reports that professional engineers, like other regulated professions, should be subjected to a mandatory CPD requirement as a condition for continued licensure in the public interest. The recommendation was noted in an external regulatory performance review that PEO underwent in 2019, and creating and implementing a mandatory CPD program was included in the subsequent action plan approved by Council to address the review's recommendations. It was also part of the recommendations of a coroner's inquest into the death of Radiohead drum technician Scott Johnson, who died because of an engineering failure of a concert stage at Toronto's Downsview Park in 2012. And it was further suggested in the report of the commission of inquiry into the Elliot Lake mall collapse in 2012.

The briefing note for the February decision pointed out that member referendums are an inappropriate delegation of power. It noted that the British Columbia government, referring to two referenda held by that province's engineering regulator, Engineers and Geoscientists BC, that had voted against mandatory CPD, said that the transfer of decision-making from Council to those being regulated by the licensing body was inappropriate: "It makes little sense to allow members of some professions to veto some types of council rules regarding matters such as practice standards, codes of ethics, continuing professional development and annual fees." With the recent change to British Columbia's *Professional Governance Act* requiring Engineers and Geoscientists BC to develop and implement a mandatory CPD program, which will come into effect on July 1, CPD is now a requirement for licensed professional engineers in every province and territory in Canada except Ontario.

The approved motion to rescind Council's 2015 decision means that PEO can proceed with the creation and implementation of mandatory CPD without the need for a member referendum as



THE APPROVED MOTION TO RESCIND COUNCIL'S 2015 DECISION MEANS THAT PEO CAN PROCEED WITH THE CREATION AND IMPLEMENTATION OF MANDATORY CPD WITHOUT THE NEED FOR A MEMBER REFERENDUM AS SOON AS ANY REQUIRED LEGISLATIVE AND OPERATIONAL TASKS HAVE BEEN COMPLETED.

soon as any required legislative and operational tasks have been completed. Based on the decision, President Marisa Sterling, P.Eng., FEC, asked that the CEO/registrar provide, for Council approval at a future meeting, the legislative framework needed to move forward with a mandatory CPD program. Amendments to the legislative framework for a mandatory CPD program will include the introduction of sanctions that will enforce compliance and a class of non-practising licence holders in the regulations, as the CPD requirements for practising and non-practising engineers will differ. The new program is expected to have measurable and achievable goals and be proportionate to the need to maintain public trust in the profession.

The decision to implement a mandatory CPD program follows a years-long trial phase of the voluntary Practice Evaluation and Knowledge (PEAK) program, which was approved by Council in 2016, following three years of discussion, including two task forces and extensive research that involved surveys, focus groups and examining the CPD programs of other regulators. PEAK officially rolled out in 2017 and has served as a framework for mandatory CPD, providing PEO with an accurate and up-to-date regulatory profile of both practising and non-practising licence holders. For the last four years, PEAK has been made up of three components: an online practice evaluation questionnaire (Are you practising or not practising)

ing?), a continuing knowledge reporting mechanism (for licence holders only) and an online ethics module (for all licence holders). Just like the development of PEAK, the new mandatory CPD program will be created based on the principles developed by PEO's Continuing Professional Development, Competence and Quality Assurance Task Force.

RULES OF ORDER BYLAW AMENDMENT

Council passed a motion to amend section 25 of By-Law No. 1 that relates to rules of order for the conduct of Council meetings and other meetings of the association. This update replaces the rules of order that are no longer current and substitutes *Nathan and Goldfarb's Company Rules for Share Capital and Non-Share Capital Corporations for Wainberg's Society Meetings*.

As part of Council's ongoing work towards governance reform, Council was advised that *Wainberg's* rules of order were no longer being updated, may no longer be readily available in print and therefore could no longer be considered current. In consultation with PEO's governance consultant, Governance Solutions Inc., *Nathan and Goldfarb's* was identified as the most appropriate substitute. The approved amendments to the bylaw confirm the substitution and make it clear that the same rules apply to all meetings of the association, including for committees, chapters, task forces and working groups. The change to the bylaw took effect as of the date of the February 26 Council meeting and the rules will apply to the next scheduled Council meeting on March 26.



COUNCIL WAS GIVEN AN UPDATE ON THE STAFF INVESTIGATION REGARDING THE ISSUE OF ENGINEERING GRADUATES WHO ARE SELF-EMPLOYED, INNOVATORS OR ENTREPRENEURS AND WHO ARE UNABLE TO OBTAIN EXPERIENCE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER.

UPDATE ON LICENSURE MODEL RESEARCH

At its February meeting, Council was given an update on the staff investigation regarding the issue of engineering graduates who are self-employed, innovators or entrepreneurs and who are unable to obtain experience under the supervision of a professional engineer. At its September 2020 meeting, Council con-

sidered a proposal to update the licensure model to be inclusive and accommodating for PEO applicants so that there are alternative pathways to the experience requirements. To obtain a licence, it is currently required that applicants obtain a minimum of one year of work experience under the supervision of a P.Eng. in Canada. The decision passed at the September meeting directed staff to collect data on the scope of the issue and provide policy options to deal with the issue.

PEO Director of Policy and Professional Affairs Bernie Ennis, P.Eng., spoke to the report, which included analysis of available data on engineering graduates who pursued a career in their field and the extent of entrepreneurial activity by engineering graduates. Several policy options and their pros and cons were also shared. These included a potential monitoring program that matches engineering graduates with a P.Eng. referee who would take responsibility for their work; creating a new exemption for a particular class of applicants who are unable to obtain their experience requirement under the supervision of a P.Eng.; or eliminating the one year of Canadian experience requirement altogether. The report made clear that considerable development work of the policy options needs to be completed before moving forward.

RECOGNIZING PAST COUNCILLORS

President Sterling gave time during the Council meeting to Past President Nancy Hill, P.Eng., FEC, LLB, who recognized retired councillors from the 2019–2020 Council. This recognition is traditionally done at PEO's annual general meeting; however, the COVID-19 pandemic prevented an in-person meeting of the 2020 AGM. At the virtual February Council meeting, Hill recognized past councillors David Brown, P.Eng., FEC, BDS, C.E.T., Guy Boone, P.Eng., FEC, Gary Houghton, P.Eng., FEC, Serge Robert, P.Eng., FEC, Keivan Torabi, PhD, P.Eng., and Gregory Wowchuk, P.Eng. Hill also recognized past lieutenant governor-in-council appointees Nadine Rush, C.E.T., and Marilyn Spink, P.Eng.

Following this, Sterling made a special presentation to Hill on her presidential term in 2019–2020 and recognized her with a package of thanks, which included a certificate of appreciation, outgoing president's award, ceremonial gavel and lapel pin. **e**



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Deadline for May/June 2021 is March 25, 2021. Deadline for July/August 2021 is May 27, 2021.

PEO has covered this ground before

Brian Lechem, P.Eng.,
North York, ON

The November/December 2020 issue of *Engineering Dimensions* contained much substance. In the article entitled “PEO’s big tent: The emerging disciplines conundrum” (p. 30), former president David Brown, P.Eng., FEC, asserted that “PEO has a significant amount of housekeeping to do before it can consider enlarging its tent of responsibility.” Harry Cayton produced an excellent report reviewing PEO and found a whole lot wrong with the organization. To its credit, PEO accepted this report. From the minutes of the recent annual meeting (p. 38), CEO/Registrar Johnny Zuccon, P.Eng., FEC, has the primary task of its implementation.

But, unfortunately, PEO has covered much of the same ground before. Twenty years ago, in 2000, I undertook for PEO a Governance and Secretariat Review, which embraced some, but not nearly all, of Cayton’s recommendations. What happened to this report? I wasn’t the first person to have identified important shortcomings in the governance of PEO. I discovered that an organizational review had also been submitted by Renaud Foster in June 1987 which, again, covered some of the same ground that I was asked to review and of which I was unable to identify any tangible implementation.

So, David Brown is absolutely correct, and Council should reread his remarks and take them very seriously: PEO has an urgent need to “get its house in order”! One of the problems is that PEO has no memory. Presidents come and go in 12 months, each having their own agenda and each departing with much of it incomplete and rarely taken up by their successor. Added to which, the governance structure of PEO is not at all suited to the modern demands either of society as a whole or to the engineering profession in particular. Marisa Sterling, P.Eng., FEC, has good ideas in her President’s Message (p. 6), but *Engineering Dimensions* is already seeking nominations for the next Council elections (p. 55). What chance does this president have of making a difference and leaving a real legacy of her involvement in just 12 months?

Das and Barton in their letter “PEO should replace Council with a board of directors” (p. 53) were only reflecting what Renaud Foster said in 1987 and I endorsed in 2000. The problem is—and I have had heated discussions with three former presidents—the emphasis is overwhelmingly on the regulation of the profession and has little to do with the profession itself. Indeed, one former president was besotted with the idea that the engineers who formed the membership of PEO were of far less importance than the need to “protect the public.” I appreciate that as a professional organization PEO has the fundamental role of regulator. Indeed, another former president expressed the opinion that this regulatory role supersedes everything else. Notwithstanding this, I believe it is essential if PEO is to implement [the Cayton recommendations] effectively, the role of Council must change, and councillors should have mandatory training in governance and the role of a director. They should be aware of what fiduciary responsibility means and their potential legal liability exposure. This is all part of the need to protect the interests of all stakeholders, including the public.

On the emerging disciplines conundrum

Edward Malec, P.Eng.,
Mississauga, ON

When I graduated from the University of Toronto in 1966, there were these disciplines: civil, mechanical, industrial, engineering science, chemical, electrical, mining metallurgy and applied geology. These traditional disciplines have obviously been expanded over the years, and now we’re discussing what to do with emerging disciplines (“PEO’s big tent: The emerging disciplines conundrum,” *Engineering Dimensions*, November/December 2020, p. 30).

In all the years I’ve been reading the Gazette section of the magazine, almost all of the cases I have seen—if not all of them—have dealt with structural issues. I don’t remember a single complaint related to my field of chemical engineering, for example. If there have been no complaints related to the other disciplines, either there is no reason to regulate them or the issues are too complex to resolve by a regulatory body. The definition of professional engineering under the *Professional Engineers Act* is too broad and should be more specific to the structure of buildings, bridges, etc. This is readily regulated because there is an established system of signed and sealed drawings, procedures, etc. that need to be followed. Can you imagine how the construction business could be regulated if we didn’t have this system in place?

Unless other disciplines have such a formal system, any hopes of regulation would be futile. If most of those 1966 disciplines don’t seem to require regulation currently, why even discuss emerging disciplines?

Notarius signature adoption

Don Ireland, P.Eng., FEC,
Brampton, ON

I read the article noted above with interest (“PEO adopts Notarius digital signature for member use,” *Engineering Dimensions*, November/December 2020, p. 9), but I was a little surprised by the implication that digital documents and signatures are somewhat new to the market. In my experience in a corporate engineering firm practice, we’ve used digital documents with a digital seal at least since 2002 or 2003, and by 2010, we used digital documents in the PDF format almost exclusively for cost savings and convenience. In the beginning, we purchased software and started encrypting documents so that only an authorized user with a password that we provided could print the document but could not make changes, copy parts or make comments. I have a few comments on the present proposal:

1. Cost: The article states there is a sign-up fee and an annual \$185 subscription fee for each user. The subscription fee seems to be fairly steep when compared to the \$265 annual fee for a PEO licence itself. I understand that other associations have agreed to this cost structure. However, with Ontario’s large group of engineers, one would hope that PEO could negotiate a lower fee. I would think that the \$75 [for members who already possess a Notarius signature from another regulator]

figure would be more appropriate, particularly since that figure seems to be acceptable to Notarius for engineers who already use a digital signature. On that issue, I think it would be safe to say that almost all engineers are using a digital signature and some sort of software to protect their seal and document contents.

2. Sole sourcing: I noted in the article that the digital signature remains optional, and I trust that PEO will not force the exclusive use of the Notarius digital signature but will allow members to protect their documents and seal as they see fit using other similar digital signatures and software. In my view, sole sourcing is usually undesirable and not in the best interest of any party except the supplier. I also wonder if it would be useful for PEO to put this procedure out to tender with a competitive bidding process.
3. Municipality acceptance: With my firm’s procedure, we ran into an issue with the City of Toronto back in 2011 and 2012. The city wanted to receive digital documents with a seal but would not accept those documents with any protection or password. After several discussions with officials, including a meeting at the PEO office with representatives from the city building department, we had to revise our procedure by issuing documents without password protection so the city could view, assemble and add comments to the documents. In my view, it was downgraded protection, since it used a digital signature, which would only advise a user if the document had been modified after it was signed digitally. I wonder if the Notarius digital signature will fit in with the city procedures of adding comments while preserving seal and content protection.



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LETTERS TO THE EDITOR are welcomed, but must be kept to no more than 500 words, and are subject to editing for length, clarity and style. Publication is at the editor’s discretion; unsigned letters will not be published. The ideas expressed do not necessarily reflect the opinions and policies of the association, nor does the association assume responsibility for the opinions expressed. Emailed letters should be sent with “Letter to the editor” in the subject line. All letters pertaining to a current PEO issue are also forwarded to the appropriate committee for information. Address letters to editor@peo.on.ca.

Quality should be the prime objective

Colin Alston, P.Eng., C.Eng.,
Markham, ON

I read with interest the opinion piece by the Three Wise Engineers (“A blueprint for PEO’s future,” *Engineering Dimensions*, November/December 2020, p. 25). In their article they address what they believe is the “current path of our profession’s public decline.” So, I have to ask myself: Where is the evidence of this alleged decline? For myself, and some colleagues whom I have consulted, I have not experienced any such decline or lack of respect. On the contrary, I have seen real respect for elegance and excellence in design and efficiency of purpose. If the perceived decline is indeed there, it would be helpful to know the source and validity of that evidence.

I look through the goals noted in the blueprint, and I agree with each of them. But to me, there is a most surprising omission: Where is there reference to what may well be the ultimate goal, which

is to ensure the successful application of engineering principles? In a word: quality. Yes, we can include certain objectives in university and ongoing education, and yes, they will help, but the blueprint makes no mention of instilling and then confirming judgment in those who have received the learning. The blueprint makes no reference to ensuring that the receiver of such enhanced education has the ability to apply that learning in practice to deliver quality.

Respect for the value of engineering works and those producing them necessarily follows admiration of high-quality design and construction. Obviously, the advocated ethics and well-designed education courses matter. We might remember that early engineers, who had often little education, were able to produce works that resulted in admiration and, in many cases, awe in the viewing public. As an example, one of the greatest of all engineers, Isambard Kingdom Brunel, did not have the benefit of today’s teaching or the advocated dedication courses; however, his understanding of basic engineering principles allowed him to succeed in solving an extraordinarily wide range of engineering challenges. In spite of our current benefits, many of us now would not be able to emulate such an immense ability to solve real-world challenges. However, according to a biographer, Mr. Brunel could have benefitted from some training in ethics. So, to Doctors Quinn and Fraser and to Mr. Armstrong, my plea to you is to enshrine quality as the prime objective in the next iteration of your blueprint. Respect is earned; it is not gratuitously given.



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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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