

MISSISSAUGA / ST. GEORGE / SCARBOROUGH

# University of Toronto

MAGAZINE

**“Being Deaf is  
normal to me.  
But how do I  
thrive in places  
not designed  
for me?”**

*—Alex Lu, PhD candidate,  
computer science*



Alex faces barriers  
that others don't.  
Read how U of T is becoming  
more accessible to him –  
and to all members of the  
university community  
with disabilities

Spring 2021

**PLUS:** ST. GEORGE'S "CLIMATE-POSITIVE" PLAN – TACKLING ONLINE EXTREMISM – HOPE IN THE DARKEST MOMENTS – PRESERVING CANADA'S HIP-HOP HISTORY – A NEW-LOOK ROBOT – HOW CAN WE END "TRANSIT POVERTY"?

## VACCINE READY

**DATE:** FEBRUARY 19  
**TIME:** 1:10 P.M.  
**CAMPUS:** MISSISSAUGA

Staff members measure the distance between chairs as they prepare for the March 1 opening of the COVID-19 vaccine clinic at U of T Mississauga. The centre – administered by Trillium Health Partners and overseen by Peel Public Health – opened with 20 vaccine stations located in the large gymnasium of UTM’s Recreation, Athletics & Wellness Centre and a spacious post-vaccination observation area (pictured). The clinic currently has the capacity to deliver up to 2,000 doses of vaccine daily and can ramp up to 4,000 a day, depending on supply.

The UTM campus is well positioned to support the public vaccination campaign. Specialized freezers, typically used for scientific research, are storing the vaccine in a secure and undisclosed location nearby. The gymnasium is accessible to people with mobility challenges and is easy to reach by car or public transit. Ultimately, the UTM site could vaccinate approximately 500,000 people.

– Patricia Lonergan









PHOTOGRAPH BY ARTHUR MOLA



## **PLAYING TO A NEW BEAT**

**DATE: MARCH 1**

**TIME: 1:34 P.M.**

**CAMPUS: ST. GEORGE**

Students and professors at the Faculty of Music have had to be especially creative during the pandemic. Initial rehearsals now happen over Zoom. Instead of large ensembles and live concerts – mainstays of the academic year for those earning a degree in performance – small groups of musicians record themselves and play back the videos later for “watch parties.”

Tyler Cunningham, Joyce To, Jasmine Tsui and Tim Roth are pursuing master’s degrees in percussion. Here, they’ve set up at Walter Hall, with barriers between them, to rehearse “Gamelan Tango,” a piece for vibraphone and marimba by master’s composition student Menelaos Peistikos.

Among musicians, percussionists have had it easy in comparison with brass or woodwind players, or singers, says the students’ adviser, Prof. Aiyun Huang: “We can play with a mask on.” But even percussionists are spending a lot less time in live rehearsals, and that means fewer chances to be spontaneously creative together. Under the circumstances, Huang says, “It’s amazing how students have adapted.” – **Scott Anderson**





# POLLUTION PATROL

**DATE: MARCH 10**  
**TIME: 9:58 A.M.**  
**CAMPUS: SCARBOROUGH**

Perched on top of the Arts and Administration Building is a specialized instrument that researchers are using to measure air quality.

The Pandora Spectrometer System uses UV and visible light to measure levels of ozone, nitrogen dioxide and formaldehyde in the atmosphere. These hazardous pollutants contribute to poor air quality and can lead to adverse health effects, particularly respiratory illnesses.

Each month, the lens of the instrument is cleaned of dust and moisture to ensure it provides accurate readings. Researchers at U of T Scarborough and Environment Canada are using the device for local and regional air quality studies as well as to collect data for the Pandonia Global Network – an international project gathering air quality measurements from more than 140 locations around the world. – **Don Campbell**



PHOTOGRAPH BY DON CAMPBELL







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## ON THE COVER



The portrait of PhD candidate Alex Lu was taken by Toronto photographers Saty + Pratha. Lu, who is Deaf, chose his quote to convey that people's attitudes and the way the world is designed are often what is "disabling," not the way someone is.





# Is it time to reset the way you protect your family's health?

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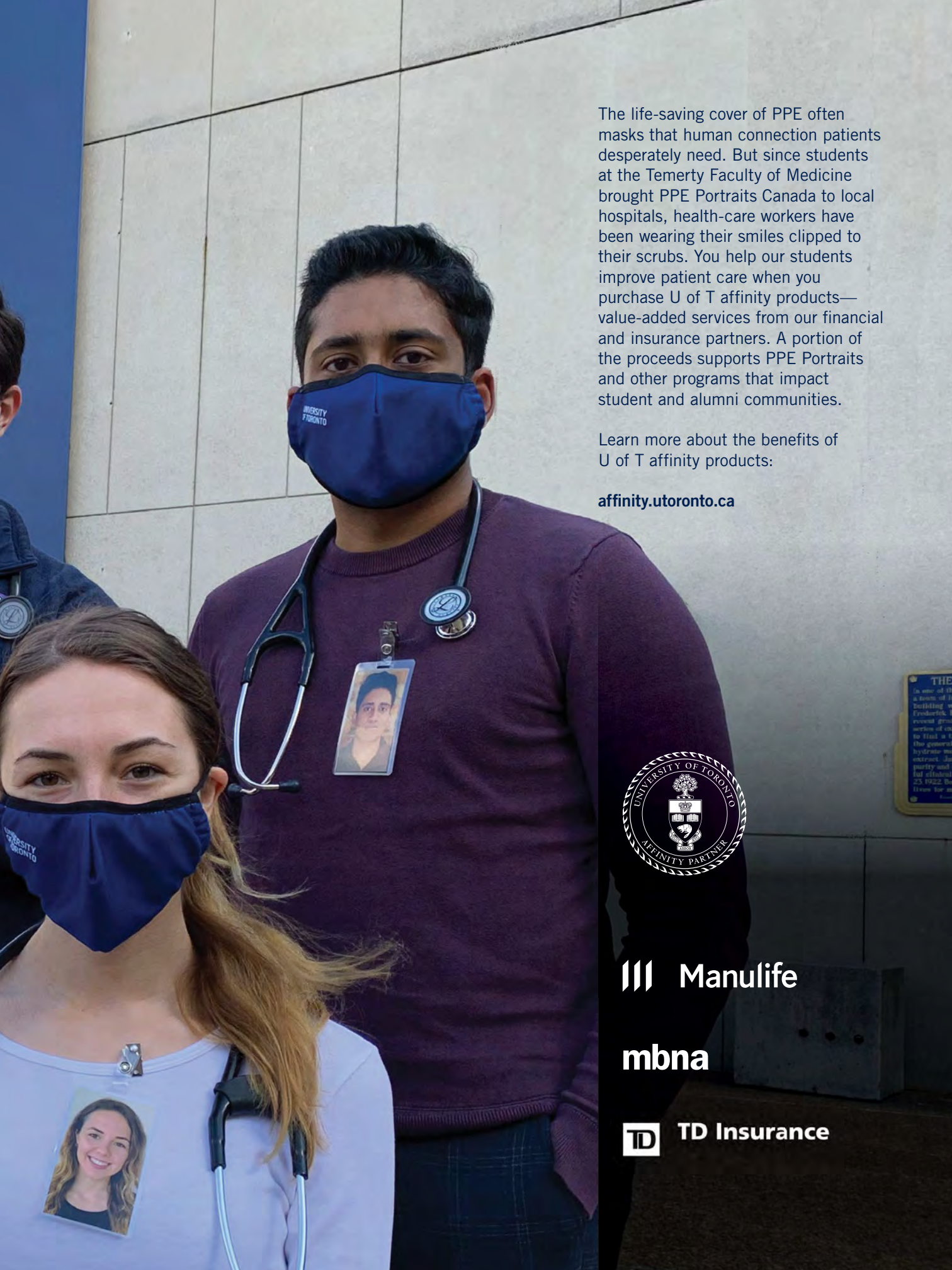
**A SMILING FACE  
WHEN PATIENTS  
NEED IT MOST**

**WELCOME  
TO THE  
TEMERTY  
FACULTY  
OF MEDICINE**

UNIVERSITY OF TORONTO  
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The life-saving cover of PPE often masks that human connection patients desperately need. But since students at the Temerty Faculty of Medicine brought PPE Portraits Canada to local hospitals, health-care workers have been wearing their smiles clipped to their scrubs. You help our students improve patient care when you purchase U of T affinity products—value-added services from our financial and insurance partners. A portion of the proceeds supports PPE Portraits and other programs that impact student and alumni communities.


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Thank you to writer Raquel Russell for capturing this moment in U of T's history. I hope these conversations about racism bring about actual systemic changes.

**SADIAH RAHMAN**, BA 2018 UTSC  
TORONTO



**The Healing Spirit**

*Our cover story from the winter issue explained how a portion of a gift to the Faculty of Medicine will enlist Indigenous Elders to provide insight for students and faculty into spiritual aspects of healing.*

Congratulations to the Faculty of Medicine on landing a historic gift from the Temerty Foundation,

some of which will be used to expand a diversity of perspectives in the faculty. That “healing goes well beyond what can be provided in the medical system” is a belief held by more than just the Indigenous nations and Elders that have now been selected to participate. Since “students from all backgrounds who need guidance will be able to speak with [these Indigenous] Elders,” will the faculty offer the same opportunity to speak to Buddhist or Jewish or Christian elders? Certainly “the emotional and spiritual dimensions of health, which are integral to many First Nations,” are also integral to other spiritualities.

**JOHN E. DUYCK**, BEd 1973 OISE  
TORONTO

*Trevor Young, dean of the Temerty Faculty of Medicine, responds:*

While many spiritual practices indeed look beyond medical systems for healing, the Temerty Faculty of Medicine’s ongoing work to incorporate Indigenous ways of knowing and guidance from Elders stems from our commitment to the Calls to Action issued by the Truth and Reconciliation Commission. For example, we are actively expanding the Indigenous health curriculum to include content in MD clerkship rotations such as pediatrics, psychiatry, family medicine, and obstetrics and gynecology. Not only will the next generation of physicians broaden their knowledge base but, more importantly, we want their future patients to receive the respect, understanding and equitable care they deserve.

**Combatting Racism**

*In “Out of Action, Comes Hope,” writer Raquel A. Russell described U of T’s efforts to end anti-Black racism and promote Black inclusion.*

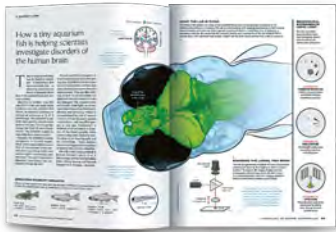
I salute the efforts of all involved in trying to eliminate racism at the university. Our numbers were much smaller when I was a student – on campus and in society – and the prospect of a Black principal was as remote as the U.S. electing a Black president. Keep up the struggle.

**RUDOLPH WALLACE** MBA 1974  
KINGSTON, JAMAICA

The gains may be incremental but every bit helps. I’m a Black woman. As an undergrad in the 1960s, I had a psychology professor who never recognized my raised hand when I had a question. I would raise it several times during a session to see if I was assessing the situation right. He never saw me.

**ERMA COLLINS**, MEd 1975, TORONTO





## Leave the Animals Be

*Prof. Tod Thiele's research uses – but doesn't hurt – zebrafish to gain insights into human brain abnormalities.*

Just because humans can use other animals for test subjects does not mean we should. Humans consider themselves the most intelligent species on Earth. Surely we can come up with accurate ways to test the effectiveness of drugs or do other kinds of biological research without harming other species.

**ANITHA ROBINSON**

MILTON, ONTARIO

## UTSC's Indigenous Hub

*An article in the winter issue described plans for a new Indigenous House at U of T Scarborough.*

*Aaniin.* My time at the university was a trip into the world of Euro-Canadian culture, history and law. I did not have many fellow “Indian” students to make the journey with me. My language and worldview is pre-Columbus, so it was hard for me to articulate my experience to my professors and non-Indian classmates. Today, the academic community is coming to understand that our ways of knowing are unique to this land. Indigenous House, as a community meeting place, will give us an opportunity to share our gifts with others who now occupy Turtle Island.

**BEVERLY KEESHIG-SOONIAS**

MSc 1977, SYLVAN LAKE, ALBERTA

## A Wonderful Mentor

*U of T Mississauga computer science professor Dan Zingaro, who is visually impaired, draws from his own challenges at university to connect with students.*

On top of everything else, Dan Zingaro has a great sense of humour. My son was one of his “seeing eye students,” which is how he described the many students who hung around his office, seeking coaching – or companionship with a kindred spirit. Dan is a wonderful mentor. He encouraged my son to become a teaching assistant, an experience that he now puts to use as a scrum master and team lead at a tech firm.

The world needs more Dans!

**WENDY BURTON** PhD 2016

OAKVILLE, ONTARIO

## Excessive Police Force

*In our winter issue, Lois Tuffin wrote about Prof. Judith Andersen's work with police on training techniques to improve performance in tense situations.*

As with businesses, why not reward police management for reaching certain goals – and of course, discipline them for not meeting goals. Start at the top. Don't just blame the beat cop. Promotion and positive reward should be part of the process. Make goals public and report results to the public. Hold people accountable. The goals for de-escalation should be clear.

**GARY BROWN** BA 1967 INNIS

ORANGEVILLE, ONTARIO

### Write to us

University of Toronto Magazine welcomes comments at [uoft.magazine@utoronto.ca](mailto:uoft.magazine@utoronto.ca). All comments may be edited for clarity, civility and length.



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# University of Toronto MAGAZINE

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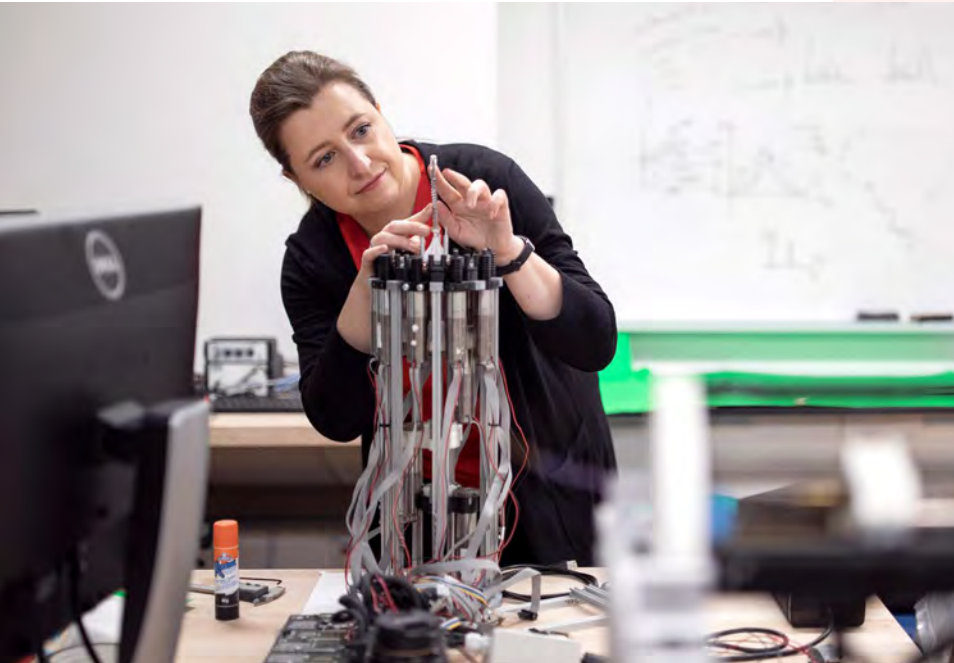
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**THE ROBOT MAKER**

Jessica Burgner-Kahrs is building slim and dexterous robots that she hopes, one day, surgeons will use to save lives. Like many researchers, she has a personal reason for choosing her field.

She was attending high school and hoping to study medicine when an uncle was diagnosed with brain cancer. He received radiotherapy, but a computer error caused the radiation to miss the tumour. He died soon after. Burgner-Kahrs realized that the life-and-death decisions a surgeon must make would weigh too heavily on her, and chose to work on tools to *help* surgeons instead.

Read about Jessica Burgner-Kahrs' Continuum Robotics Lab, page 40

↑ In her UTM lab, Prof. Jessica Burgner-Kahrs inspects one of her ultra-thin continuum robots



Photographer **WADE HUDSON** says he felt a sense of affinity with U of T Scarborough professor Mark V. Campbell's work to preserve the history of hip hop in Canada (page 42), and puts him in the category of people he frequently shoots who are "doing really cool, interesting, things." Hudson says he approaches every assignment with the goal of imbuing his subject with a kind of legendary status. "I always think, 'If this portrait were to go on money, what would it look like?'"



**MEGAN EASTON** has interviewed many students over the 20 years she has written for *University of Toronto Magazine*, but this was the first time she had asked any to share their experience living with disabilities (page 18). "It was eye-opening hearing Emily Chan's and Alex Lu's stories about navigating physical and

communication barriers on top of the demands of student life," she says. "They were candid about how exhausting it can be, despite accessibility measures, and how much it would help to have more faculty and staff with disabilities on campus who understand their struggle."



**KURT KLEINER** is a long-time science journalist who has covered climate change throughout his career. "Twenty years ago I was skeptical of proposed technological fixes," he says. "But the longer the world fails to meaningfully regulate greenhouse gases, the more tools we'll need if we ever hope to bring climate change under control." The technologies that pay for themselves, such as carbon conversion, which Kleiner writes about in the context of the St. George campus's plans to go carbon negative by 2050 (page 26), are the most likely to make a difference, he says.

Want to contribute? Send your ideas to [scott.anderson@utoronto.ca](mailto:scott.anderson@utoronto.ca).

PHOTOGRAPHS BY (BURGNER-KAHR'S) NICK IWANSHYHN; (HUDSON) TAHA MUHAMMAD; (EASTON) RHONDA MCNEILL; ILLUSTRATION BY STUDIO WYSE





**ST. GEORGE  
U OF T LAUNCHES  
EFFORT TO  
COMBAT ANTI-  
SEMITISM**

The University of Toronto has created a working group to examine and address anti-Semitism at its three campuses – and to ensure the university is an inclusive and welcoming place for Jewish members of its community.

Led by Arthur Ripstein, a professor in the Faculty of Law and in the department of philosophy, the group will review the university's existing processes for addressing anti-Semitism.

It will consult broadly with the university community, inviting students, faculty and staff to share their experiences and ideas. And it will make recommendations to the university's senior leadership about new programs and initiatives to eliminate anti-Semitism and about ways to improve responses to anti-Semitic incidents. The efforts form a key part of the university's broader commitment to address systemic forms of bias and prejudice.

**U OF T  
MISSISSAUGA  
NEW COURSE WILL  
HELP FIRST-YEARS  
IMPROVE WRITING  
SKILLS**

U of T Mississauga has introduced a half-credit writing course for first-year students designed to cover the fundamentals of writing at the university level. The course – a first of its kind in Canada – is intended to help students bridge the gap between what's expected in high school and university. Instructors hired to teach the course have significant experience in writing pedagogy.

Introduced last fall to select major and specialty programs, the initiative will continue to roll out in stages over the next five years and will become a requirement for all first-year undergraduate students in all programs.

**U OF T  
SCARBOROUGH  
CONSTRUCTION  
TO BEGIN ON  
NEW STUDENT  
BUILDING**

A new building designed to meet the growing demand for space where students can learn and collaborate is scheduled to open in late 2023.

Located at the corner of Military Trail and Pan Am Drive, the five-storey building will include 21 technology-enhanced classrooms and lecture halls outfitted with multiple monitors and wireless video sharing, as well

as study spaces, lounges, a café and open seating areas for students to gather and work together on projects.

Among the larger rooms are a 500-seat rounded lecture auditorium, and a 210-seat 'collaboratorium' designed to reduce the distance between instructors and students by having only seven rows in total that wrap around the lecture stand.

The building, tentatively named Instructional Centre 2, supports UTSC's master plan, which includes further developing the north campus.

# ATTRACTING TOP TALENT TO CANADA



**A**s Canadians contemplate a post-pandemic recovery, impending geopolitical shifts have huge implications for the country's prosperity. From my perspective as president of a university that attracts significant numbers of faculty and students from abroad, I can confirm that the playing field is already shifting.

During the years of the Trump administration and the Brexit debate, the United States and Britain both turned inward, adopting a number of measures seen as unfriendly to immigration. Canada's attractiveness as a destination for talented individuals increased as a result.

Enlightened public policies helped employers across our economy capitalize on this shift.

Canadian universities succeeded in attracting research expertise from around the world, and at U of T the number of talented international students grew to comprise one-quarter of our student body.

That may soon change, now that President Biden is in office and the Brexit negotiations are resolved. Strategic immigration policies will remain critical for Canada, but they are no longer enough. The individuals we seek to attract and retain, including Canadians, are drawn to places that offer opportunity and are willing to make big bets on promising new areas of economic activity.

To stand out in this global competition, Canada could create a 'talent moonshot,' one that's strongly funded and co-ordinated across the public and private sectors. Our goal: recruit the world's most outstanding scientists, engineers, artists and scholars to develop made-in-Canada solutions to global challenges, working alongside those who are already here. We could, for example, leverage Canada's remarkable strengths in life sciences and artificial intelligence to transform health care and propel the new bioeconomy.

We could also draw inspiration from President Biden's own playbook. This includes major investments in both private and public sector research and development, innovation partnerships that connect producers of know-how to homegrown companies that can harness breakthrough technologies, and public procurement that leverages the domestic market to support this innovation-based economic activity.

At the same time, climate change, the plight of Indigenous peoples and systemic racism have made inclusion, access and sustainability high priorities for mobile talent. This puts the focus squarely on the quality and fairness of our public health and education systems, as well as on affordable housing and daycare, and livable communities.

Closer to home, our memorandum of agreement with the University of Toronto Faculty Association continues to be a key factor in our success. It has ensured that we offer attractive salaries, benefits and working conditions while enabling us to recognize individual excellence and attract top talent to join us.

Our future prosperity depends on our capacity to invest in people, communities and opportunity, through a comprehensive strategy to maintain and enhance Canada's and U of T's talent advantage. We need to be bold and think big.

**MERIC GERTLER**





**STAY  
INFORMED.**

**STAY  
ENGAGED.**

**STAY  
IN TOUCH.**



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by  
**MEGAN EASTON**

photographs by  
**SATY + PRATHA**

Who  
is  
**INCLUDED?**

↓  
Read how U of T is becoming  
more accessible to Alex Lu –  
and to thousands of other  
members of the university  
community with disabilities







ONE DAY LAST FALL, ALEX LU WAS SURPRISED TO SEE SOME NEW EQUIPMENT IN HIS LAB IN THE DEPARTMENT OF COMPUTER SCIENCE. IT WASN'T EXPENSIVE OR ESPECIALLY LEADING EDGE, BUT IT MEANT SO MUCH TO HIM THAT HE FELT COMPELLED TO TWEET ABOUT IT.

"My PhD supervisor brought in a whole box of transparent masks so I could lipread – completely unprompted," he wrote. "I'm crying – inclusivity done right." In another tweet, Lu, who is Deaf, explained further: "He noticed he had to take off his mask once or twice to talk to me and then he just went ahead and ordered it."

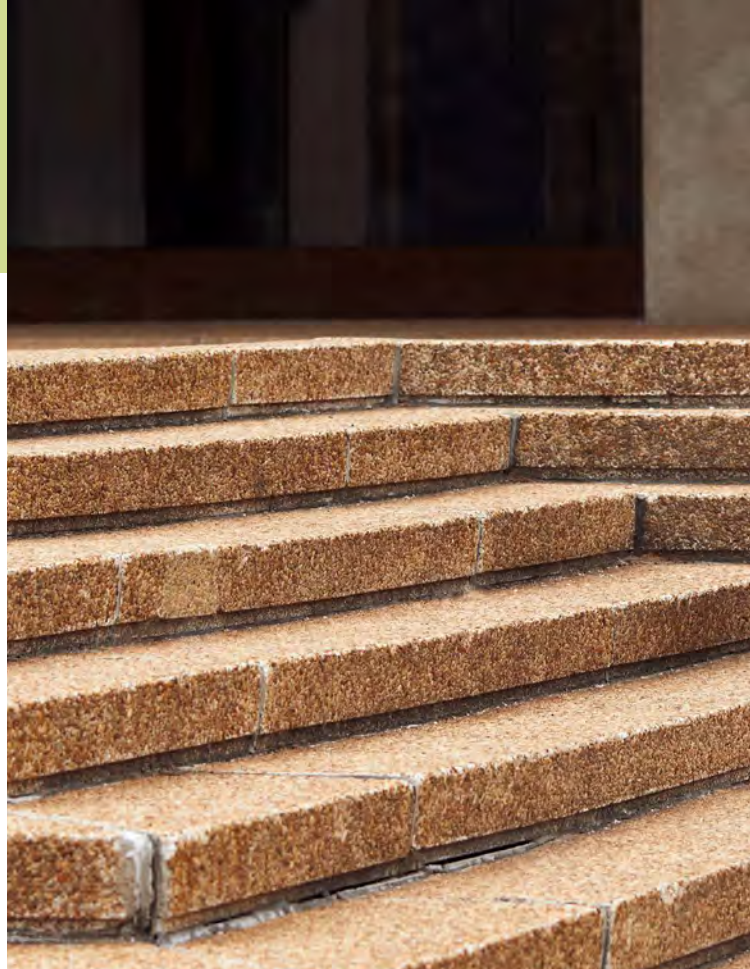
This is what accessibility at U of T is about – removing barriers so students with disabilities can get on with their learning, says Tina Doyle, director of accessibility services at U of T Scarborough. With offices on each campus, accessibility services works with students who have many different kinds of disabilities.

Since U of T issued its first commitment, in 1987, to improving accessibility for students, faculty and staff with disabilities, the university has removed or reduced many obstacles in the learning environment – ranging from physical obstructions to communication barriers. Still, Doyle acknowledges that it is always a work in progress because people's needs – and the social and educational context – constantly change and evolve.

Today, U of T is working to improve accessibility by promoting a broadened definition of disability, by creating inclusive online courses, and by increasing support outside the classroom in experiential learning, events and mentorship.

**As a PhD candidate, Lu** (MSc 2017) has a rigorous workload and unpredictable schedule. He can lip-read, but also uses sign-language interpreters for many interactions with students and faculty. "My accessibility advisers work behind the scenes to manage my interpreter bookings, so I'm not taxed with additional labour for having a disability," he says. "This has been critical to my academic success."

Accessibility advisers collaborate with faculty at the three campuses to remove obstacles that may



limit students with disabilities from fully participating in their courses and research. (The advisers also collaborate with the students themselves.) Removing obstacles often means developing alternate ways (or "accommodations") for students to meet the essential requirements of their academic work. Beyond sign-language interpreters, these accommodations can include specialized desks or lab equipment, assistive technology, extra time to complete assignments and different exam formats.

"Despite a common misconception, accommodations don't make course work easier," says Michael Nicholson, director of accessibility services at the St. George campus. "They just ensure every student has the same chance for success."

Emily Chan (BSc 2019 UTSC), a master's student at the Factor-Inwentash Faculty of Social Work, uses a power wheelchair. She says a strong partnership with her adviser has been critical to achieving her academic goals. She also credits her ability to voice what she needs.

"Over the years I've learned to advocate for myself," says Chan. "If someone has an acquired disability and is adjusting to their new life, though, or has a

↑  
Alex Lu uses sign-language interpreters for many of his interactions with students and faculty





## WHAT IS A “DISABILITY”?

The traditional way of defining disability in education, health care and other systems emphasizes physical or cognitive differences in individuals. “It focuses on medical diagnoses that need to be managed or cured,” says Cassandra Hartblay, director of U of T Scarborough’s new Centre for Global Disability Studies. “These ideas are still very prominent in Canada and other cultures.”

Many disability studies researchers, however, define disability as something that is created by barriers in society, such as the physical environment and people’s attitudes. “The classic example is that a person may have

mobility impairments, but the thing that’s disabling is a flight of stairs,” says Hartblay.

This definition shifts attention to how to create a society without barriers that exclude people with disabilities. Tanya Titchkosky, a professor of disability studies at the Ontario Institute for Studies in Education, says that institutions should aim to go beyond the ambitions implicit in the word accessible. “Accessibility measures are never a done deal,” she says. “But they can be a beginning, an open invitation to imagine further measures for a more robust and vibrant life alongside people with disabilities.” —Megan Easton

condition with flare-ups and they’re having a bad few days, they might not have the capacity or energy to speak up.”

Recent student surveys show that, because of stigma, those with invisible disabilities tend to be the most hesitant about registering for accessibility services. For this reason, accessibility services is adjusting its communication strategy so that students with invisible disabilities such as autism, anxiety, depression, and chronic or temporary health conditions, know that the office is also there for them.

“One of our priorities is helping students understand the broad definition of disability and the wide range of accommodations we offer,” says Nicholson, noting that an older, narrower definition of disability – restricted to mobility, vision and hearing impairments – persists. To shift perceptions, he and his colleagues are changing the language and images used in outreach events and material. “Instead of saying, ‘Register with us if you have a disability,’ we say, ‘If you’re experiencing something that’s negatively affecting your learning, we may have help for you.’”

It seems to be working, according to Elizabeth Martin, director of accessibility services at U of T Mississauga. “We’ve seen an increase in the number of students registering with invisible disabilities.” Over the past five years, the number of students

seeking support has grown by more than 60 per cent, with mental health disabilities accounting for much of the growth.

**David Onley, an associate professor,** teaching stream, at U of T Scarborough and a long-time advocate for greater accessibility, says U of T is doing as well as most institutions across Ontario in meeting accessibility standards. Yet despite 15 years of provincial laws mandating these standards, Onley says a lot of work remains to be done – especially now that the pandemic has worsened existing barriers faced by people with disabilities, and added new ones. For example, people with compromised immunity are even more isolated, and there are longer waits for health care and other support services.

While it is too early to gauge the long-term effects of COVID-19 on people with disabilities, the pandemic-driven shift to online learning has affected students with both visible and invisible disabilities. Lu must now arrange for sign-language interpreters for video conferencing, which works only if the video doesn’t pause, causing him to miss key information. Chan says she has adapted well – “other than Zoom fatigue.” Yet she worries about students with disabilities who may experience barriers to learning

# ANOTHER FIRST WE'LL DO TOGETHER

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exclusively on screens, such as those with acquired brain injuries or vision loss.

Most professors have had to adapt their courses for online learning, which presents an unprecedented opportunity to make teaching more accessible across the disciplines, says Martin. “There has been a large-scale review of current technologies used to ensure students with disabilities can actively participate in their courses, and more incorporation of universal design principles.”

Universal Design for Learning, a framework supported by the United Nations Committee on the Rights of Persons with Disabilities, builds flexibility into courses so that students with diverse learning needs can thrive. It presents information in multiple formats (text, video, audio), provides different ways for students to engage, and offers choices for evaluating what they have learned. In an online course, this could mean recording lectures on video with captions, running discussion forums and polls, and allowing students to get participation marks without having to appear on video.

The university’s Accessibility for Ontarians with Disabilities Act (AODA) Office is helping to train U of T educators on how to implement Universal Design for Learning. Ben Poynton, who leads the AODA Office, says hundreds have joined sessions in the past few years to learn practical strategies on how to create accessible learning environments where all students see themselves and can meaningfully engage.

There are other opportunities for faculty across the three campuses to learn how to make their online classes more inclusive, too. Nancy Johnston, an associate professor, teaching stream, in Women’s and Gender Studies at U of T Scarborough, has co-hosted virtual workshops on the subject. “Faculty have demonstrated leadership in sharing innovations and troubleshooting together to better support diverse learners in online courses,” she says. Johnston, who is affiliated with the Centre for Teaching and Learning, encourages her colleagues to always assume they will have students who require accommodations and, if possible, design their courses to be inclusive to all students from the outset.

Many opportunities for students to learn through work placements and community organizations have also gone virtual. Looking to the future, U of T is committed to improving the accessibility of experience-based learning, both in person and online. “The university has been a leader when it comes to accommodations for students in professional schools, who secure placements in locations such as hospitals, clinics and schools,” says Nicholson. “Now we’re



↑  
[Master's student Emily Chan provides feedback about physical accessibility for renovation and building projects at U of T Scarborough. "We're the ones who see the gaps, so it's critical that we have a say."](#)

seeing many other programs add experiential learning for the first time. We're working closely with the career centre to better understand the barriers faced by students with disabilities in trying to get employment opportunities while still students, and then in managing various work environments.”

Even though work-study placements and classes are happening online, the accessibility of the physical learning environment is an ongoing priority – and challenge – at U of T. Emily Chan says her best-laid plans for arriving in class on time can be thrown off when an elevator or powered door is under repair, for example. She often wishes for more signage with information about alternate routes.

To get this idea and others on the table, Chan sits

**OVER THE PAST FIVE YEARS, THE NUMBER OF STUDENTS SEEKING SUPPORT HAS GROWN BY MORE THAN 60 PER CENT, WITH MENTAL HEALTH DISABILITIES ACCOUNTING FOR MUCH OF THE GROWTH**

on the advisory committee on physical accessibility at U of T Scarborough, which provides feedback on major renovation and building projects. “We’re the ones who see the gaps, so it’s critical that we have a say,” she says.

Tina Doyle, who is also on the committee and has a disability, is leading efforts to develop a website and other resources to help new committee members better understand how to identify physical barriers and how to address them.

All new construction at U of T, and renovations whenever possible, conform to barrier-free design standards. The St. George Landmark Project, for example, set for completion in 2023, will replace stairs and ramps with gradual slopes, add textural markers on paths for people with vision loss, and increase the number of benches and rest areas.

Chan says one of her biggest challenges with physical accessibility is navigating large campus events. She remembers one exhausting foray into a career fair as representative of her experiences. “The whole thing was a struggle,” she says. “Getting through the crowds, trying to reach the tables, raising my voice to let people know I was there. I eventually gave up because I was so drained.” As co-chair of a committee exploring accessibility in career services for students, Chan provided feedback to event organizers based on evaluations from attendees with disabilities. The objective, she says, is to make each event more accessible than the last.

## A NEW CENTRE FOR DISABILITY STUDIES

Launched in 2020 at U of T Scarborough, the Centre for Global Disability Studies brings together faculty, researchers and graduate students from the three campuses conducting anti-ableist research in any discipline. “Ableism” refers to discriminatory attitudes in society that devalue the potential of people with disabilities.

“Our mission is to support research that’s focused on creating a more just future for people with disabilities,” says director Cassandra Hartblay, assistant professor of anthropology and health humanities at U of T Scarborough.

While most centres for disability studies examine issues at the regional or national level, the centre is founded on the idea that the social and historical systems that perpetuate ableism – including colonialism and racism – are global.

The centre is also committed to improving accessibility on

campus. It offers small grants to cover access needs for researchers with disabilities, such as the cost of bringing support people to academic conferences. It also provides matching funds for investments in accessible events, such as providing captioning and interpreters.

In partnership with accessibility services at U of T Scarborough, the centre hopes to one day establish a disability cultural centre. “It will be a hub for the centre’s events and for student life around disability issues,” says Hartblay. —Megan Easton

Accessibility services and the AODA Office have helped develop resources on planning and hosting accessible events, both online and in real life. And the university is developing guidelines for all faculty and students on incorporating inclusive design principles into as many facets of university life as possible.

Occasionally, there are campus events featuring alumni with disabilities, and accessibility services plans to run more, says Nicholson. “Students with disabilities should be able to come and hear people who were registered with our office and went on to do great things.”

Both Lu and Chan have felt the scarcity of mentors with disabilities at U of T. “What a lot of my barriers have in common is that my peers and mentors lack experience dealing with disability,” says Lu. “I have no one to turn to for advice and have to figure it out on my own. That’s one of the reasons that drives me to ‘make it’ – I want to be a resource for future Deaf students.”

Chan says she’s grateful to have Onley and Doyle as her role models at U of T, but says greater access to mentors would ease the isolation often felt by students with disabilities. “There have been so many times when I would have liked to have someone who truly understood my experiences to answer my questions, or just relate to the emotional labour of explaining why I need accommodations over and over again.”

Doyle says recruiting mentors can be hard – especially when it comes to people with invisible disabilities. “They may not be prepared for the possible stigma and judgment that could come with disclosure.”

While acknowledging this reality, Onley says it’s worth urging more staff, faculty and alumni who have a disability to make themselves available to students. “I think we may see more people willing to do this now because the cold reality is that this pandemic has been a great equalizer. We’re all more aware of our weaknesses, which can be a strength.”

Doyle is similarly optimistic. “Over the past year, many people have experienced things that people with disabilities have always lived with – being isolated, feeling unsafe in public spaces, requiring flexibility in their work. If everyone can remember that feeling when the pandemic is over, we have reason to hope for a future with more accessibility and less stigma for everyone.”

As for Emily Chan and Alex Lu, they will both graduate this spring. As a social worker, she would like to use her lived experience to help families who have children with disabilities. He has accepted a position at the Microsoft Research Lab in Massachusetts and intends to continue his research and work toward more inclusion of underrepresented people in science. Two reasons for hope right there. ■



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# Air

**U of T wants to drastically cut carbon emissions by 2050. It's enlisting on-campus ingenuity for help**

# Cle





# aring the A

by Kurt Kleiner

illustrations by Sam Island

## THERE WERE MANY TIMES THAT CHRISTINE GABARDO WONDERED IF THE PROJECT WOULD EVER GET UP AND RUNNING.

For more than four years, Gabardo, a post-doctoral fellow in mechanical and industrial engineering at U of T, had been working on a machine designed to take carbon dioxide that would have ended up in the atmosphere and turn it into useful chemicals. She and a team of postdocs, students and faculty advisers scaled it up from a small lab process handling a few milligrams at a time to a truck-sized machine capable of converting hundreds of kilograms of CO<sub>2</sub> per day. They hoped to win first place in the \$7.5 million (U.S.) Carbon XPrize, a competition to reward the team with the best technology for converting carbon into a marketable product.

But first they had to get the machine, called an electrolyzer, installed at the test site in Calgary. Unfortunately, the day the machine was delivered in January 2020 the temperature had dropped to minus 30 Celsius, and when they opened the delivery door the building's heaters were

PHOTOGRAPH BY DAVID LEE



immediately overwhelmed. “It was just terrible to be out there,” Gabardo said. Even worse, the extreme cold damaged some plastic components of the electrolyzer, which they had to have manufactured again.

Despite the damage, and further challenges such as frozen pipes and technical difficulties – as well as a global pandemic – by the end of December the team had succeeded in running their unit for almost 2,500 hours and in converting carbon dioxide into chemical products. Now their plan is to bring the electrolyzer back to Toronto and use it to convert emissions from U of T buildings, while continuing to refine their process.

“In time, the technology could yield a new method for fighting climate change. And it’s an example of how U of T plans to harness on-campus ingenuity to fulfil a plan to make the St. George campus not just carbon neutral, but carbon negative by 2050. This means the campus would actually remove more carbon dioxide from the atmosphere than it generates.

The university won’t rely on any single strategy to achieve this, says Ron Saporta, U of T’s chief operating officer for property services and sustainability at St. George. “The plans we develop are going to include everything from carbon capture and renewable energy to fundamentally reducing the energy we consume,” he says. “There is no silver bullet that will address our carbon challenge.”

Greenhouse gases come from many sources, including power plants and industrial facilities, which burn fossil fuels and send the exhaust gases up the smokestack. Carbon capture removes the carbon dioxide from the stack before it makes its way into the atmosphere. But the process raises costs, so most companies won’t do it unless required. There is also the problem of what to do with all the CO<sub>2</sub> you capture. At the moment, most of it is pumped underground, which further adds to the expense.

If that carbon dioxide could be converted into products and sold, carbon capture would be a lot more attractive for businesses. As long as the electricity used in the process is clean – produced with solar or wind, for example – no additional carbon dioxide enters the atmosphere. If the products made with the process can replace goods manufactured the traditional way (in which carbon dioxide is emitted), then there is an added environmental benefit.



Members of U of T’s Carbon XPrize team at their test site in Calgary last December



**THE U OF T XPRIZE TEAM** was founded in 2016 by Alex Ip. At the time, he was the director of research and partnerships for the lab of engineering professor Ted Sargent. Sargent and fellow engineering professor Dave Sinton are advisers to the team, which has since expanded to 12 members. (Gabardo joined in 2019.) They named the team Carbon Electrocatalytic Recycling Toronto, or CERT.

About the time the team started, Canada’s Oilsands Innovation Alliance and the U.S. power company NRG teamed up with the XPrize Foundation to run the competition in search of the best technology for converting carbon dioxide emissions into usable products. Although brand new, the team decided to enter the contest.

The process they developed is similar in principle to the high school chemistry experiment in which you use the energy from an electric current to split water (H<sub>2</sub>O) into its two components – hydrogen and oxygen. The U of T team’s technology breaks down CO<sub>2</sub> into separate molecules of carbon and oxygen, says Ip, and goes a step further. It puts the pieces back together again, but adds hydrogen, which enables the team to create valuable materials, such as ethylene (a building block of plastic), ethanol (a solvent) or a mix of hydrogen and carbon monoxide called synthetic gas, which can be used as a fuel.

By adjusting the type of catalysts they use, the operating temperature and voltage, and many other variables, the team is able to “tune” the machine to create more of the chemical they want – say, lots of ethylene, but not much ethanol. But getting the process to work in the lab is only the first step. The Carbon XPrize rewards teams whose machinery is efficient, has been tested over a long period, is able to convert large amounts of carbon dioxide at a time, and has the potential to work at an industrial scale.

The prize organizers brought five finalists to a site in Calgary next to a natural-gas-burning power plant. Each team was provided with a small lot with hookups for water, gas and electricity, as well as a supply of carbon from the power plant. And that was it. In the space of a year, the team had to have a pilot-sized version of their machinery built. They put in 12-hour shifts to keep their device running. Six of the team







members ended up sharing a house in Calgary throughout the competition. “It was not an easy few months,” says Gabardo. “We worked together, we lived together. We were the only people we saw in 2020. But for me, it was an interesting and exciting experience – scaling something up from the lab. We learned a lot of different skills that aren’t necessarily associated with academic research.”

The results of the Carbon XPrize competition were announced in April, and the U of T team did not win. But Ip and Gabardo consider the project a success so far. Theirs is the largest CO<sub>2</sub> electrolyzer in the world that functions at a low temperature. (Most operate at relatively high temperatures or at a smaller scale.) An analysis showed that the current process could produce ethylene competitively at an energy cost of five cents per kilowatt-hour. This is lower than the average industrial price of electricity in Ontario, but will be within reach as the price of renewable energy comes down, Gabardo says. “We definitely have a lot of work to do,” Ip adds. “We’re hopeful that in the next few years we can have some of these units operating.”

**THE TEAM’S PROJECT FITS IN** perfectly with U of T’s plans, says Ron Saporta. The university is committed to making the St. George campus carbon negative – or, as Saporta prefers, “climate positive” – by the year 2050. “Most people are talking about net zero for 2050. We want to go beyond net zero so that our campus becomes a carbon sink and creates a net benefit for our community,” he says.

In 2019, U of T adopted a plan for the St. George campus that called for a 37 per cent reduction in emissions below 1990 levels and included a number of ambitious measures. These include Canada’s largest urban geexchange project, being built on the front campus, which will use an underground heat-pump system to add heat to the buildings around King’s College Circle in winter and remove heat in summer. Similar geexchange projects are already in place at U of T Mississauga and U of T Scarborough.

Other measures include retrofitting buildings to be more energy efficient, installing more solar panels, and upgrading the 120-year-old St. George heating system. Right now, it uses natural gas to create steam, which is piped to buildings around campus. Converting it to a system that uses electricity to create hot water will be more energy efficient and will significantly reduce carbon emissions, says Saporta.

U of T Mississauga and U of T Scarborough share the university’s overall greenhouse-gas reduction goal, but each campus is formulating its own plans. For instance, UTM envisions creating a culture of sustainability. “We believe the larger campus community, including students and visitors, could play a role,” says Ahmed Azhari, UTM’s director of utilities and sustainability.

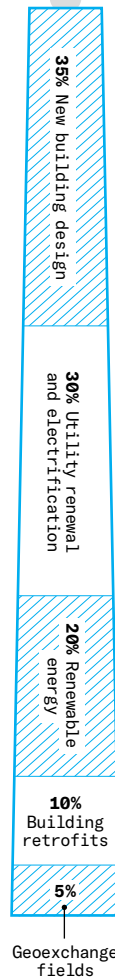
Even taking all of these measures together, though, the

## **“MOST PEOPLE ARE TALKING ABOUT NET ZERO FOR 2050. WE WANT TO GO BEYOND NET ZERO SO THE ST. GEORGE CAMPUS BECOMES A CARBON SINK AND CREATES A BENEFIT FOR OUR COMMUNITY”**



**WHERE ST. GEORGE’S CO<sub>2</sub> CUTS WILL COME FROM**

Total carbon reduction by 2050: **138,000 tonnes/yr**



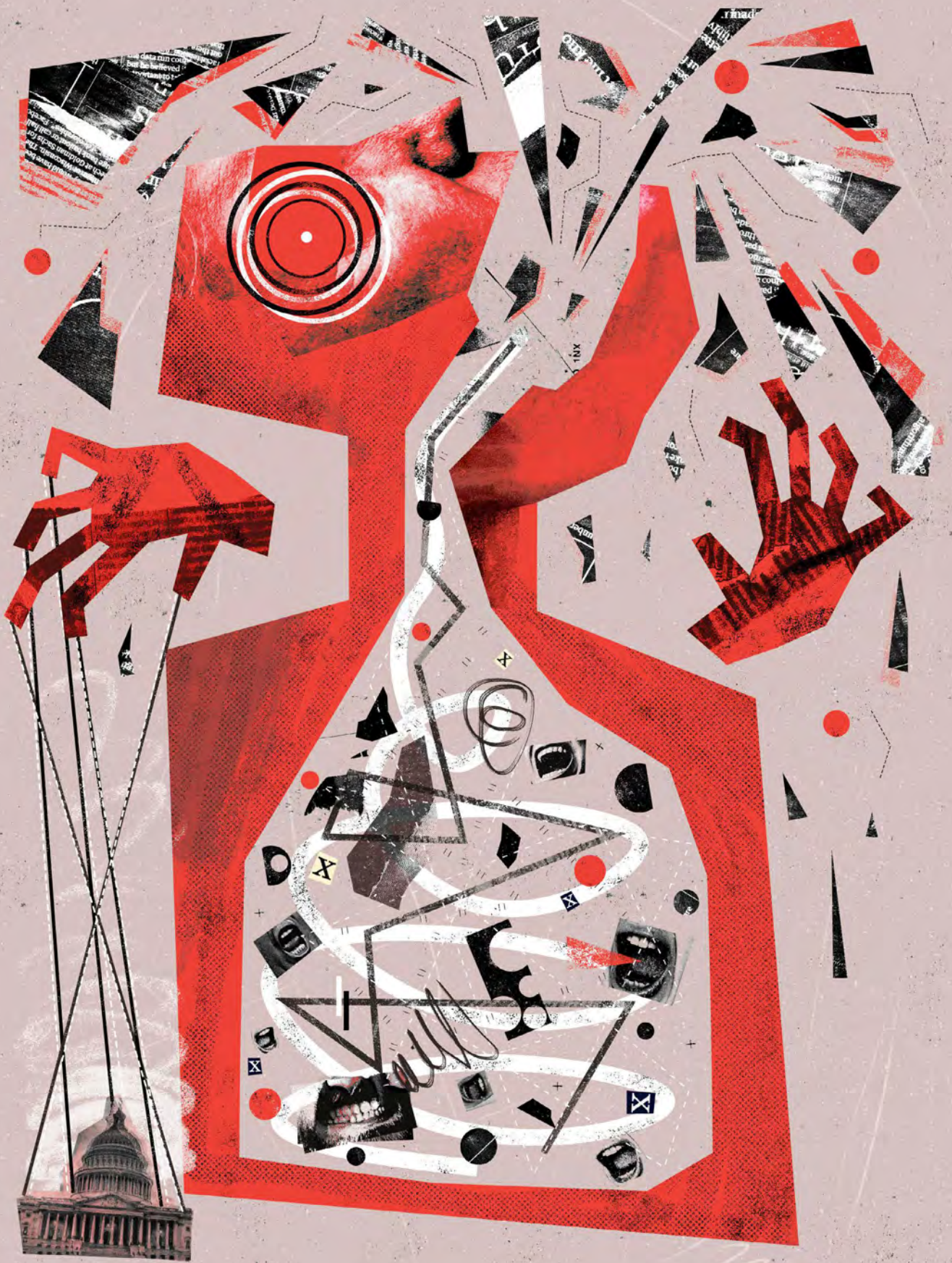
university will still be emitting about 74,000 tonnes of greenhouse gases a year in 2030. Under the “climate positive” plan, the St. George campus will cut its remaining emissions by 2050 through additional efficiency improvements. But there will be some greenhouse gas emissions that can’t be completely eliminated on campus. Those emissions will be offset with reductions off campus, says Saporta. For instance, the university may invest in building off-campus solar farms that would provide clean energy to the power grid. By replacing electricity produced from higher-carbon sources with renewable energy, the university will become an overall carbon sink, Saporta says.

The new climate positive plan also envisions developing new technologies that could help reduce carbon emissions further. Many of the gains will come from research that is being conducted on campus, says John Robinson, U of T’s presidential adviser on the environment, climate change and sustainability. Robinson, who is also a professor in the Munk School of Global Affairs and Public Policy and the School of the Environment, advocates turning the university into a “living lab” – using the research and talents of faculty and students to come up with new ways to improve sustainability on campus. “Part of the answer is uncovering the richness that’s already out there, and finding ways to connect it,” he says. “This is about universities stepping up. They need to engage.”

The carbon conversion project is exactly that kind of engagement. Although the machine is still in Calgary, the team planned to bring it to U of T sometime this spring. They are working with Saporta to find a good site – ideally, one that can make use of the carbon dioxide generated by a gas boiler that heats a campus building.

“We’re very excited to bring the team and their technology home to advance this critical research on climate change mitigation,” says Saporta. “And to start capturing carbon right here on the St. George campus.” ■







# THE EXTREMISM MACHINE

**ONLINE DISINFORMATION POSES A DANGER TO SOCIETY.  
RESEARCHERS AT U OF T'S CITIZEN LAB ARE TRACKING IT –  
AND TRYING TO FIGURE OUT HOW TO STOP IT**

**BY SADIYA ANSARI**

Illustrations by Nate Kitch

# ON JAN. 6,

while then-U.S. President Donald Trump urged supporters to “fight like hell” against his election loss, many of his followers started to make their way toward the Capitol. Thousands had travelled to Washington to take part in Trump’s “Save America” rally, and to support his “Stop the Steal” campaign after Joe Biden won the presidential election in November. Twenty minutes before Trump even finished speaking, rioters became violent with police outside the Capitol, and burst through barricades. A little over an hour later, some protesters smashed a window in the Capitol, and hundreds poured into the building as lawmakers were in the process of certifying the election. Police officers were beaten, offices were vandalized and looted, and five people ended up dead.

Like many others, John Scott-Railton, a senior researcher at U of T’s Citizen Lab, watched events unfold with increasing horror. “I saw an image of a guy with zip-tie restraints and my heart dropped,” says Scott-Railton. “I thought, *oh my God is there an intent to kidnap legislators?*”

In his research, Scott-Railton examines technological threats against civil society. (Generally, people affiliated with the Citizen Lab work at the intersection of communication technologies and human rights.) Often, he says, these threats come from authoritarian governments targeting activists or protesters in their own country. But lately he has been spending more time tracking a different kind of problem – the evolution of online disinformation campaigns in democracies, such as the “Stop the Steal” movement, which grew rapidly in the weeks following the November election.

Scott-Railton says the attack on the U.S. Capitol is one of the most alarming instances of how toxic online culture translates into real – and highly damaging – offline consequences. While he watched the movement grow online and suspected that many people were underestimating the danger it posed, the reality of the attack still unnerved him. “I was taken aback by the physical manifestation of violent rhetoric,” he says.

In the months since the attack, Scott-Railton has been using a variety of online investigation techniques to identify and understand the people who participated in the riot. Law enforcement has gotten involved. But he says criminal prosecution of those who participated in the riot alone won’t fix this issue. “This is the clearest example we have of a societal problem that people have been warning us about for a generation.”

The problem is that online disinformation is contributing to polarization in political speech, at times veering into outright extremism. The phenomenon is global. And there are numerous reasons for concern.

In Canada, Alexandre Bissonnette read anti-Muslim lies and hate online before fatally shooting six people at a Quebec City mosque in 2017. In India, the 2019 election was rife with misleading information – driven largely by

nationalism and spread primarily by political parties through WhatsApp. And worldwide, according to the non-profit Center for Countering Digital Hate, multiple anti-vaccination campaigns have ramped up during the pandemic, spreading false information about the safety of COVID-19 vaccines.

The solutions will not be easy.

While disinformation has always existed, there is “no doubt” that social media propels it, says Ron Deibert, a professor of political science at the Munk School of Global Affairs and Public Policy and the director of the Citizen Lab. To him the cause is clear: a business model that is based on collecting as much data as possible about its users by capturing – and hanging onto – their attention. Simple messages that draw emotional responses are more apt to be liked and shared. The algorithms on YouTube and Facebook that recommend new content nudge users to extreme material to elicit a stronger emotional reaction – watching yoga videos can lead down the alternative health rabbit hole to anti-vaccination videos, which can then lead to QAnon content. “That’s the algorithm working as intended,” says Deibert.

Citizen Lab associate Gabrielle Lim researches media manipulation and disinformation, and while disinformation can come from anywhere, she says the important thing is to note how it takes hold. Lim examines media manipulation case studies as part of a group at Harvard Kennedy School’s Shorenstein Center. The group studies how the information ecosystem

**THOUSANDS OF PEOPLE SHOWED UP AT THE CAPITOL UNAFFILIATED WITH ANY EXTREMIST GROUP AND TOOK VIOLENT ACTION ALL THE SAME. “TO ME, THAT’S VERY CONCERNING”**

allows disinformation to thrive, looking at how falsehoods such as the idea that COVID-19 was invented in a Chinese lab reach a large audience. Researchers pick apart how an idea gains traction – for example, from Twitter to a blog, to mainstream media and then to a politician. The bigger the platform, the more likely the idea will be seen as legitimate, says Lim.





“If an idea gets on Tucker Carlson [Tonight on Fox News], then that’s a whole new world – you might have reached a few hundred thousand people before, but now you’re reaching millions of people,” says Lim. “It’s one of the more common strategies we see: we call it trading up the chain.”

The Stop the Steal movement benefited from the ultimate amplifier, says Lim – Trump himself. But the problem with disinformation is not just that there are bad actors who deliberately want to deceive people, pushing it further up the chain. It is that there are also political and media elites who benefit from spreading false or misleading information, as well as individuals who – because of various cognitive, cultural and sociopolitical factors – are inclined to believe and share it. Analysis from the University of Chicago shows that a large majority – 89 per cent – of 193 people charged

with crimes related to the Capitol riot had “no connection to existing far-right militias, white-nationalist gangs or other established violent organizations.” While there were organized extreme-right wing groups present – the Proud Boys, Oath Keepers and Three Percenters – the analysis found they represented only about 10 per cent of those arrested.

“Jan. 6 was an opportunity for right-wing extremist organizations,” says Scott-Railton. “We’re learning that the Proud Boys and Oath Keepers clearly had specific plans and executed on them. But we also see lots of people who were in it for the ride and were willing to take directions. And to me, that’s very concerning.” What worries Scott-Railton, in other words, is that thousands of people showed up to the Capitol unaffiliated with any extremist group and yet took violent action all the same.

**M**egan Boler, a professor in the department of social justice education at the Ontario Institute for Studies in Education (OISE), investigates how social media influences emotions in the context of the “post-truth” moment we are in – where emotions have replaced facts. “Emotion drives politics more than ever,” says Boler.

As part of a three-year research project, she and her team are examining social media posts related to politically polarizing events, such as Justin Trudeau’s blackface fallout, or inflammatory statements from

People’s Party of Canada leader Maxime Bernier, to track reactions from all parts of the political spectrum.

In her work, Boler has found that the right has been more successful than the left at engaging people online, partly because the right is more coordinated than the left. Like other scholars, Boler has been employing the concept of *ressentiment*, as philosopher Friedrich Nietzsche did, in her work. *Ressentiment* refers to a sense of resentment rooted in a particular understanding of history, says Boler. In the contemporary context, Boler has observed it in “white people claiming their whiteness as part of their victim identity.” In the case of Trump supporters, it’s clear, says Boler, that they feel the America they “counted on” – an America where white people had privilege – has been lost.

“There are a few scholars who [apply this concept to] the rise of Trump and the particular way that he situates his supporters,” says Boler. “It’s such a great description of the right in terms of an identity as someone who is victimized, one who is virtuous because of the victim identity, and one who wants a particular kind of revenge.”

While in her research she sees clear similarities between how emotions are targeted by all parts of the political spectrum – the focus on issues such as identity politics and freedom of speech – *ressentiment* is what separates the two. “When the right speaks about what they want, they invoke a kind

of nostalgia for how things were – make America great again,” says Boler. “Whereas on the left, there’s less desire to move backward.”

Maxime Bernier is an example of a Canadian politician who has appealed to the same vein of narratives as the right in the U.S., says Boler, echoing a desire to “return” Canada to a simpler time by focusing on immigrants with “Canadian values” and cutting immigration levels by more than half of the number under the Trudeau government.

Disinformation has helped prop up his campaign. In a campaign speech ahead of the 2019 federal election, for instance, Bernier asked, “Are Canadians happy to subsidize 74 per cent of our current immigrants?” A thorough fact-check by the CBC showed that this statement was false, using “cherry-picked data” that did not reflect immigrants’ contribution to the Canadian economy.

Fact-checking is one tool used against disinformation, especially during elections. Factcheck.org out of the University of Pennsylvania, for instance, has been assessing claims in American politics since 2013. Many news sites fact-check specific events, such as presidential debates but also take it on as a broader enterprise. The *Washington Post*, like many other outlets, dedicated resources to verifying all of Trump’s statements (30,573 misleading claims in four years, they found).

But political fact-checking in particular may not be the best tool to fight disinformation, says Lim. She notes that the practice can be highly partisan; CNN and the *Daily Caller*, a right-wing website, will produce very different fact-checks. “They’re going to be skewed on what they choose to fact-check, and also how they choose to present it,” Lim says. Another major issue is that checking happens *after* a piece of information has already reached an audience. “It’s very hard to get that fact-check back into the hands of those who saw that original piece of content,” says Lim.

Deplatforming could be more effective. This occurs when social media companies delete or suspend accounts for spreading disinformation or hate, or when fringe platforms are forced to shut down. Twitter permanently suspended Donald Trump’s account two days after the Capitol storming. And “free speech” social media network Parler went offline for a month following the riots because Apple and Google booted it from their app stores and Amazon refused to host it on their web servers. “Deplatforming can work,” says Lim, “especially when it removes the financial resources for an individual or group to continue their work and takes their content out of the wider circulation of information.” While that content may move onto smaller platforms or messaging apps, Lim says, “growing an audience takes time and can make recruiting more difficult.”

Trump’s Twitter ban had many calling it a violation of free speech. But Twitter CEO Jack Dorsey defended the decision in a tweet, saying, “Offline harm as a result of online speech is demonstrably real.” He added that preventing real harm is “what drives our policy and enforcement [of our terms of service] above all.”

**U**ltimately, a broad solution is needed for a problem that has metastasized as a result of a tech environment that has gone unchecked for decades, says Deibert. “We’ve got an existing ecosystem that is highly insecure, invasive by design, poorly regulated and prone to abuse, and suddenly now we’re relying on it more than ever,” he says. This essentially has created “a giant data-manipulating machine that is bringing out the worst of us.”

Despite this gloomy diagnosis that he characterizes as a “social and political sickness,” Deibert is actually optimistic about being able to turn it around. “We’ve created these feedback loops and unintended consequences, principally around technology, that risk our collective ruin,” says Deibert. “We created them but we can also manage them – if we get our act together, we can do something about it.”

In his 2020 book *Reset: Reclaiming the Internet for Civil Society*, Deibert lays out a plan to manage this ecosystem better. His

### **“THERE’S NO SUBSTITUTE FOR INVESTING IN THE TYPE OF TRAINING AND EDUCATION THAT GOES INTO WHAT IT MEANS TO BE A HUMAN AS PART OF A COLLECTIVE – A CITIZEN”**

main argument is for pursuing solutions guided by the principle of restraint. For governments and companies, this means pulling back on what they can do with the powers of surveillance that information technology has enabled, and managing the risk of bad actors exploiting technology. And there’s a takeaway for individuals. “We’ll need personal restraints, too: restraints on our endless appetite for data, restraints on our emotions and anger as we engage online in the absence of the physical cues that normally help contain them,” writes Deibert.

There’s also a larger idea of what will help us mitigate the ills of technology in the future: the idea of civic virtue. Deibert points to how the environmental movement has taken on this collective, long-term view to advocate for restraint about consumption. This type of thinking, he says, has been neglected in favour of science, technology, engineering and math. And while those subjects have an important place in our society, the arts and humanities are what will ultimately help us manage these larger problems.

“There’s no substitute for investing in the type of training and education that goes into what it means to be a human as part of a collective – a citizen,” says Deibert. “Maybe during the pandemic some of us now recognize the importance of that and are starting to adjust accordingly. I hope so.” ■





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# HOW SHOULD CITIES RECOVER?

## URBAN EQUITY: BUILDING BACK BETTER FROM COVID-19



An online conversation  
with social entrepreneur  
and changemaker,  
Kofi Hope.

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With people working from home or leaving town altogether, COVID-19 is impacting urban centres. So what will recovery look like? Join adjunct U of T professor, Kofi Hope (BA 2006 Innis), as he discusses post-pandemic cities. Will inequities deepen? Or can we build back in ways that are more diverse, just and sustainable for everyone? Winner of the 2017 Jane Jacobs Prize, Hope is a *Toronto Star* writer and CEO of Monumental — an organization that works towards fair and equitable institutions.

### Wednesday, May 26, 2021

5:00–6:00 p.m. • Conversation with Kofi Hope, free online

6:00–6:30 p.m. • U of T Alumni Association AGM

This event is part of Alumni Reunion – Home Edition.

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All U of T alumni are members of the U of T Alumni Association and invited to join us for the Annual General Meeting, which immediately follows Kofi Hope's keynote conversation.

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# Seeds of Bravery

Sometimes life's pain can feel overwhelming. A new book shares stories of how people find hope in their darkest moments



S

oon after Harold Heft was diagnosed with an aggressive brain cancer, he started searching for a book that might offer some comfort or wisdom as he confronted a frightening, uncertain future. A voracious reader and professional writer, he was looking for true stories about how people bear what feels unbearable. He couldn't find these stories collected in one book, so he decided to create one himself.

*A Perfect Offering: Personal Stories of Trauma and Transformation* was published in late 2020, more than five years after Heft's death in 2015. The book was incomplete when he died, so his wife Suzanne Heft (BA 1990 St. Michael's) and longtime friend Peter O'Brien worked together to finish it. "Harold envisaged a book that would help readers feel less alone with their trauma, whatever it was, by catching a glimpse of their own suffering in the suffering of others," says Suzanne, who met Harold when they were both working at U of T in the 1990s. "At the same time, he thought it could offer a way of understanding how people often find meaning and hope, despite their anguish and pain."

The book has 31 stories of trauma – from sexual assault and the legacy of residential schools to chronic illness and the loss of a child – by award-winning writers and first-time

authors alike. They form a kaleidoscope of pain, but also sparkle with resilience and recovery. “It’s not an easy book, but I find a great deal of hope in its pages,” says Suzanne. “These people didn’t give up. They chose to affirm life in the face of what seems like abject destruction.”

It took a long time for Janelle A. Girard (BEd 2008 OISE) to feel ready to publicly share her experience of being drugged, abducted and sexually assaulted in 2009. But the chance to be part of *A Perfect Offering* came at the right moment. “I immediately had this overwhelming excitement about finally telling my story,” she says.

Girard, who was also seriously injured in a car accident a few years after the assault, knows the harmful effects of trauma all too well. But she has also seen its unexpected gifts. “This book is important because it destigmatizes trauma and focuses on transformation,” she says. “Just look at where the authors are now. We persevered and came out the other side to tell our stories.”

One of Girard’s biggest transformations has been to become a writer. She got involved in *A Perfect Offering* after Suzanne contacted her teacher at U of T’s School of Continuing Studies’ creative writing program looking for submissions. That teacher was Marina Nemat, the bestselling author of *Prisoner of Tehran* – a memoir of her arrest, imprisonment and torture after the Islamic Revolution of 1979. Nemat is also among the book’s contributors, with a story about reuniting with a high school friend who was in the same prison at the same time as her 35 years before.

Nemat says most of the students who have taken her memoir-writing class over the past eight years are there to write about a traumatic event. Another two of Nemat’s students are included in *A Perfect Offering*: Janet Culliton, whose story is about having a

daughter with autism prone to violent episodes, and Jennifer Boyle (PhD 1999), who writes about losing a lifetime’s worth of memories to profound amnesia. “These stories give us strength and hope,” says Nemat. “We cannot put trauma on a scale and measure it, so comparing suffering is irrelevant. What we need is to learn from one another and know that we are in good, wise company.”

Harold began assembling that wise company before he died, but he didn’t get to read many of their finished stories. He had received about a third of the submissions when he became too sick to work on the book. Though he opted for all available medical treatment, he died a year and a half after collapsing at work one day in 2014. He was 49 when doctors discovered he’d had a seizure caused by a brain cancer called glioblastoma.

After he recovered from the seizure, his speech came back quickly. His ability to read and write, however, rapidly deteriorated then permanently disappeared. For a

lifelong reader and writer with a PhD in literature, this was a devastating loss, says Suzanne. “Before, he wrote all the time. He always had a notebook within reach.” As he built his career in fundraising and communications at U of T, the Hospital for Sick Children and other non-profits, he always made time to write outside of work, publishing two books and many poems, articles and reviews.

“When he realized that his old life was never going to come back, he had to decide how to use his remaining time,” says Suzanne. “The book is an expression of how he integrated his former self and his new reality.” After Harold came up with the idea of *A Perfect Offering*, Suzanne acted as his scribe, sending emails to potential contributors and taking notes for his own story. “If he felt in the mood and had the energy, he would say, ‘Open the laptop.’ It gave him a sense of purpose and meaning.”

Several months after his death, Suzanne returned to the project with Peter O’Brien, who had



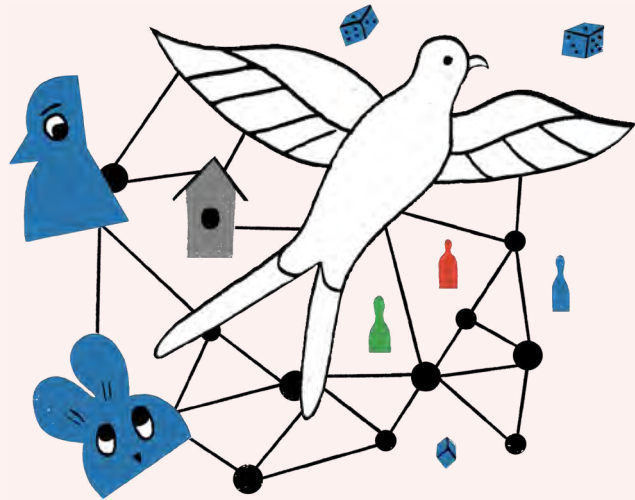
ILLUSTRATIONS BY (BOTTOM LEFT) GRACE J. KIM; (TOP RIGHT) HANNA BARCZYK



worked with the couple at U of T. (In O'Brien's contribution to the book, he recounts his father dying when he was a toddler, leaving his mother to raise 10 children.) "Peter helped Harold get the idea off the ground, then helped me solicit, edit and sort the submissions into a final manuscript," says Suzanne. "I was determined to keep going. Now it gave *me* a purpose. It was a way of collaborating with Harold, even though he wasn't there anymore. My only concern was whether to publish his unfinished story. He would have wanted to revise it countless times." She decided to include it, explaining that its imperfection aligns with the sentiment in the book's title, inspired by Leonard Cohen's song "Anthem," where he writes: "Forget your perfect offering / There is a crack / A crack in everything / That's how the light gets in."

In Harold's story, "The World I Once Inhabited: Draft One," he describes grappling with questions he rarely considered before his diagnosis. For example, how should he live with the sudden awareness that death could come at any time? And in what way is he the same person he always was? "Harold struggled with these issues until the end," says Suzanne. "He didn't have enough time to reckon with his experience of trauma. But his book brought together people who did."

It's happenstance that the book was released during a global pandemic, yet Suzanne hopes it may speak to those coping with the innumerable traumas of the past year. "While the book is an expression of the writers' courage, it's also turned out to be a book for this moment," she says. "Anyone should be able to pick it up and feel the power of the bravery of everyone in it. Maybe, then, they'll be reminded that there's a tiny seed of that bravery in them too." – Megan Easton



## Board Games That Put Learning into Play

At U of T Mississauga's Robert Gillespie Academic Skills Centre, students will find the Boardgame Café – a place where they can relax and make new friends while playing a game of their choice. The café is run by the centre's learning strategist, Thomas Klubi. He says playing board games enhances the student experience but also fosters academic competencies, such as social skills and information processing. Due to COVID-19, Klubi has cancelled the café for now – although playing continues online. Below, Klubi and his student mentors recommend three games that are good for both teens and adults. – Ali Raza



### Pandemic

Klubi calls it "the best cooperative game" he has ever come across as multiple players, each fulfilling a different role, learn about managing a pandemic while trying to discover the cure. It's especially appropriate for the current situation, he adds.



### Wingspan

Aside from its esthetics and artwork, this ornithological board game is praised for how it encourages players to learn about bird habitats, wildlife and nature. It is a great example of an entry-level strategy game that essentially teaches you as you play.



### Root

Two to six people play as animals fighting for control of the forest in a game that incorporates economics and psychology. With so much variance in how Root unfolds, you won't get bored no matter how many times you play.

# How a slender, snake-like robot could give doctors new ways to save lives

**Y**ou might call it “zoobotics.” Jessica Burgner-Kahrs, the director of the Continuum Robotics Lab at U of T Mississauga, and her team are building very slender, flexible and extensible robots, a few millimetres in diameter, for use in surgery and industry. Unlike humanoid robots, so-called continuum robots feature a long, limbless body – not unlike a snake’s – that allows them to access difficult-to-reach places.

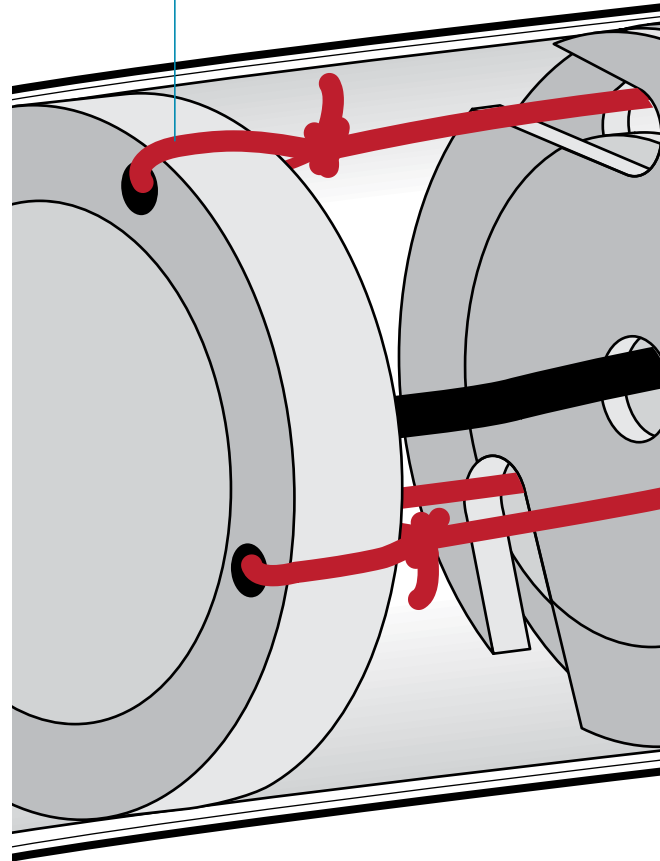
Consider a neurosurgeon who needs to remove a brain tumour. Using a traditional, rigid surgical tool, the surgeon has to reach the cancerous mass by following a straight path into the brain, and risk poking through – and damaging – vital tissue. Burgner-Kahrs envisions a day when one of her snake-like robots, guided by a surgeon, would be able to take a winding path *around* the vital tissue but still reach the precise surgical site. Previously inoperable brain tumours might suddenly become operable. “It could rev-

olutionize surgery,” she says.

Burgner-Kahrs, a computer scientist and mechanical engineer, says her lab is also developing a more advanced generation of continuum robots that are equipped with sensors and can partially steer themselves. A surgeon would have to operate the robot remotely with a computer, but the robot would know how to avoid obstacles and recognize its destination. A surgeon could deploy one of these robots to collect a tissue sample from the abdomen, for instance, or inject a cancer drug directly into a tumour in the lungs.

There are uses outside the human body, too. A continuum robot could slide through the interior of a jet engine, inspecting it for damage. The lab is experimenting with novel forms that are even more dexterous and extensible. One recent design, with potential search-and-rescue applications, is inspired by origami: it’s very light, and can elongate up to 10 times further than other designs. —Andrew Snook

Threads running through the robot’s “body” attach to a thicker disk at the end of each body segment. These threads are pulled to control individual segments of the robot and bend them in different directions.

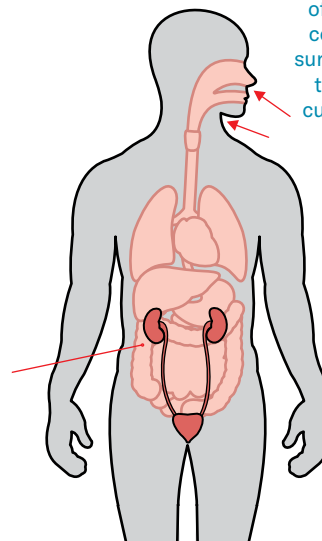


## NEXT-GENERATION CONTINUUM ROBOTS

To develop robots that can be used safely in a variety of medical and other applications, Prof. Burgner-Kahrs aims to answer the following questions:

- 1.** How can we control continuum robots so they move even more precisely through constrained and tortuous environments?
- 2.** How can we design a more intuitive interface between human and robot? Can we achieve a fully autonomous robot?
- 3.** How can we use multiple continuum robots in tandem to complete a task collaboratively?

Prof. Burgner-Kahrs is developing different kinds of continuum robots that could be used in keyhole surgeries, causing even less trauma to patients than current minimally invasive surgical techniques.

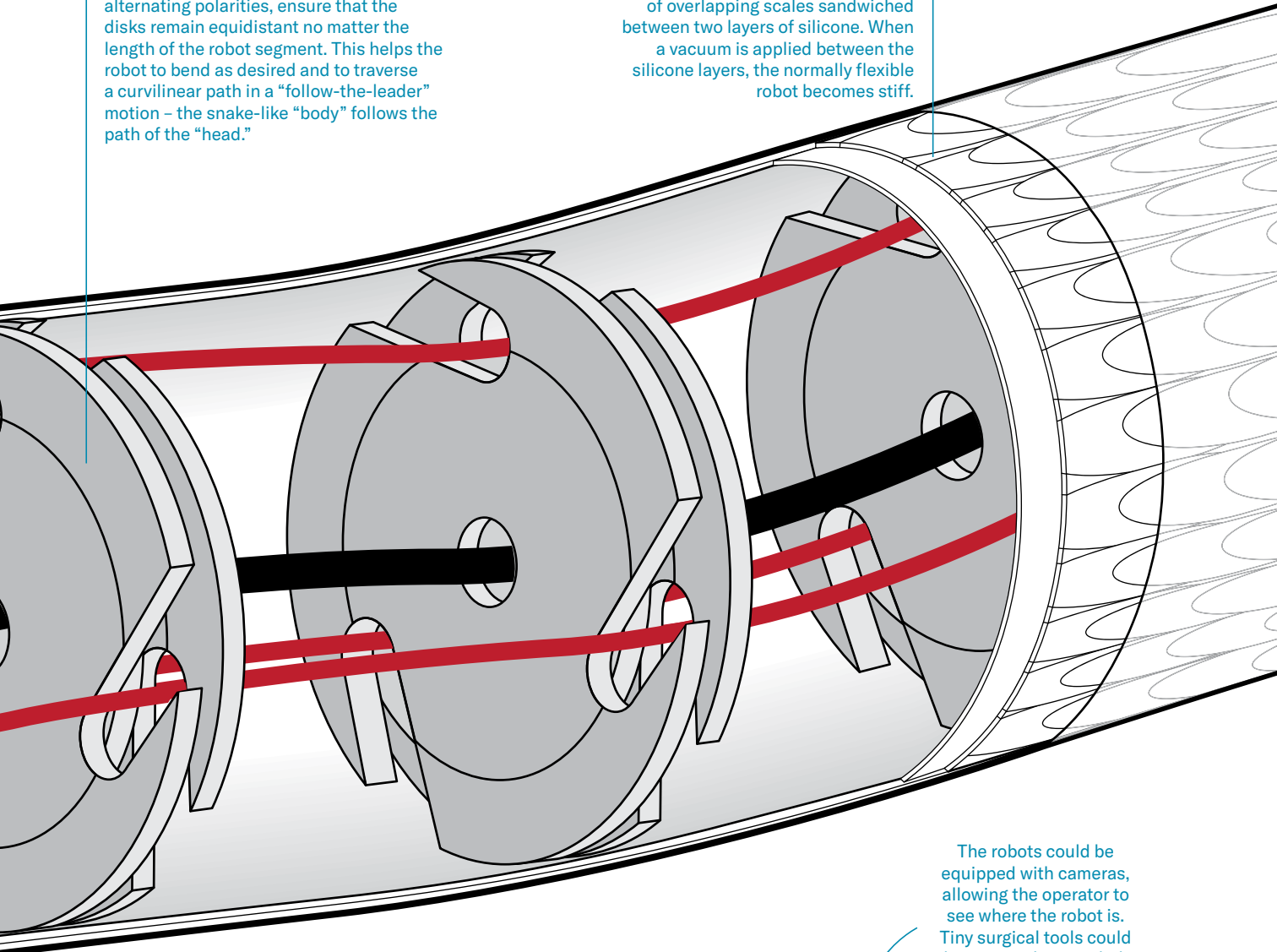


ILLUSTRATIONS BY COLIN HAYES



Magnets within each disk, arranged with alternating polarities, ensure that the disks remain equidistant no matter the length of the robot segment. This helps the robot to bend as desired and to traverse a curvilinear path in a “follow-the-leader” motion – the snake-like “body” follows the path of the “head.”

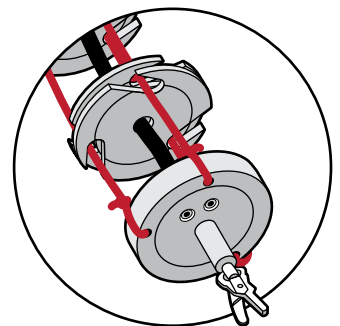
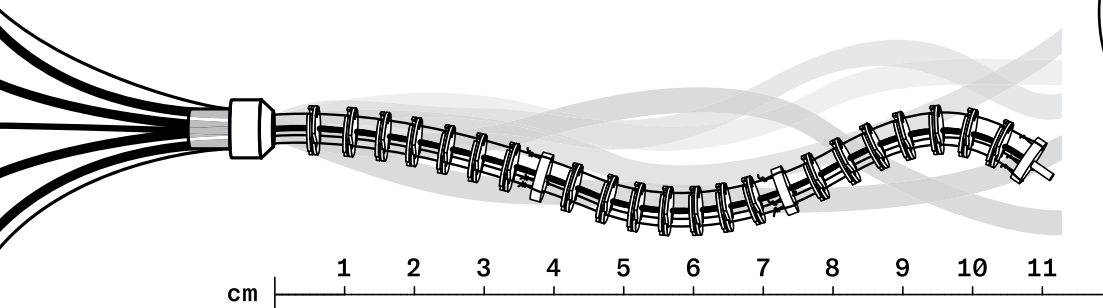
The lab has developed a sheath of overlapping scales sandwiched between two layers of silicone. When a vacuum is applied between the silicone layers, the normally flexible robot becomes stiff.



The robots could be equipped with cameras, allowing the operator to see where the robot is. Tiny surgical tools could be mounted as needed, including forceps, a laser or a suction device.

**THIS IS THE ACTUAL SIZE OF A CONTINUUM ROBOT**

The “tendon-driven” continuum robots depicted here are, in real life, about seven millimetres in diameter and are built in sections that can range in length from 15 to 70 millimetres. Other models can be even narrower. All exhibit a tentacle-like motion.



## Charting Hip Hop's Course

Mark V. Campbell grew up during the early years of rap music. Now a U of T Scarborough professor, he is helping preserve Canadian hip-hop culture for future generations

There's a special section in the basement of Mark V. Campbell's house where he keeps his records. He estimates there are thousands of them – mostly hip hop.

The collection spans decades and includes recordings by many of the genre's trailblazers in Canada. Campbell, an assistant professor and associate chair in the department of arts, culture and media at U of T Scarborough, continues to use the records not only to DJ and sample tracks for his own music, but also to chart hip hop's evolution in Toronto. The records contain a trove of information – unreleased remixes, little known B-sides, as well as the name and locations of defunct record companies and recording studios across the city.

"It's like a breadcrumb trail showing where hip hop was being made and by whom during its early days in Toronto," he says.

For more than a decade, Campbell, who is a DJ, curator and scholar, has been a mainstay in the efforts to preserve the history of Canadian hip hop. In 1997, he co-founded and ran the *Bigger Than Hip Hop* radio show, which aired for 17 years on Toronto's CHRY-FM. And in 2010, he helped establish the Northside Hip Hop

Archive – an ongoing project to digitize and archive Canada's hip-hop music and culture.

It's an unlikely career path for a kid who grew up in Scarborough, Ontario, and never imagined that a career involving hip hop was possible. In the 1980s, Campbell says positive representations of Black people in the media were rare, and Black history and culture were often overlooked in schools. Hip hop became a way for Black people to learn their own history, to point out racism in politics and society, and to discover how the media distorted the reality of Black lives.

"Something like Public Enemy's 'Shut 'Em Down' was one of the first songs I remember as a kid," says Campbell. The song was about boycotting Nike and about the need for corporations to meet their responsibilities in Black communities. "That's a lot for a 13-year-old to take in. I was learning about the world through hip hop."

Looking back now as an academic who studies the genre, Campbell believes several elements made hip hop so magnetic to the masses, especially to youth.



PHOTOGRAPHS BY WADE HUDSON





Despite the focus on fashion, early hip hop wasn't about showing off expensive taste, says Campbell; it was more about having the confidence to be different – to put your hat on backwards or to wear bold colours. The music took risks, too. In no other genre were artists sampling small portions of old recordings to make new ones. The artists were also multidisciplinary; they embraced other aspects of hip hop culture, such as breakdancing, graffiti and DJing – all of which had originated in the streets.

Hip-hop artists engaged with – and were critical of – each other in ways that didn't happen in other genres, says Campbell. They called each other out for a lack of originality, for copying another artist's style, or for a perceived lack of skill. "The importance of representing the culture the right way – of authenticity – stems from how the entertainment industry has profited off of Black culture and misrepresented Black life since the days of minstrel shows," he explains.

Hip hop also attracted audiences for its critique of American society. With their hit track "The Message," for instance, Grandmaster Flash and the Furious Five gave a first-person account of inner-city poverty in New York in the 1970s. At a time when the city was suffering from crippling debt and high unemployment, artists in marginalized communities were offering ethnographic accounts of what life was like for those who were suffering the most, says Campbell.

Canada's own hip-hop scene developed in the mid-1980s, in Montreal and Toronto, and differed from America's both musically and culturally. Toronto hip hop uniquely celebrated the Caribbean identity of Canadian artists. Campbell highlights a



## “I WANT TO DEDICATE MY LIFE TO EXPLORING AND AMPLIFYING THE CREATIVE AND ARTISTIC GENIUS EMBEDDED IN BLACK LIFE”

freestyle (improvisational rap) battle between local favourite Michie Mee and New York MC Sugar Love. “Michie Mee was outperforming Sugar Love, but then she started rhyming in patois and the crowd just lost it. The American artist couldn’t compete.” Other Toronto artists such as Dream Warriors and Kardinal Offishall also relied on a Caribbean esthetic in a way their American counterparts did not; their music became a way to celebrate their heritage, Campbell says.

When Canadian hip hop contained a social message, it was sometimes delivered in a Canadian context. Campbell points to “Nothing At All,” a 1991 song by Maestro Fresh Wes that challenged idealistic Canadian narratives about multiculturalism and criticized Thanksgiving as a colonial holiday.

Campbell, who got involved in Toronto’s hip hop scene in the early 1990s by going to shows and

DJing at small parties, was working as a high-school supply teacher in the late 2000s when he came up with the idea for a hip-hop archive. He had been planning to teach his students about local hip-hop history, but much of that history, from the early 1980s to early 2000s, wasn’t documented online. “I realized that much of what we had done had not made it to the internet, and there was no way to convince my students that Canada had a thriving hip-hop community,” he says.

The archive that Campbell then started has grown significantly over the past decade. It now includes artifacts such as show posters, flyers, photographs, oral histories, audio recordings, press clippings, and even high school lesson plans on hip-hop history.

Campbell, who holds a fellowship at U of T’s Jackman Humanities Institute, notes a deep

### A FEW KEY MOMENTS IN CANADIAN HIP-HOP HISTORY

**Feb. 1984**  
Montreal’s first Break Dance Battle draws a sold-out crowd at the Spectrum concert hall.

**March 1986 & 1987**  
Two freestyle rap battles pit Toronto artists against their New York counterparts.

**August 1989**  
Rap City first airs on MuchMusic, with host Michael Williams. The weekly 30-minute show is the first in Canada to play hip-hop videos to a national audience.

**March 1998**  
Vancouver hip-hop group Rascaalz refuse to accept their Juno Award to protest the omission of the hip-hop category from the main ceremony.

connection between his long-standing interest in digital archives and his current teaching and research at U of T Scarborough: both aim to “decolonize” knowledge about Black culture. (Decolonizing knowledge is a term commonly used in cultural studies to challenge the idea that Western knowledge is “universal.”) Campbell says he uses the concept in his own work to address the gaps that exist in our understanding of Black culture, and to ensure that the creation of knowledge about Black culture does not reproduce existing stereotypes. He wants to help create knowledge that counters existing narratives about Black culture as “unmodern” or “lacking.” And he draws on the musical and cultural innovations of hip hop as examples.

From his undergraduate and graduate courses on DJ and remix cultures, Campbell hopes his students come to see the subversive nature of these musical innovations and how they have nourished Black life. “It all started with recycling records,” he says. “Some argued, and continue to argue, that sampling isn’t real music. But I find it inspiring that a group of racialized artists found a way to generate cultural value. You just had to be creative,” he says.

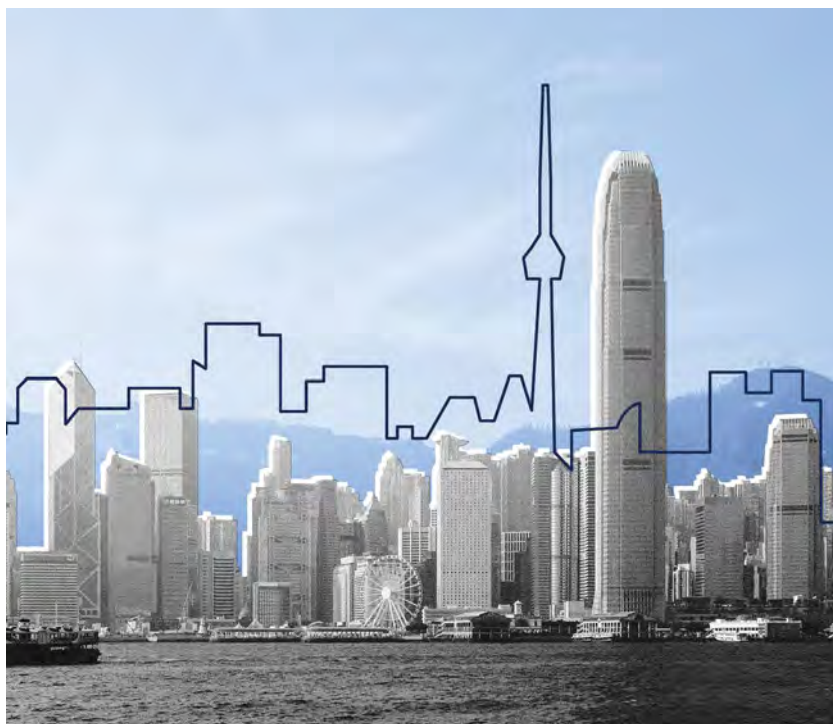
Campbell says it is remarkable that hip hop has become so influential in the development of Western popular culture – in spite of being an art form rooted in the Black experience outside the mainstream and inspired by the outright neglect of Black communities. “I want to dedicate my life to exploring and amplifying the creative and artistic genius embedded in Black life, with hip hop being one example,” he says.

“I thought, and continue to think, that if we explore the many creative ways Black life has flourished, we might arrive at new understandings of contemporary society.” —Gilbert Ndikubwayezu



## The Bridge Builders

How a visionary group of alumni helped forge a strong and lasting connection between Hong Kong and U of T



**T**wenty-five years ago, a dedicated group of Hong Kong alumni formed the U of T (Hong Kong) Foundation with the idea of giving academically qualified youth in their city the opportunity to attend U of T on a scholarship.

Their efforts gained early support from the late Stanley Ho and the late Cheng Yu-tung, who, as founding patrons, championed the initiative across Hong Kong.

Since then, the U of T (Hong Kong) Foundation has awarded scholarships to more than 80 students. Worth \$22,000 a year and renewable for four years, they are

↑ U of T's connections to Hong Kong date to the 1870s

Six out of 10 Hong Kong Foundation scholars pursue post-graduate degrees

Foundation scholars work in 11 different fields, from pediatric research to city planning

among the most generous offered by the university.

The scholarships are also a symbol of the long-standing connections between the University of Toronto and a city that's home to one of the university's largest alumni groups outside of Canada.

"Our relationship with Hong Kong is vital and enduring, and we are grateful for the many alumni who have supported the scholarships over the years," says U of T President Meric Gertler.

Foundation scholars live and work in 15 different countries. Many say their U of T experience changed their view of the world – and of themselves.

Huberta Chan (BA 2015 UTM) received a foundation scholarship to study linguistics. She recalls that on the first day of her socio-linguistics class, the professor asked each student to introduce themselves with their name and the languages they spoke. "The moment I demonstrated how to say hello in Cantonese was the very first time I was aware of feeling proud to be a native Cantonese speaker from Hong Kong," says Chan. "I had never appreciated the fact that I was bilingual."

She says her classmates spoke with similar pride about their own languages and cultures, and she grew interested in learning more about them. "My professor taught us that every language is special because behind each one are the culture and stories unique to the people who speak it," she says. "This is an idea I treasure to this day."

Foundation chair Daisy Ho (MBA 1990) says she, too, feels fortunate to have studied at U of T. In some cases, she became aware of the benefits only after she graduated. "I was in my 20s and working in Hong Kong, and I realized there was a difference between me and my locally educated colleagues: I had the personal growth from having studied abroad."

Attending U of T gave her greater self-confidence and a broader perspective, she says. She sees these same qualities in the foundation scholars she meets. "The difference between when they arrive on campus to the day they graduate – it's their maturity, their confidence."

David Palmer, U of T's vice-president, advancement, praises those who have upheld the foundation's vision over 25 years. "Their dedication helps these students every step of the way, from their arrival in Toronto to that proud day when they receive their hard-earned degrees," he says. — **Staff**

# A U of T Mississauga study aims to identify the ‘secret sauce’ that’s helping many restaurants stay open



Early in the COVID-19 pandemic, Sasha Steinberg decided that keeping her bar’s kitchen open simply wasn’t worth it.

Steinberg (BA 2010 Victoria) owns Cider House in Toronto’s west end. Prior to the pandemic, she relied mainly on alcohol sales to keep her business afloat. But when the lockdown hit, in March of last year, she shut down the bar completely and temporarily laid off all her staff. Cider House reopened for takeout one day a week soon after, with Steinberg selling baked goods she made herself. When she and her co-owner opened their kitchen for three days a week in the late spring, however, it was clear that the effort wasn’t worth the cost.

“People weren’t coming to us for a full, hot meal, because we never were known for that,” Steinberg says, adding that, even on platforms such as Uber Eats, Cider House was only receiving three or four food orders a night. “We had to make some changes.”

Steinberg is one of thousands of restaurateurs across the city – and the country – whose life since COVID-19 hit has been defined by the “pandemic pivot:” adjusting one’s business model to accommodate restrictions due to the coronavirus. From closing, to half-opening, to serving hot meals, to turning into a bottle shop offering small grab-and-go items, which is Cider House’s current status quo, Steinberg’s business model has been in a constant state of flux. “I love the



bottle shop concept,” Steinberg says, referring to the practice of selling alcohol to go, “but we’re still lucky if we break \$500 a night.”

Shauna Brail, an associate professor at the Institute for Management & Innovation at U of T Mississauga, knows flexibility has been key to survival for restaurants, at least during the pandemic’s first wave. She and her team have developed “Toronto After the First Wave,” a research project that examined restaurant data on Yelp from May to November 2020. Among the report’s findings was the surprising fact that more restaurants opened than closed during these six months of the pandemic: 244 versus 214.

“It’s encouraging,” Brail says of the restaurant data, “and it shows a level of creativity. In order for restaurants and food service providers to survive, we need them to be innovative and find new ways of reaching customers.”

The Yelp data Brail’s team examined did not include information about whether a restaurant had its own website or if it offered delivery and pickup, which might have provided insight into why some businesses were able to weather COVID’s first wave. But Brail has some ideas. She says the main marker of success has been the ability to adjust – and fast.

“When you look at what restaurants and food service operators are doing well, they’re changing their menus to things that travel,” she says. “They’re changing how they are working, and who is working. There’s been growth in ‘ghost kitchens.’” Spaces like this, Brail explains, have eliminated the need to pay for a dining room – and dining room staff: “It’s a commercial kitchen that works strictly on take-out and delivery.”

Brail says restaurants have recognized the importance of having a strong digital presence – and this is where significant failures can take place. Some have struggled with setting up an efficient online ordering system. They might



Cider House reopened for take out only, offering a limited menu. ←



### OFF THE MENU

Restaurant closures, by category, May to November 2020 (top six listed)



depend instead on services such as Uber Eats, which can take up to a hefty 30 per cent cut – a huge financial hit to already struggling restaurants. Business improvement areas and municipal governments have supported local businesses by helping them get online, Brail says, but whether a restaurant was able to access this assistance may have influenced (and may continue to influence) their survival.

Steinberg, who graduated from U of T with a double major in cinema studies and sociology and a minor in fine art, has worked in food service for more than a decade, and opened Cider House four years ago. She says she will continue to sell alcohol and is planning to hire back some staff and open a sidewalk patio this summer, as she did last year as part of the city’s CafeTO program. She points to the Canada Emergency Rent Subsidy as a primary reason why she’s able to remain in operation: “If we didn’t have that,” she says, “we would shut down for sure.”

Brail is hoping that “Toronto After the First Wave” will help influence policy decisions by demonstrating that the pandemic

has already had an indelible impact on the city’s vitality. “It has real potential to demonstrate how we can use data to understand how the city is changing,” she says. Further research will be needed to determine exactly what policy interventions might look like: If the city wants to avoid the closure of another 214 restaurants, for example, it should determine what supports were used by the 244 restaurants that opened. Brail considers her work a stepping stone toward more research, driven by deeper data that can help prevent similar industry challenges in the future.

Brail believes, however, that more programs like the rent subsidy leveraged by Steinberg at Cider House are necessary. “The pandemic has shone a light on the things we’ve done well, and the things we’ve done badly,” Brail says. “We don’t have to accept that coming out of a pandemic will mean a return to where we were. We have an opportunity to think about where we want to go, as a city, as a society, and as a country. And we need this data to be able to make investments that actually get us to where we want to be.” —Rebecca Tucker





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# In

February, Toronto City Council voted to reallocate \$1.2 billion for the controversial Scarborough subway to another proposed transit project known as the Eglinton East LRT.

I'm a transportation geographer, so when analyzing such decisions, I ask, 'What is the problem we are trying to solve with our transit investments?' I also apply a social justice lens, which means asking whether these costly projects are likely to address larger equity issues, such as providing low-income neighbourhoods with the kind of transit service that wealthier areas enjoy.

Council's latest move in the ongoing debate over expanding transit in Scarborough will provide better transit access to marginalized communities there, which is a positive. At the same time, COVID-19 has laid bare the inequities in existing transit service that extend across the *entire* Toronto region.

About a year ago, members of my research team and I surveyed people who had been regular transit riders before the pandemic. We found that anyone with a car had stopped using transit during the early days of the lockdown. Those who didn't own a car had to continue to use transit despite potential health risks and public health

## All Aboard

How can we build a more equitable transit system?

By Steven Farber, as told to John Lorinc

warnings. They had very few options to get to the supermarket or pharmacy, to visit friends or family who needed care, or to travel to work. In fact, in our survey, members of this group were very likely to say that doing these activities had become significantly harder after the pandemic hit. People with cars, on the other hand, simply used their vehicles instead of public transit. They were not significantly affected socially or economically.

Most large U.S. cities have a longer track record in applying an equity lens to transit planning than Toronto does. This stems from anti-racism provisions in the 1964 Civil Rights Act. As well, most regional planning authorities in the U.S. conduct an equity analysis that expands on the requirements provided by the federal government. There is no equivalent in Canada.

One of the long-standing concerns here in Toronto is that accessibility to rapid transit is concentrated, which means that a relatively small part of the city is situated close to subway or LRT stops. These neighbourhoods become intensely attractive to home buyers and developers, driving up apartment rents. If we could provide reliable service over a broader area, we would reduce the premium people have to pay in the form of higher rents for access to good transit.

I'm interested in how we measure the benefits associated with transportation investments, and how we measure the distribution of those benefits in different neighbourhoods and among different population groups. Are transit services supplied fairly? Will improved transit remove certain barriers – such as long commuting times – from marginalized neighbourhoods? By doing this analysis, we can see how different transportation options affect different groups, which gives us the ability to make decisions about transit options with a

more rigorous understanding of the equity outcomes.

We know a major benefit associated with transportation investment is that it provides users with the ability to reach meaningful destinations, such as work, school or shopping. We measure this benefit, which we call “accessibility,” by assessing how many of these destinations residents of a given neighbourhood could reach within, say, 30 minutes.

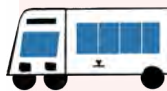
If we look at how accessibility is affected by the decision to build the Scarborough subway versus the decision to build an LRT, for example, we can make an apples-to-apples comparison of how many people will gain from those investments. This in turn allows us to help inform decision-makers with data showing how those different options may be of more or less benefit to the members of marginalized communities.

This isn't about which mode is “better.” For much of the city, including low-density areas that are home to many lower-income

households, transit doesn't offer much of a benefit compared to a car in terms of travel time. If the goal is to improve social justice by increasing the number of communities served by transit, then it's smarter to design a system that reaches more people and more neighbourhoods.

Increasingly, it seems clear that more bus rapid transit must be part of the solution. Municipalities and governments want to improve transit cost effectively, and investing heavily in the bus system is the way to achieve that goal. There is no question that major improvements to bus frequencies and bus speeds along suburban avenues is a quick, easy and effective solution that's likely to improve transit access for many people.

A major insight we gained through our surveys during the pandemic is that a range of transportation options builds resiliency and produces societal benefits by enabling people to participate in more daily activities. This insight



## GETTING AROUND

**33 minutes**  
Average one-way commute time in Toronto

**17.3%**  
Percentage of Toronto households without cars



ILLUSTRATIONS BY (LEFT) PILAR TORCAL; (SPOTS) HANNA BARCZYK; CHART SOURCE: STEVEN FARBER AND JEFF ALLEN



has also led us to think about how different groups respond to a shock in the transportation system. During COVID-19, people who had multiple transportation options, from cars to bikes or other modes, were better able to accommodate a big disruption.

Most folks living in Toronto's suburbs are completely car dependent and do not have good transit options – evidence that we need to ensure that all communities are well served by transit and local amenities. This pandemic precisely revealed the demographics of those people who were still using transit – mainly buses – during the lockdown, and the folks who are potentially at risk of infection because they have no choice but to travel in those crowded buses.

To increase the supply of transit along those congested routes, we need to reallocate more road space to the bus network so the TTC can operate more buses at faster speeds and with less crowding. The TTC has done some of this but there needs to be more widespread action. The investments in dedicated bus lanes are a positive step, but we require more of this infrastructure, as well as additional buses to run in these dedicated lanes.

We also don't have to repeatedly pilot and evaluate this approach. There is an international body of work showing the success of prioritizing transit. In Toronto, the King Street Pilot Project demonstrated it as well. Hopefully, we can now recognize dedicated surface transit lanes as best practice.

Over the next decade, governments will invest billions in Toronto's transit system. We have a crucial opportunity to bring better options to the hundreds of thousands of residents who are currently underserved. Let's not waste this chance to make our transit network more equitable. ■



## On Watkins' Pond

Who built U of T Mississauga's most picturesque spot?

It's an Instagrammer's dream location – a beautiful stone bridge arching over a small pond surrounded by trees, seemingly in the midst of a forest. No matter the season, this scenic gem nestled alongside Principal's Road at U of T Mississauga is a popular destination for professional and amateur photographers alike.

It is believed that the ornamental pond and bridge was built in the late 1920s or early 1930s under the direction of Reginald Watkins, who owned Lislehurst (a three-storey stone house) and much of the property UTM now occupies after he purchased it from the Schreiber family in 1928.

A bachelor and wealthy businessman from Hamilton, Ontario, Watkins purchased 50 acres, which included Lislehurst and another house known as Woodham. Watkins demolished Woodham and used the materials to extensively renovate Lislehurst to resemble a Tudor house, which

was the fashion at the time.

According to *Erindale at the Crook of the Credit* by Jean Adamson, Watkins also did a lot of work to the grounds of the former Schreiber estate, “creating spacious lawns, gardens, a pool with a stone bridge, and a long, curving gravel driveway.”

That “pool with a stone bridge” is the much-photographed artificial pond beside Principal's Road. Watkins, who spent a lot of time in Europe on buying trips for the family's department store in Hamilton, styled the bridge after an idea he got from a small English village. The pond has a concrete bottom, is believed to be spring fed and provides a home to aquatic life, including, at one time, two snapping turtles.

Watkins died in 1964 at the age of 87 after selling his property to U of T. While there appears to be no official name for the pond, over the years it has been called both Principal's Pond and Watkins Pond. —**Patricia Lonergan**



←

**Inspiration**  
My mom and dad. They're why I continue to work hard and set ambitious goals

**Book recommendation**  
*The Book on Rental Property Investing* by Brandon Turner

**Key quality for a landlord**  
Empathy

## The Property Guy

In less than five years, Austin Yeh has built himself a solid real-estate portfolio. Here's how he did it

The urban real estate market is tough for anyone looking to invest. But it's not impossible – even for young buyers. Case in point: Austin Yeh (BBA 2017 UTSC). Since graduating, the 26-year-old has built a portfolio of 20 properties – all stemming from a small initial investment. His secret? Knowing where to look. Now he helps others do the same by offering real estate advice on his podcasts and in articles.

### Why real estate?

The decision was practical: I wanted financial independence, and my parents, who immigrated to Canada from India, live modestly. I couldn't ask them for help, and I didn't see myself working full-time until age 65 to create the lifestyle I wanted. I started investing in stocks and did terribly. A lot of average investors, including myself, tend to sell when the market takes a hit, and buy back when it does well. By contrast, real estate requires patience. You need to make more rational, less emotional decisions.

### Most of your properties are in Windsor, Ontario. Why?

When I started, I had saved \$40,000 from working summer jobs and internships, so it was the only market I could afford. In Windsor, your money goes further, which is essential to make good investments. For a property to become an income-generating asset, the rent must cover all the expenses of the property, including mortgage payments, property taxes, insurance and repairs. That's only achievable in Toronto with

a 50 to 60 per cent down payment. With many homes costing more than \$1 million, this is not feasible for most people. I urge people to consider smaller markets if they want to invest and don't have a ton of cash.

### Because of your media work and public profile, I understand you've received threats. What did they say?

Stuff like, "Let's kill all landlords!" Landlord hate groups exist because not everyone agrees with capitalism. Some people believe housing should not be capitalized. It's a tricky subject.

### COVID-19 has affected many people's ability to pay their rent. Did it affect your tenants?

Once the pandemic struck, I called all my tenants to find out their situations. Some of them had taken a financial hit, so we talked about lowering the rent while they were struggling. We are not out of the woods yet. It's an evolving situation.

### What are your future goals?

This month, I quit my full-time job as a senior data analyst because my real-estate income stream is sufficient to support myself. By age 30, I'm hoping to stop working in real estate, and become a high school business teacher. If you teach kids about business fundamentals from a young age, you can provide them with the tools to achieve financial freedom. Then they can live the lives they want. —Alexandra Shimo





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