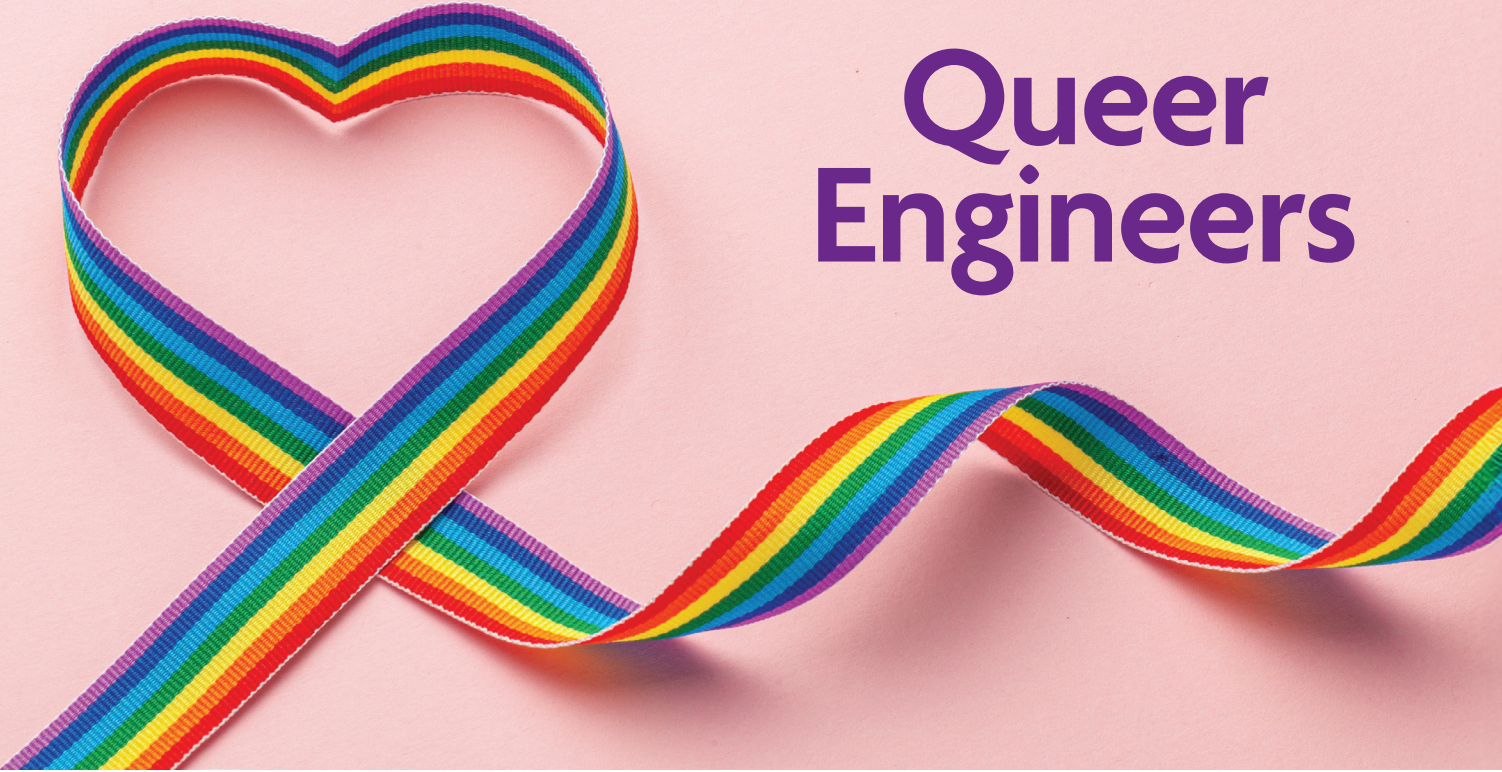




Queer Engineers

ENGINEERING PRIDES itself on solving complex problems, but for some professionals, simply showing up as themselves remains one of the hardest challenges to navigate. For one queer, non-binary and trans engineer, entering the profession a decade ago meant entering a space where their identity was invisible, if not unwelcome. “Queerness was simply absent from conversations, policies and practices,” recalls Mic Liu, MASC, P.Eng., JD.

When Liu proposed gender-neutral washroom facilities in a project meeting early in their career, the response was awkward laughter and dismissive comments rather than thoughtful dialogue. The moment wasn’t unusual. Subtle but persistent signals—offhand jokes, whispered remarks, unchecked assumptions—reinforced a deeper truth: Engineering had not yet made space for them. And eventually, after years of choosing between authenticity and advancement, Liu left the profession altogether, seeking a career in law where they felt their voice could be a catalyst for change.

The acceptance of 2SLGBTQ+ (two-spirit, lesbian, gay, bisexual, trans, queer or questioning) practitioners in engineering has improved since then, but some gay rights advocates and equity, diversity and inclusion (EDI) experts say much more needs to happen to achieve a truly inclusive profession.

“The employment situation has definitely improved for non-binary engineers,” says Karla Beltrán Martínez, the director of outreach and development at Pride In Engineering (PIE). “But we need more concrete information on where things stand.”

PIE is a national nonprofit that provides networking support to 2SLGBTQ+ engineers and educates engineering employers about fostering queer-inclusive workplaces. As Beltrán Martínez notes, a lack of data about the work experiences of engineers with gender-diverse identities is a major barrier to advancing queer inclusion in engineering. The problems with this data deficit are underscored in “Advancing LGBTQ+ People in STEM Careers,” a 2023 report co-published by the Royal Canadian Institute for Science. It found that inadequate official

statistics on the sexual orientation and gender identity of science, technology, engineering and math (STEM) professionals is a key obstacle to understanding and addressing employment inequities in these fields.

THE DATA DEFICIT

As Ontario’s engineering regulator, PEO began collecting data on the gender identities, including non-binary identities, of the province’s 90,000+ licence holders on a voluntary basis in late 2024, and the organization is currently working to expand these efforts to include sexual orientation. The move aligns with PEO’s Anti-Racism and Equity Code, which serves as a guiding framework to ensure PEO’s regulatory practices, policies and culture actively uphold anti-racism, fairness and inclusivity. This includes measuring the representation of equity-seeking groups such as queer people in the profession and developing human rights training to prevent discrimination against this population.

“We are committed to being a more inclusive regulatory body, and in order to do that, we have to get to know who our membership is so we can create training and programs for specific communities,” says Kay Mehrizi, manager of EDI at PEO.

Such efforts are vital given what little existing information about queer employment experiences, both within and outside STEM organizations, reveals. The reports and surveys available today show that Liu’s lived experience isn’t an anomaly. The “Advancing LGBTQ+

Belong Here

The engineering profession is on a journey to foster belonging. For 2SLGBTQ+ engineers and aspiring engineers, this means ensuring they envision a future where they are seen, respected and valued.

By Sharon Aschaiek

People in STEM Careers” report indicates queer STEM workers still experience professional devaluation by their colleagues, fewer opportunities for career advancement and social exclusion. In Canada’s broader labour market, a 2024 York University study that surveyed 4205 gay, bisexual and lesbian adults working in middle or senior management positions found that 55 per cent sometimes experienced microaggressions influenced by anti-queer workplace values, heteronormative assumptions and cisnormative culture (see glossary of terms, p. 21). The study’s Ontario participants were more likely than those in other provinces and territories to report having to be careful in how they managed their queer identity at work. Meanwhile the 2022 analysis “Pay Gaps, Precarity and Prejudice: New evidence on LGBTQ2S+ employment in Canada” notes that queer people continue to face barriers related to job access, pay equity and workplace discrimination.

“Many [engineering] leaders still view 2SLGBTQ+ inclusion as peripheral, irrelevant or at best an HR concern, rather than integral to ethical professional practice,” Liu says. “Further, fear of professional repercussions prevents many 2SLGBTQ+ practitioners from openly advocating for themselves.”

Over the years, Liu has championed several initiatives for queer inclusion, including co-chairing the Equity, Diversity, Inclusion and Accessibility Task Force for the Ontario Society of Professional Engineers (OSPE) and co-creating and co-funding the Liu-Kennington Award for the 2SLGBTQ+ Engineering Community at the University of Waterloo, their alma mater. Earlier this year, they co-established a law and counselling group in Ottawa that partly helps those who have experienced human rights violations at work.

“Advocacy became a necessity, not a choice,” Liu says. From the beginning of their career, they recognized that representation, visibility and active support weren’t just ideals but necessities for survival and progress. “Early in my career, a close colleague came out as transgender shortly after graduating. Despite her brilliance and professional success, the engineering community’s rejection—

in addition to rejection by her family—contributed to her taking her own life. This heartbreaking event crystallized the urgency for me: 2SLGBTQ+ inclusion is not just about fairness but about lives and well-being.”

VALUES-DRIVEN GENERATIONS

From their observations of Ontario’s current engineering environment, Liu describes the progress made in queer inclusion as “encouraging but uneven,” with changes being primarily reactive and superficial, rather than proactive and structural. They see a need for more equity measures such as formal pronoun policies; dedicated resources, mentorship and affinity groups for 2SLGBTQ+ employees; gender-neutral washroom facilities; and more representation at leadership levels.

“Engineering must shift from treating inclusion as optional to seeing it as central to its professional and ethical mandate,” says Liu, who served as an Eastern Region councillor on PEO Council from 2023 to 2025. “Engineers of the new generations increasingly refuse to tolerate workplaces where their identities or those of their colleagues are erased, marginalized or seen as inconvenient.”

The more discerning employment preferences of today’s youth is reflected in Deloitte’s 2025 Gen Z and Millennial Survey: For both Generation Z (born between 1995 and 2006) and millennial (born between 1983 and 1994) folks, their happiness at work is strongly influenced by how much alignment there is between their values and those of their organizations. As many in engineering

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already know, attracting and retaining up-and-coming engineers should be a top priority for the profession given its persistent recruitment challenges: As OSPE's 2023–2024 analysis of recent Canada Census data on engineering employment trends reveals, less than one-third of engineering degree holders are working in the profession, and underemployment among women P.Engs continues to be a problem. Since, as a 2024 United States survey of more than 6600 people revealed, 28 per cent of Gen Z folks identify as part of the 2SLGBTQ+ community, creating queer-positive workplaces is a necessary part of any engineering firm's human resources strategy.

"If you hold an identity that is not uplifted in society, you're dealing with a lot of things on a day-to-day basis. Going into a space where you feel you wouldn't be welcomed—that might be why you pursue a different career. There's more safety," says Erin Davis, an EDI workplace consultant based in Edmonton, AB, who operates nationally and serves clients in engineering and related fields. She adds that firms that embed queer inclusion in their workplace cultures will be better positioned to attract and maintain talented employees, because "there is more being demanded of employers from the next generation."

Today's 2SLGBTQ+ engineering graduates have stronger inclusion expectations of employers in no small part because of the efforts of EngiQueers, queer student clubs at 30 engineering schools at universities across Canada, including 12 in Ontario. EngiQueers provides students with opportunities for professional development,

self-advocacy skill-building and social connection. Having evolved into a non-profit organization in 2017, EngiQueers also advocates for queer inclusion in the profession and delivers gender diversity and inclusion training at engineering conferences and workplaces. Its signature event is an annual conference for queer engineering students and industry professionals, and this year's edition featured 26 sponsors that included engineering firms as well as Engineers Canada and OSPE.

"We started EngiQueers to create welcoming spaces for queer engineering students to share their experiences and have solidarity," says Alexander Dow, P.Eng., who co-founded EngiQueers while studying civil engineering at McGill University. "If you don't see yourself in the field, you have to become the trailblazer."

Dow earned his civil engineering undergraduate degree at McGill in 2018 and since then has worked at Markham, ON-based subdivision and land development engineering firm David Schaeffer Engineering Ltd., where he facilitates projects in Brantford, Durham and Milton. Reflecting on the profession's approach to queer inclusion in recent years, he says: "The progression has been exponential in terms of care, policy change and overall perception within the industry," particularly among large firms. However, he sees room for more small- and medium-sized engineering companies to become more welcoming environments that can also reap the rewards of having more diverse workforces.

"The queer perspective can really improve business outcomes, because the whole concept of innovation is having different ideas and thoughts at the table...and alternative ways of seeing and solving problems," says Dow, who received OSPE's Achievement of the Year award in 2023 for creating EngiQueers with fellow co-founder Vanessa Raponi, P.Eng.

To further advance queer inclusion in the profession, PIE has developed an Ally Toolkit featuring educational resources about gender identity and solidarity groups. It also offers a Know Your Rights guide full of information for queer engineers on dealing with discrimination and accessing legal, mental health and other support services. Beltrán Martínez says PIE also advocates for provincial and territorial engineering regulators in Canada to collect information on the sexual and gender identities of licence holders, much like what PEO is doing. Other organizations doing related work in Canada are the Queer Infrastructure Network, a community-led initiative to improve 2SLGBTQ+ representation in the Canadian



infrastructure sector; Pride at Work, which strives to empower Canada's employers to create safe and welcoming workplaces for queer employees; and Out in Science, Technology, Engineering and Mathematics (oSTEM), a US-based non-profit professional association with a presence in Ontario.

ADVANCING QUEER INCLUSION

While these organizations play a vital role in advancing queer inclusion at work and specifically within engineering, the federal government still has some catching up to do. A notable gap is the fact that Canada's *Employment Equity Act* requires federally regulated employers to eliminate employment barriers for women, visible minorities, Indigenous Peoples and people with disabilities—but not members of the 2SLGBTQ+ community. However, the government deserves credit for introducing in 2020 the 50-30 Challenge, an initiative to advance gender parity and diversity within Canada's workplaces that is supported by Engineers Canada and PEO.

For its part, PEO is taking small but intentional steps to promote a culture of belonging. Notably, the regulator is introducing a series of EDI training for its staff, volunteers and committee members, including one session on the main principles and practices of gender-inclusive language. "It's important to understand how inclusive language can play a big role in belonging and safety for the 2SLGBTQ+ community," Mehrizi says. "PEO has a responsibility and a commitment to help create spaces that are safe for the folks we're licensing."

Trailblazers like Liu and Dow are also helping carve a path for 2SLGBTQ+ engineers, showing that visibility can inspire possibility. Like a raised rainbow flag, representation tells others that they, too, might find belonging in a profession that hasn't always welcomed them. But meaningful change within engineering still demands intention, action and sustained accountability. "Engineering firms have an ethical responsibility to ensure all employees feel safe, seen and respected," Liu says. "Not as a competitive advantage, but because it's a matter of basic fairness and human rights." **e**



GLOSSARY OF TERMS

CISNORMATIVE

The assumption that all people are cisgender (their gender is aligned with their sex assigned at birth), which can make trans and non-binary individuals less visible or acknowledged.

GENDER IDENTITY

Refers to an individual and/or social experience of being a man, a woman, neither or both, which may or may not align with the sex assigned to them at birth.

GENDER-INCLUSIVE LANGUAGE

Language that avoids assumptions about gender and respects all identities. For example, using "they" as a singular pronoun or saying "partner" or "spouse" instead of "husband" or "wife."

HETERONORMATIVE

The assumption that heterosexuality is the norm, often reflected in language, policies or social expectations.

NON-BINARY

A gender identity that does not fall exclusively within the binary categories of man or woman. Non-binary people may identify with a mix of genders, no gender or a different gender altogether.

QUEER

An umbrella term some people use to describe sexual orientation and gender identities that fall outside of cisgender/straight norms. While once used as a slur, it has been reclaimed by many within the 2SLGBTQ+ community.

SEXUAL ORIENTATION

Refers to a person's emotional, romantic or sexual attraction to others. For example, being heterosexual, gay, lesbian, bisexual or asexual.

TRANS

An umbrella term used to describe a person whose gender identity differs from the sex they were assigned at birth. This may include people who identify as binary (for example, a man or woman) or non-binary.