

The York University Magazine

Rain Check



Usman Khan
wants to
forecast flooding

Fall 2023



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**The
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THE PRESIDENT



RHONDA L. LENTON
PRESIDENT AND VICE-CHANCELLOR

WHILE THE WORST OF COVID-19 APPEARS to be behind us, recovery is still very much top of mind for Canada and many countries around the world. We continue to deal with the effects of climate change. Rapid technological growth is disrupting the workforce in ways that contribute to significant labour market shortages and widening skills gaps, especially for socially and economically disadvantaged groups. Reskilling and upskilling are the new reality for even the most seasoned worker as generative AI becomes more widely adopted.

This is where modern and progressive universities such as York come into play. From our inception in 1959, to our motto, *tentanda via*, to our vision in our 2020-2025 University Academic Plan (UAP), York has been committed to enhancing the well-being of the communities we serve through our academic programs, teaching and learning, research and campus operations.

We are a leader in lifelong learning and curriculum innovation, dedicated to meeting the current and future needs of our learners both locally and across the globe. One of the ways York has responded to this urgent demand for new skills is through micro-credentials – innovative programs delivered in a variety of platforms to ensure fast, flexible and relevant reskilling and upskilling.

York, in fact, offers the most Ontario Student Assistance Program-eligible micro-credentials of any institution with a total of 370 programs, ranging from Big Data Analytics and Production Accounting to Cancer Coaching and Chronic Disease. The unprecedented demand among our students and alumni has led York to increasing its micro-credential offerings by 43 per cent since 2020.

Another example is the School of Continuing Studies – a forward-thinking school focused on the future of work, with tailored programs. In its unique cohort model, students can quickly gain in-demand skills needed for today's competitive workforce. Earlier this year, we opened our new, beautiful, state-of-the-art School of Continuing Studies building – the first of its kind in Canada – built for the unique needs of continuing education students.

The future of education in the 21st century will require the ability to adapt, be intellectually agile and learn in any context. Our new Markham Campus, slated to open in fall 2024, and our proposed new School of Medicine, will further meet the evolving needs of our society by recognizing the impact of technological innovation and AI while building on York's unique excellence in delivering programs with an equity, diversity and inclusivity lens. As Canada's third-largest university, York will continue to support our students, alumni and communities by providing the skills and tools needed for a lifetime of career success.

Our impact is further enhanced by a rich array of research activities that include leveraging our campuses as living labs to apply and assess scientific discoveries for the benefit of our campuses and beyond. Learn more about York's impact across all the UAP priorities this past year, in the 2023 President's Annual Report. Visit go.yorku.ca/presidentsreport2023

PHOTOGRAPHY BY SOFIE KIRK

EDITOR'S NOTES



Future Forecast

SUMMER'S NOW OFFICIALLY OVER, but does anyone regret it? The season that just was counts among the worst on record. It was too hot, too cold, too rainy, and too smoke-filled to stoically breathe through it. Consider it a preview of yet more extreme weather to come. Global temperatures are expected to surge to record levels over the next five years, according to a recent report by the World Meteorological Organization. Scientists at the United Nations warn that accelerated warming of the planet will cause irreversible damage to parts of the world. Searing heat brings with it drought and rapidly depleting supplies of freshwater. If left unchecked, large swaths of the planet could end up being barren landscapes of rubble and dust.

York University has climate-change experts of its own who are generating important research on global warming and how to mitigate the damages. We profile one in the fall 2023 issue of *The York University Magazine*. Usman Khan (cover story) is a professor at the Lassonde School of Engineering who studies the effects of climate change on urban waterways. Measuring rainfall, temperature, and other environmental variables, he predicts, manages, and prevents flood hazards such as storm surges, dam failures and riverbank flooding. Given that floods have some of the greatest social and economic impacts worldwide compared to other natural disasters, his work is

of vital importance. It compellingly represents York's commitment to advancing the UN's Sustainable Development Goals to ensure the lasting protection of the planet and achieve a more equitable future for all.

There are other examples, many of them also showcased here, in the magazine's fall edition. Inside this issue you will find stories on the greening of finance to advance positive change in business, and on the adoption of sustainable machine-learning technologies by Canada's mining sector to reduce waste and safeguard the environment. We also have a compelling feature on sustainable affordable housing and how it is shaping developments at York, such as the newly built Markham Campus, scheduled to open next year. That's a future to embrace. ●

— Deirdre Kelly

The York University Magazine



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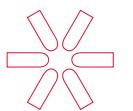
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ON THE COVER



Usman Khan
Photography by
Chris Nicholls





Ghost Particles in the Machine

What nearly undetectable particles can reveal about the universe

PHOTOGRAPHY BY HORST HERGET

RESearchers at York University are unravelling the mysteries of the universe, one subatomic particle at a time. At the Main Injector Experiment for ν -A (MINER ν A) – an international collaboration with Fermilab in Batavia, Illinois, as well as many other institutions – this means firing a beam of neutrinos at a host of different materials and seeing what happens.

Neutrinos are nicknamed “ghost particles” for their ability to pass through solid objects undetected. Trillions of neutrinos zip through your body every second, but since these tiny particles lack charge and have almost no mass, they very rarely interact with any of your atoms. Scientists can only detect them when they crash directly into another particle (or group of particles), changing its properties.

“They have to knock into a nucleus. And the nucleus is kind of a messy place,” says Deborah Harris, a professor of particle physics at York University and co-spokesperson for MINER ν A.

By shooting a high-energy neutrino beam at various elements, the MINER ν A experiment measured what gets produced when these tiny particles collide with different nuclei. But researchers realized that their neutrino beam could also help solve another particle physics conundrum – the radius of a proton. In a paper recently published in *Nature*, York University postdoctoral researcher Tejin Cai described this measurement, which was his thesis work at University of Rochester. The calculation isolated a bunch of antineutrinos interacting with hydrogen atoms

in the detector by measuring the direction of the outgoing neutrons. Then, the analysis worked backward to infer the protons’ size. MINER ν A found that protons have a radius of 0.73 femtometres – about 13 per cent smaller than, but still consistent with, what scientists previously measured using a beam of electrons. The fact that these two very different measurements gave consistent answers tells us something about how weak charges and electric charges are attached to the same building blocks of the proton.

In addition to the MINER ν A experiment, Harris is lending her expertise to the upcoming Deep Underground Neutrino Experiment (DUNE), an experiment also hosted by Fermilab. The goal of DUNE is to shed light on one of the neutrino’s most mysterious properties: their ability to oscillate, or change “flavour” (type), as they travel. This weird ability would be akin to buying a scoop of chocolate ice cream and walking three blocks, only to find that your cone suddenly contained vanilla.

The DUNE project plans to shoot neutrinos some 1,300 kilometers underground and measure how much they oscillate after travelling that distance. This will help scientists develop an even better grasp of the physics underlying every quark, atom and galaxy. “The more we understand about neutrinos, the more we understand about the universe,” Harris says. ●

– Joanna Thompson

INCLUSIVE HEALTH CARE



ON THE ROCKS

Using machine learning to manage deep mining hazards

PHOTOGRAPHY BY HORST HERGET

THE DIGITALIZATION of the design and maintenance of underground excavations is helping to mitigate some of the risks associated with underground mining, finds a new study out of York University. Data driven approaches, such as machine learning algorithms and equipment automation, enable rock engineering professionals to predict underground stress changes and complex rock deformation as mining progresses with greater accuracy, increasing the potential for safer and more sustainable mining practices.

“Machine learning presents an opportunity to extract more nuanced information from available data, and therefore make more refined engineering decisions,” says Josephine Morgenroth (PhD ’22), a Lassonde School of Engineering rocks mechanics engineer and researcher who studies the opportunities for using machine learning in Canada’s mining industry.

Her peer-reviewed journal paper looks at the application of machine learning at Garson Mine, a 112-year-old underground nickel mine near Sudbury, Ont. The mine site is known for its challenging ground conditions and high stress environment. A series of seismic events have occurred at Garson Mine in the past, necessitating the need to gain a more informed understanding of the seismically active structures located underground.

A manually calibrated and complex finite difference numerical model was introduced to assess seismic risk. This model is used to inform mine operations and scheduling to lessen some of the risks associated with Garson’s rock bursts (spontaneous failure of rock that can occur in mines).

But the manual model calibration is tedious and time consuming, leading Morgenroth, as part of her research, to propose a Long-Short Term Memory (LSTM) network to assist in finite difference model calibration, a means to forecast stresses in the mine.

The significance of this approach is that it frees up rock engineers to validate model inputs and interpret outputs, instead of manually calibrating the finite difference model.

Two LSTM networks were developed for Garson Mine, which resulted from an analysis performed to determine the optimal algorithm architecture to adequately predict stress changes. Research is ongoing, supported by the Natural Sciences and Engineering Research Council of Canada. Says Morgenroth, “More accurate forecasts of changes in stress conditions will allow earlier intervention and reaction to challenging stress environments, leading to increased safety of excavations and mine personnel.” ●

– Deirdre Kelly

A York scholar confronts bias in AI-assisted medical research

BIG DATA and new machine learning systems are transforming health care by cutting wait times and streamlining the gathering of information – so that cases requiring life-saving interventions can be identified and prioritized. Artificial intelligence (AI) is also accelerating the development of new therapies and therapeutics for drug research, while also enhancing diagnostics and the practice of preventive medicine. But there is a down side.

Research carried out by Laleh Seyyed-Kalantari at the Lassonde School of Engineering (and published in the journal *Nature Medicine*) has found that there are biases embedded in AI algorithms, leading to wrong diagnoses or incorrect treatments for certain socio-demographic groups, particularly marginalized or minority populations.

It’s not a technical issue; it’s the result of social and cultural factors. Machine-learning algorithms are only as unbiased as the humans programming them, says Seyyed-Kalantari, a professor in the Department of Electrical Engineering and Computer Science who studies inequities in AI.

“Such biases are especially troubling in the context of under-diagnosis, whereby the AI algorithm would inaccurately label an individual with a disease as healthy, potentially delaying access to care,” she says.

Seyyed-Kalantari’s latest research into algorithmic bias – published in *The Lancet Digital Health* – examined algorithmic under-diagnosis in chest X-ray pathology classification across three large chest X-ray datasets, as well as one multi-source dataset. The research found that X-ray analysts consistently under-diagnosed underserved patient populations and that the under-diagnosis rate was higher for intersectional subpopulations, such as female patients, Black patients, and patients of low socioeconomic status.

“Deployment of AI systems using medical imaging for disease diagnosis with such biases risks exacerbation of existing care biases and can potentially lead to unequal access to



Laleh Seyyed-Kalantari

medical treatment, thereby raising ethical concerns for the use of these models in the clinic,” she concludes.

How to mitigate the bias?

AI systems need to be better designed to reflect diversity in socioeconomic and health-care settings to avoid health disparities, Seyyed-Kalantari says. Until that happens, she advises health-care workers to proceed with caution, suggesting they process their data in advance of feeding it to AI and filter the system’s results when they appear in accordance with fairness definitions introduced into the AI training process itself. “Addressing this concern is essential,” she adds, “so that the benefits of health-care-related AI are not realized at the expense of sustaining or increasing discrimination against marginalized groups.” ●

– Deirdre Kelly



Slice and the City

A York grad dishes up a tale of two pizza-loving towns

PHOTOGRAPH BY CHRIS ROBINSON

ALEXANDER HUGHES (PhD '22) ate his way through 712 slices of pizza while pursuing a doctorate degree in history at York University.

The fast-food favourite also fed his thesis, which looked at the history of pizza in Toronto and Buffalo, N.Y., from the 1950s to the 1990s.

Why those two Great Lakes cities?

Because once upon a pepperoni, they had more than pizza in common.

“In 1950, Toronto and Buffalo were actually rather similar cities,” Hughes says. “They had similar-size populations with a comparable percentage of Italian immigrants, and economic output.”

Those immigrants ate a lot of pizza, a dish dating back to ancient Rome (Virgil mentions it in *The Aeneid* as an efficient dish for soldiers) that later acquired the status as a low-class meal consumed mainly by impoverished Italians.

When, for economic reasons, they started to move by the tens of thousands to North America in the 1950s, they brought pizza with them, gradually introducing it to non-Italians when they opened up food-centred businesses in the cities where they settled.

Vesuvio, Toronto’s first pizzeria, was opened in 1956 by a family of Italian-Canadians, Hughes says. “By the 1960s, there were similar spots opening across the city, especially in the suburbs, all attributed to Italian-Canadian entrepreneurs.” It’s how pizza went from being food that only Italian immigrants in Canada and the U.S. ate, to becoming the universally prized gastronomic dish it is today.

That trajectory is known as “the pizza effect,” an anthropological phenomenon by which a seemingly ordinary object gains new significance when transplanted to a new, usually foreign context.

Hughes wanted to study it, using pizza “as a lens to explore the history of immigration, business, labour, urbanization, gender, culture, economics, consumption and food,” in each of his sample cities.

For his research, he chowed down on both sides of the border, meticulously documenting the differences, and then went backwards to account for them.

He reckons he spent hundreds of hours in municipal libraries and archives combing through decades of newspaper articles about pizza in both cities, charting its evolution through the opening and closing of mom-and-pop pizza

joints, the marketing of at-home pizza kits and the establishment of large takeout chains such as Pizza Pizza in Toronto and Pizza Hut south of the border.

He also conducted on-the-ground interviews with pizza business owners and their patrons, and even produced computer-driven maps to determine food migration patterns. A time-consuming process, it involved using geographic system information (GIS) software to create, analyze, manage and visualize the locations of pizzerias (past and present) in Toronto and Buffalo on maps. “I created layers to the map for every five years, which allowed me to see patterns in the growth of the industry and the suburbanization of cities,” Hughes says.

He discovered that food consumption habits changed with the cities where pizza was a common food and feature of city life. It mirrored the transitions of the urban environment.

“By 1990,” Hughes says, “Toronto would become this prosperous, multicultural metropolis with strong economic output, and Buffalo a regional American city, which suffered from industrialization and protracted population loss.”

Pizza told the story.

“The commodification of pizza, the development of pizza industries, and the culture of consumption in Canada and the United States paralleled currents in postwar life in Toronto and Buffalo.”

What status does pizza hold today? It’s a question that Hughes will chew on for his next project, a book that he hopes will extend his original York research into the modern era.

“I want to explore the idea of so-called pizza snobs and the rise of celebrity chefs,” he says, adding that delicious morsels of history are all around us. You just have to know where to bite. ●

– Deirdre Kelly



Alexander Hughes (PhD '22)

HUGHES PHOTOGRAPH BY HORST HERGET

BY JOANNA THOMPSON
PHOTOGRAPHY BY CHRIS NICHOLLS

*Urban hydrology meets AI:
Usman Khan is working to build
Canada's first flood forecasting system*

Rain Check

UNDER THE GARDINER (RIGHT): RUNOFF FROM THE HIGHWAY ABOVE NURTURES NATIVE PLANTS IN OVERSIZED PLANTERS LOCATED ALONG THE BENTWAY'S PUBLIC PATHWAYS. FOR YORK'S USMAN KHAN, IT'S AN EXAMPLE OF CREATIVE GREEN INFRASTRUCTURE THAT CAN IMPROVE OUR RELATIONSHIP WITH WATER.

WHEN MOST PEOPLE watch water swirling down a storm drain, they see a whirlpool in miniature, a tiny reminder of the power of a current. Usman T. Khan sees a design challenge.

Khan, a civil engineer at York University, is on a mission to revolutionize the field of urban hydrology through green infrastructure and computer modelling. Urban hydrology refers to the way that water flows through cities and over human-made structures. It encompasses everything from designing city sewage-treatment plants, to studying the path of a river cutting through a metropolitan area, to modelling how rain drains out of a parking lot.

"What I'm usually most interested in is stormwater," says Khan, who recently participated in York's inaugural micro-lecture series in sustainable living. "What happens to water after it rains? Where does it go?" In order to devise strategies to better absorb excess runoff, Khan and his team are applying artificial intelligence models to urban water flow. Khan's research focuses on predicting where and when floods are most likely to happen in cities – and designing sustainable measures to help mitigate them. As climate change and aging infrastructure make urban areas more vulnerable to flooding, this work could help shape a more sustainable, equitable future.

Khan grew up in a desert. He spent a decade of his child-

hood in the arid United Arab Emirates, where temperatures climb to over 50 C in the summer months and dust storms regularly blow through. Over the course of those 10 years, he says, it only rained once. "I was really young, and I was so excited," he recalls.

This experience planted the seeds for Khan's fascination with rainfall – and paved the way for his eventual career in hydrological engineering.

After earning a degree in civil engineering from the University of Calgary, Khan went on to a PhD program at the University of Victoria under mechanical engineering professor Caterina Valeo. Under her tutelage, Khan studied green infrastructure, including rain gardens, and developed an early mathematical model for predicting flood risks up to seven days out from a storm. "Usman was a wonderful student," Valeo says. "To have even a day's lead time is amazing, let alone seven days."

Worldwide, floods are responsible for nearly 6,000 deaths and billions of dollars in damage every year. Much of any flood's destructive power comes from a city's ability to handle the volume of water. And unfortunately, between crumbling dams, rusting pipes and overfilled retention ponds, many cities urgently need to upgrade their water management infrastructures for the 21st-century.

Climate change is only ratcheting up that urgency. Storm patterns across Canada are shifting, causing places with historically low flooding risk to see significantly more water.

**What I'm usually most interested in is stormwater.
What happens to water after it rains?
Where does it go?**





Khan has spent years investigating various long-lasting, easy-to-implement, eco-friendly strategies for draining and storing away excess H2O.

FLOOD PREVENTION INITIATIVES: WATER MANAGEMENT IS PRIORITIZED AND CELEBRATED AT THE BENTWAY STAGING GROUNDS, A NEW INTERACTIVE ENVIRONMENTAL LEARNING AND ART SITE LOCATED BENEATH THE GARDINER EXPRESSWAY IN DOWNTOWN TORONTO.

“A storm that would have normally showed up once every five years now shows up every year,” Valeo says. And coastal areas are slowly flooding due to sea-level rise.

As the world continues to warm, it will become increasingly important for Canada – and countries the world over – to renovate its hydrological infrastructure. However, “it’s hard to design for future climates right now,” Khan says. First, civil engineers need a better understanding of how climate patterns will shift.

Khan’s current research could help with that. Using artificial intelligence, he and his team are working to create a computer model that can predict an area’s risk of flooding. The model combines massive amounts of data, drawing from factors such as rainfall, temperature, proximity to a body of water and soil absorbency, as well as other variables, to forecast floods across Canada.

Similar systems have already been deployed in places such as the United States and China. And Google’s flood prediction model, which launched in 2018, has been used to forecast floods in sensitive regions such as Bangladesh and eastern India. But, Khan says, no such model exists for Canada on a large scale. He and his team aim to create the first. “It’s really ambitious,” he says.

It may be ambitious, but Valeo believes that Khan and his collaborators are up to the challenge. “It is so good to see him be successful,” she says.

Of course, it’s not enough to simply know when and where a flood might strike; you also need to be able to deal with the water. That’s where green infrastructure comes in. Khan has spent years investigating various long-lasting, easy-to-implement, eco-friendly strategies for draining and storing away excess H2O. These include things such as rain gardens and absorbent concrete, which are easier to install than traditional infrastructure such as underground pipes.

These technologies can also improve water quality. Their porous structures filter stormwater runoff and remove contaminants, such as road dust and micro plastics, before they can wash into a major waterway.

Unfortunately, flood prevention infrastructure is not equitably distributed. “Disadvantaged people get disproportionately affected by floods on a global scale,” Khan says. In the United States, for example, predominantly Black communities have a 40-per-cent higher flood risk compared to predominantly white areas. This is largely due to the fact that marginalized people receive less funding for infrastructure and disaster relief in general. However, most computer models don’t take these economic disparities into account. “I think we need to change that,” Khan says.

Some of his models take these socioeconomic disparities specifically into account. Khan hopes that by applying these data to real world infrastructure policy, he and his collaborators might help to protect the people most at risk. ●

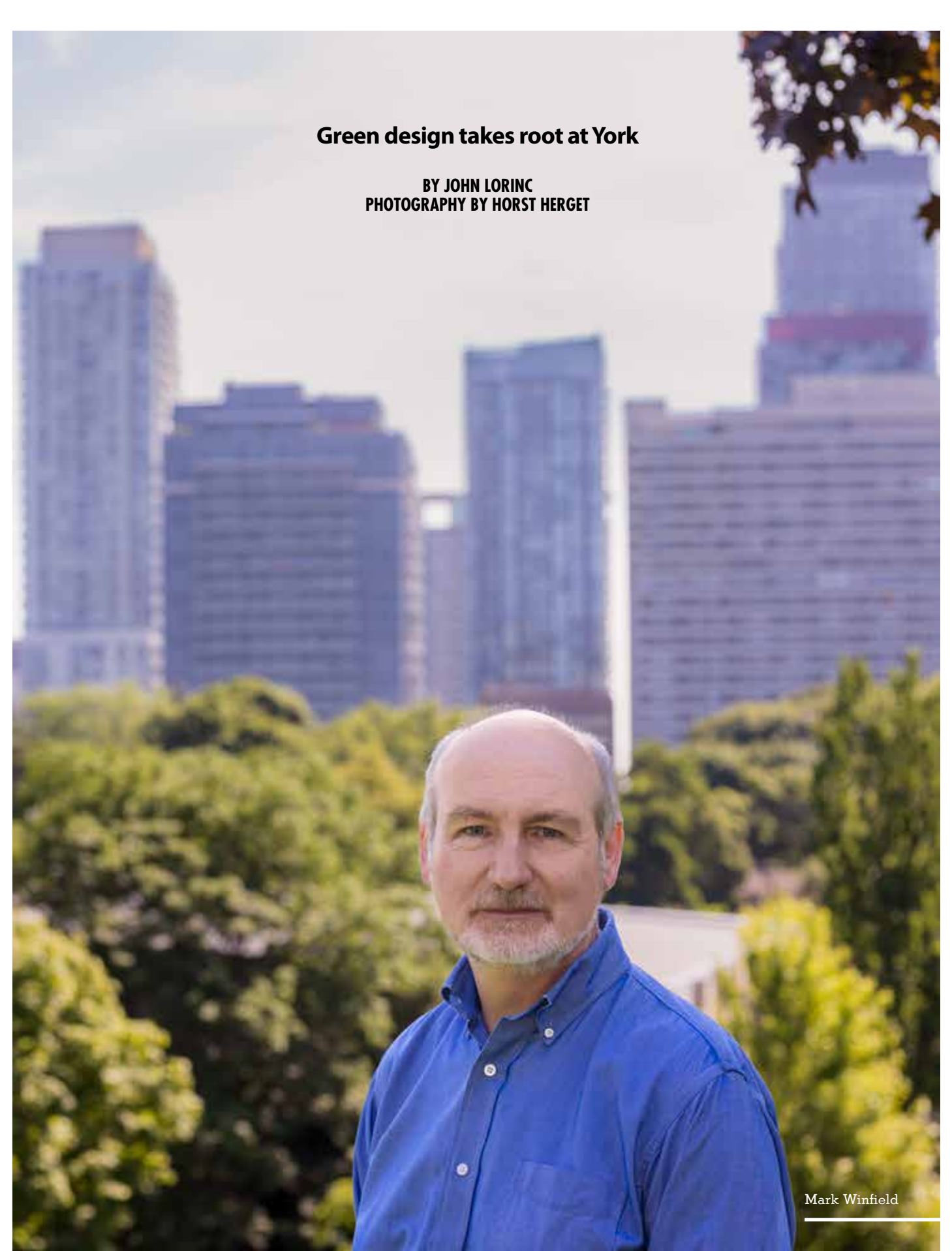
Luisa Sotomayor



BUILDING SUSTAINABILITY

Green design takes root at York

BY JOHN LORINC
PHOTOGRAPHY BY HORST HERGET



Mark Winfield



Opening in 2024, York's new Markham Campus is a sustainable development designed for positive impact.

WHEN YORK UNIVERSITY'S new Markham Campus opens its doors in 2024, the 10-storey building will mark a first for the high-tech suburban city in the northeast of the Greater Toronto Area. The \$275-million facility, designed by Diamond Schmitt Architects, will be Markham's first post-secondary campus, offering a range of science and technology programs, as well as student services, flexible internal spaces and a soaring atrium.

But the project, which broke ground in fall 2020, has been designed to meet LEED Gold standards – an environmental certification managed by the Canadian Green Building Council (CaGBC). It has green features such as on-site storm-water management and connectivity to a municipal district energy utility, which reduces carbon emissions from buildings in Markham.

The environmental features of Markham Campus reflect York's commitment to the UN's 17 Sustainable Development Goals, and are part of the University's strategy to achieve net zero by or before 2049. According to York's latest sustainability progress report, the University reduced electricity consumption by 24 million kWh since 2015. In terms of its built form, two other new buildings – the Rob and Cheryl McEwen Graduate Study

Energy-efficient buildings cost somewhat more to build, but tend to be much less expensive to maintain over the long term

and Research Building at the Schulich School of Business and the School of Continuing Studies – both feature innovative low-carbon features, including a “solar chimney” and photovoltaic facade panels.

York is part of a broader move across the post-secondary sector to drive low-carbon design, including in new student residence projects. For example, Boston's Northeastern University secured a LEED Platinum certification for an 825-unit residence, the first private student housing project to achieve this designation. The building features low-water laundry facilities, LED lighting, drought-tolerant plantings, and locally sourced or recycled materials.

Closer to home, the University of Toronto completed a 750-bed passive-house residence at its Scarborough campus that will cut energy costs by 40 to 60 per cent compared to a conventional structure. Montgomery Sisam Architects, in turn, is building a student housing complex at Sheridan College modelled on the modular, deeply affordable housing projects that sprang up around the city during the pandemic.

Green design is exceptionally well-suited to housing projects owned by institutions – universities, as well as municipalities, co-ops and non-profits – that pay close attention to long-term operating costs. Energy-efficient buildings cost somewhat more to build, but tend to be much less expensive to maintain over the long term, and thus allow owners to keep fees or rents low.

Luisa Sotomayor, a housing expert and professor in York's Faculty of Environmental and Urban Change (EUC) observes that the potential benefits of sustainable affordable housing have often been “absolutely overlooked” by many planners. “We need to start looking at this.”

The potential synergies, adds EUC Professor Mark Winfield, coordinator of York's Sustainable Energy Initiative, should have particular resonance with post-secondary institutions that are under increasing pressure to provide or develop bet-

The potential benefits of sustainable affordable housing have often been “absolutely overlooked” by many planners.

ter and more affordable housing for students, and particularly students who lack family financial support.

Sotomayor, whose research focuses on student housing, has explored recent development trends in such projects, which have tended to involve private-sector partners building highrise, condo-style apartment buildings. Such investments respond to mounting pressure from municipalities and neighbourhoods that have become dominated by overcrowded rooming houses that cater mainly to post-secondary students.

“A lot of the emphasis for affordable housing solutions has been placed on new development,” she observes. “But I think something that is being overlooked is the role of conserving the affordable housing that is already there.”

She also points out that sustainability in student housing per se is not necessarily achieved through new construction, which often relies on the consumption of carbon-intensive materials such as steel and concrete, even in otherwise energy-efficient buildings. “In a city like Toronto, a lot of the emphasis for affordable housing solutions has been placed on new development,” she observes. “But I think something that is being overlooked is the role of conserving the affordable housing that is already there.”

There's evidence that the mutually reinforcing benefits of sustainable affordable housing initiatives are gaining broader attention from the design community, government funders and housing agencies. In 2019, the Federation of Canadian Municipalities launched a \$300-million program, funded by

Ottawa, to invest in sustainable affordable housing projects through 2026. In 2020–2021, the group earmarked funding for 33 such initiatives, comprising a total of 3,000 units.

Among them, a 157-unit apartment in Vancouver for low-and moderate-income seniors and people with disabilities. The project will be built to so-called “passive house” standards – an ultra-sustainable design approach that can slash energy expenses by up to 90 per cent, using heavily insulated walls, triple-glazed windows and various waste-heat-recovery systems. (The funding for this venture also comes from B.C. and a federal housing program.)

Winfield points out that organizations such as the Low-Income Energy Network, which is part of the Canadian Environmental Law Association, have stepped in to advocate for individuals and families living in older affordable housing complexes that require energy retrofits. The challenge, he adds, is that capital for such projects can be scarce.

Given both the acceleration of the housing affordability crisis and the diminishing timeline to take meaningful action to curb emissions, Winfield argues that policymakers would be well-advised to look to measures that allow non-profit housing providers with the requisite upfront capital to construct resilient, low-carbon buildings that will cost less to operate over the long run.

As for post-secondary institutions, Winfield says they can not only marry these twinned objectives, but also treat campuses as “pedagogical assets.” Winfield points out that his colleagues in York's engineering faculty now teach graduate students who are keen to find new solutions for building low-carbon communities and answer questions such as “how [to] manage something like a university campus as a micro-grid and potentially tie together a range of assets into a reliable and stable and resilient and affordable energy system.” As he notes, “We're ideally positioned, in many ways, to be the leaders in practice in those sorts of goals.” ●

VIBE105'S GENERAL MANAGER, RANDY REID



Hip hop celebrates 50 years of resilience

BY DAVID JAGER
PHOTOGRAPHY BY CHRIS ROBINSON

Can you dig it?

AS THE WORLD LOOKS back on the legacy of hip hop 50 years after its birth at a birthday party in the South Bronx, York University has its own reasons to celebrate. Hip hop has grown from a renegade musical idiom from the inner city into a global phenomenon, spawning a multi-billion-dollar industry in the

process. Most importantly, it has given a musical and lyrical voice to urban experiences – both American and Canadian – that had gone previously unheard.

As an institution, York has had its own long-standing relationship to the genre, most actively through its campus radio station, VIBE105 (formerly CHRY-FM). The station's program-

ming is devoted almost exclusively to hip hop. “You can’t tell the story of hip hop in Canada without mentioning CHRY,” says VIBE105’s general manager, Randy Reid.

“CHRY delivered content reflective of the vast Afro-Caribbean community in the Jane-Finch corridor near the campus. With that came a plethora of hip hop programming and

young talent who grew to become the country's tastemakers for the genre." The station launched the careers of foundational hip hop pioneers, including DJ Grouch, DJ Baby Yu, DJ Mel Boogie, Kid Kut of Baby Blue Soundcrew, and many others.

The link between Canadian hip hop and York also runs deep in terms of its roster of well-known performers and scholars of the genre. At least four major Canadian hip hop recording artists and producers have attended or taught at York over the years. University scholars have also contributed significant research on hip hop as a multidisciplinary field of study that encompasses everything from anthropology and cultural studies to musicology and critical race theory.

Two of York's undergraduate courses – past and present – have been taught by notable architects of the Toronto hip hop scene, DJ Ron Nelson and Wendy "Motion" Braithwaite.

PROFESSOR RON WESTRAY, who is the current Oscar Peterson Chair in Jazz Performance at York, recently published a landmark collection of essays on the genre, entitled *Contemporary Black Urban Music: The Revolution of Hip Hop*.

As well, Serouj "Midus" Aprahamian (PhD '21), who is an internationally known hip hop dancer, recently released a definitive history of hip hop dance, *The Birth of Breaking: Hip-Hop History from the Floor Up*. Presently a professor in the Dance department of the University of Illinois Urbana-Champaign, Aprahamian also contributed an essay to *The Oxford Handbook of Hip Hop Dance Studies*, co-edited by Mary Fogarty, a professor in York's Dance Department and internationally recognized hip hop culture expert.

Westray, who was lead trombonist for the Jazz at Lincoln Center Orchestra and the Wynton Marsalis Septet, offers a unique perspective on hip hop as both an academic and a jazz musician. "Jazz guys are kind of snooty about the hip-hop world," Westray says. "I'm not like that. I'm passionate about rap and hip hop and urban music and soul music, but equally accomplished in jazz, so that gives me a chance to mediate both of these genres."

Jazz musicians haven't been the only individuals to express snootiness toward the genre. Hip hop, especially in Canada, has always struggled to gain genuine respect, or any real industry traction north of the border. This, despite talent that managed to chart in the U.S. Until the arrival of megastar Drake, Canadian hip hop languished in near obscurity.

There were exceptions, of course: Maestro Fresh Wes, whose single, "Let Your Backbone Slide," landed on the U.S. Billboard Top Rap singles chart in 1989. There was also Michie Mee – now acknowledged as the 'Queen of Canadian

Hip Hop' – who released *Jamaican Funk—Canadian Style* with DJ L.A. Luv on Atlantic Records in 1991. The album sold 60,000 copies.

Despite these breakout successes, Canadian hip hop languished. Nearly 20 years after its beginnings in New York, Canada had no commercial radio station devoted to it. DJ Mel Boogie, sister of Maestro Fresh Wes, hosted a hip hop show on CHRY-FM, and Ron Nelson's legendary hip hop show "Fantastic Voyage" – on Toronto Metropolitan University's now defunct CKLN – was also a Saturday afternoon favourite. Other than that, however, there was only a Buffalo radio station just across the border.

Businessman and promoter Denham Jolly tried to rectify this by applying to the CRTC for a commercial urban music radio station in 1990. The CRTC refused the licence, in favour of a country music station.

A supergroup of Canadian artists released a single as a direct response to the regulatory agency's denial of the licence, entitled "Can't Repress the Cause." The release represented a roll call of early Canadian hip hop artists: Lillian Allen, Devon, B-Kool, Dionne, Dream Warriors, HDV, Maestro Fresh Wes, Michie Mee, Thando Hyman, Carla Marshall, Messenjah, Jillian Mendez, Self Defense, Lorraine Scott, Zama and Leroy Sibbles.

For many, the CRTC's decision was a final nail in the coffin of the Canadian hip hop scene, one that wouldn't be revived until Drake's multi-platinum debut album, *Thank Me Later*.

There have been many theories as to why the Canadian music industry, internationally known as an incubator for superstar rock, pop and indie talent, has been less than generous to its hip hop artists. One is that Canadian hip hop's distinctively West Indian character, inflected with Patois, reggae and dancehall stylings, is less accessible to listeners more accustomed to East and West Coast American urban stylings.

Noah James Shebib, better known as 40, the producer best known for his collaborations with Drake, received an honorary doctorate from York in 2022. He has reflected on this distinct Caribbean culture in director Alim Sabir's YouTube documentary, *Toronto Rising*: "When you talk about the Jamaican diaspora... the effects of that islands cultural impact here are massive. It's rooted in the fabric of Toronto, it's rooted in the neighbourhoods and it's rooted in the communication and it's rooted in a place that's very close to my heart."

This same dancehall-inflected character inspired Kardinal Offishall, who was once enrolled at York as an undergraduate in sociology, to write "Bakardi Slang," a single that would hit

YOU CAN'T TELL THE STORY OF HIP HOP IN CANADA WITHOUT MENTIONING CHRY-FM

number 37 on the U.S. Billboard Hot Rap Singles chart in 2001. The blistering single strongly delineates the difference between Toronto's Jamaican Patois and mainstream American Black vernacular:

We don't say, "You know what I'm sayin'?"

T-dot says, "Yuh dun know"

We don't say, "Hey that's the breaks"

We say, "Yo, ah suh it go."

OTHER ARTISTS CLAIM that Canada has simply been in denial about its urban population. Michee Mee recounts being told by producers to play down her tough Jane and Finch upbringing. "They told me 'There are no ghettos in Canada.' With that contradiction, it became hard to speak about urban experience," she said in a 2020 interview with "Entertainment Report Podcast."

Some Canadian hip hop artists have survived by folding

in elements of other genres. Hip hop pioneer k-os, who attended York as a creative arts film student, released *Black on Blonde* in 2013, a collection of both hip hop and rock songs. "I grew up as an original hopper, but also in the presence of indie rock in Canada," k-os said at the time.

The story of Canadian hip hop is one of a close-knit and resilient local community that relied more on love, innovation and creative compromise than on record deals. Mark Campbell, who earned his bachelor of education at York, grew up in the early, fertile era of mix tapes and sound crews. He would volunteer at CHRY-FM and host a late-night radio show called "The Soul of Hip Hop Show." Campbell continues his archival work because he wants Toronto's hip hop community to "look back and say 'Oh, OK, there is value to us. We did contribute to this city. We are important.'"

Drake may currently be one of the biggest hip hop superstars on the planet, but his humble origins in Canada's resilient and struggling hip hop scene should never be forgotten. ●

A HIP HOP HAPPENING

WE DO IT for the Culture: A Hip Hop at 50 Event Series will take place between September and December 2023. The conference is co-presented by Roots Rhymes Collective, The Urban at York University and Hart House at the University of Toronto, with events taking place on the campuses of York University, University of Toronto and Toronto Metropolitan University. Francesca D'Amico-Cuthbert (BA '06, MA '08, PhD '19), who is chief research officer at the New York City-based Hip Hop Education Center, and the course director of York's Hip Hop and the City course, is one of the organizers. "As part of our We do it for the Culture event series, York University will serve as the site and co-presenter for our flagship event — a full-day conference commemorating the history of the Toronto hip hop scene," says D'Amico-Cuthbert, who is also an adjunct professor in the Urban Studies program at York's Department of Social Sciences. She adds that the series will also feature workshops for artists, professional development sessions, speakers, film screenings, breakdancing and more. Additional details can be found at rootsrhymescollective.com. ●

CREATIVITY AFIELD

York artists and athletes aren't on competing teams

BY MICHAEL GRANGE • PHOTOGRAPHY BY CHRIS ROBINSON



From a distance, the two worlds couldn't seem more different, the cliché's splintering off in opposite directions, the stereotypes clashing. But truths in life often defy easy categorization or simple definition. Two things – even seemingly different things like sports and the arts – can be one, you just have to know how to look, where to find the common ground.

THEN AGAIN, for Kayden Johnson, it's simple. He easily and enthusiastically straddled both worlds while starring on the football field and on the track for York University, while simultaneously finding engagement, enrichment and fulfilment as a theatre major in the School of the Arts, Media, Performance & Design (AMPD).

The 2020 graduate is more commonly recognized for his exploits on the football field as a record-setting, fleet-footed, bruising running back for the Lions, or for exploding from the starting blocks – all power, grace and fury – as a hurdler on the track team. Athletically, his impact was measurable and lasting.

Even after missing all but one game of his last season of football due to an injury, he finished 10th all-time in rushing yards and seventh in rushing touchdowns. He was chosen by the BC Lions in the 2020 CFL draft. In 2017-18, Johnson won gold medals at the OUA and USports championships in the 60-metre hurdles, was named all-Canadian and York's athlete of the year.

And while he honed his talents through training and repetition, fine-tuning his strength, timing and explosiveness as he maneuvered his six-foot-two, 225-pound frame through and around opposing defenses or barrelling up the track at the crack of a starting pistol, Johnson credits his athletic success in part to the skills and confidence he gained as a theatre major. Now an actor, personal trainer and aspiring winter Olympian in bobsleigh based in Vancouver, when Johnson looks back at his time at York, he's as proud of the preparation he put into mastering the nuances of the character Belize – the retired drag queen turned nurse from *Angels in America* – for a reading in class, as he is of his athletic accomplishments.

More than that, he believes one discipline informed the other.

“The confidence that you have to have, and perfectionist type of attitude you need to have as an athlete carried over to nailing my lines,” he said. “But when you're acting, you

always have to be vulnerable when you're playing these characters, and put yourself out there, so that helped in turn in sports. It helped being authentic and more confident and brave stepping out on the field or the track.”

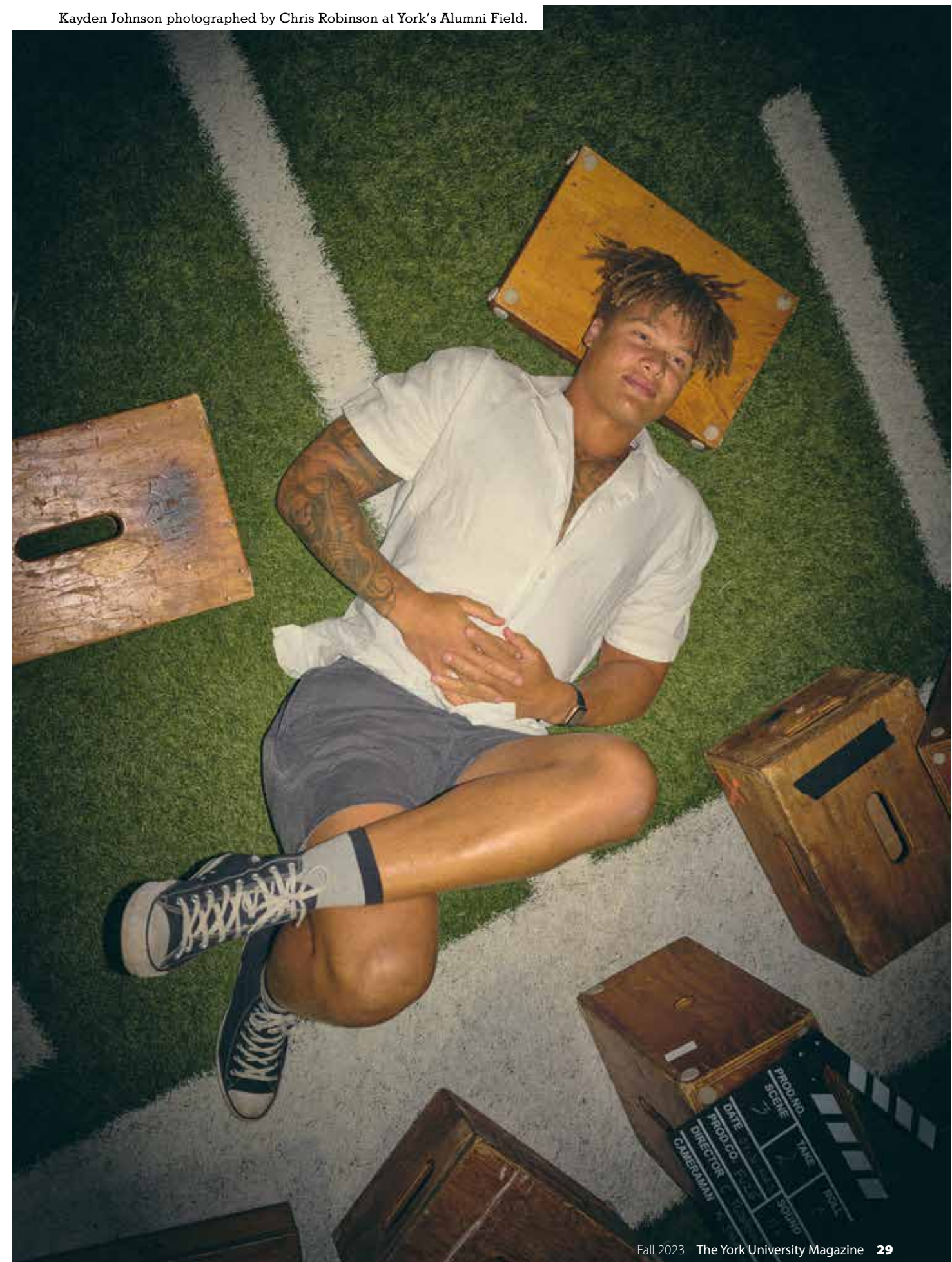
During his time at York, Johnson was the only varsity athlete in the theatre program. It was a subject of curiosity in both camps. But existing between them, Johnson saw more in common with what it took for him to take on the role of Belize in class or thrive as a running back on Saturday afternoons for the Lions. But if you look for them, the parallels begin to jump out: sports and the arts are both avenues for personal expression, meant to be shared with an engaged audience, but only after years spent refining skills, typically while working in groups.

The ultimate is when the audience rounds out the environment, providing the final jolt of energy, awe and passion.

It's peak human.

Few understand the parallels better than Sarah Bay-Cheng, dean of AMPD. Almost since she can remember, the northern California native has had a foot in both worlds. She grew up with a passion for theatre – passed on to her by her parents – and a deep love of sports that remains part of her cellular composition to this day, as an artist, an arts administrator, and a still very active athlete. “Like athletes, I think that artists of all kinds – painters, sculptors, dancers, musicians – it's a daily practice,” Bay-Cheng says. “And I think the people who are successful in [either] area, regardless of how you define success, are the people who really feel compelled to embrace and commit to this daily practice.”

Her career in the arts has in some ways been shaped by sports. She decided not to play Division 1 basketball at university because the demands would mean giving up theatre, so she enrolled at Wellesley College in Massachusetts, where she was the point guard and captain of the basketball team at the Division III level, and was simultaneously able to throw herself into her theatre degree. She did her master's at Purdue, choosing to study there in part because it's a basketball school in Indiana, the sport's heartland. Even as her career in





AMPD Dean Sarah Bay-Cheng photographed by Horst Herget at York's Accolade Building.

the arts flourished, she was always engaged in sports, trading basketball for rugby in her graduate years, and team sports for more individual pursuits like running and triathlon after that. She's been a regular participant in a pick-up basketball game organized by cinema and media arts professor Michael Zryd that features a number of colleagues and alumni with a shared passion for hoops and the arts. Decades into her career, and now leading an institution where dancers, actors, designers and filmmakers are working to master their talents, her college role as point guard – the player on the floor who organizes, leads and shares – remains her internal compass.

"The arts are a team sport," Bay-Cheng says. "The things that I do now as dean, I go back to what I learned as a theatre director and what I learned as a point guard. It's the same kinds of team building, group dynamics, common goal motivation."

Sometimes the lines between sports and the arts are so blurred as to barely exist at all. Within AMPD, Bay-Cheng can refer to multiple examples. Patrick Alcedo, the chair of the department of dance at AMPD, is making a film about the intersection of dance, sports and athletics. Danielle A.D. Howard, a professor in AMPD, is working on a manuscript entitled *Making Moves: Race, Basketball, and Embodied Resistance* that spans the 20th and 21st centuries. The project examines Black basketball players' virtuosic and improvisational movements as oriented toward a kinetic knowledge of freedom and akin to contemporaneous jazz aesthetics.

For Amar Wala (BFA '08), another participant in the AMPD pick-up runs, his own background in basketball is typically a source of strength during the grinding days of filmmaking.

"The parallels exist internally for me, because I grew up playing a lot of sports and basketball was my main sport, and I was good at it by 1990s/2000s Scarborough high school standards," he says. "But I still play and it's a huge part of my health, my mental well-being, and my ability to stay fit for my own work, which is extremely physical, whether it's documentary making or the four weeks I'm about to shoot a feature, it's going to be wall-to-wall, endurance is a really important thing."

In the course of his other projects his connection with the sport is even more linear. One of the joys of Wala's career has been the opportunity to collect behind-the-scenes footage with Canada's men's national team, a group laden with NBA talent, as they work toward qualifying for the 2024 Olympics in Paris. On shoots that often have constraints of time and access, Wala says his group is as much a team as what's happening before his lenses on the hardwood.

"What I love about basketball and currently love about filmmaking, too, is there is a team aspect to it which is really important," says Wala, who has previously produced and directed a documentary on Raptors "superfan" Nav Bhatia for CBC. "And I think when you work in documentary units which are often four people or five if you're lucky, it's very similar. You have to play off one another and communicate really well. There are definitely parallels to being on the court when you actually shoot this stuff, especially when you're shooting in real time and working with a certain amount of scrutiny when there are NBA athletes around or top-level coaches you have to be very, very serious about what you're doing and be very careful about where you are on the court and how to capture things that feel real and authentic."

But in that pursuit, some hard-won sweat equity can pay dividends as well. It can be as simple as explaining to a sound engineer, that yes, the ear-splitting screeches of rubber on wood made when elite athletes change direction at full speed is actually exactly the type of ambient sound a basketball project needs, or finding ways to capture the artistic and aesthetic wonder that giant, extraordinarily gifted athletes playing basketball at a world-class level represent.

"I'm trying to get the feeling of what it's like when a 240-pound athlete who can jump 40 inches in the air jumps, catches the ball and comes down."

But the final connection between the arts and sports may be in the feeling those involved get when something clicks or comes together – at least to the outside world, blind to the hours, pains and doubts required to make things work – seemingly seamlessly. Great art, like perfect moments in sport, elevate everyone they touch. They never come easily or instantly, but the feeling is one for sharing. Like a great play or perfect shot, or flawlessly delivered dramatic scene, it provides its own reward and justification for everything required to make it so.

"You do have those moments when you are in the zone, you're not thinking about anything else, you're not thinking about any of the other stuff going on in your life," Wala says. "And at the end of the day, you know you did something cool, or got something special, and it kind of makes you feel really good, and there's this euphoria afterwards."

Any athlete or artist—or combination thereof—can understand.



Giving

FRIENDS & PHILANTHROPY



THE GOOD FIGHT

A new endowment promotes continued study of the Spanish Civil War

BY DEIRDRE KELLY
PHOTOGRAPHY BY HORST HERGET

CANADIAN INVOLVEMENT in the Spanish Civil War will get increased recognition thanks to a new \$1-million donation to York University in support of teaching students about the fight against fascism.

The gift from the Mackenzie-Papineau Memorial Fund will go toward hiring a new professor of history to replace Adrian Shubert, a York professor emeritus and leading Canadian Hispanist who retired from the University last year. “I thought the teaching of modern Spanish history would end with my departure,” Shubert, a fellow of the Royal Canadian Society, says, “so this is a thrilling new development.”

It is estimated that close to 1,700 Canadians volunteered to fight in the conflict that was instigated when a group of generals that included Francisco Franco attempted to overthrow the Spanish Republic in 1936. The failed coup d’état sparked a civil war that raged until 1939, dividing Spain into two acrimonious factions.

On one side were the Franco-led rebels, assisted by Hitler and Mussolini; on the other were the Republicans, a diverse group that included middle-class democrats, Socialists, anarchists and Communists, and whose numbers were augmented by foreign volunteers who felt it imperative to push back the tide of fascism that was then starting to swell in Europe.

Many of the Canadians who enlisted to fight overseas were Communists who eventually formed their own unit. They called themselves the Mackenzie-Papineau Battalion in tribute to Louis-Joseph Papineau and William Lyon Mackenzie, leaders of Canada’s anti-colonial rebellion of 1837.

Famed Canadian physician Norman Bethune joined their ranks, treating the wounded on the battlefield with his mobile Canadian Blood Transfusions Unit, which helped to save many lives. Back home, Canadian artists and writers supported the cause with seminal modernist literary works about the Spanish War, among them Ted Allen’s novel, *This Time a Better Earth*, and Dorothy Livesay’s poem, “Catalonia,” which lionized fallen Canadian soldiers.

Despite the surge of popular support, the Canadian government passed a law prohibiting its citizens from enlisting in the Spanish conflict. Along with Britain, France and the

U.S., Canada was officially neutral. Italy and Germany also agreed to be part of an international non-intervention agreement, but this did not stop them from continuing to send arms and troops to fellow fascist Franco as they had been doing since the first days of combat. Their support helped the Nationalists win the war.

Up to half of the Canadians who fought in Spain died there.

When the survivors returned to Canada they were branded as renegades by the government and restrained from participating in military operations during the ensuing Second World War. They were also denied veterans’ benefits and excluded from the *Books of Remembrance* kept at Parliament Hill. They were surveilled by the Mounties into the 1980s.

Recognition of their valour has come mostly this century with the erection of monuments, funded by private initiatives that commemorate the Mackenzie-Papineau Battalion in Winnipeg, Toronto, Victoria and Ottawa. In 2007, the government of Spain granted the Canadian volunteers citizenship. Now Canada itself is recognizing the role they played in the battle.

In September 2022, a virtual museum of the Spanish Civil War – vscw.ca – opened with funding from Canada’s Social Sciences and Humanities Research Council (SSHRC). Directed by Shubert, together with Trent University historian Antonio Cazorla-Sánchez, it is the first museum dedicated to this central event of 20th-century history. Phase 2 of the project is now underway, and will involve a gallery on Canada and the Spanish Civil War, curated by York history Professor Marcel Martel and doctoral student Maggie McKeon. It will highlight Canada’s history of anti-fascism, the role of the Mackenzie-Papineau Battalion, and the ways in which the conflict has so far been remembered.

Future plans include building a bibliographic reference, as well as teaching modules for high school and post-secondary students. York will be a direct beneficiary of these efforts, especially now that funds have been made available to create a new Chair in the History of the Spanish Civil War.

Says Shubert, “It’s a great opportunity to ensure that the Spanish Civil War – and the Canadian contribution – will continue to be studied and discussed. With the extreme right growing in influence around the world, this wonderful donation could not be more timely.” ●

Alumni

BRANCHING OUT

A York grad nurtures trees in the urban environment



BY ALANNA MITCHELL PHOTOGRAPHY BY HORST HERGET

ADRINA BARDEKJIAN (PhD '15) didn't start out to be a champion tree hugger. Her first love was the arts. Creative writing. Painting. Photography. Film. Theatre.

But in 2001, as she was nearing the end of her undergraduate degree at Concordia University, she got the chance to go to a tree-planting camp in northern Ontario. Trees captured her and never let go.

That passion led her into a master of forest conservation at the University of Toronto and then to several years of consulting work with non-governmental organizations related to forestry. But something didn't feel right. She could see disparities in how people doing different types of work were treated.

"I was noticing the need for a bridge or language to start talking about some of the marginalized stories I was seeing," she says on a Zoom call. She wanted to learn how to share those stories.

Finally, she found York's Faculty of Environmental and Urban Change. Inspired by the breadth of the faculty's expertise, she enrolled in the doctorate program. It was a revelation.

"There were people in my cohort that were looking at art. There were people looking at urban festivals and how that influenced environmental change. York was this very interesting, interdisciplinary world," she says, adding, "I'm so grateful to the university for extending my mind in those directions."

Today, Bardekjian is an urban forestry researcher who is passionate about combining storytelling and the creative arts with science. An adjunct professor of forestry at U of T's Daniels Faculty of Architecture, Landscape and Design, she is also director of engagement and research at Tree Canada, a national non-profit dedicated to planting and nurturing trees in both rural and urban spaces. Plus, she continues creative writing and landscape photography.

Some of her tales are straightforward. In 2014, she spent eight and a half hours on National Tree Day hugging a cra-

pple tree in Montreal's Mount Royal Park. The goal was to draw attention to urban forests and parks. But it was also to break a world record.

Representatives for both Guinness World Records and Tree Canada took notes and recorded the event, verifying Bardekjian's record for the longest hugging of a tree. And while she recently found out that the paperwork cataloguing the feat has been lost, she knows of no one who has out-hugged her since.

Through Tree Canada, Bardekjian strives to understand the less literal ways people view trees, too. Caring for the urban forest is not only about planting trees and making sure they thrive. Trees carry meaning and emotional freight.

"I love people," she says. "I love doing forest walks and I love being in the forest. But in terms of my work and academic inquiry, it's the story of spaces and the mix between the relationship between people and nature that really interests me."

For people of some cultural backgrounds, certain trees are places of convening and therefore the keys to making political decisions, Bardekjian says. For others, trees are fantastical creatures, perhaps even magical, like the hawthorn trees that Irish legend says are beloved by faeries. Some see trees as aesthetically pleasing, or as habitat for wildlife, or as purifiers of air or as carbon reservoirs.

"I think trees have always been looked at in multiple ways," Bardekjian says. "It just depends on your entry point into the conversation."

But urban forests hold social and political implications, too. That's why, along with her colleague Liza Paqueo, an urban ecologist with the U.S. Forest Service international programs, Bardekjian has developed the innovative YouTube discussion series *Where Women Choose to Walk: Paths to Improving Cities and Nature*. The series looks at women's experiences of natural resources in urban settings across the world. It's a way to talk not just of trees, but also issues such as social and environmental justice, diversity, motherhood and even creative inspiration. The tree provides a canopy broad enough for all. ●



Accelerate the Positive

Leah Perry champions sustainability driven by women entrepreneurs

BY SHARON ASCHAIK

AT A TIME OF RISING CONCERN about the climate crisis, we can find hope in the work of clean technologies business advocate Leah Perry (MBA '22).

At the MaRS Discovery District, the Toronto-based innovation hub for Canadian science and tech firms, the 30-year-old York grad helps cleantech entrepreneurs access capital to develop and market their technologies. Companies offering environmentally friendly products, services, technologies and processes – known as “cleantech” ventures – are vital to our ability to live, work and play in ways that are less harmful to the planet, she says.

“I’ve always really liked working with early-stage entrepreneurs,” explains the senior manager of Cleantech Venture Services, who was named to Corporate Knights’ list of Canada’s top 30 under 30 sustainability leaders of 2022. “They are passionate not only about the companies they’re building, but the change they’re making.”

That change-making spirit was instilled in Perry by her

environmentally and socially conscious parents: her father is a sustainability-focused engineer who previously co-led the sustainability team at DuPont Canada and has volunteered on clean water projects in Africa; her mother is a nurse who supported the development of a maternity centre in Uganda. “Sustainability has been in my brain for a long time and something I’ve always been around,” she says.

After completing a bachelor’s degree in international business, Perry joined Export Development Canada as a business development intern. Within two years, she became a member of EDC’s cleantech team, where she helped small- and medium-sized Canadian exporters access financing from EDC and secure clients in international markets.

Wanting to further advance in the venture services sector and help more entrepreneurs achieve their dreams, in 2020 she chose to pursue an MBA at York’s Schulich School of Business. Perry’s passion for environmentalism was further ignited through courses and projects where she was able to explore sustainable finance, impact investing and social bonds. Her academic performance earned her the Graduate Business Council Gold Medal for achieving the highest GPA in her class.

Joining MaRS in July 2021, Perry now supports cleantech entrepreneurs specializing in areas such as agri-tech, advanced manufacturing or materials, energy, transportation, water and waste management. Working alongside her colleagues, she helps entrepreneurs prepare to secure initial funding from institutional venture capital entities, and also works on creating matches with potential investors.

A key part of Perry’s job, and one that she says brings her tremendous satisfaction, is leading the RBC Women in Cleantech Accelerator. Launched in September 2021, the intensive 24-month program aims to address the gender gap in cleantech by offering female-led early-stage startups with business workshops, networking, mentorship and connections to investors. The accelerator currently serves 10 businesses focusing on areas such as reusable packaging, solar cell technology and compostable menstrual pads.

According to MaRS, only one in 10 cleantech founders is a woman.

Perry wants to change that.

“The purpose is to increase the representation of women-led cleantech companies in Canada,” she says. “They’re so inspiring and I’m definitely their biggest cheerleader. I’ll do anything to help them grow.” ●

Classes

1974

TAYLOR, TOM
(BA '74, HISTORY)

Tom has published a series of four novels: *Brock’s Agent*, *Brock’s Railroad*, *Brock’s Traitor* and *Brock’s Assassin*. He won the gold medal from the Independent Publisher Book Awards in the category for wartime fiction in 2013. His next book, entitled *Brock’s Spirit*, will tell a story about Stoney Creek, Laura Secord and the battle at Beaver Dams.

1975

WOOD, JOAN L.
(BA '75, SOCIOLOGY)

Joan is a proud York alumna who served as a member of the York Alumni Association in the early 1980s. With her husband, Keith, she relocated to Bermuda 25 years ago for work. She now lives there full time as a retiree.

1980

SLEIGH, JAMES F.
(MA '80, PHD '04, ENGLISH)

In 2021, James published his first fiction book, *A Parcel of Rogues*, described as a quirky, barbed comedy.

1984

NATARELLI, FAUSTO
(BA '84, PUBLIC POLICY AND ADMINISTRATION)

Fausto has retired from provincial and municipal service after a fulfilling

career. He is now teaching public policy and administration to undergraduates, along with leadership and human resources management to graduate students, at York.

1992

CHU, ALBERT H.
(LLB '92, LAW)

Albert is a seasoned real estate investment professional and broker, located in Hong Kong, where he hosts classes on how to invest in commercial and residential real estate.

1996

NADALIN, CHARLENE
(BA '96, SPANISH)

Charlene is the founder and CEO of Aminthro, a free web-based platform and information hub that helps people aged 50 and over expand their social circles and create new friendships.

2003

BAKER, LAURIE M.
(BA '03, PHD '16, SOCIAL ANTHROPOLOGY)

Laurie is the director of programs for Treefrog Accelerator, a digital company helping startup founders expand their businesses. It has partnerships with York’s Schulich School of Business, York Region and the Newmarket Chamber of Commerce.

2004

SADDLER, MINERVA
(BA '04, SOCIOLOGY)

Minerva is the co-founder of Grants & Business Strategist, a consulting firm providing grant writing and resource enrichment strategies to not-for-profits, public agencies and selected businesses throughout Ontario.

2010

UMADAT, NADIA D.
(BA '10, BSW '14 SOCIAL WORK)

Nadia is a Toronto-based social worker. She recently released her first children’s picture book, *The Most Beautiful Thing I Have Ever Seen*, inspired by her work with migrant youth in Canada.

2018

BHULLAR, AMANJOT S.
(BSC '18, BIOCHEMISTRY)

Amanjot started medical school three months after graduation. He is currently completing his master of public health (MPH) with a residency at the University of Buffalo. He is looking forward to pursuing his dream career as a child and adolescent psychiatrist.

CHOWDHURY, ZAK
(BA '18, POLITICAL SCIENCE)

Zak is the proud recipient of a graduate certificate in cyber security at York. He is currently a teaching assistant at the University of Toronto.

2020

ANDERSON, BRETT
(BA '20, PSYCHOLOGY)

After graduating from York, Brett earned a master’s degree from West Virginia University. Today, he teaches at the University of Georgia while pursuing a PhD in kinesiology.

2021

QAYYUM, FAHAD
(BA '21, COMPUTER SCIENCE)

Fahad works as a software engineer for the Royal Bank of Canada. He is currently working on a performance testing platform that helps users test their applications for performance and efficiency.

IN MEMORIAM

STUART, JUDITH
(PHD '05, ENGLISH)

On May 1, 2023, Judith passed away peacefully at home with her family around her, after almost a year-long struggle with the effects of organ rejection following a double lung transplant in January 2021. She earned her PhD in English literature at York University, where she taught as a contract member at York for many years.

WANT TO BE IN CLASSES?
Email us at magnotes@yorku.ca



Flashback

Have a great
photo from
your days at
York?

Email us at magnotes@yorku.ca

I AM LITERALLY JUMPING FOR JOY in this photo of me at York University when I was an undergrad in the music department. I had just seen the final proof of the poster advertising *What A Difference O'Day Made*, a celebratory concert honouring Anita O'Day that I produced at Burton Auditorium in 2005. The legendary jazz singer was my idol, the reason I was studying vocal jazz at York, and would later become a professional performer. She was 85 at the time and as VP of programs for York's Creative Arts Student Association (CASA) I hatched a plan to bring her up from New York to attend the show. In her time, she had performed with the greats, Louis Armstrong, Benny Goodman, Oscar Peterson and others. Now it was our time to perform for her. That night, York musicians, including faculty members, took to the stage, to pay her tribute. Dance students presented choreography inspired by one of her hit songs. When the show was over, more than 100 people stood in line to get her autograph. It was my first time wearing the hat of an impresario, and all these years later – in addition to singing and recording – I am still producing concerts, showcases and festivals, and all because of York, which truly did inspire me to redefine the possible. ● — Ori Dagan (BFA '07)

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