

# PIVOT



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**PUTTING  
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**INDIGENOUS  
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**WHAT DO YOU THINK?**

Send your input to the editor at [pivot.letters@cpacanada.ca](mailto:pivot.letters@cpacanada.ca). If your letter is chosen for publication, it may be edited for length and clarity.

PHOTOGRAPHS: WATERFALL BY ALAMY; CYBERSECURITY BY ISTOCK

# BOTTOM LINE

Mental health affects all aspects of a corporation. It's time to get real about how we deal with it.

BY PAMELA STEER



**“My ultimate goal is for mental illness to be treated just the same as a physical illness.”**

So said Denis Trottier, KPMG’s Chief Mental Health Officer, in his award-winning article for *Pivot* in 2020. Since then, I believe the tenor of the conversation has changed for the better, but to say the work is done is simply not true. However, brave people like Denis—whom I had the honour of working with in my early days at KPMG—have helped the world see mental health for what it is: something that affects everyone.

The mental health of a workforce is a pillar in the social sustainability of any company and that’s why I’ve been such a huge proponent of mental health in the workplace throughout my career. When I was CFO of the

WSIB, I championed its new mental health strategy as legislation was introduced to make mental health a compensable injury.

As a founding member of the Accounting for Sustainability’s CFO Leadership Network, I was incredibly proud to publish one of the first worked examples using the Essential Guide to Social and Human Capital Accounting—of which mental health is a key component. Now I’d urge companies from all industries to move forward and champion mental health in their own organizations. I see a lot of fragility in our current business and societal structures—without the right supports, companies face innumerable risks if they ignore the mental health of their workforce. I chatted with CPA Canada’s Chief People Officer Andrea Venneri for her take on this topic:

“Acknowledging mental health in our workplace and workforce is a monumental step toward inclusion” she says. “Seeing people for their humanity, and not just their productivity, is the path toward improved equity, retention, engagement and trust.”

This acknowledgement is fundamental for companies when they prioritize the mental health of their people.

We’ve talked a lot here at CPA Canada and in the pages of *Pivot* about the “S” in ESG not being prioritized enough, and mental health is an aspect of that “S” that is often overlooked. This is the core of what I want to bring to this topic today.

**“We need to put systems in place to ensure that anyone who is suffering gets the time and help they need, without judgment or repercussion.”**

When people think of mental health, it is generally considered a Human Resources issue—and certainly HR departments should be trained and open about discussing mental wellness, as referenced in Denis’s quote above. But that’s not where it should end. Mental health

is a corporate-level issue that must be addressed as part of the foundation throughout the entire company. Employees must be perceived as assets rather than expenses.

Social and mental health investment disclosures along with disclosures for benefits usage form a significant component of integrated reporting that work alongside integrated thinking, which is the ultimate goal. The advent of the International Sustainability Standards Board will only make this issue more important.

Mental health is not just an HR issue, it’s a corporate issue, top to bottom. It affects culture, output, retention—everything. So let’s start talking about it!

“I did not grow up with a mental health toolkit, or even vocabulary, to acknowledge how I was feeling through difficult periods,” Andrea told me. “Coming from my parents’ environments of scarcity and uncertainty, the option of talking through ‘feelings’ and supports would be seen as a luxury no one had. Today, we can speak more openly about our needs and we can support each other and those around us very differently. I am grateful for that.”

The Canadian Mental Health Association’s Mental Health Week is May 1 to 7. The goal this year is to refill our empathy reserves and #GetReal about how to help. When it comes to mental health, listening is key. So, I’d like to issue a call-out. Please share your thoughts about mental health at [pivot.letters@cpacanada.ca](mailto:pivot.letters@cpacanada.ca).

As Denis expertly said in his article: **“A world where we can talk openly about mental health while standing at the water cooler is within reach. I see proof of that every day.”**

See the Essential Guide to Social and Human Capital Accounting at [accountingforsustainability.org/social-and-human-capital.html](https://accountingforsustainability.org/social-and-human-capital.html)

## THE NUMBERS DON'T LIE

CAMH research lays bare the true cost of mental illness

### THE TOLL

- In any given year, 1 in 5 Canadians experiences a mental illness.
- By the time Canadians reach 40 years of age, 1 in 2 have—or have had—a mental illness.
- About 4,000 Canadians per year die by suicide—an average of almost 11 suicides a day. It affects people of all ages and backgrounds.
- Indigenous people, especially youth, die by suicide at rates much higher than non-Indigenous people. First Nations youth aged 15 to 24 die by suicide about six times more often than non-Indigenous youth. Suicide rates for Inuit youth are about 24 times the national average.
- Overall, sexual-minority Canadians were more likely than heterosexual Canadians to report that they consider their mental health to be poor or fair (32% versus 11%). They were also more likely to have seriously contemplated suicide in their lifetimes (40% versus 15%) and to have been diagnosed with a mood or anxiety disorder (41% versus 16%).
- Transgender Canadians were also more likely to report their mental health as poor or fair than their cisgender counterparts, and also more likely to have seriously contemplated suicide in their lifetimes. They were also more likely than cisgender Canadians to have been diagnosed with a mood or anxiety disorder.

### STIGMA

- In a 2019 survey of working Canadians, 75% of respondents said they would be reluctant—or would refuse—to disclose a mental illness to an employer or co-worker.
- However, 76% of respondents stated that they themselves would be completely comfortable with and supportive of a colleague with a mental illness.

### COSTS TO SOCIETY

- The annual economic cost of mental illness in Canada is estimated at over \$50 billion per year. This includes health care costs, lost productivity, and reductions in health-related quality of life.
- The cost of a workplace disability leave for a mental illness is about double the cost of a leave due to a physical illness.

# PIVOT

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# FIRST IN

## PURPOSE DRIVER

# THE CHALLENGER

PwC Canada's Lana Paton has pushed against negative stereotypes and helped other women find success in the upper ranks of business. And she's done all that while remaining true to her roots. **BY ALI AMAD**

**The daughter of Greek immigrants** who moved to Canada in the 1960s, Lana Paton watched her parents overcome adversity to establish themselves in their new country. Armed with a similar resolve, Paton has been a trailblazer in the accounting world. Over the course of her 29-year career with PwC Canada, Paton became the firm's first female tax leader and only its second-ever female managing partner for the Greater Toronto Area (GTA), where she's responsible for more than 3,500 employees. In recognition of her achievements, Paton was recognized as a Fellow of the Chartered Professional Accountants (FCPA) in 2021.

Throughout all her career successes, Paton has never forgotten her humble origins and the importance of giving back. A pillar in Ontario's Greek community, Paton is a board member of the Hellenic Heritage Foundation and the creator of a scholarship to support students in her hometown of Oshawa, Ont. Paton was formerly involved with Make-A-Wish Canada for more than ten years, including six years as national board director. Now, she's established another scholarship for female students studying finance and accounting at the University of Waterloo. Her hope is to inspire more women to take ownership of their careers and push beyond the glass ceiling in the finance and accounting world.

PHOTOGRAPH BY EBTI/NABAG



PwC's Lana Paton has set up a University of Waterloo scholarship for female accounting and finance students

**How did your Greek heritage shape you as a person?**

I grew up in Oshawa, where my parents were some of the builders of the Greek community there. My father was a trained carpenter back in Greece, but he struggled to find work in Canada. To make ends meet, my mother worked as a seamstress and my father ended up taking a job as a cook, eventually owning several restaurants.

Whenever something gets hard in my life, I remind myself of my parents' resilience and their courage to try and do hard things. They embraced being Canadian while never forgetting to appreciate their roots. My parents also didn't speak English at first, so they relied on more established immigrants for support. That's when I learned how important it was to give back, because you receive so much more in return. We didn't have much, but for as long as I could remember, my parents, brother and I always volunteered together as a family. As part of our church and Greek community, we would be actively involved in a number of community and city-related events, including a dance troupe, selling baked goods, etc. This helped support our community and other local charities.

Being part of a diverse community facing different struggles, I learned to appreciate the differences that make us all unique—especially the differences you can't see. Throughout my life, people would see my name and assume I came from a privileged household that had been in Canada forever. They'd never guess I was a first-generation immigrant from a working-class family. That's why I also learned to avoid being judgmental or making assumptions. When we make assumptions about others, we're often incorrect. Instead, I take the time to learn about people with empathy and understanding, which has helped me connect with others in my personal life and my career.

**What drew you to accounting?**

I've always loved solving problems. The more complex, the better! And every accounting question essentially starts with a problem. When I studied accounting at the University of Waterloo, the problems got harder and harder to solve, but I loved the challenge. Accounting is also a dynamic field that's constantly evolving. The problems are never static. In my early years at PwC, in the mid-1990s, it was incredibly rewarding to see my efforts contribute to helping clients with major challenges they were facing. The camaraderie I've experienced while solving a problem with clients, colleagues and mentors has kept me inspired and motivated ever since. For me, my job isn't just about career progression. It's about being constantly challenged so I can grow and connect with others.

**You're PwC Canada's first female tax leader and second-ever female managing partner for the GTA, which is incredible. What challenges did you face in attaining those roles?**

Believe it or not, one of my biggest challenges was my own mindset. It took a long time for me to embrace my ability to do broader things than I felt

**I LEARNED HOW IMPORTANT IT WAS TO GIVE BACK, BECAUSE YOU RECEIVE SO MUCH IN RETURN**

I was capable of doing. When I look back to when I was first made a partner in 2006, we didn't have as much diversity in the firm as we do today. That partly has to do with the small and often unconscious biases around women that existed back then and continue to exist currently, although we're now much more intentional and effective in tackling those biases as a firm and as an industry.



But at the time, it was difficult to see myself in certain roles I aspired to because women didn't typically fill those roles. I had to really shift my perspective: instead of seeing myself solely as a tax partner, I envisioned myself as a tax leader and started actively working toward that.

When I became PwC's first female tax leader in 2016, countless women approached me to share how they were inspired by my example to push for industry firsts. That's why I think it's so important that we continue to have different people representing different roles—it helps us see ourselves in those people and realize if they can do it, we can do it too. Diversity fosters further diversity.

**How have you worked toward fostering that diversity at PwC?**

I was lucky enough to have several female mentors who challenged me to think bigger, and I wanted to play the same role for younger women building their careers at the firm. In 2013, PwC Canada created its Women in Leadership (WiL) programme,

**70**

Percentage of PwC's new female partners who graduated from its Women in Leadership program in 2022

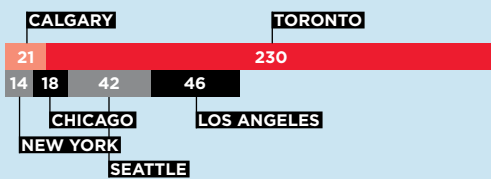
which takes place over six months, primarily in the form of seminars and networking groups. Essentially, we provide a deep dive into understanding yourself: your strengths, passions and values, as well as some of the inherent biases you might encounter. Program participants get support from sponsors as well as presentations from female leaders who share their own career stories and challenges.

I've been involved with the program since the very beginning as a presenter and mentor. My main goal is to help women and people with diverse backgrounds understand how they can change their own mindset. When you change your mindset, you can then help others change their mindset. We're now celebrating the 10-year anniversary of the program, which has been a massive success: in 2022, 70 per cent of our new female partners were program graduates. I stay in touch with many of those graduates, and I've seen quite a few of them become more vocal in stepping up and owning their careers. But of course, each of us still have to play our part in creating gender equity in finance leadership roles.

**HEAVY LIFTING**

According to construction consultancy Rider Levett Bucknall's latest North American Crane Index, Toronto tops the list for the number of cranes operating in 14 cities across the U.S. and Canada, including New York, Los Angeles, Denver and Washington, D.C. Toronto's dominance in the survey reflects record investment in the city's commercial real estate market over the past half decade. In the first two quarters of 2022, \$19.2 billion was sunk into real estate in the Greater Toronto Area, a 41 per cent increase over the same period in 2021. —Steve Brearton

**Toronto and Calgary have more cranes than all 12 U.S. surveyed cities combined**



**Percentage of all cranes in 14 cities located in Toronto**



**Almost half of all tower cranes are at work in Toronto**

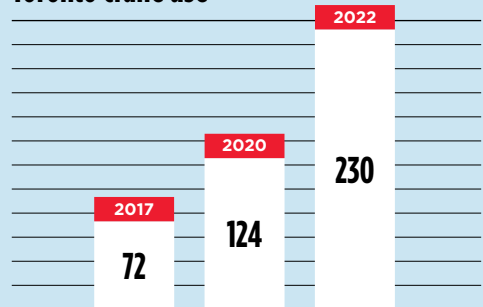
**-27%**

Percentage drop in number of tower cranes in Calgary between 2017 and 2022

**+219%**

Percentage growth in number of tower cranes in Toronto between 2017 and 2022

**Toronto crane use**



PHOTOGRAPH BY ISTOCK



**Is that where your Women in Finance Scholarship comes in?**

Precisely. When I attended the University of Waterloo, I had to work to put myself through school. I was also lucky enough to be a recipient of several scholarships. To help other women facing similar financial hurdles, I set up a scholarship in 2020 for female students attending the University of Waterloo’s School of Accounting and Finance. So far, I’ve donated \$100,000 and three students have received a scholarship. Because of the pandemic, I was unable to meet any of the students in person, but they all sent videos to thank me. I was incredibly moved watching those videos. But what’s more incredible is that five other alumni were so inspired by my example that they’ve set up their own scholarships, too. It just goes to show that when you lead the way in giving back, others will follow.

**For a female CPA reading this right now, what advice would you give them?**

Say yes more than you say no. Look for ways to take yourself out of your comfort zone. Challenge yourself. When you do that, you change how you see yourself and how others see you, too. Also, don’t wait for an opportunity to come to you. Be more proactive. Think about ways that allow you to own your career instead of leaving your career up to somebody else. Taking that approach also challenges some of those biases that crop up in the workplace. ♦



**SOCIAL Qs**

**THE HEADS AND TALES OF MONEY**

Crafting our own money narrative can help us understand and improve our finances **BY DORETTA THOMPSON**

Money is about so much more than money. It’s a belief, a relationship, a brand, a value, a mindset. Money is a story we tell ourselves. We start telling it the first time we experience it—long before we understand it—and we keep telling it our whole lives. Money stories are personal and individual, shaped by all the ways we interact with it, think about it, feel about it, and believe it to be.

These individual stories don’t even start with us. They’re intergenerational, rooted in the scarcity or affluence in which we grew up, in the experiences, beliefs and attitudes of our parents, and their parents, and so on. The stories we tell ourselves about money and our relationship with it are shaped by the ways our parents talked about money, shared, or didn’t share money decisions, made choices, modeled behaviour.

This is important because the stories we tell ourselves about money drive our financial decisions. They shape our understanding of how “good” or “bad” we are with money, our concept of value, and what we understand to be a “want” versus a “need.”

Even though our personal money story is to some extent pre-written, we can change it. We can write our own version by consciously exploring and challenging our assumptions. We can advance our story to make it more thoughtful, deliberate and unique—and ultimately to learn more about ourselves.

What is your money story? ♦

*Doretta Thompson is financial literacy leader at CPA Canada.*

PHOTOGRAPH BY EBETINABAG; MONEY BY ISTOCK



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2. Internal statistics of The Personal: Number of policyholders who renewed their policies when their policy came up for renewal from January 1, 2022 to December 31, 2022. The rate does not include mid-year term cancellations and terminations.

PICTURE THIS

# TAKING FLIGHT

For Indigenous Aerospace, using drones to deliver to remote First Nations communities is just one way it hopes to create equity for Indigenous people in both business and technology **BY NINA DRAGICEVIC**

**In 2016, Norman Shewaybick** dragged an oxygen tank on a toboggan for 17 days back home to Webequie First Nation, a fly-in community more than 500 kilometres north of Thunder Bay, Ont.

The walk was an act of protest—Shewaybick’s wife had died after her oxygen tank ran out at the local nursing station. It was their 26th anniversary. Shewaybick had promised his wife no one would suffer as she did.

At the time of her death, the nearest oxygen tank was about 70 kilometres away, “straight as the crow flies,” Jacob Taylor told the CBC last year. The oxygen supply ran out at night, when a helicopter couldn’t make the trip.

The incident was the final piece falling into place for Taylor, founder and CEO of Indigenous Aerospace. After years of health sciences education with a focus on Indigenous populations, along with deal-making between these communities and business interests as head of a development consultancy, Taylor saw a problem he could fix.

“A drone,” he says, “could have made that flight to a new oxygen tank in less than an hour.”

But, Taylor doesn’t want Indigenous communities to merely benefit from the remotely piloted aircraft systems (RPAS) industry, he wants them to lead it.

Taylor wants First Nations to become the pilots, experts and innovators for RPAS in their region—he wants the education, the jobs, the self-sufficiency and an early stake in a nascent, game-changing, technology-rich industry.

Taylor is a band member of Curve Lake First Nation; his spirit name Wasa Nabin Nini means “the man who sees very far straight ahead.” Fresh from bachelor’s and master’s degrees in Indigenous health and policy, Taylor in 2014 launched Pontiac Group, an economic development consulting firm that aimed to expand the connection between Indigenous values and business opportunities.

Mentored by senior Indigenous leaders across the country, Taylor absorbed the Assembly of First Nations’ interest in economic reconciliation: “fostering more ways for Indigenous people to



participate in the capitalist society we have operating in Canada, but doing so with a lens that kept our treaty benefits in mind,” he says. “You know—the history of our people in mind.”

Pontiac Group developed partnerships in the medicinal cannabis space before recreational use was legal, and later Taylor was hired to provide community cannabis education for First Nations in Northern Ontario.

Flying into these remote locations, the issue was obvious to Taylor—Canada is a vast country dotted with sparse, isolated locales, sometimes accessible only by plane. Whether it’s a shortage of life-saving medical supplies or \$20 for a carton of orange juice, the expense and challenge to reach these communities was a harsh reality for residents.

PHOTOGRAPHS COURTESY OF INDIGENOUS AEROSPACE



3



4

1. An outdoor drone in action.

2. **Jacob Taylor, spirit name Wasa Nabin Nini**, is the CEO of Indigenous Aerospace.

3. The special team trained and equipped to use LiDar (light detection and ranging) technology fixed to drones to **assist in the location of unmarked graves at the Brandon residential school property.**

4. **The water protector group of women** who use drones to monitor waterways.

“When the Chiefs I was working for showed me that news story about that oxygen tank,” Taylor says, “they were very upset and said, ‘You know, we need an answer.’”

Soon after this plea, Taylor was watching the Business News Network and a segment aired about drones. “Sometimes the universe opens up to you,” Taylor says. He sent a message on LinkedIn and, within a week, had an in-person meeting with an industry player.

Taylor founded Indigenous Aerospace in 2021 as a focused push into RPAS, partnering with Volatus Aerospace to leverage their expertise, equipment and training.

“My experiences in other areas of Pontiac Group and the lessons of community and the lessons of academia are all pointing to self-determination,” Taylor says of this moment. “And that is doing the work for ourselves.”

New applications for RPAS are developing constantly, and billion-dollar industries using the technology include construction, infrastructure, energy and utilities, agriculture, natural resources, real estate, law enforcement and the military.

The global drone services market is expected to reach \$63.6 billion by 2025, according to market research company Insider Intelligence. Technology and regulations are rapidly evolving together. “It’s really anybody’s ballgame,” Taylor says.

In Indigenous communities, RPAS can document mining, forestry and dumping in remote locations; find lost hunters or fishers in search and rescue missions; monitor water levels and wildlife migration; transport water samples for quick testing; and revolutionize supply-chain logistics with cargo drones. During the COVID-19 pandemic, Taylor used drones to move vaccines and samples between island communities and the mainland.

Community enrichment is the essential piece for Taylor. The RPAS industry provides local jobs, sparks interest among youth in STEM fields, and can reduce the brain drain of talented and ambitious Indigenous workers.

“Our applications for it are so broad,” Taylor says. “Everyone else is in the space of a niche market, looking after a certain area, and that’s great. But for us, as Indigenous communities, we can be our own solutions provider, we can integrate all of this into ways that are the best fit for us. And what it does with community development, revenue, and inspiring young people into STEM careers, is really holistic.”

Indigenous Aerospace assists clients with the equipment, education and training to set up their

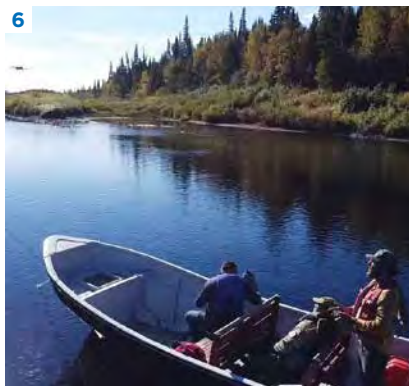
own drone unit, as well as sourcing funding if needed. The firm is currently focused on Ontario communities as it develops and hones its standard operating procedures, before expanding further east and west. Arctic-certified drones are also on the horizon.

Taylor keeps busier than most. Now working on his PhD in Indigenous Health Sciences, he also formed and chairs the inaugural Indigenous Committee at the Aerial Evolution Association of Canada, a not-for-profit industry group.

It was the association’s first committee to represent the values and interests of these communities, for whom the RPAS industry would arguably be game-changing—or literally lifesaving. For First Nations, it’s a seat at the table.

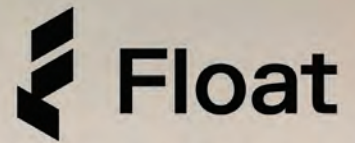
“I’ve always just been really proud of every step, every milestone we achieve,” says Taylor. “If I could work myself out of a job with Indigenous Aerospace, and communities take this over and develop massive, awesome enterprises—then, you know, I really have succeeded in the mission here.” ♦

**\$63**  
Value, in billions,  
of the global  
drone services  
market, by 2025



**5. The fixed-wing drone is a development project that Taylor is currently working on.** The goal is to monitor for forest fires (along with other surveillance applications). Currently, it can fly 24 hours at a time.

**6. Using a drone to scan and observe fish movements in river systems.**



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## GUEST COLUMN

## US VERSUS FRAUD

Diligence, healthy skepticism and a sense of responsibility are tools we can all use to help stop financial misdeeds



PHILIP  
MAGUIRE

With the FTX fraud scandal in the news, many Canadians were reminded of our own crypto exchange disaster a few years ago involving Gerald Cotten at Quadriga Fintech Solutions. Other prominent companies that have been charged with, or alleged to have committed a variety of wrongdoings include Theranos Inc., Bridging Finance Inc., the former Barings Bank, and Wirecard in Germany. What these companies have in common is fraud, deceit, conflict of interest, poor internal controls, lack of corporate governance: pick your poison.

Performing our daily functions at work can be overwhelming; how can we find the time to add preventing fraud to the list? Fortunately, the answer lies with us. Never mind thinking that someone else will figure it out: all of us can do more. And it is not that difficult. Although each fraud appears to be unique, or committed by clever people, there are a few themes that continually recur. Once we consider this then ignorance can be replaced with awareness.

#### Listen to the whistleblower

When frauds are uncovered one of the big surprises is how many warning signs were ignored. The whistleblower is often the first to speak up. In many cases it's an employee who is sharp enough to realize that something is amiss. They, however, will often be ignored or, even worse, fired before their concerns are investigated. In some cases, several whistleblowers over many years have to raise the alarm before someone listens. A case in point is Wirecard. Not only was a whistleblower ignored but was subjected to criminal charges—by the German regulator no less—for disparaging the organization. An inspiration for all whistleblowers is the individual who identified so many concerns at Bridging Finance that he filed a complaint under the Ontario Securities Commission whistleblower program. This individual has no connection to Bridging Finance other than access to publicly available documents. Kudos to him.



**THERE ARE MANY TEMPTATIONS TO ENGAGE IN BAD BEHAVIOUR. BUT WHEN THAT BOUNDARY IS PUSHED, IT'S HARD TO PULL BACK.**

#### Beware the ultimate decision maker

Fraud that destroys a company usually comes from the top. Presidents and CEOs have so much authority that wrongdoings at this level can take several years to uncover. The board of directors, to whom the CEO reports, must be especially diligent in confirming what they are being told. In its simplest terms, you do not want one person to be able to order, receive and pay for goods or services. Organizations separate these functions in order to prevent unauthorized purchases. Be suspicious of people overriding controls—policies and procedures are designed to address control weaknesses.

#### Ethics breaches are a slippery slope

If your organization's employees behave properly, even when no one is looking, then you have established an ethical culture. There are so many temptations, however, for management to engage in





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questionable behaviour. Once the boundary is pushed, it is so hard to pull back. When high profile cases of fraudulent transactions made headlines at Barings Bank in 1995, it was due to the escalating amounts and increasingly frequent patterns of the transactions.

**Be wary of the money manager**

Unfortunately, fraud is also common in the investment business. We've all heard stories of the money manager who appropriates the funds for their own use, invests the money contrary to the objectives of the fund's mandate or, even worse, creates a Ponzi scheme. Quadriga and Bernie Madoff are two examples of spectacular frauds. In these cases investors have little hope of recouping their

investments. The regulatory authorities in Canada, and their patchwork compliance approach, struggle to understand this industry. It is buyer, or investor, beware. Often, the victim is blamed for being gullible. But who isn't attracted to the promise of higher returns?

A rarity in today's business community is the individual who admits that more should have been done to detect fraud and other misdeeds. It would not be difficult to develop a template within individual businesses or even entire industries to address these concerns. After all, you could be the next victim. ♦

*Philip Maguire is a CPA and principal at Glenidan Consultancy Ltd. in Toronto*

**SHAM, WOW**

A catalogue of recent cons **BY ANDREW RAVEN**

**TIP OF THE ICEBERG**

The last few months have seen a parade of once-celebrated executives, like Theranos' Elizabeth Holmes and Nikola's Trevor Milton (founder of an electric truck manufacturer), convicted of fraud.

A new study suggests they're far from alone when it comes to corporate malfeasance.

Some 10 per cent of large, publicly traded companies commit securities fraud in any given year and only about one-third of them are caught, said the study, co-authored by University of Toronto professor Alexander Dyck.

It estimates that fraud "destroys" US\$830 billion in equity value annually. Perhaps even more surprising: in the average year, 41 per cent of companies misrepresent their financial reports, the study found.



**UNDERCOVER GRANDMOTHER**

Two Saskatoon grandparents have been credited with helping to take down a fraud ring that bilked seniors out of more than \$100,000.

The tale began early one January morning when the couple—identified only as Larry and Helen—received a phone call from someone claiming to be their grandson.

The man said he had been jailed and desperately needed \$9,000 in cash for bail, which would be collected by a bondsman.

Sensing something was fishy, the couple reached out to police, who asked the seniors to star in a sting that would have made Paul Newman proud.

Larry filled a manila envelope with bill-sized pieces of newspaper while Helen strung along the scammers, telling them the cash would be ready for pickup later that afternoon.

Sure enough, the "bondsman" came calling, only to be greeted by waiting police, CBC reported.

Saskatoon police say three men have been charged in connection with what's known as a "grandparent emergency scam." Officers say they began receiving complaints in December and that seniors had been defrauded out of more than \$100,000.



**CRYPTO CALAMITY**

An Ontario man has lost \$500,000 in an elaborate cryptocurrency scam that saw fraudsters reportedly build a phony trading platform to lure in their victims.

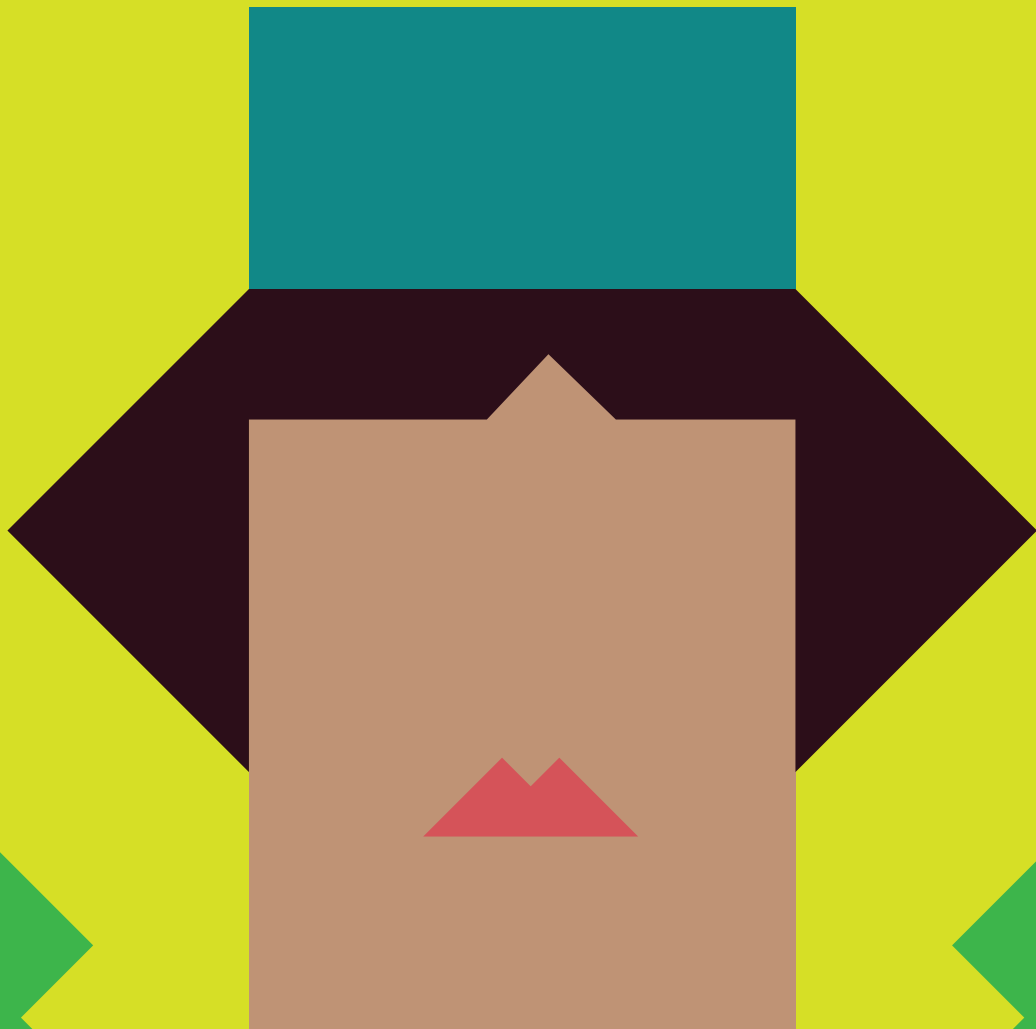
The man, from the Guelph, Ont. area, had daily contact with what he believed was a cryptocurrency investment firm and tracked his growing "portfolio" online, said CTV, citing police.

The man added \$500,000 into his purported investment account over the course of six months.

Ontario Provincial Police, who are investigating the case, say scammers will sometimes go as far as to build their own app to convince would-be traders of their legitimacy.

From 2017 to 2021, Canadians lost more than \$122 million in crypto-related schemes, according to the Canadian Anti-Fraud Centre, a partnership between law enforcement agencies. That is more than any other type of scam, save for wire fraud, and three times the amount lost in credit card fraud.

PHOTOGRAPHS: TIP OF THE ICEBERG BY CP IMAGES; UNDERCOVER GRANDMOTHER BY ISTOCK



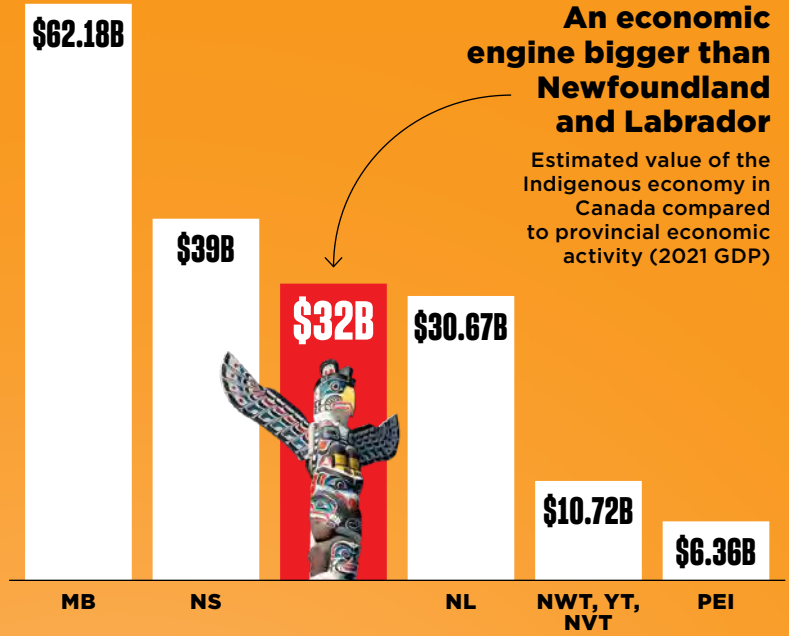
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BY THE NUMBERS

# PROFIT CENTRES

There are an estimated 60,000 Indigenous-owned businesses in Canada, representing a combined economic impact greater than that of some provinces. Mostly privately owned (85%) and for-profit (89%) these First Nations, Inuit and Métis enterprises are succeeding despite systemic barriers related to education and training, infrastructure, financing, and other essential business inputs. And, compared to other businesses in Canada, they are more innovative and more export oriented. —*Steve Brearton*



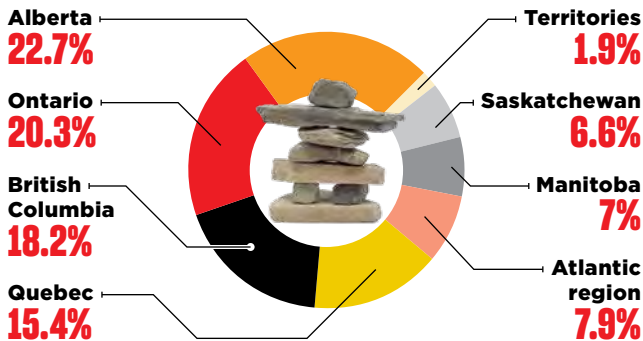
**An economic engine bigger than Newfoundland and Labrador**

Estimated value of the Indigenous economy in Canada compared to provincial economic activity (2021 GDP)



## Alberta leads in Indigenous businesses

Share of Indigenous businesses by province, 2018



## First Nations coalition in \$1B purchase of Clearwater Seafoods

In November 2020, a partnership between a coalition of Mi'kmaw First Nations and Premium Brands of British Columbia bought Halifax-based Clearwater Seafoods in a billion-dollar deal.

"I feel excited about it. We're a player now. To be in business, you first have to play the game. You have to play to win, and we won. This deal is a transformational moment for all participating communities. We will now have access to the offshore fishery from an ownership position."

—Chief Terry Paul, Membertou First Nation



## \$27.7 billion annually in lost wealth to Canada's economy

The Indigenous population represents a wealth of underutilized labour potential. Closing the socio-economic gaps between Indigenous and non-Indigenous people in Canada would add an estimated \$27.7 billion to the Canadian GDP each year.

"There are significant gaps between the Indigenous and non-Indigenous populations in Canada that prevent [our] economic participation, including: shortage of jobs; inequitable funding for education; work inexperience; lack of training, transport, digital infrastructure."

—Chief Clarence Louie, Chairperson, National Indigenous Economic Development Board



## Top five sectors for Indigenous businesses



# 43



Percentage of Aboriginal businesses without a current lending relationship with banks, Aboriginal Financial Institutions (AFIs), governments, or credit unions, according to a 2021 survey by the Canadian Council for Aboriginal Business.

## \$3 billion in Indigenous financing

First established in the late 1980s, there are 58 Aboriginal-owned and controlled business lending organizations in Canada. Known as Aboriginal Financial Institutions, they have provided more than **50,000 loans totaling \$3 billion** to businesses owned by First Nations, Métis, and Inuit people.

## What the loans supported

In 2020-21 AFIs provided 982 loans worth \$109 million to Indigenous businesses, affecting more than 3,802 jobs

**51%**  
off-reserve

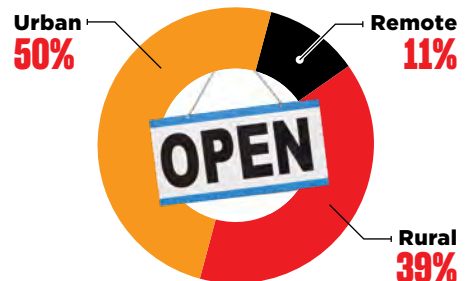
**49%**  
on-reserve

**69%**

Business solely owned by a man

**24%**

Business solely owned by a woman



**An abiding interest in business has taken **Greg Twinney** through the dot-com era to the CEO's role at General Fusion. Now he's using his CPA skills to help light the way to a sustainable future.**

# ENERGY

## STAR

BY JANET GYENES  
PHOTOGRAPHS  
BY VISHAL MARAPON

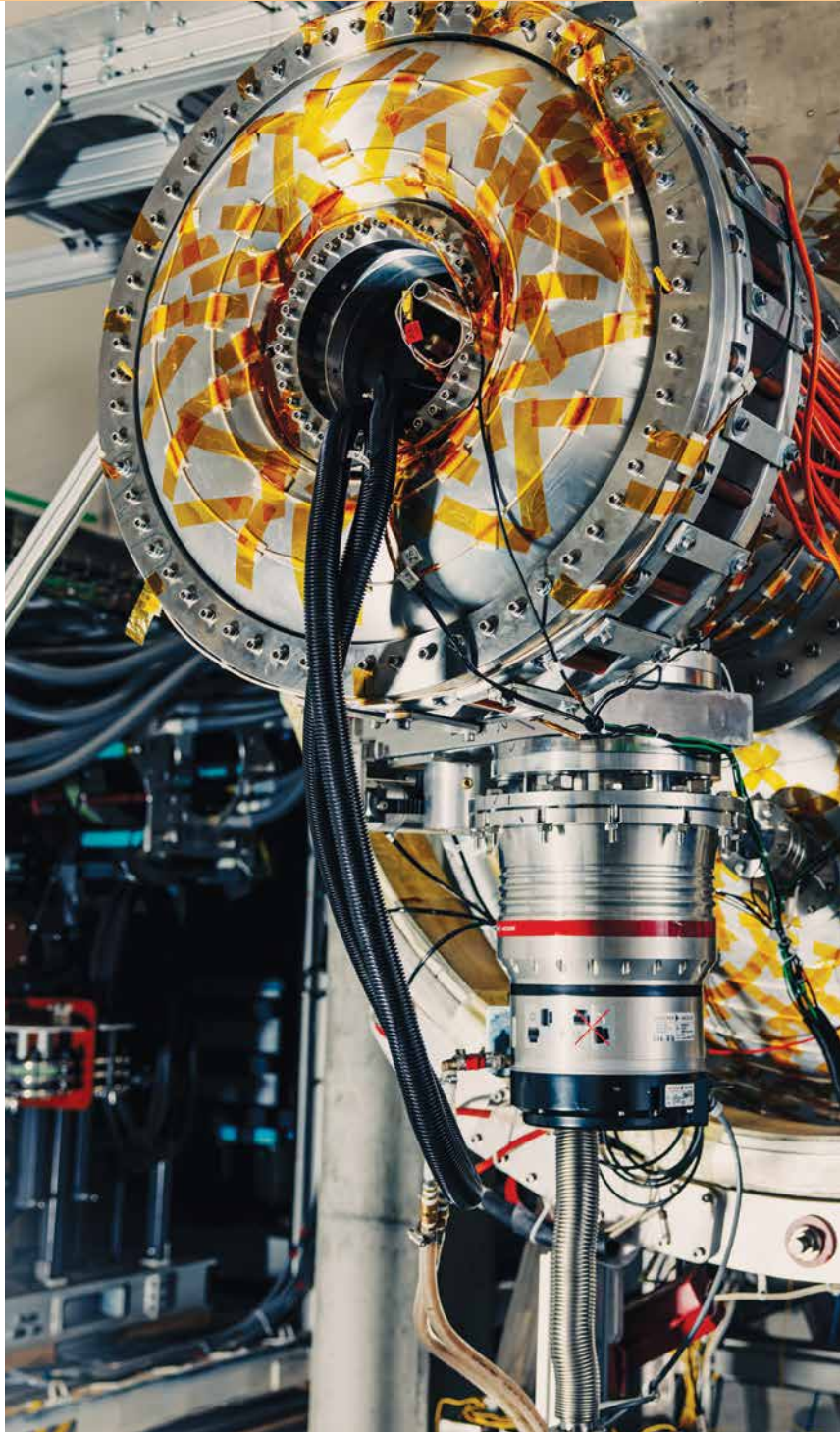


# Q

**reg Twinney** admits that he wasn't aspiring to become a CPA, despite developing an interest in business at an early age. As a kid growing up in Newmarket, Ont., he was just looking to earn some pocket money when he started a window-washing company as an entrepreneurial high schooler.

"I had a couple of employees and vans," he recalls. "It wasn't just me and a squeegee." By the time college rolled around, Twinney had accumulated a chunk of cash but not the knowledge or core business skills to take his company further. "I needed to figure out how to run a business and what financial statements meant and how to put money away in banks," he says. To tackle those blind spots, he earned a business diploma from Seneca College in Toronto. Then, still eager to gain additional experience, he took an accounts receivable role for Can-Ar Coach, a bus company, which later became an export business in Cuba. Still, that entrepreneurial itch left him wanting to make a bigger mark in business.

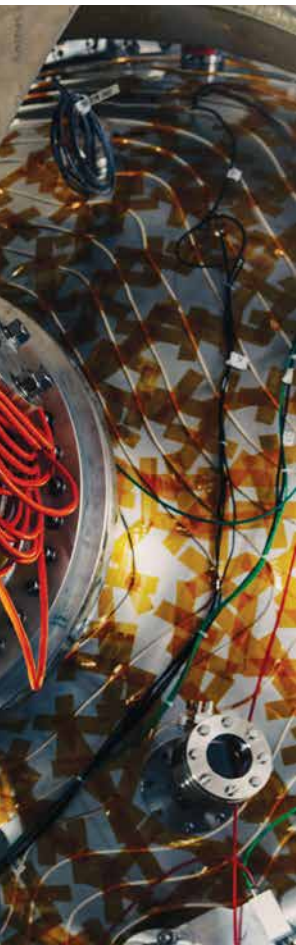
"[At Can-Ar] we had a controller who said, 'Look, if you're going to go anywhere inside of a company, especially in accounting, you need to get a designation.' I had no idea what that meant," Twinney says. He quickly found out, though, that he could get that designation while still exploring his entrepreneurial interests. Twinney ended up moving to Cuba part-time and travelling back and forth to Toronto while studying for his CPA designation. It wasn't long after that when his interest in finance fused with an interest in disruptive technologies, setting him on the path to where he is today.



You don't need to be a nuclear scientist to understand General Fusion's overarching goal: to create an energy solution that meets the urgent global need for carbon-free electricity. Just imagine a world where the power grid is decarbonized and there's an end-to-end supply chain distributing generated fusion energy across the planet—with zero emissions and on-demand availability. It might sound like science fiction, but magnetized target fusion (MTF) technology already exists and is expected to be distributed commercially by the early 2030s.

**Magnetized target fusion technology has existed since the '70s, but plasma physics only recently made it commercially viable**





In fact, the Vancouver company, which has offices near London, U.K., and in Oak Ridge, Tenn., was founded in 2002 by Canadian physicist Michel Laberge, General Fusion's chief science officer. MTF technology goes back to the 1970s; however, plasma physics wasn't advanced enough to make it commercially viable. But fusion's potential is real: one kilogram of fusion fuel (deuterium and tritium), which has zero emissions and on-demand availability, can replace 55,000 barrels of oil, six million kilograms of natural gas, or 10 million kilograms of coal. As the world shifts to a low-carbon economy, companies like General Fusion are hoping to lead the way.

Twinney first joined General Fusion as CFO in 2020. The company is funded by a global syndicate of leading energy venture capital firms, industry



early on that Greg had a really strong operating competency and capability," he says. "I was impressed to see how quickly he won over the trust of key people within the organization, and not just on the executive team but at all levels. I think he is a real beacon within the leadership team whom many people look up to."

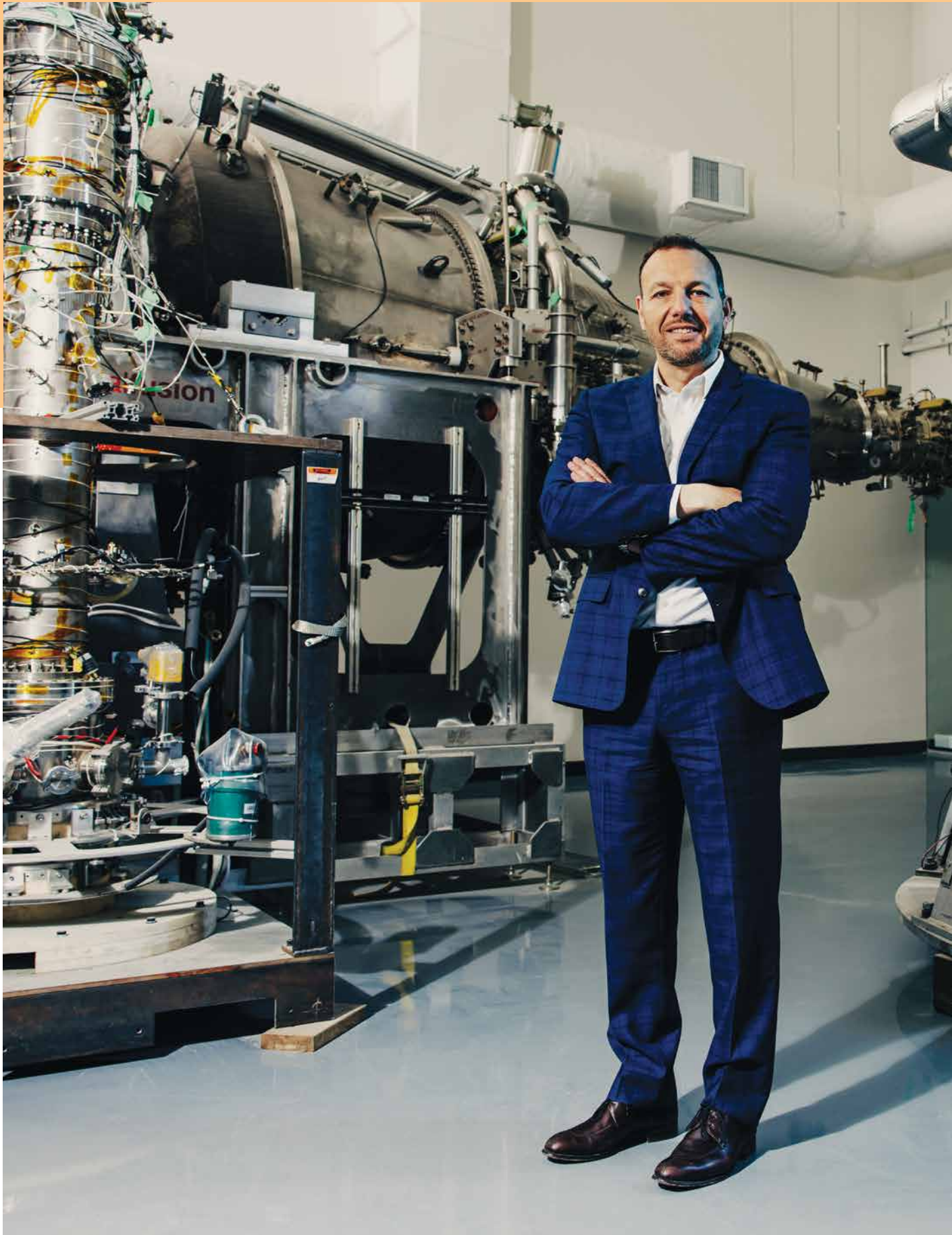
## Fusion has real potential. One kilogram of fusion fuel can replace 55,000 barrels of oil or 10 million kilograms of coal.

leaders, and technology pioneers, and Twinney has helped expand the company's investor base. In November 2021, General Fusion's US\$130 million Series E funding round was oversubscribed. Anchor investors include the Business Development Bank of Canada (BDC), Temasek (a Singapore-based investment firm), and the Jameel Investment Management Company (JIMCO), plus individual investors such as Shopify's Tobias Lütke and Amazon's Jeff Bezos. Twinney is also part of the team that helped launch its Fusion Demonstration Program, which takes the technology out of the lab to create the world's largest prototype for an MTF power plant.

Zoltan Tompa, who leads clean technology investments at the Business Development Bank of Canada and is a board member at General Fusion, met Twinney for the first time in 2020. "It was clear

General Fusion has an outside goal, but one that Twinney believes is within reach. In 2022, he shifted into the CEO seat. "I'm the bridge between the founder's vision and what the investor needs to understand about the company in order to find it attractive. I end up being the translator between the two," he says. "That's where the CPA [designation] gave me the financial acumen and the credibility to represent the founder, our science genius who started the company 20 years ago. I'm the business guy who translates all this incredible technology to the business world and investors."

Tompa believes Twinney is the right person for the role. "He came to General Fusion because he realized there was a lot more [that] he could do to join the fight on climate. I think that's his guiding light day in, day out. He brings no ego to the table but the desire to drive this organization forward."





When Dr. Laberge was in the early stages of establishing General Fusion, Twinney was getting his first taste of a different kind of disruptive technology. It was the early 2000s and the dot-com sector was booming. Venture capitalists couldn't inject money fast enough into start-ups. It was worlds apart from washing windows or doing accounts for a bus company. Twinney remembers thinking, "This whole website thing sounds like it's going to be world changing. And I want to be a part of that. So I joined a company called CyberPlex. We went public and I became the head of finance."

Of course, the dot-com bubble eventually burst, but Twinney wasn't deterred. He still had a solid foundation to build on and continued to hone his skills in corporate finance and operations across technology and Software as a Service (SaaS) businesses, taking on leadership roles such as CFO and COO at Kobo, the Toronto-based Indigo offshoot that became one of the world's largest e-reader and e-book retailers. He also did a stint at Opalis Software, which was acquired by Microsoft in 2009.

Of course, Twinney's CPA designation gave him the financial acumen to complement his entrepreneurial skills, but he says the discipline required to complete the program is what has helped him bring those two elements together to create value for an organization. "Technology companies taught me to think in a different way than a more traditional company," he says. "It's really contrary, but you *can* create value inside of a company—and you need to, especially in technology—before you create revenues and profitability."

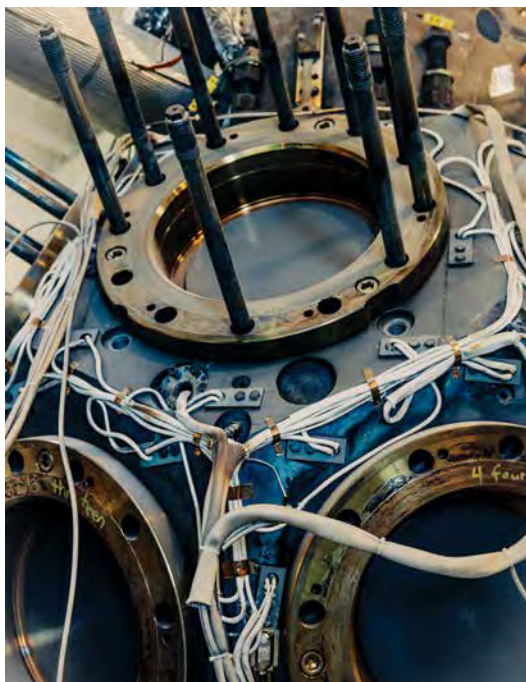
It can be a challenge to communicate such tactics to the financial community and investors. But Twinney has been able to do so by demonstrating his confidence in the team's ability to execute on them. The goal, in the end, is to create value for the world, value for the company, and long-term value for investors.

One major career turning point stands out for Twinney. In 2014, he'd taken on the role of EVP at Real Matters, another industry disruptor founded by technology entrepreneurs with expertise in the real estate, lending, and insurance sectors.

## “He’s a real beacon within the leadership team whom many people look up to”

Within a few years, Real Matters went public with a billion-dollar IPO (its debut was one of the TSX’s largest tech IPOs in a decade). The company had an internal meeting that happened to coincide with a “bring your kid to work” day. So Twinney invited his 14-year-old daughter, Olivia, the eldest of four, to witness the company’s inner workings. He recalls thinking, “This is going to be the best day ever. She’s going to see me on stage and go, ‘That’s my dad. I’m so proud.’”

“We were partway through the presentation and I’d been on stage. I saw my daughter in the crowd, and I went over and stood beside her and said, ‘So what do you think?’ And then she leaned over and said, ‘Well, at least now I know what I’m *not* going to do when I finish university.’” Surprised, Twinney asked what she meant. “She said, ‘All you guys care about is money and percentages in these hundreds of millions and these billions. But what’s the point?’ She felt that what I was doing was not valuable in the greater scheme of what’s valuable to the world.”



The words stung, but Twinney soon found himself moving on to the next big thing, a role as CFO and COO of Hootsuite, one of the first social media management platforms. It was 2018 and Twinney saw the opportunity to work closely with another entrepreneurial founder and help bring some business and financial discipline to the company. “I had worked with other founders and turned those companies into very valuable businesses that we’ve sold or had IPOs, and the scale of it was attractive, and a nice fit for my skill set.”

But his daughter’s words still resonated, and Twinney realized that striving for bigger and better wasn’t validating enough. Reflecting on his early entrepreneurship, he says, “I started out in business because I wanted to, but mostly because of financial reasons. That’s the reality of it. But I had hit an interesting spot in my life in my 40s,” says Twinney, who is now 50. “I’d had some good wins and some financial success, probably even beyond what I thought I could achieve. But what I recognized is that type of success did not equal happiness for me. I was unfulfilled despite being able to do things and buy things that I didn’t think I’d be able to do and buy...the desire for material things is almost insatiable. It’s an unfulfilling path that just doesn’t end.”

Twinney had never even heard of General Fusion when a recruiter for the company connected with him. And he didn’t know what fusion was, either, aside from what he’d learned in high school physics class. “I did a little research and tried to understand, mostly, what’s the market opportunity for a technology like this? I recognized pretty quickly that the market opportunity and impact for fusion is almost immeasurable because it’s so transformative to the world. We’re talking about clean energy from water—very small amounts of water—with no radioactive waste. It’s the Holy Grail of energy and changes everything.”



**In his 40s, Twinney realized he was unfulfilled. A move to General Fusion gave him a chance to make a positive impact in a brand-new field.**

Twinney knew he wanted to feel personally connected to his work and had seen companies struggle as they attempted to make their work more meaningful to their leaders and workers.

“Whereas [with] General Fusion, [there’s no struggle]; its mission is to change the world by producing clean energy that’s available anywhere in the world. The financial [component] is actually secondary because you’re creating this value,” he says. “There are easier ways to make money than this. But the mission is so powerful, even for me personally, and for teams to really embrace hard, hard things.”

To stay up to speed, Twinney reads countless books on business, physics, and fusion, as well as global energy markets, so he has the knowledge and tools to deliver. At the same time, he recognizes his CPA designation is what has given him the

most credibility at General Fusion. “It separates you from the others at the executive table when you can go deep and understand, ‘How does this all turn into money on a financial statement, and what does all that mean?’ That’s been a huge part of this designation.”

But it goes even deeper than that as Twinney thinks about the legacy he’s leaving behind and the time he spends away from his family while working. “With four kids, am I trading my time with them for something they see [as] just money? Of course, I don’t want my kids to think that I’m trading their time for money.”

His kids, especially Olivia, are all proud of their dad. Twinney is still talking about millions and billions—and now even trillions—as General Fusion moves forward on its mission. But what could be more valuable than saving the planet? ♦



*Placing a dollar value on watersheds, forests, and wildlife has often been a controversial idea. But it just might turn out to be the best way to preserve the landscapes that protect us.*

# Nature's Call

*By Andrew Raven*

**A**s you walk along the banks of the Grindstone Creek, which meanders through the cities of Burlington and Hamilton in Ontario, it almost feels like you're in another world.

Bracketed by towering maples, the watercourse rushes over waterfalls, plunges into atmospheric valleys, and splays out over duck-filled wetlands.

Despite scything through farms and subdivisions, the creek and its surrounding watershed are bursting with wildlife, including species at risk such as the red mulberry tree, the monarch butterfly, and the red-headed woodpecker. The star attraction, however, is probably the Jefferson salamander, a candy-bar-sized amphibian so rare, Burlington closes a major road every spring so they aren't squashed en route to their mating grounds.

"There are parts of this watershed that are just

gorgeous," says Kim Barrett, associate director, Science and Partnerships at Conservation Halton, the public agency that manages the area. "When you're in one of these deep valleys, it doesn't feel like you're in southern Ontario. It feels like you're somewhere much wilder."

As scenic as it is, Grindstone Creek is more than just a place to escape the urban jungle: its forests, swamps, and valleys act like a giant sponge, sopping up stormwater before channelling it into Lake Ontario. Ecologists like Barrett have long known that was a valuable service but now they know exactly how valuable.

A study released in August 2022 found that if the Grindstone watershed collapsed, Hamilton and Burlington would need to spend \$2 billion on stormwater infrastructure to protect local homes and farms from flooding.

For many environmentalists, studies like that one have long been borderline heretical. “Ecologists have valued nature intrinsically, you know, forever,” says Barrett, whose organization co-funded the Grindstone Creek study. “So there has been a bit of friction about putting a dollar value on it.”

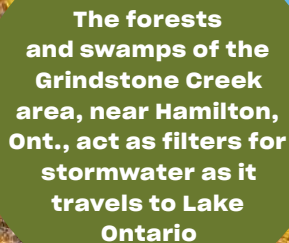
But as natural spaces disappear, many are coming around to the idea. And they’re finding allies in an unlikely place: the world of public sector accounting.

In recent years, a growing number of municipalities have attempted to place a dollar value on the often-invisible services that nature provides. The worry is that as urban development and climate change chisel away at natural landscapes across Canada, those places are losing their ability to filter water, hold soil, and draw pollution from the air.

If these ecosystems collapse, they could leave Canadian municipalities facing multi-billion-dollar bills for new infrastructure. Yet those risks are not reflected on public financial statements.

Bailey Church, leader of KPMG’s National Public Sector Accounting Advisory service line, called the issue a fiscal “time bomb” for municipalities.

“If you go back to what public-sector financial statements are meant to do, they’re designed to track the resources available to provide services,” says Church. If municipalities just focus on traditional capital assets—like land, buildings, and equipment—they’re “missing the biggest piece of the puzzle,” he believes. “We’re just beginning to open our eyes to the full extent of these benefits.”



**The forests and swamps of the Grindstone Creek area, near Hamilton, Ont., act as filters for stormwater as it travels to Lake Ontario**





**Nearly every settlement** on Earth relies on the natural world to function. Rivers serve up drinking water. Honeybees pollinate crops. Wetlands shield communities from storm surges. Rivers channel stormwater away from homes. And forests scrub the air of planet-warming greenhouse gases.

The World Economic Forum estimates that more than half of the global gross domestic product—valued at some \$44 trillion—is moderately or highly dependent on nature and its services.

But the natural buffet isn't bottomless, and humans are voracious dinner guests.

We have "significantly altered" three-quarters of the Earth's dry land, according to the United Nations, with our farms and cities pushing ever deeper into previously untouched spaces.

**“ Ecologists have valued nature intrinsically. So there has been a bit of friction about putting a dollar value on it. ”**



As the global population surges—it's expected to hit nearly 10 billion by 2050—and climate change unleashes a mix of floods, droughts, and rising seas, natural spaces will continue to dwindle. Experts say that if they do, cities could be in serious trouble.

Roy Brooke, the executive director of the Municipal Natural Assets Initiative (MNAI), sees this as a global challenge.

The non-profit group helps civic leaders (among others) across Canada value, understand, account for, protect, and manage their natural capital. Brooke estimates that about 100 Canadian municipalities, from Toronto to tiny Rossland, B.C., have at least dabbled in the field.

“On the one hand, that's good,” Brooke says. “On the other hand, it is kind of crappy when you consider that there are almost 4,000 local governments in Canada.”

Municipalities own about 60 per cent of Canada's infrastructure and make most of the decisions regarding land use. Those that don't attempt to value nature when planning for the future are rolling the dice with their finances, Brooke says. “Every hour of every day, year in [and] year out, local governments, and many others, are making decisions about zoning, land use, and investment with, at best, an incomplete understanding of the impacts of those decisions.”

Last year, the University of Waterloo's Intact Centre on Climate Adaptation, MNAI, and KPMG Canada backed a study on natural capital. Titled *Getting Nature on the Balance Sheet*, it examined what it would cost cities to replace damaged or threatened natural assets with built infrastructure.

Some of the totals were hefty. Gibsons, B.C., for example, would need to spend between \$3.5 million and \$4 million on stormwater storage if it lost a series of naturally occurring ponds. It would cost Oshawa, Ont., nearly \$19 million worth of drainage work to replace one local creek. And, in Quebec City, civic officials would need to shell out about \$50 million annually to mimic the flood control capabilities of nearby wetlands.

Church says that embracing the principles behind these numbers is an important step forward for the accounting world.

“If we had this conversation 10 years ago, even five years ago, this would've been viewed as a very, very nice concept, but something that's not necessarily real,” says Church. “Now I think we're realizing, ‘No, no, no,’ these are critical, essential benefits we're seeing.”

As cities push forward with valuing their natural assets, one major question looms over the accounting world: what's to be done with these numbers?

**Right now, municipalities** follow a hodgepodge of standards for valuing assets, some borrowing from guidelines developed by the United Nations. (The UN's framework is known as the *System of Environmental-Economic Accounting*.) At the same time, there are no rules governing where valuations should go. Should they be add-ons to sustainability reports, documents that chart a government's overall impact on the environment? Or should they be embedded in financial statements, a move that would require municipalities to be much more rigorous in how they track and manage their natural assets?

The answers to those questions could be coming soon.

In May 2022, the International Public Sector Accounting Standards Board, which develops global accounting guidelines, released a consultation paper on natural resources reporting. The paper was the first step in what is likely a years-long process of standard setting, but it outlined the organization's thinking on the future of natural capital accounting. In short: it likes the idea.

The board said that if certain conditions are met, natural assets should be recognized...in general purpose financial statements.


The paper looks at how to account for commodities like freshwater and oil. But it also suggests that natural resources don't need to take a physical form in order to be considered an asset. That would seemingly open the door to including natural services, like a wetland's ability to filter pollutants from drinking water, on balance sheets. Provisions like that are considered key to protecting the entirety of landscapes, especially ones that can't be commoditized.

The international board recommended that to be considered an asset, a natural resource must be controlled by a public body. (That standard could mean, for example, that water in a small lake would be considered an asset but water in a transboundary river wouldn't be.) The paper added that control must be the result of a past event, like a land purchase or treaty.

The board also said governments must be able to reliably measure the value of that asset using accounting principles like relevance, timeliness, and verifiability.

Canada's Public Sector Accounting Board (PSAB), which sets the country's accounting standards for public sectors and draws on international guidelines, has welcomed the push toward standardization. It submitted comments last year on the consultation paper after meeting with municipal and Indigenous governments across the country.

The board's director of public sector accounting, Michael Puskaric, said the attempt to value natural



**The city of Burlington, Ont., closes a major road every spring so the Jefferson salamander can get safely to its mating grounds**

assets is an important "evolution" in accounting given the pressure on the planet.

"There are certainly challenges when it comes to auditing, tracking, and recognizing natural resources. Those need to be worked through," says Puskaric. "But I think it comes down to the concept of what gets measured, gets managed."

At least initially, he thinks reporting on natural resources will have to reside outside of financial statements, but as measurement techniques evolve, that may change.

Long-term, listing at least some natural assets in financial statements is crucial, says KPMG's Church. It would compel municipalities to consider the financial costs of replacing those resources. And it would force cities to write down compromised natural spaces, like a wetland that's so polluted it can't filter water.

"If we have equity investments and the market goes down, what do we do? We rate those down,



**“ Even if we just take an educated stab at the value nature is providing us, we may make decisions very differently”**

we take a loss. We don't do that with the wetland,” says Church. “Having (natural assets on) financial statements is key, to me, from a transparency perspective and accountability perspective.”

As the regulatory process unfolds, many are pushing forward with natural capital accounting. The MNAI, KPMG Canada, and the University of Waterloo's Intact Centre on Climate Adaptation are developing voluntary non-binding standards for municipalities that want to dip their toes into the field, until PSAB rules change. (Some PSAB staff and board members are sitting observers during the process.) An outline of the guidance has been developed, and the coalition is now determining how to actually build it out and create the guidance.

“By definition, a PSAB process takes between three to six years,” says Brooke from the MNAI. “There is a requisite amount of transparency and due diligence and consultation that is required—which is just part of the normal process.

“But we have a whole range of local governments who are saying, ‘Hey, I don't need that stuff in six years' time. I needed it yesterday.’”

---

**Nova Scotia-born** CPA Mike Kennedy, the chief financial officer of Rossland, B.C. (population 4140), approaches the job with a keen eye and interest on sustainability.

Rossland is set deep in the Kootenay Mountains and when Kennedy arrived in 2021, the city was in the middle of a novel accounting experiment.

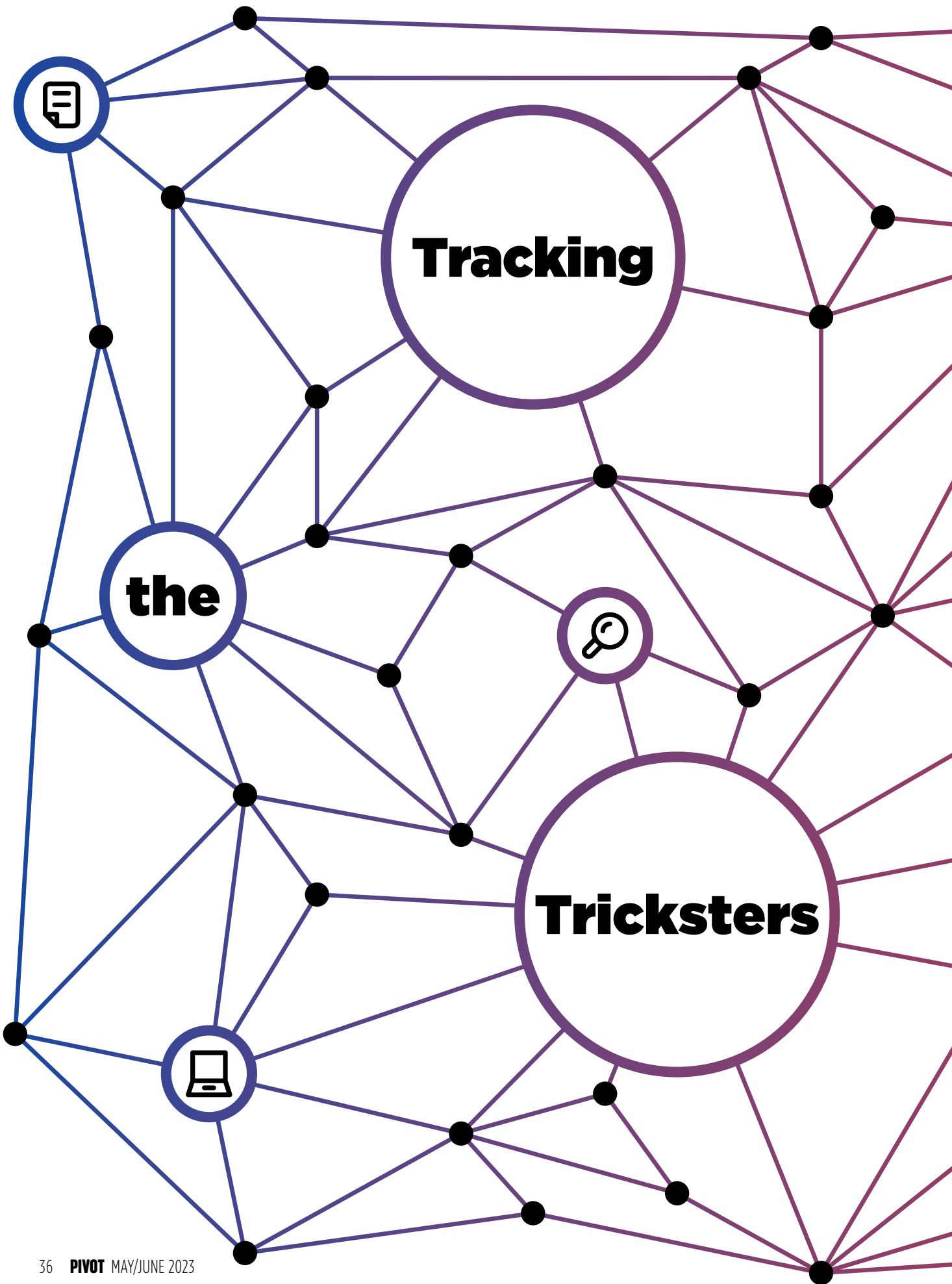
Municipal officials had just done an in-depth survey of Rossland's natural surroundings, including its forests, wetlands, and creeks. The report assigned a grade to more than 4,000 natural features and found that many, especially Rossland's wetlands, were in good condition, which informed the need to track and prolong their health.

It was the first step in an attempt to gauge the value of Rossland's surroundings and make more informed decisions about urban development, and to put nature first in those decisions.

“(Natural asset accounting) isn't maybe as clear-cut as the average CPA would like,” says Kennedy, who taught accounting at Acadia University before decamping to Rossland. “But even if we just take an educated stab at the value nature is providing us, we may make decisions very differently.”

Ultimately, Rossland is hoping to put natural assets at the heart of its planning process.

“We're trying not to be so reliant on complex, expensive built infrastructure,” says Kennedy. “Nature has a pretty good track record of providing many services, free of charge.” ♦



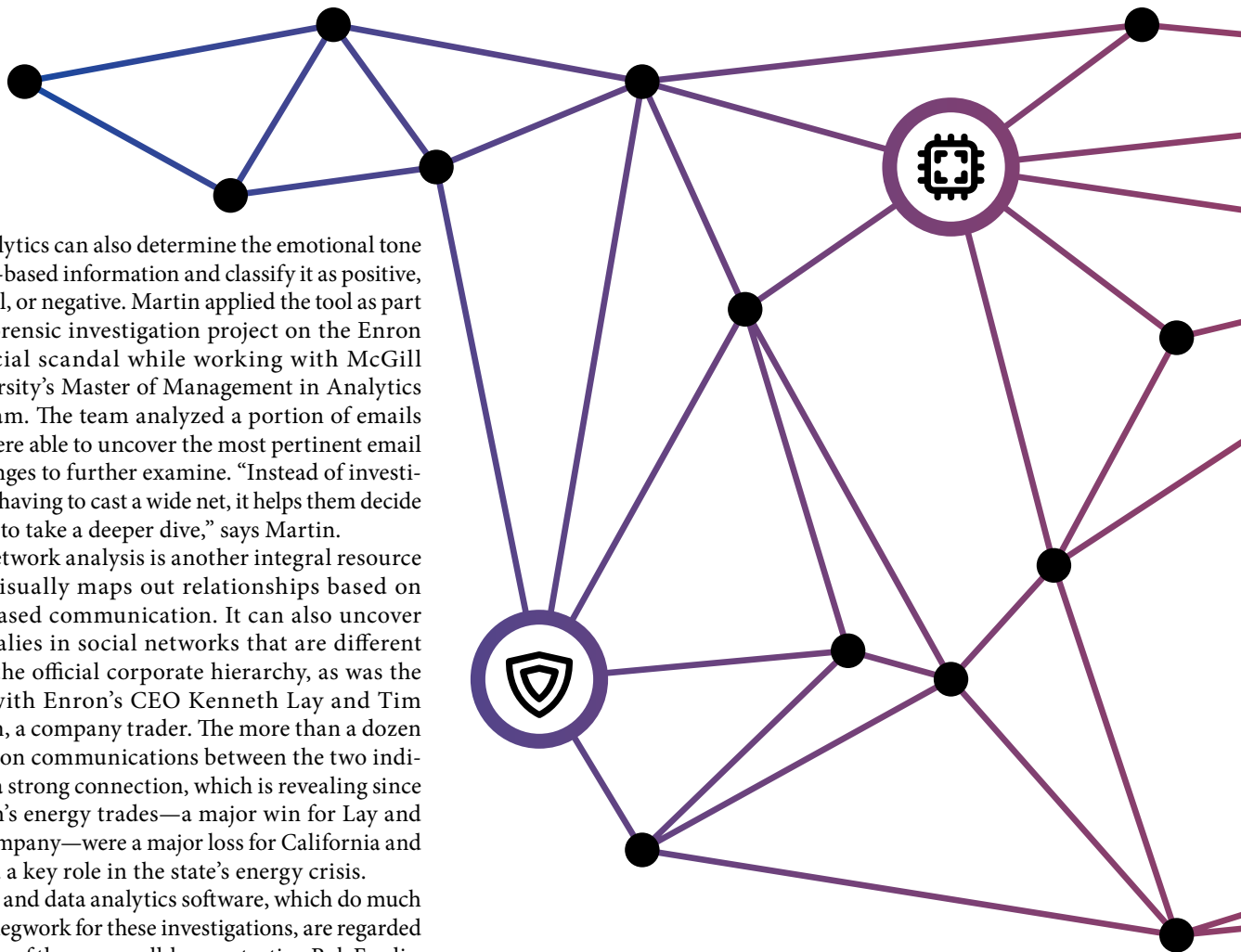


## As financial criminals become craftier, forensic accountants and law enforcement, bolstered by new legislation, find new ways to crack down. But is it enough?

BY RITA SIMONETTA

**F**inancial criminals no longer operate out of dark alleyways; they often hide in plain sight in home offices and corporate boardrooms. And, while these criminals have become more innovative, so have those standing in the way of their illegal pursuits. As the federal government and Canadian financial institutions work to form a united front against lawbreakers, they must also ensure that their tactics and defence strategies evolve alongside new tech and slippery criminal methods.

One major helping hand is text analytics, which sifts through text-based information like emails, memos, or text messages. “It can take regular word searches to a new level,” says Jack Martin, director of Forensic Data Analytics at KPMG in Canada. The technology mines for keywords in a trove of documents, suggests similar words, and also provides statistical determination about when a match is unlikely “because with so much data, it’s sometimes hard to know when it’s time to stop searching,” notes Martin.



Analytics can also determine the emotional tone of text-based information and classify it as positive, neutral, or negative. Martin applied the tool as part of a forensic investigation project on the Enron financial scandal while working with McGill University’s Master of Management in Analytics program. The team analyzed a portion of emails and were able to uncover the most pertinent email exchanges to further examine. “Instead of investigators having to cast a wide net, it helps them decide where to take a deeper dive,” says Martin.

A network analysis is another integral resource that visually maps out relationships based on text-based communication. It can also uncover anomalies in social networks that are different from the official corporate hierarchy, as was the case with Enron’s CEO Kenneth Lay and Tim Belden, a company trader. The more than a dozen common communications between the two indicated a strong connection, which is revealing since Belden’s energy trades—a major win for Lay and the company—were a major loss for California and played a key role in the state’s energy crisis.

Text and data analytics software, which do much of the legwork for these investigations, are regarded as some of the more well-known tactics. Rob Fowlie, a forensic accountant and partner at MNP, an accounting, consulting, tax, and risk services firm in Toronto, advocates for the use of more cutting-edge technology, like machine learning. Fowlie calls it a “critical resource that not only reduces the risk of fraud losses but also leads to more efficient and thorough investigations.”

“Machine learning is one of the most practical and important applications for fraud detection as it allows companies to analyze data and to classify it in order to find trends and patterns and to predict future outcomes,” Fowlie says. “Algorithms can be applied in an employee or expense reimbursement system, for example, to detect PDF documents from vendors that have been modified. Typically, vendor invoices in this format are originals, and modifications are predictive of a fraudulent expense claim.”

Sue Ling Yip, a partner in KPMG Canada’s risk consulting and financial crimes practice, says that “machine learning helps forensic accountants look in the right places.” In a human trafficking ring, for example, patterns associated with past human trafficking are inputted so that the machine “learns” from this information and thereby can make predictions or provide red flags. Yip says examples of red flags in a human trafficking ring include frequent

purchases and ATM withdrawals at night, extensive e-transfers, and multiple hotel bookings. Machine learning also collects relevant data from open-source information, such as news articles. “It then packages all of this information,” she says. “And forensic accountants group the alerts that are more likely to result in good intelligence for law enforcement.”

Zain Raheel, EY Canada forensics and integrity leader, agrees that machine learning is an essential aid and adds that EY Canada has developed its own proprietary technology solution “that is adept at not only analyzing numbers but also what we refer to as unstructured data (based on our own proprietary library of words that has been developed). It helps us mine for issues in order to alert us that we could have a problem here.”

Sometimes these reactionary methods aren’t enough, which is why establishing preventative measures is key, according to Fowlie. He argues that this will go a long way in lessening risks of financial crimes down the road. He adds, “Fraud risk assessment is a powerful strategy that forensic accountants can utilize to protect companies from internal and external forces.” A fraud risk assessment is tailored to a business’s operations and identifies vulnerabilities to fraud exposure that might occur from client onboarding, for instance.



**Rob Fowlie**  
CPA, CA, CFE

“Fraud risk assessment is a powerful strategy that [can] protect companies”



# Fraud risk assessment identifies a business's vulnerabilities to fraud exposure

“By working with management, a forensic accountant can identify potential fraud risks in business operations and ascertain whether existing controls can prevent or detect specific fraud scenarios,” explains Fowlie. And businesses are getting the message, he says. “I’m noticing a number of provincial entities undertaking fraud-risk assessments to reduce the risk of fraud losses.”

Forensic accountants aren’t alone in this battle as the nation’s top cops are also preparing for this brave new world. Karen Manarin from the RCMP’s IMETs (Integrated Market Enforcement Teams) says the RCMP is intent on hiring investigators with accounting expertise to assist in the battle against fraud and money laundering. According to Manarin, “This will bring additional multi-disciplined expertise that will be embedded in the RCMP.”

The RCMP has recently taken steps to get tough on money laundering with its Integrated Money Laundering Investigative Team (IMLIT), created in late 2020 and with units in British Columbia, Alberta, Quebec, and Ontario. The goal of the IMLIT is to build partnerships with other law enforcement agencies, as well as the Canada Revenue Agency and the Forensic Accounting Management Group.

“The IMLIT allows the RCMP to be intelligence-led, and to identify, seize, restrain, and forfeit

illicit and unreported wealth accumulated by organized crime groups,” says Manarin. “The creation of the IMLIT teams in key geographical areas in Canada allows the RCMP to focus its efforts on this serious problem.”

This development comes at an opportune time—as of 2023, Canada is not on the Financial Action Task Force list of countries identified as having strategic anti-money laundering defences, making it an attractive target for criminals eager to take advantage of the country’s lax prosecutorial and enforcement laws. According to the Criminal Intelligence Service of Canada, it’s estimated that money laundering nationwide was worth up to \$113 billion annually.

One of the easiest exploits is due to Canada not having a comprehensive national registry to identify who owns or controls private companies, leading to money launderers being able to easily hide their identities and transactions through shell companies.

Strengthening beneficial ownership information has long been advocated by CPA Canada, and some progress has been made. In its 2022 budget, the federal government announced it will implement a publicly accessible beneficial ownership registry of federally regulated companies before the end of 2023.



**Sue Ling Yip**  
CFE

“Machine learning helps forensic accountants look in the right places”

PHOTOGRAPH COURTESY OF KPMG IN CANADA



# Financial crime is as far-reaching as it is impartial when it comes to whom it targets

But a major concern involves provinces and territories having their own guidelines, acts, and requirements for incorporating companies. “That’s inefficient,” says Sanaa Ahmed, assistant law professor at the University of Calgary, who notes that “the federal government registry won’t reveal too much about beneficial owners because the majority of companies in the country are provincially or territorially regulated.” The federal registry is intended to be scalable to plan for provinces who may wish to join the registry later.

Still, other experts say the government’s upcoming beneficial ownership registry could actually remove significant hurdles for law enforcement when conducting investigations. Raheel notes “it has the potential to [both] provide a significant increase in transparency and to aid the investigative process.”

“I think it’s an important first step,” says Fowlie. “And I’m hopeful that the provinces will follow shortly.”

With finance companies and the federal government reinforcing their defences, all that’s left is having more boots on the ground in the country’s financial crime-fighting efforts. Luckily, there has been an increase in academic interest in forensic accounting. The University of Toronto Mississauga’s Master of Forensic Accounting program (MFAcc), which consists of 10 courses delivered part-time

over a two-year period, launched in 2016 and continues to gain interest and students.

“Enrollment has doubled since the program first started,” says Debby Keown, program officer. She says part of its success is due to courses that offer “case-based scenarios that consider how to combat financial crime before it starts.” Courses touch on numerous topics, including fraud prevention, cybercrime, and asset tracing. Some graduates have gone on to work at the World Bank and the United Nations.

“Forensic accountants are definitely in demand,” says Esther Young, an adjunct professor at the Smith School of Business at Queen’s University, Kingston. “The need for investigations has increased as schemes have become more complex, and businesses are also looking for trusted advisers.”

The courses in the MFAcc program are facilitated by practitioners, such as forensic accountants and lawyers.

“Direct transfer of knowledge from practitioners in the field” is one of the fundamental aspects of the Fraud Examination and Forensic Accounting program at Seneca College, according to Cameron McCaw, program coordinator. The eight-month graduate certificate program has evolved over the more than 15 years of its existence, says McCaw, and a course on cybercrimes is forthcoming.

The impact of financial crime is as far-reaching as it is impartial when it comes to whom it targets. According to the 2023 Annual CPA Canada Fraud Survey, 63 per cent of 18- to 34- years olds report being a victim of financial fraud in their lifetime, 39 per cent higher than those ages 35 to 54. But the diversity in tactics and tech that will help the front lines stay in step with their targets. ♦



**Zain Raheel**  
CPA, CA

“[Beneficial ownership registry] has the potential to aid in investigations”



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EXTRAORDINARY ITEM

## SEEDING HISTORY

In the late 1800s, a new variety of melon cultivated in Montreal captured the attention of the world's cultural elite before fading into obscurity. More than a century later, local farmers (and some monks) are reviving this once-forgotten part of Canada's agricultural legacy.

BY SADAF AHSAN



PHOTOGRAPH BY STEPHANIE FODEN



Trappist monks in Oka, near Montreal, now grow the melon in small amounts

“The largest of all, the most solid of all, the most delicious of all, the most profitable of all, the best shipper of all, the best keeper of all, in every way the most desirable of all.”

This might sound like too-good-to-be-true marketing copy for some newfangled agtech product, but it’s actually a (mostly) accurate description of the Montreal melon from an 1887 catalogue ad. Every bit as good as was pitched, the fruit was an expensive and rare variety of melon, and especially popular among affluent East Coasters. Still, despite the splash it made, it quickly disappeared, and only recently resurfaced.

Originally, the melon was largely grown on the fertile land between the St. Lawrence River and Mount Royal in Montreal around 1900, and specifically in the neighbourhood of Notre-Dame-de-Grâce. Sweeter than your average cantaloupe with a faint and surprising hint of nutmeg, the Montreal melon had a distinctive netted skin and seafoam green flesh, and could grow up to 13 kilograms in weight. Despite its humble origins, a single slice of the melon sold for \$1 (the equivalent of about \$30 today). If you were craving a taste and had



the cash to spend, you’d find it in the finest restaurants in Chicago, New York and Boston. Even the Queen of England had a taste for the melon and received one each year, carefully wrapped and shipped to her.

Although it became a luxury item, the Montreal melon’s moment in the sun was short-lived. Urban expansion eventually supplanted the fertile farmland where it was grown, and it was difficult to find other locations that met its very specific requirements (seedlings needed to be planted at a certain angle, during a certain part of a season). Quebec’s agricultural industry was also becoming focused on more reliable and high-yield crops.



## DESPITE ITS HUMBLE ORIGINS, A SLICE OF THE MONTREAL MELON SOLD FOR \$1, EQUAL TO ABOUT \$30 TODAY

And anyway, the melon was difficult to store and took relatively long to ripen. Tastes changed, leaving the fickle fruit behind. By about 1950, it had essentially disappeared.

Cut to about 40 years later. After a *Montreal Gazette* story on the fruit’s history, reporter Mark Abley took a keen interest in the fruit and, after extensive research, was able to track Montreal melon seeds to the U.S. Department of Agriculture’s collection in Ames, Iowa. He brought the seeds—which descended from a melon grown in Montreal in 1961—to organic farmer Ken Taylor, who in 1996 managed to revive the once beloved fruit at his farm on Île Perrot.

PHOTOGRAPHS BY STEPHANIE FODEN

Taylor kept at it for about five years, inspiring other farmers to tackle growing the melon, too. Today, a handful of local producers grow and sell Montreal melons—but this new version isn't quite as impressive as it was a century ago. It rarely grows uniformly, for example, instead producing fruit of varying shapes and sizes.

But leave it to the Trappist monks in Oka, which is about an hour west of Montreal, to get a little more creative. The same monks behind Oka cheese and the Chantecler chicken, they know a thing or two about inventing their own varieties. Back in 1912, they had crossed the Montreal melon with the banana melon to create the Oka melon, which was not as sweet and more orange than green, but easier to grow. But when the monks' agricultural school was moved over to a local university, the memory of the melon was once again lost.

Until, that is, local organic farmer Jean-François Lévêque discovered the Oka melon's existence in the Seed Savers Exchange (a U.S. non-profit that preserves heirloom plant varieties). He headed to the Oka monks' new monastery, Val Notre-Dame Abbey in Saint Jean de Matha, which is located less than thirty minutes away from his farm. When he brought them Oka melon seeds, he was surprised to learn they'd forgotten their community had invented the fruit.

Inspired yet again, the Oka monks opted to cultivate the Oka melon and, today, grow about 40 a season.

"We grow very few melons, because we don't sell them; the melons are only for the monks," says François Patenaude, who works at the monastery, where he picks wild edibles and helps to cultivate the Oka melon. "We are cultivating a few wild plants, and emerging cultures."

Instead of growing melons to sell, their goal—one they've already handily achieved—has been to revive a tradition and historic moment in Montreal's agricultural history. While it might not be the Montreal melon exactly as it once was, it comes close enough, and remains a rare and special treat. ♦

## TECH

# FLIGHT OVER FIGHT

A shifting cohort of players and designers has led to a new breed of calm, low-stress video games **BY CORRINA ALLEN**



Not so long ago, video games that fell under the narrow category of action-adventure made up the majority of titles on offer from mainstream brands like Nintendo, Ubisoft, Epic Games, or Electronic Arts. People who said they didn't like video games often actually meant that they didn't like games like *Fortnite*, *Grand Theft Auto*, or *Call of Duty*—games that are currently available on platforms like Microsoft's Xbox Series X, or Sony's PlayStation 5.

Then our phones caught up. "The fact that you can play a relatively complex

game on a portable device like a phone or a Switch has changed the way in which we interact with games, the sorts of games we can make, and the ones we can actually make money from," says Greg Ipp, an industry expert and former games-maker for Nintendo and Electronic Arts.

As interest in games that fell outside the traditional categories increased, so too did the number of platforms that games could be played on and distributed through. Low-stress games (once dismissed as

Brie Code, Canadian programmer and creator of #SelfCare



## #SELFCARE FOCUSES ON YOUR WELLNESS INSTEAD OF OBJECTIVE-BASED GAMING ACTION

‘casual games’) are currently among the most popular varieties on the market, with titles like *Stardew Valley*, *Animal Crossing*, and *Unpacking* topping gaming ‘best of’ lists and inspiring the creation of hugely popular TikTok channels.

Take *#SelfCare*. Designed in Toronto by former Ubisoft programmer Brie Code and her team at AI firm TRU LUV, *#SelfCare* was designed with a purpose that goes beyond that of a first-person shooter game. Code, who worked on projects like *Assassin’s Creed* and *Child of Light* for Ubisoft, wanted to create not just a different kind of game, but a game that produced a completely different effect on the people who played it.

In real life, the opportunity to stay in bed all day doesn’t present itself often, but that’s exactly what the sole character in *#SelfCare* does. All day, every day, they lie in bed with the ability to interact with various items including a nearby cat, a bit of laundry on the floor alongside a deck of tarot cards, a flower blooming on a bedside table, a journal awaiting new entries, a glass of water, a locket. Each item leads to a mini-game within the app, all designed to lead the player toward

self-reflection, meditation, and (like the name says) self-care.

“Most video games leverage the fight-or-flight response to stress,” says Code. “The game designer creates artificial stress, which in some people triggers the fight-or-flight response, which creates a desire to win. However, many people don’t respond to stress with the well-known fight-or-flight response but rather with a little-known but prevalent alternate response called tend-and-befriend.”

The ‘tend’ in tend-and-befriend refers to protecting offspring, while ‘befriend’ manifests as seeking social support from peers and giving it in return.

This response, says Code, “creates a desire to take care and to connect. People with this response may find most video games boring,” she says. “However, activities that are about care, such as organizing things, dressing characters, or sharing insight, may stimulate the tend-and-befriend response and create feelings of connection.”

To ensure that result, Code collaborated with Dr. Isabela Granic, the director of the Games for Emotional and Mental Health Lab, who advised TRU LUV designers on how to

utilize tend-and-befriend to create a low-stress game.

The pandemic-era popularity of games with no set goals, no defined ending, and no flesh-eating zombie nipping at the heels of your fleeing on-screen character are not a coincidence, but there are additional factors that feed the trend. Mobile platforms made space for a wider variety of games to be distributed while increasing accessibility to them—gaming consoles are by no means obsolete, but they’re no longer a prerequisite to play.

Attitudes within and toward gaming changed, too. Games once classified as casual (read: not for *real* gamers) gained popularity as the pool of people making games became more diverse.

The term ‘casual games’ “was kind of this weird, pejorative concept,” says Ipp. “I think the association came from a predominantly young, male group of people making games.

They saw what they were doing as ‘by us, for us.’ There was a barrier to entry and if you don’t pass that barrier to entry, you’re not worthy of playing.

But, he adds, as the gaming industry matured and expanded beyond hardcore gamers, “it’s made it so that we actually have an ability to make games that have a wider appeal.”

Demographics play into that, too. Millennials and Gen Xers normalized game-playing into adulthood, creating a market for subtler, more sophisticated games. “The people who are older are making games for themselves and for their peers who all grew up feeling like video games could be an intellectual or emotional form of entertainment,” Ipp says.

Ipp sees a future in which gaming is part of healthy social engagement: “There’s a lot of opportunity for increasing the emotional and intellectual impact that games have on us through mechanisms that allow us to play games together,” he says. “That sort of interaction is also going to become more normalized, and interacting with each other through gaming could be a bigger part of our lives and could make these games more interesting and more fun.” ♦



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## BOOK VALUE

## A NUMBERS GAME

Mathematician Sarah Hart delves deep into the hidden significance of numbers written into literary classics throughout history **BY BRIAN BETHUNE**

Sarah Hart, the 33<sup>rd</sup> Gresham Professor of Geometry, is a mathematician, to put it mildly. She is, in fact, the first woman to hold the oldest mathematical chair in the United Kingdom, created in 1597 in the will of the Elizabethan financier Sir Thomas Gresham, he of Gresham's Law ("bad money drives out good"). It's hardly remarkable, then, that Hart writes articles like "A Theorem on Maximal Sum-Free Sets in Groups." Far more surprising is that she's also the author of "Ahab's Arithmetic: The Mathematics of *Moby-Dick*," and someone who annually reads the entire Booker Prize shortlist. In short, Hart—to adapt one of the finer phrases from the pen of Lewis Carroll, himself a mathematician turned literary genius—does seem capable of accomplishing "six impossible things before breakfast." That might have been a theorem in the past, but the proof has now arrived in Hart's *Once Upon a Prime: The Wondrous Connections Between Mathematics and Literature*. Hart writes of the presence of math in what she calls the housing of literature (the ties that bind poetry and math); in the furnishing of the house (metaphor and allusion from three wishes to 40 thieves); and in the characters who dwell within (Professor Moriarty, the mathematician turned Sherlock Holmes' archenemy, and Pi Patel of Yann Martel's *Life of Pi*). *Prime* is as elegant as a proper mathematical theorem, erudite but accessible, hugely informative and, above all, a joyful paean to the beauty of structure. Dive into it and, as Hart warns, "you're going to need a bigger bookcase."

Hart notes how humans are hard-wired to love and seek out patterns in both the natural and human worlds, making mathematics and structured stories (especially poetry) two of our most ancient creative expressions. Both are found in the oldest known works by a named author, Enheduanna, high priestess of the moon god in the city of Ur over 4,000 years ago. Her Temple Hymns are rife with geometry references and numbers, and one states that a wise woman "measures the heavens above/and stretches the measuring cord on the earth." Math is omnipresent in what Hart calls "the deep currents of verse," lying beneath its rhymes and flowing through its metre: "[Poetry] is simply the continuation of mathematics by other means."

Math runs through novels, too, right up to the present day, in both structure and content. For the former, Hart offers an intricate dissection of Eleanor Catton's 2013 Booker Prize-winning *The Luminaries*. She lays bare why each of the 12 chapters is half the length of the preceding one,

why a key plot point —£4096 worth of stolen gold—requires precisely that number, and how the whole 832 pages offer a mirror image of "the widening gyre" in W.B. Yeats' "The Second Coming," one of the 20th century's most cited poems.

## MATHEMATICS, AND STRUCTURED STORIES LIKE POETRY, ARE TWO OF OUR MOST ANCIENT CREATIVE EXPRESSIONS

As for content, Hart happily ranges through time and space, from *Gulliver's Travels* to modern times. She cites narrator Ishmael's love of geometric cycloids in *Moby-Dick*, takes note of the not-infrequent appearance of cold-hearted mathematician villains like Professor Moriarty, and explains why







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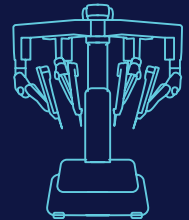
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## LAST OUT

Pi Patel was adrift (with a Bengal tiger, no less) on the ocean for precisely 227 days—22 sevenths, aka  $22/7$ , is as close an approximation of the number Pi as 3.14 is. But in literature nothing trumps the magic numbers, which include five, seven nine, 12, 40 and the undisputed king, three.

Trichotomies, mathematicians' term for sets, however large, where each individual entry has one of three relationships to the others—larger, smaller or equal—resonate in the human psyche, Hart argues. They are everywhere in math—every angle is either acute (less than 90 degrees), a right angle (equal to 90 degrees), or obtuse (greater than 90 degrees). And it's everywhere in human thought and expression, albeit in reverse, with two relatively precise parts and one prolonged section: birth, life, death; sunrise, daytime, sunset; first shot, Hundred Years' War, last shot; and (of course) beginning, middle, end.

Then there's Alice. A whole lot of math went down the rabbit hole with her in *Alice's Adventures in Wonderland*, including Carroll's notorious obsession with the number 42. The number is found sprinkled across his writings, on the surface and in the depths, where it's still visible to Hart. Why, she wonders, does the White Queen say she's precisely 101 years, five months and one day old? Hart calculates the number of days involved (37,044), assumes the Red Queen (from the same chess set) is the same age, adds the days of their lives, and comes up 74,088. Which is exactly  $42 \times 42 \times 42$ .

No one has yet come up with a convincing explanation for Carroll's obsession. Perhaps Douglas Adams got it right in his tribute to Carroll, and the *Alice* author thought—as Adams had it in *Hitchhiker's Guide to the Galaxy*—that 42 is the answer to the Ultimate Question of Life, the Universe and Everything. Or maybe, as Hart—who ought to know and who displays the same tendency throughout her entrancing book—puts it, 42 is simply a number: "I suspect he just took a shine to it." ♦



## FOOD

# IN GOOD SHAPE

Traditional methods of pasta-making are having a moment, sparking interest in the principles of pasta-shape design **BY MARYAM SIDDIQI**

Gragnano, a town on Italy's Amalfi coast that is part of Naples' metropolitan area, is the country's capital of artisanal pasta. Among its defining characteristics: the view it offers of Mount Vesuvius (yes, *that* Vesuvius, which destroyed the nearby town of Pompeii when it erupted in 79 CE) and its main street, which was designed as a corridor for both the sea and mountain breezes.

The breezes help *pastai*, or pasta makers, dry their noodles. And in this town, they make a special variety—*vesuvio*—inspired by the nearby volcano, squat spiral noodles that evoke images of smoke twisting up out of the crater.

These noodles, like many others, are traditionally made using bronze dies, a centuries-old method that involves using perforated metal plates to shape and cut the pasta. By contrast, most mass-manufactured noodles are made using Teflon dies for efficiency, but the

heritage method is becoming increasingly popular, making its way from trattoria menus and specialty shop shelves to TikTok feeds and your local grocery store.

Global content marketing firm Tag lists heritage pasta among its food trends for 2023. Sana'a Ahsanuddin, culinary and styling manager at Tag, attributes the renewed interest to nostalgia and a desire for comfort. "In the last couple of years, especially with the pandemic, there's been a desire to go back to basics," she says. There's a health element to it too, as consumers are savvier about reading labels and want to know what's in their food. "Nobody wants to buy a product that has 25 ingredients that they can't recognize," she explains.

Filomena Da Costa Teles, who heads the Italian culinary arts postgraduate program in the hospitality and culinary arts department at Toronto's George Brown College, says the slower

pace during the first couple years of the pandemic also gave people more time to learn about and appreciate the variety of pasta. “People were home for a very long time, making pasta again or finding that love of pasta again,” she says. “The art of making pasta, fresh pasta, was starting to get lost a little bit and there’s been a bit more of that love coming back.”

There’s more to the method of bronze-die pasta than simply cutting shapes, however. Pasta is shaped using either Teflon or bronze. Teflon results in noodles that are quicker to dry but smoother; they lack the texture that’s essential for grabbing on to sauce and other flavour elements, like spice, that may season a dish. Bronze die-cut pasta takes longer to dry than the Teflon-cut version, 24 to 48 hours vs flash dried, and it’s usually richer in colour, too, because it’s made with semolina flour from durum wheat. These dies also produce a coarser noodle with tiny ridges and bumps to pick up the accompanying sauce—and

that’s what makes a pasta noodle good. “If the texture is off, then the whole dish is going to be off,” says Da Costa Teles. (Though, there are times when a Teflon-cut noodle is preferred, says Dino Borri, global vice-president at Eataly, especially when you want a lighter pasta that won’t soak up sauce.)

Regardless of how you slice it, there are hundreds of shapes that can be produced. Pasta is generally divided into two groups, fresh and dried. Among these two groups, gourmet grocer Eataly carries over 240 different kinds, says Borri, more than 200 dried and 40 fresh. He, like Da Costa Teles, is quick to point out that fresh is no better than dried: “They are just different,” he says.

The motivation for creating different pasta shapes comes from many places, he explains, whether it’s an homage to the surrounding landscape, the time of year or a desire to create a vessel to capture as much sauce as possible.

“Take penne, for example. If you have a meat sauce or a ragu, you can

capture some of the sauce and meat in the hole of the pasta,” he says.

Hot summers call for lighter pastas, simple noodles, like trofie, accompanied by pesto. But during truffle season, there’s demand for a pasta that can balance the richness—something like tagliatelle, which can soak up truffle butter but not be overwhelmed by it. In winter, *tortellini in brodo*, a stuffed pasta of pork or veal in broth, is popular as a warm hearty meal.

Given the renewed consumer appetite for heritage pasta, mass producers are attempting to grab a piece of the market. Last October, Barilla launched its Al Bronzo line, a collection of six bronze die-cut pastas made from semolina: bucatini, fusilli, spaghetti, linguine, penne rigate and mezzi rigatoni.

“Al Bronzo represents a new step forward on the path of innovation for Barilla,” stated Melissa Tendick, vice-president of marketing, Barilla Americas, in a news release.

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TRENDING

# POWER SHIFT

Female founders already get the smallest share of venture capital investment—even though they often run more successful businesses than their male counterparts. But some discerning investors are focusing their funds on women. **BY BRITTANY DEVENYI**

When Bobbie Racette was laid off from her administration job in 2016 during Canada’s oil and gas sector crash, the Calgary-based admin assistant struggled to find work—so she set out to create a job for herself. Today, that job is Virtual Gurus, a robust and growing company with over 40 full-time employees that matches businesses across North America with virtual assistants. But as an Indigenous woman who is also part of the LGBTQ2SIA+ community, getting her business to where it is today wasn’t without its challenges.

“I had \$300 in my pocket when I started,” she says. “It took two years to close [our Series A funding round], because nobody would invest in me. I went through 170 investors who said no, that we’re not scalable, even though we were pushing over a million in revenue.”

Racette isn’t the only female founder to come up against a lack of access to venture funding. Women-led startups account for approximately 17.5 per cent of all private-sector businesses in Canada, yet received 2.3 per cent of total VC funding worldwide in 2020 (down from 2.9 per cent the year prior), according to Crunchbase. And for women who also belong to other marginalized groups, that statistic is even lower. When Virtual Gurus secured \$8.4 million in Series A funding, Racette became the first Indigenous woman in Canadian tech to close a Series A round of funding. Meanwhile, data shows that Black female founders receive less than 0.35 per cent of total funding dollars in the U.S. despite being among the fastest growing group of entrepreneurs.

And now, amid the economic slowdown in the tech sector, which is seeing mass layoffs across the board, investors are pulling back, leaving startups desperate for capital. Data firm Briefed.In reported 701 deals between Canadian tech companies and investors in 2021 for a total of \$14 billion. Compare that to this past year, where investment activity fell by 41 per cent to 417 deals worth \$9.7 billion—a trend forecasted to continue into 2023. This isn’t welcome news for any founder, but it leaves women in an especially challenging position.

One main, well-documented explanation: women are deemed less relatable when pitching their business

they’ve changed their name so venture capitalists will return their emails. There’s a lot of built-in systemic bias in the existing system.”

Rachel Bartholomew, founder of Hyivy Health, a Kitchener, Ont.-based pelvic health startup, was met with skepticism, too. She founded her company in 2020 after being diagnosed with cervical cancer. During treatment, she found herself frustrated and disheartened by the outdated (read: 84-year-old) rehab device she was handed for pelvic floor rehabilitation. She leveraged \$1.7 million in government grants before tapping on the shoulders of investors, many of whom couldn’t

Lana Cuthbertson (from left) of Areto Labs, Bobbie Racette of Virtual Gurus and Shelley Kuipers of The51



## “THERE’S OPPORTUNITY FOR WOMEN TO REDESIGN, REBUILD, RE-ENGINEER AND RE-ARCHITECT PRODUCTS”

venture to a group of (mostly male) investors, and face a number of gender-based biases, in part because women make up less than 20 per cent of partners at Canadian venture capital firms, according to a Diversio report

“You invest in what looks like you,” says Shelley Kuipers, co-founder of The51, a Calgary-based venture capital firm that focuses on democratizing capital for women and gender-diverse founders. “We’ve had founders tell us

connect with her product. Eventually, she raised \$1.3 million in pre-seed funding, but doing so was no small feat.

“I do find many of the male investors we’ve had investment with connect with [our product] because their wives, sisters, daughters have gone through it and [that] can create that conversation. I think that’s where I see the biggest impact being made,” she says. “But it takes us that much longer, that many more conversations and that many

more nos. And that's a tough pill to swallow on the business side."

However, progress is being made to give women-led businesses more opportunity to succeed. The number of female investors at VC firms is on the rise, and there are several high-profile venture capital firms, including The51 (which has backed both Hyivy Health and Virtual Gurus), working to fund and empower startups with underrepresented founders at the helm. Other examples across Canada include Backbone Angels, a team of angel investors focused on women and non-binary founders, as well as StandUp Ventures and Sandpiper Ventures, two seed-stage venture firms.

"Women are designing products and services for themselves, because they either aren't there or they really haven't been designed or developed with a woman in mind," says Kuipers. "There's a tremendous opportunity for women to redesign, rebuild, re-engineer and re-architect the things that we are consuming every day."

There's data to support this, too. Over the past decade, the rate of women in entrepreneurship in Canada has increased 30 per cent. In addition, despite receiving significantly less capital, women-founded ventures often generate more revenue than their male counterparts—more than twice as much per dollar invested. A recent report by the Women Entrepreneurship Knowledge Hub (WEKH) also found that the number of new female-led startups valued at more than US\$1 billion (aka "Unicorns") has nearly doubled since 2019.

Lana Cuthbertson, co-founder and CEO of Alberta-based cyber safety startup Areto Labs, a company that counteracts online abuse and recently raised its first \$1 million in equity financing, isn't surprised.

"The expectations for us are way higher. So, by the time women are asking for a certain amount of investment at a certain valuation, it's a really good deal" she says. "For me, it seems like a big opportunity for investors. It's a competitive advantage that's up for grabs." ♦



#### BUZZWORD

## FIRE (FINANCIAL INDEPENDENCE, RETIRE EARLY)

Many millennials think they've found a solution to their financial woes **BY ALEX CORREA**

"Financial Independence, Retire Early" is the motto of a great number of hopeful investors, many with money to burn. The philosophy boils down to saving aggressively so that the more income you set aside, the earlier you can retire. What sets this tactic apart from a healthy savings plan is that it involves, for most, a minimum of 50 per cent income savings and retirement in your twenties or thirties, at the earliest.

Millennials warmed up to the FIRE movement in recent years alongside the burgeoning popularity of online financial influencers and discussion forums. One early FIRE advocate is Canadian blogger and fin-fluencer Peter Jonathan Adeney (aka Mr. Money Mustache), who went so far as to embed a calculator on his site in 2012 for visitors to evaluate how many years it would take them to reach financial independence.

Then success stories began to emerge as retired twenty-somethings began talking up their new retired lifestyle. But, a closer look revealed that many had higher incomes than their peers to begin with, making "retirement" easy. Skipping restaurant dinners or walking to work won't really

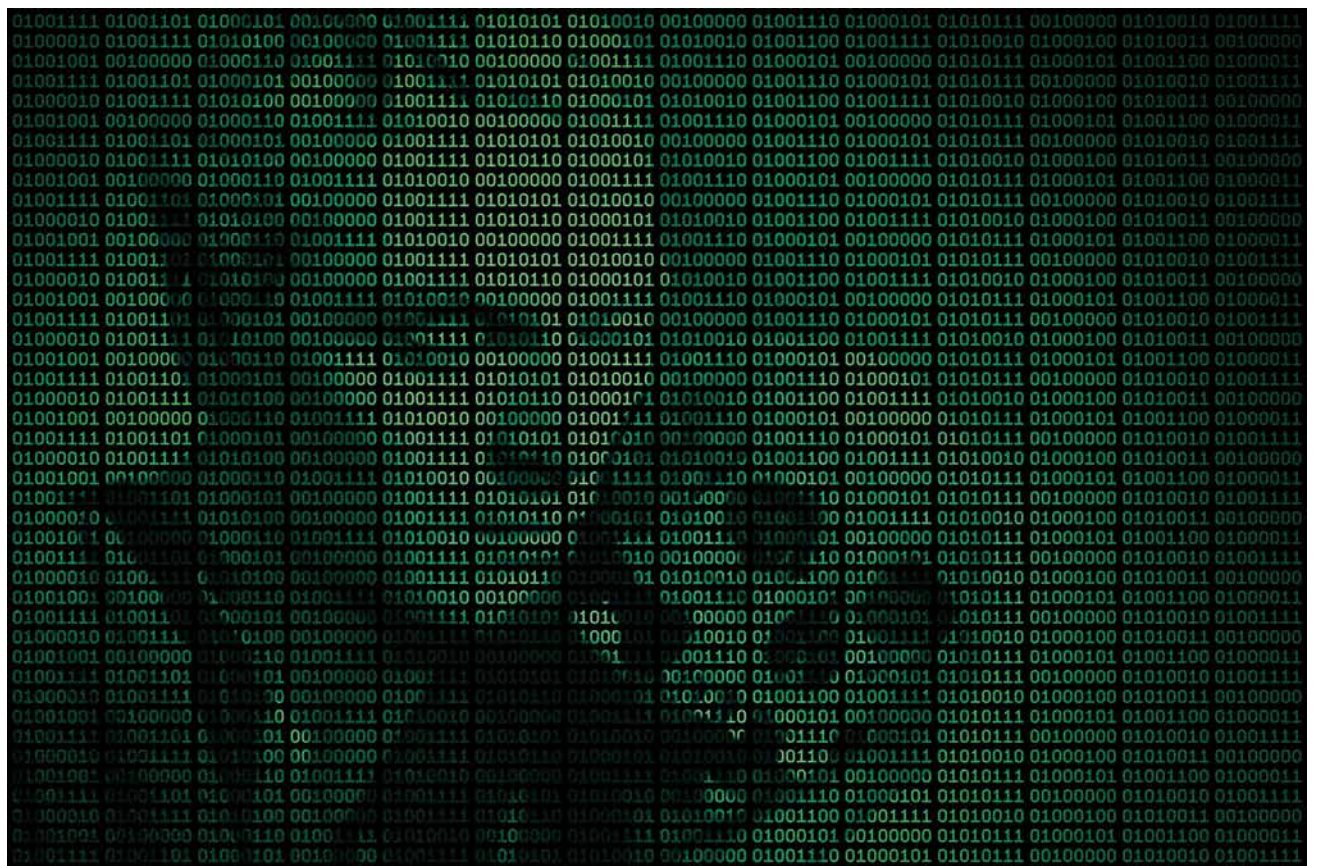
help anyone retire before their grey hairs set in.

FIRE, though, still retains its staying power. The Reddit community alone has nearly two million members sharing tactics

## THE TERM, AND MOVEMENT, OFFERS AN ALTERNATIVE TO THE CLASSIC WORK AND RETIREMENT TRAJECTORY

and their own versions of success using the savings strategy. It's since spawned several iterations, including Coast FIRE, which is front-loading retirement contributions to later "coast" on compound interest. And Barista FIRE—maintaining an enjoyable part-time job after reaching a more realistic savings goal.

Although the bigger success stories from the FIRE community seem more like outliers than the norm, many are still happy to chase an alternative to the classic work and retirement trajectory. ♦



CULTURE

# NO, THE NEXT GREAT NOVEL WON'T BE WRITTEN BY A BOT

But there are real ethical and practical concerns around AI-generated stories and designs **BY SARAH LAING**

Can AI really replace writers and artists?

It's a question creative types, and possibly the people who pay their salaries, have been asking themselves more frequently lately, thanks to some recent high-profile developments in what's called "generative artificial intelligence"—essentially, algorithms that can be used to generate new content with just a simple prompt from a human.

The best known—and most-used—is ChatGPT, a chatbot launched by OpenAI in November 2022. By February 2023, it was estimated to have reached over 100 million users, who are using the free version of the app to do everything from write

a cover letter to create jokes for a best man's speech.

In the visual realm, several similar AIs have popped up over the last few months. You may have seen your friends post fantastical-looking avatars (thanks to digital portrait app Lensa) or a series of images purporting to show what they'd look like across different historical time periods (via PetaPixel's "AI time machine" app).

The results are mixed in quality and frequently absurd. Mostly, these applications are just for fun—but they're also anxiety-inducing for people who make their living doing the very things being outsourced to artificial intelligence. Case in point: According to

*Forbes*, news site BuzzFeed is planning to use ChatGPT to "enhance" content on its site, including their famous quizzes. ("What famous sentient robot are you?" feels inevitable.) Many journalists and graphic designers are experiencing dystopian nightmares right about now.

"Is this the future? Absolutely. Are we there, or will we reach there tomorrow or next week? Probably not," says Deval Pandya, director of AI Engineering at Vector Institute in Toronto, an independent not-for-profit that researches the field of artificial intelligence, excelling in machine and deep learning. "We have a bit of a longer way to go, but progress is being made very fast."

But, he adds, it's important to remember that this technology still has its limits. It still requires a prompt from a human.

"If anything, the real creative side of talent will be even more in demand," Pandya says. "Thinking creatively will not be outsourced."

What could be handed over to generative AI, however, are all the boring, repetitive parts of otherwise creative jobs in design and writing. “They could free up more time to think creatively,” he says, pointing to the way that OpenAI’s Codex helps speed up the coding process by translating it into plain language.

“Is this going to replace software engineers?” Pandya asks. “Probably not, but it’s going to make the process more efficient.”

But could that efficiency result in, say, three much more productive content creators doing the work that ten used to do?

It’s possible, says Karina Vold, an assistant professor at the University of Toronto’s Institute for the History and Philosophy of Science and Technology, and research lead at Schwartz Reisman Institute for Technology and Society. But “for the near future, I still would

## “IF ANYTHING, THE REAL CREATIVE SIDE OF TALENT WILL BE EVEN MORE IN DEMAND. THINKING CREATIVELY WILL NOT BE OUTSOURCED.”

imagine there’d be a role for a human with an aesthetic eye to do the curation or final decisions,” she says.

There are also ethical questions around whether we’d even want companies to offload those kinds of decisions to machines. For example, there’s the issue of bias in the data these machines are being trained on.

“Right now, ChatGPT is trained on a corpus of human text, and we know that some humans can be sexist, racist, ageist, have cultural biases and all those things,” says Vold. “The creators of ChatGPT have tried to build it in ways to prevent it from reporting those

biases and exacerbating them, but it’s impossible to root them out entirely.”

So, if we were totally reliant on this technology, without humans curating, she says, there’s a real danger of endlessly perpetuating those biases.

There’s also the fact that ChatGPT has no inherent interest in the truth, or accuracy.

“It’s putting out content that’s plausible and grammatically correct, but not factually correct. Sometimes the answer is nonsensical,” Vold says, pointing out that some people are now using it almost like a search engine.

That’s why, coupled with social media, the threat of inadvertently spreading misinformation is real. If you’re a company planning on replacing your entire marketing team with generative AI, that’s got to be a concern.

Something else to worry your legal department: copyright. That’s already led to a lawsuit by photo company Getty Images against Stability AI, claiming it “unlawfully” scraped and processed millions of images in order to “train” its generative artificial intelligence machine.

Yet, Vold still sees real potential for creativity within these technologies. Humans’ “computational powers” are limited by physical realities like life span and brain size. Vold says machines aren’t beholden to those limitations, nor our accepted ways of doing things.

“These systems don’t have that, and they’re coming up with some really interesting things that we don’t think about, and breaking some of our norms,” she says. “That’s exciting.”

It’s a sentiment echoed by Pandya, who is most excited about what generative AI can do outside the world of art and writing.

“It can accelerate drug discovery, materials discovery for renewable energy storage and solar absorption, it can accelerate modeling to understand climate change, so we’re better ready to adapt,” he says. “I’m very excited about the potential of generative AI beyond language and images, to some of the hard sciences and social problems we are facing right now.” ♦

### PIVOT RECOMMENDS

## Off the clock

BY CHRIS POWELL



### Watch

Inspired by Garth Risk Hallberg’s acclaimed debut novel—which sparked a bidding war among publishers—*City on Fire* is a mystery set in New York. Developed by long-time collaborators Josh Schwartz and Stephanie Savage (the team behind *Gossip Girl*), the eight-part series swaps out the novel’s gritty 1976 New York setting for 2003 but retains the central plot of an NYU student named Samantha who is shot in Central Park with no witness and scant physical evidence. **May 12 on Apple TV+.**

### Read

In his book *If It Sounds Like a Quack...* journalist Matthew Hongoltz-Hetling straddles the line between solemnity and side-splitting humour as he brings readers face-to-face with “therapists” advocating for using leeches to cure blood infections, lasers to cure cancer, and a man claiming to turn people into zombies using aerosol spray. Each of these quacks has been able to amass customers and influence, with only the government standing between them and legitimacy.

### Listen

CBC Radio has been creating some terrific podcasts of late, and *Helluva Story* is among them. Among its most fascinating episodes are “Road Trip with Kokum,” in which journalist Kaitlyn Swan takes a road trip with her grandmother to the residential school she was forced to attend years ago; and “Where Did All The Trains Go?” which explains how Canada’s “once glorious” rail network was undone by the car and short-sighted policy decisions.

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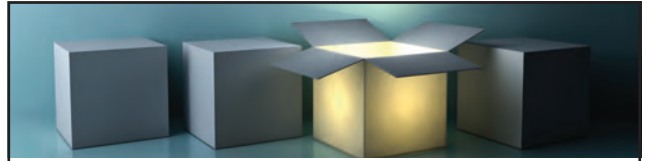
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## STABLE HAND

Combining her knowledge as a CPA with a passion for helping those in need, Ariana Azhari joined the equine therapy service Community Association for Riders with Disabilities (CARD) in Toronto. As treasurer, she hopes to ensure CARD's long-term success, as well as follow in her father's volunteering footsteps. **BY ALEX CORREA**

After graduating from university, I worked at a rehab clinic and in finance. I saw the scope of what you could accomplish in finance, beyond just accounting. **My boss encouraged me to pursue my CPA certification, and I never looked back.**

CARD is a therapeutic horse-riding program. **Under the supervision of physiotherapists and equestrian staff, riders gain greater physical, cognitive, psychological and social skills helping improve their balance, coordination, and even confidence and self-esteem.** Our mission is to improve the standard of living not only for children, but for anyone with disabilities or mental health issues.

My dad was a human rights activist in the 70s in a country where you could go to jail for your political affiliations. So, he was very supportive of me doing something outside of my career that left a stamp on the world, like volunteering. **Due to my background working in rehab, CARD's mission statement resonated with me** and that's why I got involved with them.

**The beauty of being a CPA, and the reason why I gravitated toward it, is that there's always a need for someone with financial expertise.** And being a CPA also allows me to contribute in a different way in my volunteer work so that I can help support whichever organization I choose.

**I'm director of finance for Mattamy Homes, both the land and joint venture finance sides,** kind of two separate teams. On the land side, we deal with pre-acquisition investigations, ad-hoc analysis and project budgeting. While in joint venture partnership, I deal directly with some of our partners, preparing their financial packages and ensuring that the joint venture has sufficient cash.

I joined CARD during the COVID-19 pandemic. The pandemic was very hard on our operations. So, **the focus right now is on risk management** and ensuring that if there's another scenario where we're not receiving riders' fees, we'll be able to continue helping the community that we've set out to support.



PHOTOGRAPH BY PATRICK MARCOUX

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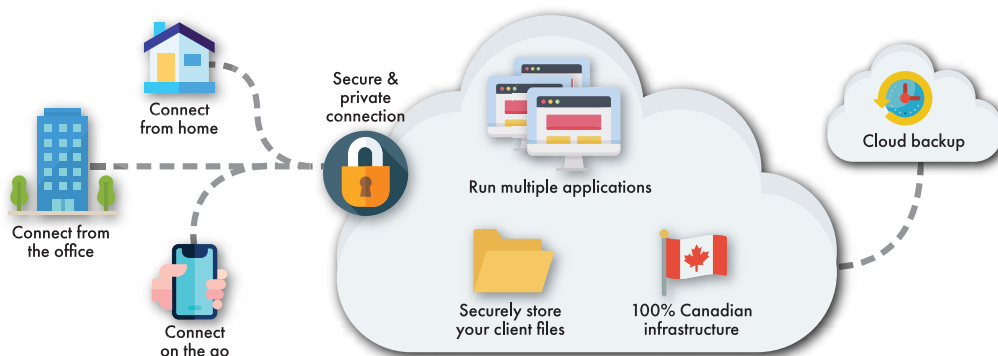
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