The **Innovation Economy Council (IEC)** is a coalition of tech-sector leaders dedicated to shaping Canada’s industrial innovation policy. The IEC works with active members of Canada’s innovation ecosystem to identify areas for in-depth analysis and offer timely insights to increase Canadian productivity and sustainable growth.

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THE QUEST FOR INCLUSIVE INNOVATION: ACKNOWLEDGING THE PROBLEM

In the 21st century, in one of the most important pillars of a vibrant economy, Canada has a problem. Innovation is suffering. Instead of reaping the benefits that diversity, equity and inclusion can bring to the innovation sector — advantages it sorely needs — we dilute our deep talent pool by blocking contributions from major segments of the population. At every step along the innovation journey — from learning to launching a startup to bringing a breakthrough to market — the harder it becomes for certain racialized groups to succeed, and for women especially. In this multicultural country, the business of innovation is still very much a man’s game, and for the most part, a white man’s game.

The numbers tell at least one side of the story. While women outnumber men in most post-secondary degree programs, the gender balance flips after graduation and becomes evermore lopsided. Women trail men in the tally of postgraduates who land internships in the innovation sector. Women are less likely to become decision-makers, senior managers or business owners. At the entrepreneurial stage, the gender disparity is difficult to overstate. Only one of every five startups in Canada is led by a woman, and female-led firms receive barely a sliver of the venture capital funding pie.

This dynamic is even more pronounced for women of colour — and also for both men and women from Black and Indigenous communities. A lack of mentors, role models, opportunities and even basic information has hamstrung their progress, and so too has the egregious persistence of prejudice and discrimination from the education system straight through to capital investments.

“The definition of innovation is the implementation of new ideas, and the intent is to move us forward. Yet without effectively addressing and changing age-old issues — like who has a seat at the technology table — outdated norms and prejudices are going to continue to impede the pathways toward success,” says Nigela Purboo, co-founder and executive director of the non-profit Onyx Initiative, which seeks to close the gap in the hiring, retention and promotion of Black post-secondary students and recent graduates in corporate Canada. To stay ahead of the curve and be competitive, businesses require fresh young, industrious thinkers. And as Purboo adds, those thinkers need access and opportunities in order to share their unique knowledge and creativity.

Initiatives are underway to help under-represented groups to succeed, yet a woeful dearth of information has hampered efforts: Canada has a long history of not keeping race-based data, whether it be in matters of business, medicine or the justice system. But with the renewed commitment to fight racism in
all its forms in all spheres, data is slowly accumulating, making it possible to identify and remove the hurdles certain populations face as students, employed contributors and entrepreneurs.

The nuanced picture emerging reveals how uneven progress has been in the innovation sector: Different groups face different barriers and not all populations are lagging. The representation of South Asian and East Asian men, for instance, has outpaced other populations, particularly in the tech sector. Indigenous men and women, however, are severely under-represented in the sector and the post-secondary channels that feed it: Recent Statistics Canada data finds that only 10.3 percent of Indigenous people had attained a bachelor’s degree or above.

“It’s becoming clear from the bits of data we have that just like Indigenous people suffer from particular barriers that other people don’t, Black people also have particular barriers that are not necessarily the same as those for say, South Asian people, or East Asian people,” says Maydianne Andrade, co-founder and president of the Canadian Black Scientists Network (CBSN) and a professor of biological sciences at University of Toronto Scarborough.

Canada has a robust history of innovation. Yet concerns the sector is stagnating are wide and justified: It currently ranks 13th out of 16 peer countries on innovation. To be sure, myriad factors contribute to our relatively weak performance, but the ability to capitalize on the advantages our diversity can provide could be a game changer. After all, an acute talent shortage leaves jobs unfilled while the country grows more diverse with each passing year. The most recent census found racialized groups made up more than 25.3 percent of the population in 2021, up from 22.3 percent in 2016. Canada simply cannot afford to disregard the systemic barriers under-represented groups face.

**OPPORTUNITIES AND CHALLENGES**

| 1/2 | Half of the young women who do go into tech drop out by the age of 35. |
| $125 K | Median seed round Black women received in 2020 (the national median was $2.5 million). |
| 80% | The vast majority of investors in Canada are male and white. |
| U.S.$24.3 B | The estimated global market for diversity and inclusion by 2030. |
Face of the nation

*Racialized groups made up more than 25 percent of Canada’s population in 2021.*

![Bar chart showing population growth of different racialized groups from 2001 to 2021.]

Source: 2021 Census

This report delves into three formative stages of the innovation journey, exploring issues at the post-secondary level, the entrepreneurial phase and the point of raising capital. At each juncture, positive change is within reach. But implementing the most effective strategies to affect that change — reversing and compensating for generations of inequality — is a mission that demands wide cooperation and collaboration. Educators, mentors, policymakers, business leaders and investors all have a role to play to ensure that everyone, regardless of gender or racial background, has an equal shot at making a meaningful contribution.

**The rewards of inclusive innovation**

While much work remains to achieve full diversity in Canada’s innovation sector, striving for inclusion at the same time is just as crucial — and arguably more so. Only by fostering inclusive workplaces do the diverse perspectives of those who have managed to beat the odds truly count. Diversity after all, is just about numbers; it ensures that an enterprise appropriately reflects the population it represents. Inclusion refers to a culture that provides access to opportunities and resources for everyone, where people of diverse backgrounds feel comfortable contributing and know their input is valued. Without inclusion, diversity means next to nothing.
The evidence to support its benefits is compelling. A 2020 McKinsey report, for example, found that companies in the top range for gender diversity on their executive teams were more likely to have **higher than average profitability** than companies that scored lower. Research from the Brookfield Institute for Innovation and Entrepreneurship at Toronto Metropolitan University finds diverse and inclusive teams **boost firm performance** with a better mix of ideas, perspectives and networks on which an organization can draw, resulting in more effective problem-solving and stronger science.

“If you don’t have inclusion within an organization, you can have all the diversity in the world, but you’re not going to unlock the innovation you’re striving for,” says Angelin Soosaipillai, vice president of equity, diversity and inclusion at **Mitacs**, a national non-profit organization that develops post-secondary talent through research innovation internships.

Inclusive innovation involves people of diverse backgrounds collaborating to turn new or improved ideas, products or strategies into real-world advances. It also has the potential to better serve diverse populations that the establishment has traditionally overlooked because they have contributed to the breakthrough.

By removing barriers to inclusive innovation, under-represented groups not only gain fair access to the opportunities and resources they need to succeed, society gains the prosperity inclusive innovation brings. It boosts creativity, productivity and job creation. In turn, this leads to the availability of greater consumer spending and tax revenue to be reinvested to improve the quality of life for all Canadians.

It’s no wonder that inclusive innovation has become a hot global pursuit. According to the latest D&I report from Research and Markets, the global market for diversity and inclusion is expected to become a U.S. $24.3-billion global industry itself by 2030, up from $9.3 billion in 2022: Businesses everywhere are scrambling to find methods and experts who can help them tap into the benefits inclusive innovation promises to bring.

### Facets of an inclusive innovation ecosystem

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<td>The intention of that innovation is to address the needs or wants or problems of the under-represented group.</td>
<td>The innovation is used by under-represented group, i.e. it is accessible, affordable and that the group has the motivation and capabilities to absorb the innovation.</td>
<td>The innovation has a positive impact on the livelihoods of the under-represented group.</td>
<td>The under-represented group is involved in the development of the innovation.</td>
<td>An innovation is inclusive if it is created within a structure that is itself inclusive.</td>
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Countering the innovation myth

Ironically, one of the major obstacles to realizing the rewards of inclusive innovation, may be the sector’s own limited — and limiting — view of innovation itself. Unlike invention, which centres around the creation of something brand new, innovation is the entire process of turning a progressive idea or creation into reality. It is the multi-stage endeavour of deriving economic or social value from knowledge, whether that’s by translating new ideas into products, services and processes that solve a problem or adapting them to improve existing solutions.

But the dazzling innovations from the tech sector specifically — which has undoubtedly driven more change than any other in the last half century — fuels the myth that tech is the only source of innovation, rather than being one aspect of discovery or transformation. Innovation also relies on critical thinking, ingenuity, design and marketing to make a vast range of useful and affordable creations, be it vertical farming, precision medicine, edible cutlery, pioneering the practical tenets of a Universal Basic Income or building a better bicycle.

Yet with the tech-centric perspective of innovation, opportunities shrink for any talent outside the computer science and engineering fields — where women, Black and Indigenous contributors remain dramatically under-represented and underpaid. What’s more, evidence is mounting that the focus on high tech not only contributes to social inequalities, it creates them. It perpetuates non-inclusive workplace cultures, concentrates wealth in the pockets of a few and exacerbates the wage gap between those who work in tech and those who do not.

Globally, a reckoning is afoot that it’s not just diversity that needs boosting — needed too is a mindset expansion that champions innovation as the lifeblood of socioeconomic progress in all disciplines. The 2021 report from the United Nations Conference on Trade and Development, for instance, recommends fostering diverse innovation ecosystems that support social and environmental objectives. The report also calls for public and private investments to support these aims, and a more thoughtful and deliberate approach to nurturing and training talent to deliver on these objectives.

Embracing this ethos has become essential to the work of Mitacs, which plays a major role in seeding the next generation of the country’s innovators, pairing more than 10,000 students and postgrads a year with industrial partners and social organizations, where they can apply their academic skills to help solve pressing real-world problems.

“If you don’t have inclusion within an organization, you can have all the diversity in the world, but you’re not going to unlock the innovation you’re striving for.”

Angelin Soosaipillai
Vice President of Equity, Diversity and Inclusion, Mitacs
“A tech-centric view of innovation leaves out all kinds of innovation that may be happening outside of the tech sphere,” says Gail Bowkett, vice president of Mitacs Programs. “We should be acknowledging multiple forms of innovation and recognize all of the talent — in all its diversity — as playing a key role in all types of innovation.”

As it is, however, the tech bias is a primary reason certain groups have long been poorly represented in Canada’s innovation sector — women in particular — starting from the early stage of the talent system that feeds it.

The postgrad puzzle: Where do the women go?

Back in 1981, when the Sony Walkman was considered high-tech, women surpassed men for the first time as the student majority at Canadian universities, and the trend has continued ever since. In 2020, there were nearly 30 percent more women than men enrolled in post-secondary education in Canada, for a total of 1.2 million female students who outnumber male students in nearly every discipline. Yet the career trajectory of women compared to men, in terms of earnings and advancement, sinks after graduation day, especially in the innovation sector.

Why? Research suggests that it’s not just how many women study, but what they study. The diminishing postgrad prospects for women as innovators and entrepreneurs seems to come down to a four-letter acronym: STEM — science, technology, engineering and mathematics.

“There are fewer women in computer science today and only marginally more in engineering than there were 30 years ago,” says Wendy Cukier, professor of entrepreneurship and strategy and founder of the Diversity Institute at Toronto Metropolitan University. More women are pursuing science, but most are drawn to healthcare and medicine, while the push to entice more women into tech, Cukier says, has been “an abject failure.” According to a recent report from the Information and Communications Technology Council, the percentage of women in tech in Canada has stalled below 30 percent for the last decade.

Figuring out why efforts are failing is both complicated and controversial. A 2021 Statistics Canada report concluded academic performance cannot fully explain it: Gender differences in high school marks in STEM subjects only account for about a third of the 36-percent gender gap in university enrolment, which is largest in bachelor’s degree engineering programs. Other studies suggest the gap has less to do with how female students fare in STEM than it does with how well they do in non-STEM subjects, leading most women to pursue the social sciences and humanities over computer science or engineering.
The 2021 Statistics Canada report finds women who do choose to study STEM report a loss of interest in the curriculum, Feeling isolated and outnumbered by male peers, unequal treatment from professors and not seeing a career in STEM as a way to improve life for themselves or others. Meanwhile, the relatively few women who stick with STEM and land in the tech sector after graduation, don’t stick around for long — and there’s no shortage of studies that blame sexism as the chief culprit.

“Just as they say men will apply to job postings when they only fit 70 percent of the requirements while women only apply if they meet 100 percent, you see similar trends in education,” says Nisha Sarveswaran, CEO and co-founder of biotech startup Kraken Sense. “We tend to raise our sons to play rough and get back up again whereas our daughters are praised for being proper and polite. Our girls aren’t encouraged to make mistakes. You can only really learn math and physics by failing and trying again. That’s why many girls discourage themselves from pursuing these areas of science. We need to create an environment where our daughters are encouraged to explore and take risks, as true innovation happens when you’re constantly disrupting.”

In the tech sector’s male-dominated work environments, many of which have become notorious for their “bro culture,” women can find their input ignored or belittled, advancement opportunities as scarce as equal pay and long hours incompatible with any semblance of work-life balance. Unsurprisingly, a 2020 report from global consulting firm Accenture and the international non-profit advocacy organization, Girls Who Code, finds the proportion of women to men in the sector has actually declined since 1984, and that half of the young women who do go into tech drop out by the age of 35.

The result is a dire shortage of female mentors, leaders and role models for young women in tech to make its workplace cultures more diverse and inclusive. As the status quo perpetuates itself, it contributes to the deep gender divide in wages: According to the 2016 census, STEM-based graduates earn about $15,000 more annually than non-STEM graduates, $92,800 a year versus $78,025, and women rarely catch up: As Cukier points out, on the list of Canada’s top 100 earners, there are more men named Paul than there are women.

Making the most of the post-grad talent pool: Fighting bias where it begins

The disheartening track record of women in STEM and tech, and the innovation sector generally, has been well charted for decades, unlike the representation of racialized populations. But the bleak experience of women is helping to inform efforts to remove the barriers that exist for all. At Mitacs, for instance, it’s bolstered the determination to reimagine how it drives inclusive innovation in Canada.
Founded amid tech’s dot.com boom in 1999, Mitacs launched with a government mandate to promote innovation and social good by building an academic research network. The idea was to connect students in STEM to industry partners and split the internship costs 50-50 with the company in need.

But the organization has since grown into a national non-profit that nurtures young talent from various disciplines at all education levels, from undergrads to postdocs, sponsoring more than 90,000 innovation internships in the last dozen years alone. So in 2021, Mitacs opted to look closely at its own diversity data, collecting detailed survey information for the first time about the gender, race, ethnicity, disabilities and sexual orientation of its interns.

“Part of our mandate is prosperity and social good. It’s hard to argue for prosperity and social good if it’s only benefiting a fraction of the population,” says Mitacs CEO John Hepburn. Given the breadth of problems innovation can solve, he says, it’s important to have full representation at the intern level: “You don’t get very creative solutions when everybody comes from the same background and thinks the same way.”

While the survey revealed Mitacs’s data looks encouraging for many historically marginalized groups, the representation of women is less so. Although the country has significantly more female postgrads than males, more men land innovation internships, which provide a critical opportunity for employment, networking and professional development. The reason, says Mitacs’s Soosaipillai, is that although the organization supports a wide range of internships outside of tech, the new data shows it still disproportionately sponsors more STEM projects.

“Soosaipillai, who was hired in 2021 to spearhead Mitacs’s DEI initiatives, says the organization is working to build awareness of the value companies can derive from students who are not in STEM. Since innovation is what happens between idea and impact, it has much to gain from the insights, of say, social science, which could offer valuable input on how to make a product, service or process best suit people’s needs.

“There’s a bias that, ‘Oh, we need innovation, and it’s always tech, so there are fewer women represented.’ But opportunities are there to promote diverse talents, she says: “Let’s say you want to develop a video game, have you thought about bringing on a psychology student to help develop the character arc?”

Given its origins, Mitacs is still best known among STEM-based industries, so it’s now raising its profile among a broader range of companies. The goal is to increase Canada’s social and environmental innovations in a way that’s inclusive from the get-go — by design and by impact. One of its recent award-winning commercialization projects, for example, involves a cocktail
of pollution-eating bacteria capable of devouring some of the world’s most widespread contaminants in soil and groundwater. Developed by University of Toronto postdoctoral researcher Courtney Toth, the natural solution costs a fraction of other remediation approaches and the cultures are now being produced and distributed by Guelph-based remediation company SiREM.

Mitacs says its expanded mission is informed in part by the work of economist Dan Breznitz, Munk Chair of Innovation Studies and co-director of the Innovation Policy Lab at U of T. Breznitz argues that thinking beyond tech accelerators is necessary to generate local, lasting and inclusive prosperity by fostering a wide range of innovation strategies. He posits that the socioeconomic benefits of inclusive innovation come not from one sector, or a single invention — be it an automobile or an app — but from the continuous stream of innovations that make a creation or creative idea more reliable, marketable and affordable.

In his book, Innovation in Real Places: Strategies for Prosperity in an Unforgiving World, Breznitz cites the cautionary tale of Israel, which invested heavily in the Silicon Valley model of innovation, betting that deep state support of a new high-tech sector would pull the country out of its economic crisis in the 1980s. The effort did indeed turn Israel into a business R&D powerhouse in terms of venture capital investment and the number of high-tech companies. But the rest of the economy paid a price: Productivity and wages in all other sectors stagnated or declined, while the tech boom spread wealth only among “the geek elite.” Israel went from being the West’s second most egalitarian society to one of the most unequal: Among OECD countries, it now has the third highest percentage of the population living in relative poverty.

Informed by this research, Mitacs understands the importance of fostering talent with new training and skill-development opportunities for students across multiple sectors. But, Soosaipillai says, “If we just do more projects in humanities and social sciences — that’s only one part of the equation. It doesn’t solve for that other gap — we still want to bring more women into STEM, and to increase the representation of Black and Indigenous contributors.”

Supporting racialized talent: How to overcome the barriers of history

Even before receiving its new diversity data in 2022, Mitacs had decided it had to do more to support Black and Indigenous students in the innovation sector. The decision, says Rahina Zarma, Mitacs senior policy advisor, was based on evidence from several compelling studies showing both populations are severely under-represented in business and academia.

Statistics Canada, for instance, found that the proportion of Black youth who have not attained a high school diploma is markedly higher than it is among other visible minority groups — a disparity that sheds light on why relatively few Black students make their way into the innovation ecosystem. Research from StatsCan also revealed that about 90 percent of Indigenous people have not attained a university degree, and most are of working age.
So in a bid to nurture Indigenous talent at an earlier stage, Mitacs is forging closer ties with Indigenous communities to help “naturally uncover opportunities for innovation,” says Soosaipillai. In the process, they have learned that financial barriers play a major role in blocking internships for Indigenous talent. To counter that, Mitacs increased its financial support to Indigenous-owned businesses hiring Indigenous interns by contributing $3 for every $1, instead of its usual dollar for dollar split. The move has led to a higher participation of Indigenous interns than ever before.

“It’s not good enough for any organization to say, ‘We deal with the people who apply to us,’” says CEO Hepburn, “because there are reasons why people don’t apply.’”

Understanding those reasons has become an urgent priority. Similar to the way the Truth and Reconciliation process seeded new commitment to support Indigenous people, the 2020 public murder of George Floyd, an African-American man, by a white police officer in Minnesota, sparked an international outcry and a global movement for social justice. With that has come an unprecedented acknowledgement and accounting of systemic anti-Black racism and the will to fight it — from courtrooms to boardrooms to classrooms.

In 2021, 50 universities and colleges in Canada signed on to the Scarborough Charter, a pledge to fight anti-Black racism in post-secondary institutions. In the innovation sector, anti-racist advocacy groups have also emerged to remove barriers that have stymied Black talent, such as the Toronto-based Onyx Initiative, which provides Black post-secondary students and recent graduates with career coaching while linking companies with top Black candidates. As its co-founder Purboo explains, “The pervasive inequity in employment practices has significantly affected the Black community’s ability to thrive, and this has been true for generations.”

Statistics Canada research finds Black university and college graduates with a bachelor’s degree earn markedly less than white graduates. Black students and graduates are also over-represented in lower-paying occupations but under-represented in higher-paying fields. Perhaps most troubling is the 2016 StatsCan report that found 94 percent of Black youths between the ages of 15 and 25 said they would like to get a university degree, but only 60 percent thought they could. In contrast, 82 percent of youth from the rest of the population said they would like to get a degree, and nearly 80 percent thought that they would.
Post-secondary plans

While 94 percent of Black youths said they’d like to get a university degree, only 60 percent thought they could.

Source: Statistics Canada

The finding suggests Black youth face barriers early on that make them doubt their chances of academic success — and indeed, a seminal 2017 investigation revealed those barriers are systemic. Carl James, the Jean Augustine Chair in Education, Community and Diaspora at Toronto’s York University produced a study based on the experience of Black students in the Toronto District School Board, the largest school board in the country in a city with the country’s largest Black population.

The TDSB’s data showed that compared to other students, a disproportionately high number of Black students end up in the Applied Stream or in Locally Developed/Essentials courses versus the Academic Stream. The Locally Developed/Essentials supports students in achieving compulsory credits to graduate high school; Applied prepares students for college; while the Academic stream readies high school graduates for university, which are degree-granting institutions and the path to professional programs.

“What it did was feed a deficit narrative: ‘we know Black students are not very good because they’re all in those [Applied] streams.’ It basically doubled up on itself,” says Andrade of the Canadian Black Scientists Network (CBSN).
James’s study, which included interviews with Black students, their families, teachers and counsellors, also found many of the students had been put into the Applied stream even if they had requested — and qualified for — the Academic stream. “It was just this constant expectation of failure,” Andrade adds, “no matter what the record was, no matter how good they were.”

The students who do go on to university find few Black professors, mentors or potential supervisors for independent research, which can have a major impact, she says. Students with close faculty connections are more often invited into labs, more likely to land fellowships and to enrol and succeed in grad school. “There’s the lack of understanding of the unwritten rules,” Andrade says, “if you don’t have family members who understand the value of research and how to get those opportunities, you don’t necessarily know where or how to look.” Black people, she notes, must send out more than one and a half times more applications to get the same number of call backs as white Canadians.

In 2020, Andrade co-founded the Canadian Black Scientists Network to increase the representation and visibility of Black researchers and practitioners in Science, Technology, Engineering, Mathematics and Medicine, to advocate for equitable funding and especially, “to create pathways for Black youth to enter STEM because they aren’t entering at the rates we’d expect.” Increasing the number of Black STEM students would also support those already in those programs. “Many members of the CBSN were the only Black person in our department — sometimes in the entire institution,” she says.

The CBSN is partnering with other organizations to nurture Black talent at all stages of the innovation journey, including teaming up with Mitacs to illustrate career paths as well as the k2i (kindergarten to industry) academy at York to reach Black youth in high school. The aim is to foster talent in under-represented communities before the post-secondary stage with the hope that it will eventually lead to a more diverse cohort of game-changing talent in the sector.

At the same time, to make sure that tomorrow’s innovators have the support and resources they need to succeed requires a better understanding of the hurdles different populations face on the road to entrepreneurship. From building networks to finding funding, entrepreneurs from under-represented communities face a number of challenges.
Starting from scratch: The struggles of under-represented founders

Looking back, Nisha Sarveswaran wishes she started sooner down the entrepreneurial path. As it was, she became an aerospace engineer and worked in the industry and other engineering fields for a decade before branching out on her own.

“If I was exposed earlier, I think I would have started much earlier. But I wasn’t brought up in the area of startups or business. My dad is an engineer and had the mentality of working a job for life,” says Sarveswaran, who is South Asian. “I had always been passionate about entrepreneurship but didn’t think that would be a possibility because I thought you had to have a lot of resources and stability.”

Indeed, along with exposure to launching new ventures, entrepreneurs from under-represented populations are also short on the contacts and information needed to start a company.

“If you don’t come from a wealthy family, and a lot of the demographic [groups] we’re talking about don’t come from wealthy families, you need to support it to get the ball rolling,” says Sarveswaran. “But you have to go through three years of hoops — pitches, competitions, proofs of concepts, all these things — to get like, $100,000,” which, she knows, doesn’t go very far.

CASE STUDY: Precision Analytics

Some entrepreneurs worry about being tokenized and pigeon-holed. Erika Braithwaite and her co-founder worked to find success on their own terms.

Once Erika Braithwaite and her business partner Kathryn Morrison had finished their PhDs at McGill in the department of epidemiology and biostatistics, it didn’t take long for the two women to be integrated into the startup world. “We were working with bio-pharmaceutical companies, and the pressure to be an AI pharma company was tremendous,” says Braithwaite. “Everyone has this vision. And people were a bit unsophisticated, saying ‘You’re a woman of colour, you’re in AI, you’re in healthcare, you could raise millions — this is your path.’ And I was like, well what if that’s not my path?”

The two co-founders started Precision Analytics when there were aggressive efforts to promote women in AI and STEM, and Braithwaite says they often benefited from that. But there was always a concern of being tokenized. It sparked Braithwaite to question: “Did our business earn us this recognition or prize, or was the awarding organization using criteria other than our hard work, such as my gender or race?”

What has really helped them have been their relationships with their mentors. “They were able to say, ‘Don’t work with people who don’t believe in your vision. Don’t listen to people who are just trying to sway you. Trust that you know your value and your business’ “ she adds. Having great mentors, Braithwaite says, “can change your business and can just transform the whole journey.”

“I don’t know if people took us seriously or if they just wanted to use us as a prop in pamphlets.”

Erika Braithwaite
CEO and co-founder
Precision Analytics
A January 2023 study at the University of Alberta, for example, surveyed 256 Black entrepreneurs, and found that more than half used personal or family savings to launch their ventures, and 39 percent used credit cards. The few founders who did approach banks were unsuccessful.

The 2020-21 Rise Up analysis by the Black Business and Professional Association involving 700 Black women entrepreneurs — the largest sample ever taken in Canada — also finds a lack of information, as well as discrimination, are major obstacles. More than a quarter of participants had no idea where to get help with their businesses and only 22 percent had heard of the Business Development Bank of Canada or Export Development Canada — the two largest federally funded programs for Canadian businesses.

While there are many incubators and mentorship programs, accessing the right help is tricky: “The Ontario innovation ecosystem is really messy, there are so many organizations. There’s really good wisdom out there, but no central way to get information, so you go from one person who refers you to another

**CASE STUDY: Reyts Fintech**

Nigerian-born entrepreneur Ayobami Macaulay found that targeted programs were really helpful in launching his business. It was the experience of trying to move his life savings from his home in Nigeria to Canada in 2019 that gave Macaulay the idea for Reyts Fintec. “Even if the Central Bank of Nigeria had enough foreign currency to supply the banks there, it was still hard to exchange Naira for Canadian or U.S. dollars — most banks don’t even carry Canadian dollars,” he explains. Reyts’ app promises to make swapping currencies much easier — no matter what the country of origin.

But scaling the startup has been challenging. Macaulay and his partner Abimbola Adegbite were turned down by various financial institutions. “We are Nigerians, we are people of colour, and we are servicing people of colour,” he says. “It was told to us in direct and indirect ways that we are prone to certain types of behaviour that the banks cannot tolerate. And that was why it took a year and nine months to get something so basic that any other company would have gotten in weeks.”

What has given Macaulay and his partner the most help is in the Black Innovation Program Social Impact Stream at the DMZ incubator at Toronto Metropolitan University. With grant money from the SIS, they were able to enter a pitch competition. They came first, winning $20,000. They were then introduced to a VC firm that understands the struggles people of colour have raising funds. Macaulay is optimistic that his time in the incubator will get Reyts close to launch-ready. “At the end of the day, the effort has to come from people like us, when we experience the benefits from these incubators — whether it’s through mentorship or funding — to make sure other people don’t have to go through what we went through.”
“and another,” says Sarveswaran. “It’s really challenging in terms of time and efficiency. When you’re running a startup, you have to be racing fast or you will run out of money.”

When Sarveswaran started her first venture, a cleantech company that produced sensors to monitor local air quality, she brought on more senior co-founders but still did not fully realize the challenge of finding the right market fit, or the resources needed to sustain it. (At one point, she had to re-mortgage her house to cover payroll.) She closed the firm after three years. “It was,” she says, “an expensive MBA.”

In Canada, 20 percent of startups fail within the first year and 60 percent within the first three years. A shortage of means and resources is a chief reason, according to FundSquire, and Black and Indigenous entrepreneurs face a particularly tough go. But statistics suggest that it’s women who are least likely to succeed: Only one in five startups was founded by a woman between 2005 and 2013 across all business-size categories, according to a 2020 StatsCan report. And women-led companies are more likely to be out of business at the five-year mark than those led by men.

In fact, Mitacs’s Soosaipillai suspects that female founders face the steepest climb: “I do think it’s more favourable for men, regardless of their racial identity, in the innovation space compared to women of any racial demographic.”

Meanwhile, relatively few women take part in campus-based startup incubator and accelerator programs designed to nurture new companies. Survey results from research the IEC conducted with academic institutions in late 2022 reveal the gap. In 2020, males accounted for 75 percent of founders at U of T’s three accelerators, but in 2021, their proportion decreased slightly to 72 percent. Concordia reported that 71 percent of its 304 startups are led by men. Kathleen Kemp, who runs the Entrepreneurship Hub and accelerator at the University of Ottawa, where concerted effort has increased the representation of women from 30 to 50 percent says, “Whether it’s unconscious bias or not, accelerator programs are inherently built for men.”

Yet having the support of various incubators and accelerators is critical. To Sarveswaran, who went on to launch Kraken Sense, a thriving 32-employee biotech firm, they “made a world of difference.” Among them, she mentions the “the aggressive” mentoring of the Creative Destruction Lab, where “once you start talking, lots of people want to help solve a problem,” and the invaluable support from the National Research Council “because they have people who have run businesses and understand the nuances of the technical.”

Given that racialized women have the lowest odds of succeeding in the innovation sector, Sarveswaran realizes she is something of an inspirational outlier, but she says part of her success is never letting the odds dampen her enthusiasm for her project — particularly when seeking support and
investment. “Investors are looking for patterns. They’re looking for what has been successful before, and so if they haven’t seen someone like you being successful, they’re going to be a lot more apprehensive.”

Indeed, several studies suggest venture capitalists tend to fund people who look like they do and most funding-decision makers, and investors — about 80 percent in Canada — are male and white.

Diversifying investment: How to fund inclusive innovation

As the CEO of the Canadian Venture Capital and Private Equity Association, which represents 320 member firms and 3,000 individuals from VC and private equity firms, Kim Furlong has no doubt change needs to happen: “We absolutely need diversity in order to be great investors. At our core, our ability to be great at it is anchored in diverse thoughts.”

But the CVCA’s 2021 Diversity and Inclusion report — in which 73 venture capital and 43 private equity companies participated — shows much work lies ahead. It found that less than a quarter of VC partner respondents identified as being Black, Latinx, Indigenous, Middle Eastern, East Asian or South Asian.

But, in particular, partners of Black, Indigenous, Middle Eastern and Latinx background “remain few and far between,” Furlong says. Most disconcerting is that only 19.4 percent of VC partners were women — and that’s up 8.4 percent since 2019.

The lack of gender diversity has real impact: Potential investors tend to come to the table with preconceived ideas about which gender is better suited to business, says Furlong, “There’s this unconscious bias that men will get it done and women will need help, and it’s not a fair assessment.”

Based on IEC calculations, during the first eight months of 2021, Canadian companies with at least one male founder attracted 98.4 percent of all VC funding, according to PitchBook data. Those with a man and woman at the helm received 21.2 percent; and those with women-only founders raised just 1.6 percent of VC funding. (Financing for men-owned businesses is close to 150 percent higher than that for women-owned businesses, a recent report from the Women Entrepreneurship Knowledge Hub found.) In fact, other studies have shown that women founders still receive only 2.8 percent of the venture capital funding that is available globally, and about 4 percent of VC funding in Canada overall. For racialized women entrepreneurs, the numbers are even lower.
Kemp, who heads U of O’s entrepreneurship hub, says funding for women is a major impediment. “It’s not just specific to equity financing,” she says. “Even on the debt financing side, I’ve heard stories of women older than I am who would try to secure a loan for their business only to hear, ‘Where’s your husband? We need your husband here to co-sign for you.’ A cultural change needs to happen.”

At least three approaches to counter the prejudices at play in venture fundraising are emerging. One is a deliberate effort to boost diversity and inclusion among investors. In 2021, for instance, the CVCA launched a pilot internship program for Black, Indigenous and students of colour with ICON Talent Partners, an organization that mentors, trains and helps place diverse talent in areas in the VC and private equity ecosystems in which they are typically under-represented. It placed 10 Canadian students in 10 CVCA member firms in its first term.

Another is working to counter the tech-centric bias in investment. In search of the next unicorn — privately-held firms with a valuation of at least U.S.$1 billion — investors prefer to bet on tech-based startups. Based on recent history, they regard tech innovations as easier and quicker to develop and scale, making for a higher and faster return on their investment. According to 2022 HubSpot and PitchBook data, tech, specifically software, is the runaway dominant industry on the unicorn list, followed far behind by commercial services, transportation, real estate and media. But the achievement has led to a disproportionality in the allocation of resources and support for tech startups.

“There’s this unquestioned assumption that if you invest in tech, you’ll get paid back. People don’t think that way about women in service industries or in food and beverage or hospitality, or Indigenous people in tourism,” says Wendy Cukier of TMU’s Diversity Institute. “Yet dollar for dollar, in terms of job creation, contribution to GDP and so on, I would argue that you get at least as much back investing in a full range of entrepreneurship and innovation as you do in trying to cherry-pick the next unicorn.”

Finally, the approach that has generated the most traction — and some controversy — involves specially created investment funds to increase the financial support available to startups led by women and certain racialized groups.
Specialized funds: How to move the needle

To Michelle McBane, managing director of StandUp Ventures, there are several reasons that VC funding companies like hers — which specifically back women entrepreneurs — have grown in popularity. Not only do they help compensate for the gender funding imbalance, she says, but women founders also tend to pay it forward by building teams that are more diverse.

“We believe they’ll build different types of companies that appeal to a broader set of talents which allows them to recruit from a much broader pool. In the early days, you just hired who you knew,” says McBane, whose Toronto firm has backed 23 women-led businesses since launching in 2017. “This is a way to change that narrative. It’s about women developing their own networks over time.”

Not everyone, however, is convinced that targeted investment is the best approach. At an IEC discussion on diversity issues, Marina Massingham, CEO of Aifred Health, said having female-focused investment groups allows other investors to brush women off more easily. “The thing that I really hate is when you have ‘regular investors,’ who, at the end of your pitch are like, ‘Have you tried X female thing?’ It feels like a really easy out for them.” Especially, she says, when there are not nearly enough female-focused investment groups to meet the needs of the number of women founders looking for support.

Sarveswaran criticized female-focused investors as being “totally risk averse because they have a brand to protect. They will invest in you when you have $2 million in sales. But then, ‘Why would I need you when I have $2 million in sales?’”, she says. “They only want the sure thing, because they want to show in their stats that they are successful.”

Ironically, women who do raise funds from female-focused investors may end up paying a high price for the targeted support. A February 2023 study in The Harvard Business Review found women who raised their first round of financing exclusively from female VCs were two times less likely to raise additional funds. “When people see that a female founder received funding from a male investor, they assume it’s because she is competent and her startup is strong. But if the same founder only has female investors, then people are more likely to assume that her success is due to her gender, rather than her competence,” the researchers wrote, basing their report on more than 2,000 venture-backed startups in the U.S.

While some argue that targeted funds are not effective, others see it as a necessary step. Policy makers, business leaders and investors increasingly see focused investment programs for women, Black, Indigenous and other racialized entrepreneurs as an expedient, effective strategy to cut through — and compensate for — the long-held biases that persist in the venture capital world.
“Some people have called it presumed incompetence,” Andrade says of the disparities. “No matter what your credentials are, you have to keep proving over and over again that you have the talent, the skill or the good ideas and they can result in a successful startup.”

This is why targeted interventions such as the Black Founders Network at the University of Toronto, DMZ’s Black Innovation Programs, BDC’s Black Entrepreneur initiatives and Nobellum, a non-profit organization dedicated to Black founders in STEM, are essential. “I think people recognize that there is a different set of exclusions that affect Black people and therefore you need specific interventions,” says Andrade.

In 2020, the Canadian government launched the country’s first-ever Black Entrepreneurship Program to address systemic barriers faced by Black business owners and entrepreneurs that had been exacerbated by the COVID-19 pandemic. The program includes investments of almost $221 million in partnerships with financial institutions over four years to help thousands of entrepreneurs and business owners, with up to $6.5 million earmarked to create and operate a knowledge hub to identify barriers.

**CASE STUDY: Virtual Gurus**

Indigenous innovators face an uphill battle, with low rates of post-secondary education, internships and access to capital funding. Bobbie Racette is one founder who beat the odds.

On her 171st pitch, Bobbie Racette heard something different. She had been turned down dozens and dozens of times for funding for her diversity-focused virtual assistant startup, Virtual Gurus. But she persisted, and became one of the first Indigenous women to lead a Canadian tech company to a Series A round. The company is now raising Series B funding.

Virtual Gurus connects companies with remote freelance workers who perform admin duties. But unlike its competitors, who, Racette says “don’t show the humanity” behind the work, the Calgary-based venture focuses on workers whose talents are often overlooked — people with disabilities, those living with mental-health issues, people who are Indigenous or Black, single moms, veterans and those who identify as LGBTQ2S+.

“When all that money got put into our account, I sat in my office and had a good cry.”

“Everybody who’s on our platform has a story,” says Racette. “And we make sure to shout that out to the world.”
Targeted investment programs to support Indigenous entrepreneurs start or expand their businesses are also taking off. In 2021, the National Aboriginal Capital Corporations Association, working with the Canadian government, the Business Development Bank of Canada, Export Development Canada and other government partners, created the first-of-its-kind evergreen fund: the Indigenous Growth Fund (IGF). Raising $150 million in its first round, the IGF will provide access to capital that small- and medium-sized Indigenous-led enterprises have lacked.

More recently, the federal government launched the 2SLGBTQI+ Entrepreneurship Program in partnership with the Canadian Gay and Lesbian Chamber of Commerce (CGLCC), which will invest $25 million to support 2SLGBTQI+ business owners. The targeted program is modelled after such initiatives as the Women Entrepreneurship Strategy and the Black Entrepreneurship Program.

Among the positive side effects of targeted interventions is that they are bringing together business leaders not only looking to solve problems related to under-representation in the innovation sector but also its productivity gaps. The Coalition of Innovation Leaders Against Racism (CILAR), for instance, founded by MaRS CEO Yung Wu and Armughan Ahmad, CEO of machine learning company Appen, has convened leaders from various backgrounds, including from the University of Waterloo, HP, Google and Facebook, to discuss where and how change needs to happen.

With programs to nurture BIPOC talent at all stages of their careers and foster inclusive innovation, the organization is also mindful of where talent is missing. CILAR chair Claudette McGowan, a former global executive officer of cybersecurity at TD Bank Canada and founder of cybersecurity startup Protexxa, noted that “In cybersecurity, there are 3.5 million unfilled jobs globally right now. And yet I go to family gatherings and people say, well, there’s no jobs and no one wants to hire us. There’s some disconnect there. How do we get past that?” McGowan says purposeful leadership is essential: “You can have these lofty goals but if there’s no one to lead it, it’s not going to happen.”
From crash test dummies to facial recognition: Inclusion can have an outsized impact

As the case for greater diversity in the innovation sector grows, so too does the realization that the lack of inclusive innovation has profound — and harmful — implications. Whether it’s product development, medical research, workplace design, or urban planning, gender and racial bias have real world consequences in terms of time, efficiency, accessibility and safety.

In her ground-breaking 2019 book *Invisible Women: Data Bias in a World Designed for Men*, British writer and activist Caroline Criado Perez cites phones that are too big for female hands, drugs that are wrong for female bodies, ill-fitting seat belts and even male-biased snow-removal schedules that contribute to the higher hospital admissions of women forced to navigate unplowed walking paths.

“Because so much data fails to take into account gender, because it treats men as the default and women as atypical, bias and discrimination are baked into our systems,” Perez writes, “And women pay tremendous costs for this bias, in time, money, and often with their lives.” One of the most notorious examples of gender bias, for instance, is the failure to include “female” proportioned crash test dummies, which contributes to the fact that women involved in car crashes are 47 percent more likely than men to be seriously injured, and 17 percent more likely to die.

Similarly, a 2019 landmark study by the U.S. National Institute of Standards and Technology found facial recognition systems misidentified people of colour far more often than white people. The study found Asian and African American people were 100 times more likely to be misidentified than white men. Native Americans had the highest false-positive rate of all ethnicities and women were also more likely to be misidentified than men. Middle-aged white men, meanwhile, had the highest accuracy rates. The report raised acute concerns about a technology that law enforcement agencies had widely and rapidly embraced to hunt for criminal suspects — and in at least one documented case wrongly charging a Black man because of it. It also has implications for cell-phone sign-ons and plans to use facial recognition in airport passenger boarding systems.

With the juggernaut pace of advances in artificial intelligence, biotech and robotics, unless the gender and racial gap in innovation closes, society will continue to lose the crucial input of at least half of the human population. And the need to close that gap is becoming more pressing. A May 2023 report from the human resources analytics firm Revelio Labs based on data from the U.S. National Bureau of Economic Research estimates that AI is poised to replace many lower-level jobs — jobs held disproportionately by women and people of colour.
Yet by fostering the development of products and services with and for formerly excluded groups, companies stand to create new avenues of revenue and additional economic growth. What’s more, building an inclusive culture also helps a company recruit and retain more diverse talent, which in turn leads to greater innovation. Inclusive innovation is not only a matter of fairness, but a savvy operating procedure for any company to be successful. The 2022 D&I report from global insight firm Research and Markets estimates that diverse companies earn 2.5 times higher cash flow per employee and inclusive teams are more than 35 percent more productive. Other studies put that number even higher.

Unlike diversity, however, inclusion can’t be counted. It’s practically invisible. In response, a growing number of organizations are coming up with creative metrics to facilitate the assessment.

CASE STUDY: Summit Nanotech

*Early-stage financing is often referred to as the “friends and family round,” which speaks to the implicit assumptions about having access to capital. Founder Amanda Hall sold her house in order to seed grant money.*

It’s hard to spend 10 minutes talking about what Summit Nanotech is doing without seeing “the size of the prize.” But that’s not to suggest it’s always been seamless getting the lithium extraction technology company off the ground. After leaving her job as a geophysicist for oil and gas, Amanda Hall — a single mother of three daughters — had to sell her house to use the $400,000 proceeds to seed grants. It was a year-and-a-half before she had her first angel investor.

“I’m a grown woman, and the last thing I was going to do is ask my mom and dad for money,” says Hall. “I didn’t want friends and family to be risked the way I was risking myself.”

In those early days, too, there were comments she had to ignore — someone close to her who referred to Hall’s “little project”; the mentor she won time with who suggested Hall dial it back a bit and take baby steps; the miner who said no one would buy the technology from a woman.

Since selling the house four years ago, Hall has won the million-dollar Women in Cleantech Challenge and is considered one of Canada’s leading female innovators. The company closed a $14-million Series A financing round, and last January completed a Series A2 round, raising U.S.$50 million. “You need to have selective hearing,” she says. “So when someone tells you you can’t do it or you’re not experienced enough or you’ve never done this before, you don’t listen or you just filter out the negative and look for the golden nugget of constructive advice. Have courage to go against the flow of things. There’s always a better way of doing something.”
The end of the beginning

A much-needed sea change is underway in Canada’s innovation sector. Recent efforts to finally break down years of assumptions with detailed data on how racialized populations are faring in one of the economy’s key areas reveals that progress to date, while laudable, has been uneven at best.

The representation of some populations in the sector is remarkable, but the advancement of others has been abysmal. For Black and Indigenous talent, it remains a harrowing path, where the chances for success narrow as they move from the post-secondary stage to career launch, from starting a venture to raising venture capital. It’s a dynamic that hits women especially hard, and racialized women even harder. Women constitute the majority of university graduates yet become the troubling minority of business leaders and entrepreneurs in the innovation space.

Global management consulting firm McKinsey, for example, has developed a measurement tool that takes a two-pronged approach. It looks at an employee’s personal experience in terms of “Authenticity,” asking if the individual feels they can be themselves and be comfortable to speaking up; “Belonging,” finding out if an individual feels connected to others at work; and “Meaningful” work, which asks whether an individual feels their work is personally meaningful, valued and contributes to the companies’ success. It also looks at enterprise perception in terms of “Acceptance,” finding out if employees value and embrace diversity; “Camaraderie,” assessing whether employees feel strong bonds with each other and work together toward shared goals; and “Fairness,” which evaluates whether employees receive equitable treatment and have fair chances to succeed.

As more companies apply inclusion-measurement models like this, more are realizing that it requires a concerted effort. Says Mitacs’s Soosaipillai, “It’s not who you have in the room; it’s qualitative — it’s about the experiences. It requires ongoing pulse checks to understand what’s changing in your culture, and what some of the issues are.”

Kim Furlong, who is spearheading the CVCA’s efforts to ensure greater diversity among investors, acknowledges that revamping the culture of VC firms — some “in long-standing need of modification” — can be challenging. “You can hire people who look different but they’re not going to stay if they don’t feel that culture in the workplace.” But, she adds, if that work is done well, “The end result will be an industry that’s more representative of Canada’s population.”
This is due in no small part to the dearth of women who study STEM and the limiting view that innovation comes only from those in computer science and engineering. It has resulted in the under-representation of women in innovation internships and the stark gender gap that persists in the tech sector. Black and Indigenous talent face similar obstacles, exacerbated by a lack of information, contacts, mentors, role models, and an ugly legacy of discrimination.

Hope, however, is on the horizon. A new era of collective awareness, bolstered by data and the acknowledgement of systemic biases is inspiring a concerted effort to tear down the barriers that block full diversity, equity and inclusion in the innovation space.

Even in the tech sector, infamous for its alienating monoculture, there’s a broad reckoning that diversity and inclusion are key to unlocking the fresh and creative thinking that it urgently needs, particularly as it faces an acute skills shortage and concerns that its progress has stalled. The desire for change is clear. The question now is how to ensure meaningful change.

Population-specific initiatives with wide support from business and academic leaders, government, investors and policy makers are underway to foster talent from under-represented groups at all stages of the innovation journey. It will require significant investment in money and time to make a meaningful difference, not least to gauge whether the initiatives are actually working.

Yet with no central hub for potential innovators to learn about the various initiatives underway, or the many accelerators, incubators and granting programs they could tap, the individual is left with the burden of navigating the growing maze of information solo. This could leave certain populations — who already face a lack of information on turning ideas into ventures — at a further disadvantage. It may be that what’s needed is broad cooperation from the innovation community to create a centre that curates all the programs, supports and grants available to a budding entrepreneur. It’s a one-stop prospect that could be an invaluable resource to under-represented populations — and the will to provide such resources has never been greater.

Inclusive innovation is no longer an abstract concept, but a widely shared goal in the sector as both an economic and moral imperative. There is still a very long way to go to overcome the distinct barriers different populations face, and to ensure everyone has equal access and opportunity to become the future’s changemakers, but, as Andrade put it: “I think people are listening.”