

FALL 2023

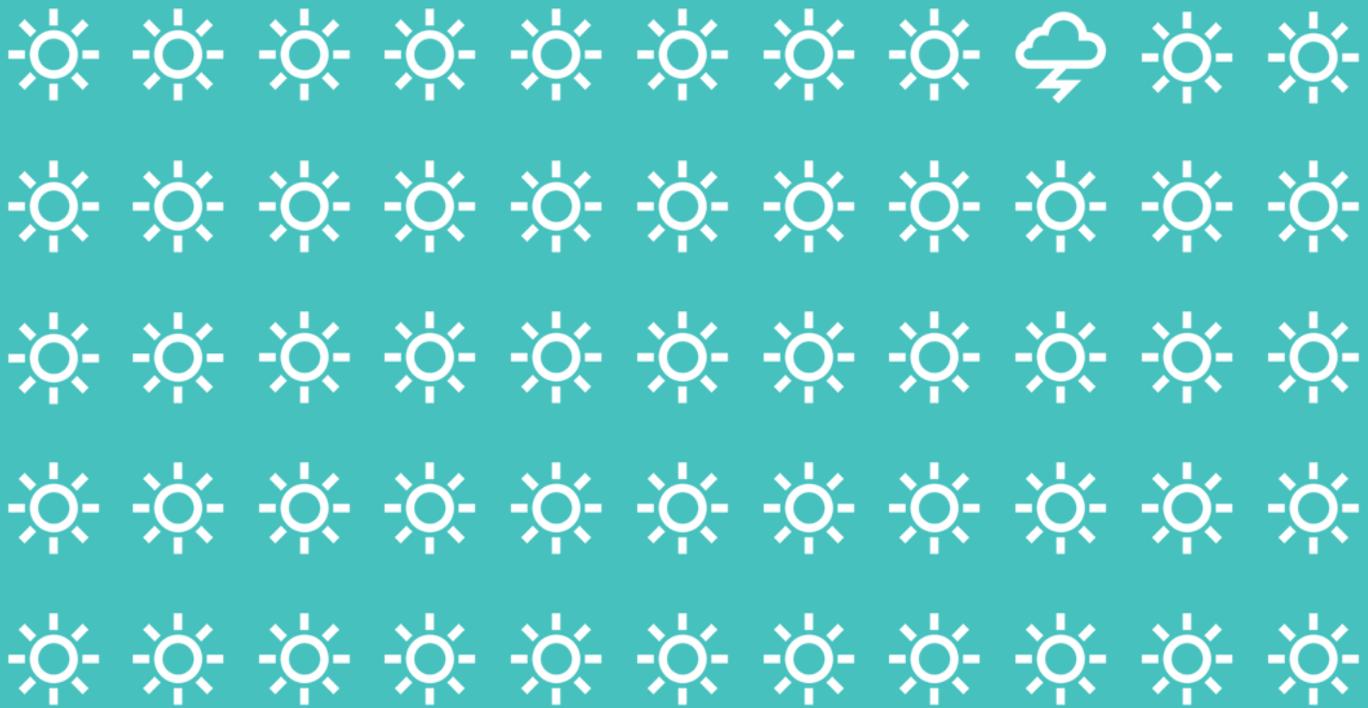
WATERLOO MAGAZINE

# The New Entrepreneur



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**BONNIE FOLEY-WONG**  
(BMATH '97, MACC '97)

Find out how alum Foley-Wong's entrepreneurial pursuit is helping leaders turn sustainability strategies into results.

FEATURED ILLUSTRATOR:

**SEAN MCCABE** has been illustrating for more than 20 years. His work has appeared in publications like Rolling Stone, Time, The New York Times, New Yorker and The Wall Street Journal. McCabe lives with his wife Annie and their two dogs MeiMei and Pippi in Philadelphia, PA.

### UWATERLOO SETS UP A NEW FUND TO SUPPORT ENTREPRENEURS

The Velocity Fund II is a new venture capital fund operated independently by general partners Ross Robinson (BCS '12) and Akash Vaswani (BASc '14). The University of Waterloo will become the first post-secondary institution in Canada to invest from its endowment into a venture capital fund launched by the team behind Waterloo's Velocity incubator.

Read the announcement at

[uwaterloo.ca/news/vc-fund](http://uwaterloo.ca/news/vc-fund)

# THE NEW ENTREPRENEUR

In this issue, we explore how today's entrepreneurs are innovative business leaders, policymakers and advocates designing new solutions to bring about positive social and environmental change.



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### ACKNOWLEDGEMENT OF TRADITIONAL TERRITORY

The University of Waterloo acknowledges that much of our work takes place on the traditional territory of the Neutral, Anishinaabeg and Haudenosaunee peoples. Our main campus is situated on the Haldimand Tract, the land granted to the Six Nations that includes six miles on each side of the Grand River. Our active work toward reconciliation takes place across our campuses through research, learning, teaching, and community building, and is co-ordinated within our Office of Indigenous Relations.

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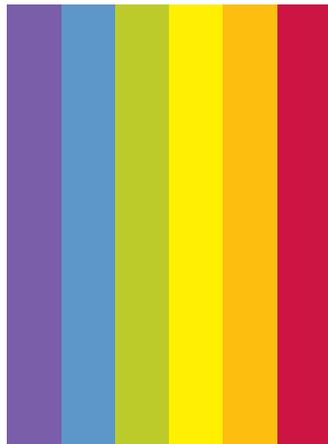
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# HONOURING PRIDE



This June, we activated many new Pride initiatives across campus.

Rainbow walkways were installed outside the Dana Porter Library and at campus entrances, while the Two-Spirit Pride flag was flown alongside the Intersex-Inclusive Pride Progress flag for the first time.

The Great Gaggle of Waterloo, original art by Rachel Jung (BA '23), became a campus-wide installation with rainbow-coloured geese on display across campus to mark Pride Month.

On June 28, these celebrations were violently interrupted when our campus community experienced a hate-motivated attack related to gender expression and identity.

“At home and abroad in 2023, we’re seeing a rise in 2SLGBTQIA+ hate and violence. After the attack on our campus this June, we are left heartsick and horrified.” said Michael Dorr (BMath '01), associate vice-president of marketing and brand strategy.

While our community has been deeply shaken, we remain steadfast in our commitment to foster an inclusive, safe and welcoming environment for all members of our community.

“It’s more important now than ever before to send a message of belonging to students, staff and the broader community. I believe that 2SLGBTQIA+ Pride takes on a deeper meaning of resilience and an urgent protest against hate, intolerance and violence.”

While these Pride initiatives and symbols are important, we have a lot of work ahead to combat transphobia and homophobia and work towards an inclusive campus. ♡



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*Kyne Santos (BMath '21) poses with Waterloo students.*



*On June 29, community members gathered to stand in solidarity against all forms of hatred and bigotry.*

# WE NEED TO STAND AGAINST HATE

I have been overwhelmed by the messages of support our institution has received from all corners of the country after the hate-motivated attack against a gender and social justice class on our campus in June. The outreach from across the country makes it clear that those united against violence, hatred and bigotry far outnumber those who would terrorize us.

We acknowledge that our 2SLGBTQIA+ community members and people with other marginalized identities face ongoing hate and threats to their safety. A sense of safety and belonging must be in place to fully realize Waterloo's culture of curiosity, innovation and entrepreneurship. Hate and injustice are global problems, and our campuses are not immune to

them. Now, more than ever, it is critical that we build a community that drives positive transformational change across our campuses and broader society.

There is much work to be done to overcome the challenges facing our world. Bringing a human-centred lens to our work, building on our strengths in arts, humanities and social science, will help us find new approaches to address the increasingly complex challenges our world faces. As an institution, we are working to apply our innovations locally and globally, so that our campuses and local communities reflect our bold aspirations for society – equitable, anti-racist, sustainable, decolonized, accessible and centered on our community's well-being.

In April, we broke ground on the Innovation Arena. In partnership with the City of Kitchener and Velocity, the Innovation Arena will support entrepreneurs in turning novel ideas into solutions and breakthroughs that will improve individual and societal health. It is just one example of networks, tools and resources in place to equip our changemakers with a solid foundation to succeed.

Our community of researchers, students and alumni share a solution-driven spirit. Within this magazine issue, you'll discover how this spirit is helping change how we think, work and live.

I am encouraged to know this spirit will also shape how our Waterloo community moves forward together in the wake of the horrific attack. Together, we can find solutions to drive positive change for our institution and the world.

Dr. Vivek Goel, CM  
President and Vice-Chancellor



→ READ PRESIDENT GOEL'S FULL STATEMENT FROM THE COMMUNITY GATHERING

# Waterloo announces tuition waiver for students from two First Nations communities

The University of Waterloo is offering a full tuition waiver to all qualifying students from two First Nations communities on whose traditional territory the University is situated.

The initiative covers current and incoming students who are members of the Six Nations of the Grand River and the Mississaugas of the Credit First Nation. Waterloo will also offer Ontario domestic tuition rates for First Nations, Métis and Inuit students from elsewhere in Canada as well as Native American students from the United States in recognition of the Jay Treaty. It will also continue to waive the application fee for these applicants.

“This announcement is part of Waterloo’s efforts toward indigenization, decolonization and reconciliation, which are at the heart of the values guiding us as an institution of higher learning,” said Vivek Goel, president and vice-chancellor of Waterloo.

→ **LEARN MORE at**

[uwaterloo.ca/indigenous/tuition-waiver](http://uwaterloo.ca/indigenous/tuition-waiver)



## Needles Wall embodies past and present

A new mural recently installed in Ira Needles Hall visually represents the University of Waterloo’s history and future. Dubbed “Needles Wall,” the mural draws upon the unconventional spirit of Waterloo’s founding while hinting at what lies ahead.

## Velocity celebrates 15 YEARS

Velocity started as a University of Waterloo dorm residence in 2008 and has since helped entrepreneurs build scalable companies by creating optimal conditions for their growth. Building on its 15 years of success – which includes helping more than 400 companies create a total enterprise value of more than US\$26 billion – Velocity is constantly evolving on its mission to assist entrepreneurs and the startup community.

With locations across the University campus and downtown Kitchener, Velocity operates specialized labs, runs tailored programs and provides access to capital, resources and advisory for rapid business development.

Since the beginning, Velocity’s self-reinforcing culture has fostered collaboration and trust. Velocity entrepreneurs work with a broad network of industry-specific experts through various streams such as software, health tech and deep tech.

Velocity will further strengthen this collaborative culture at the Innovation Arena, where innovation can thrive with the broader community.

→ **FIND OUT MORE at**

[uwaterloo.ca/innovation-arena](http://uwaterloo.ca/innovation-arena)

## 65 YEARS of experiential education

In 1957, Waterloo set itself apart from other universities with an innovative co-operative education offering. A cohort of more than 70 engineering students experienced their first co-op work terms in 1958, and Waterloo's unique co-operative education program soon expanded to all other faculties on campus.

Today, Waterloo is a global leader in experiential education. More than 25,000 students are available each year for four- or eight-month full-time work terms across all industries. Students create an impact at more than 7,500 global employers by supporting projects, delivering solutions and offering diverse perspectives.

"The amazing work of students through work-integrated learning experiences has set Waterloo apart from other institutions," said Norah McRae, associate provost of Co-operative and Experiential Education. "As we celebrate 65 years of experiential education at Waterloo, we continue to innovate and find meaningful ways to support our students. Our strong industry relationships and leading-edge research help us to future-proof ourselves, employers and students."



## Waterloo celebrates Black communities

On Friday, May 26, more than 300 people from campus and the community gathered at the University of Waterloo for the inaugural Celebrating Black Communities event at Federation Hall. The evening's program featured a reception and a sit-down dinner, followed by a keynote address and a conversation with the Right Honourable, Michaëlle Jean, the former 27th Governor General of Canada and current chancellor at United College.

President and Vice-Chancellor Vivek Goel and Dr. Christopher S. Taylor, Associate Vice-President Equity, Diversity, Inclusion and Anti-racism also addressed the audience and gave thanks to all existing donors for their support of the Black Student Opportunities Fund — a new resource to support current and future Black students. ♡



(L to R) Dr. Vivek Goel, Right Honourable Michaëlle Jean, Dr. Christopher S. Taylor

→ GIVE TO THE BLACK STUDENTS OPPORTUNITIES FUND





**Indigenous entrepreneur wants to use his mushroom-supplements business to start a dialogue for a positive future**

By Rose Simone

# THE MUSHROOM STARTUP WITH THE POWER TO HEAL

Entrepreneurship is the heart of the University of Waterloo.

The University is widely known for thriving technology companies – in everything from quantum computing, artificial intelligence and robotics to nanotechnology – that grew out of its incredible ability to generate startups.

But today, in a world beset by climate change and other formidable challenges, a different type of entrepreneur is emerging: one that cares deeply about making a positive impact on society and the environment.



on a subscription basis. The products have many fans, including Vandermeer's sister, who has felt better since trying them.

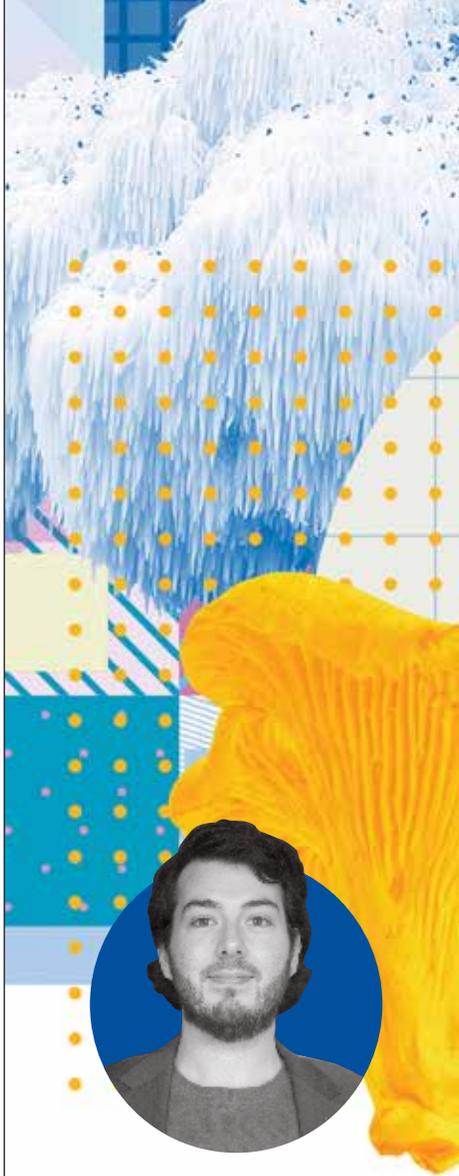
A friend introduced Vandermeer to GreenHouse, a social impact incubator for students and community members who want to create social or environmental change. GreenHouse is part of United College, an affiliated institution of the University of Waterloo that offers programs tailored to Indigenous entrepreneurs who want to have a positive impact on their communities.

From the get-go, Vandermeer knew it was a perfect fit.

Last fall, at the 27th Social Impact Showcase run by GreenHouse, the MycoNutrients team consisting of Vandermeer (biology), Saira Hadi (biomedical sciences), Ryan Mitchell (psychology) and Jonathan Chen (biophysics) was awarded \$2,500 to support the venture, as well as an extra \$1,000 in funding for winning the People's Choice Award with a story about love and family.

For Vandermeer, the commitment to community and giving back is as important as anything he does in his business. A couple of years ago, he worked with a House of Friendship team that taught teenagers how to cultivate food plants at the Sunnysdale Community Centre community garden.

He's also part of a group at GreenHouse that has access to a space where they can grow Indigenous sacred plants such as



**“WE’RE PUT  
ON THIS EARTH  
TO SOLVE  
PROBLEMS WE  
ARE UNIQUELY  
EQUIPPED  
TO SOLVE.”**

- Evan Vandermeer  
(BSc in progress)

sage and squash. “Food sovereignty has always been a big focus for me,” Vandermeer said.

He also loves to educate people about mushrooms.

“We tend to think we’re the smartest organisms on the planet, but if you study mushrooms for a year, you’ll realize how intelligent they are,” Vandermeer said. “They can be used to make quantum dots for sensing applications, in a way that doesn’t pollute the environment. They can be used to make building materials that self-repair. They can be used to make computer chips that are flexible.”

Vandermeer isn’t interested in chasing another new convenience.

“It’s tough for me to see a cup that connects to a smartphone to keep coffee at a perfect temperature when I know that our communities don’t have clean drinking water,” Vandermeer said. “I support innovation, but come on, we do have bigger problems.”

Vandermeer said it’s easy for young people to catastrophize, so he wants to paint a picture of a better future. The Earth can heal itself if we let it, he added. “We need to start trusting our Mother Earth, and just get out of her way.”

He hopes his business can make a difference. “It’s my hope that we can start a dialogue for a positive future, where humans have learned to live in harmony with all the living things on Mother Earth, so that we can all enjoy wealth, abundance and a sustainable future.” ♡

→ Find out more about the impact GreenHouse students are making

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L: James Lowman (BMath '16, MSc '19, PhD in progress)

R: Dr. Moslem Sadeghi Goughari (PhD '20)

# Innovating better ways to care for people using technology

## Velocity health entrepreneurs turn research into health-care solutions

By Angelica Marie Sanchez (BA '21)

From automating a medical imaging device to developing a health-care platform to reduce anxiety, the Velocity health stream is creating the next generation of innovators working to transform their research into real-world technological solutions.

In March 2023, Velocity launched a new initiative, Velocity health, which aims to help early-stage startup companies in the health-tech sector access a wide range of support and resources. From ideation to clinical trials, market validation and adoption, the inaugural group



of entrepreneurs will receive support in making their products and services available to those who need them.

James Lowman (BMath '16, MSc '19, PhD in progress) transformed his research in computational fluid dynamics into Cauchy Analytics, a startup focused on medical imaging, while Dr. Alison Smith (PhD '09) used her background in neuroscience to create Roga, a health-care platform and wellness device for reducing anxiety.

Founders like Lowman and Smith in the Velocity health stream are focused on designing solutions that address health challenges to make a positive difference in people's lives and care.

Velocity health received funding from the Government of Canada through the Federal Economic Development Agency for Southern Ontario (FedDev Ontario).



## Cauchy Analytics

Cauchy Analytics is an analytics platform for medical imaging that allows doctors to properly monitor a patient's heart in hospital intensive care units (ICUs).

Lowman explained that when a patient has an infection, they are taken to the ICU where doctors do a procedure to measure cardiac hemodynamics. The procedure is used to extrapolate information into data that physicians need to diagnose whether blood flow and pressure out of the heart is adequate or abnormal.

"However, unless there is a doctor trained as an echocardiograph technician, the hospital will need to call another doctor or relocate the patient, which in turn, will take a couple of hours and can cause further challenges," Lowman said.

To address these issues, the company is developing a hands-free, automated and remote device that combines an ultrasound, machine learning and computational fluid dynamics to produce a real-time, non-invasive continuous monitoring system for cardiac hemodynamics.

In January 2023, co-founders Lowman and Rakshit Shetty were joined by Dr. Moslem Sadeghi Goughari (PhD '20), who serves as the chief technology officer. The Cauchy Analytics team performed their first successful "feasibility trial" of their medical device prototype on 10 volunteers at Velocity.

"It's an ecosystem that I don't just want to be a part of it, but I want to see it flourish," Lowman said. "We are proud to be a part of the inaugural companies in the Velocity health stream."

# ROGA

In 2019, Smith met Ami Lebendiker at a neurotechnology conference in Silicon Valley. They quickly discovered a shared common mission: to create an affordable, convenient alternative to medication and therapy to help relieve daily stress and anxiety.

Together they co-founded Roga, a health-care platform that combines a wearable wellness device, which produces pulsed electrical stimulation when plugged into your phone, and on-demand, video-based content via the Roga app.

"We wanted the device to be very easy to use, as our rule was: the device has to be put on within five seconds because that is how quickly somebody can get triggered into a panic attack," Smith said. "We also didn't want others to know our users are wearing a brain stimulator, so the hardware design had to be concealable for people to put on the device in public."

Internal user testing shows that the device significantly reduces stress and anxiety symptoms. Roga has recently confirmed a partnership with Smith's former PhD supervisor, Dr. Richard Staines, to collect data for Roga in his lab at the University of Waterloo.

"One of the biggest advantages of being an entrepreneur in Velocity is having access and forming research collaborations with Waterloo researchers," Smith said. "It is a major milestone for Roga to base all of our research projects at the University of Waterloo." 



*Dr. Alison Smith (PhD '09)*



**“With my clients, actions speak louder than words.”**

- Rebekah Churchyard  
(BA '13, BSW '14)



# GREEN CARE FARMS TAKES ROOT

**Rebekah Churchyard  
launched Canada's  
first care farm for  
people with living  
with dementia**

By Kira Vermond

Nestled between apple and cherry tree orchards on a half-acre of rural land between Milton and Guelph, Ont., Green Care Farms is ready for planting. Incorporated in 2021, it is Canada's first care farm specifically for adults living with dementia, a disease that affects at least 597,000 Canadians today.

## **It was about thyme**

"You can have horticulture care therapy elements in a program, but to have a care farm, it needs to be operational. You need the blue skies and the open fields. It's part of the healing in the model," chief executive officer and founder Rebekah Churchyard (BA '13, BSW '14) said.

While common in Europe, few care farms exist in Canada. The model can serve young people with intellectual differences, those living with mental health concerns, mental illness, addictions, and folks who need a bit of support to build skills and an opportunity to belong to a productive community. For people with dementia, working in the fields with ample support has been shown to reduce cognitive decline, stress and agitation, loneliness and physical pain while improving mood, self-esteem, energy and functional independence.

Churchyard should know. Since launching the social enterprise, she's seen the difference her business has made for her clients. One man who had worked as a labourer for 45 years took time each Sunday evening to gather tools and other items he thought would be useful for the workday. He may have had difficulty remembering dates and names, but he finally felt he had a purpose again.

"It was extremely healing. He had something to do. He had jobs and was good at being on a team and listened to direction well," Churchyard said. "I think with my clients, actions speak louder than words."

## **It could have been different**

Churchyard wishes a care farm had been an option for her grandfather, Ron Goodall, who was diagnosed with early-onset dementia when Churchyard was 14. A farmer and teacher, he was happiest riding his tractor or trimming trees on the family Christmas tree farm, the ultimate retirement project.

But as his dementia progressed, it became harder for him to spend time outdoors safely. He once poured water into his chainsaw's gas tank – Churchyard still remembers the plumes of smoke – and despite peripheral vision loss, he continued to ride his tractor.

Eventually, her grandmother took away the keys for his safety. Boredom and frustration set in, even though he tried a few day programs.



“He absolutely hated them,” Churchyard remembered. “He wanted to be outside working because that’s who he was – a true-blue farmer through and through.”

Tragically, her grandparents passed away within just four months of each other in 2014. Caregiving had worn her grandmother down. After she died, Churchyard’s grandfather went into a top-quality long-term care facility. But soon, he was gone too. The experience pushed Churchyard to ask how nature could help people with dementia and their caregivers.

“I was so dissatisfied after my grandparents passed away. I thought, ‘This is so wrong. It could have been different.’ They did everything right, and it was still awful,” she said.

### Doing good in the world

Yet that experience was precisely what guided Churchyard forward for the next 10 years. Along with her social work experience at Waterloo, she earned a Master of Social Work in Gerontology and is now a specialist in geriatric health services in Waterloo region. She methodically built up her entrepreneurial skills and savvy by taking business and accounting courses,

volunteering and serving as president of the board of directors for the Toronto Council on Aging.

Eventually, Churchyard felt she was ready to launch Green Care Farms. It took time to decide on a non-profit or social enterprise model – a business that does good in the world. She eventually chose the latter when she realized it would be easier to quickly offer the service to more people.

With a client-staff ratio of three to one, she now has the capacity for 12 clients each Monday for five hours of digging, planting, weeding and harvesting and experiencing the world with all their senses. Participants take produce home while the extra goes to the local food bank. Meanwhile, catered lunch is served by The Lunch Box Café, a training café for adults with developmental disabilities.

And it isn’t only the participants who benefit from the program. Caregivers do too. Churchyard remembered a care partner telling her the five hours of respite on Mondays was a lifesaver.

“Hearing ‘this changed my life’ was honestly all I needed to keep going,” she said. “It was very healing. Obviously, the clients are not my grandparents, but this has been a way to pay tribute to them.” ♥

# BE A CATALYST FOR POSITIVE CHANGE



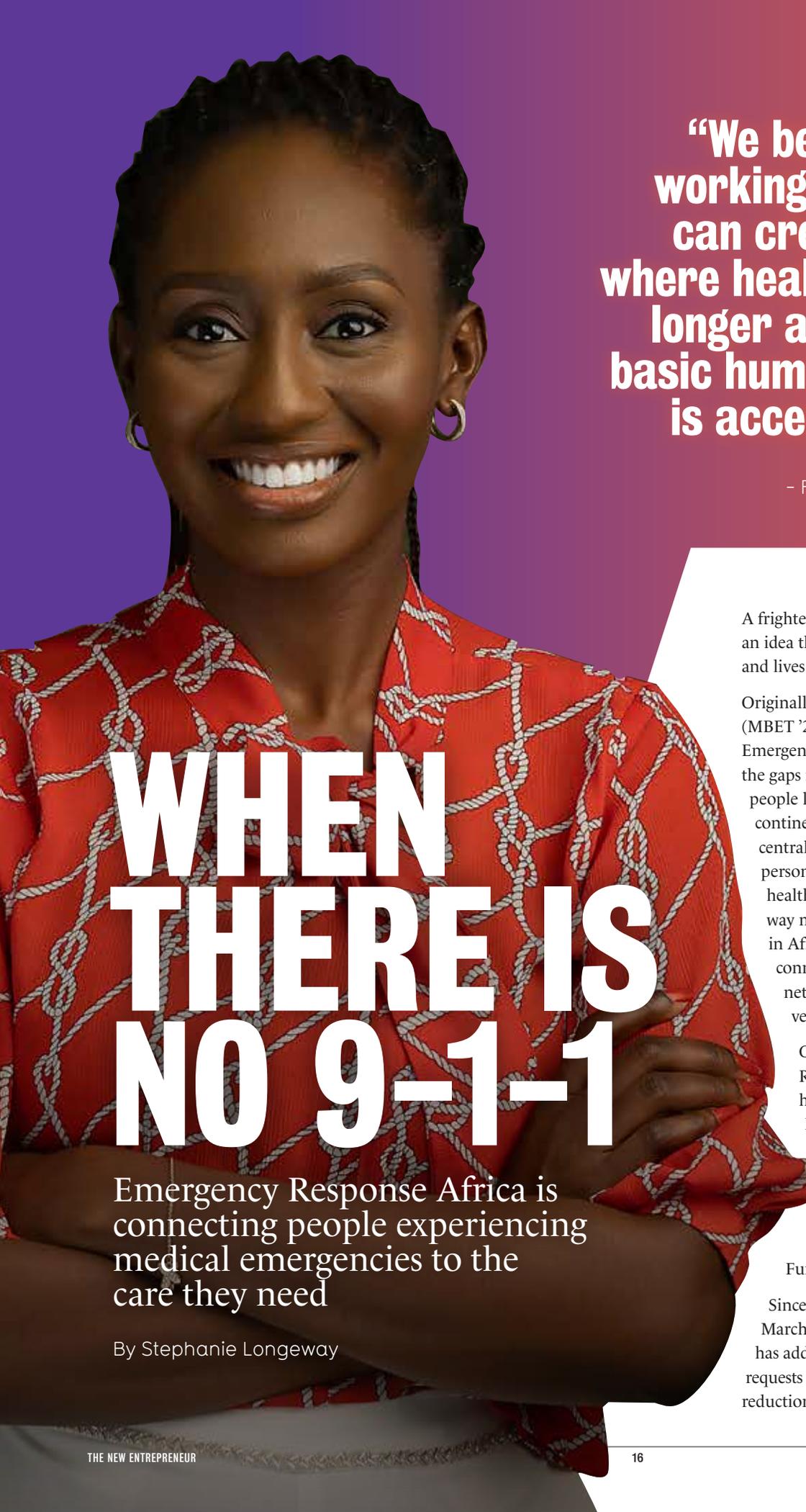
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A portrait of Folake Owodunni, a Black woman with her hair styled in braids, wearing a red patterned top and hoop earrings. She is smiling and looking towards the camera.

**“We believe that by working together, we can create a future where health care is no longer a luxury but a basic human right that is accessible to all.”**

- Folake Owodunni (MBET '21)

# WHEN THERE IS NO 9-1-1

Emergency Response Africa is connecting people experiencing medical emergencies to the care they need

By Stephanie Longway

A frightening medical emergency inspired an idea that is now changing the health and lives of thousands of people.

Originally from Nigeria, Folake Owodunni (MBET '21) was compelled to create Emergency Response Africa to address the gaps in health services available to people living in Africa. In many parts of the continent, there is no consistent or reliable central emergency service to call when a person is in medical distress. Owodunni's health-tech company is transforming the way medical emergencies are managed in Africa, beginning in Nigeria, by connecting communities to a large network of first responders, emergency vehicles and hospitals in minutes.

Owodunni started Emergency Response Africa after meeting her business partner Maame Poku (MBET '19) in the Master of Business, Entrepreneurship and Technology program at the University of Waterloo. They won several pitch competitions including \$5,000 at the Velocity Fund Finals in 2019.

Since launching the service in Nigeria in March 2021, Emergency Response Africa has addressed more than 3,000 emergency requests and has seen as much as a 40 per cent reduction in response times.



We asked Owodunni about the inspiration behind her social enterprise and her vision for the future of health care in Africa.

### **What inspired you to become an entrepreneur and start Emergency Response Africa?**

The business idea was inspired by a personal experience when we were living in Canada and my 18-month-old son woke up screaming in pain and we had to call 9-1-1 for help.

The prompt response of the paramedics made me reflect on what would have happened if we were in Nigeria, and the realization that providing prompt and efficient emergency response services was essential for saving lives in critical situations.

My co-founder, Maame Poku, also shared a similar experience of losing a family member in Ghana due to lack of timely help. Together, we recognized there was a pan-African problem that needed a solution. We decided to work together to use technology to improve access to emergency medical services across the continent and founded Emergency Response Africa to achieve this goal.

### **Emergency Response Africa is a social enterprise. Can you explain why it was important for you to use this model?**

We believe that access to timely and effective emergency medical services is a basic human right, and we wanted to create a sustainable solution to improve the health-care outcomes of African communities.

As a social enterprise, we can pursue our social mission while also generating revenue to sustain our operations. We believe this model allows us to achieve a balance between making a positive social impact and ensuring the financial sustainability of our operations. By generating revenue from our services, we can reinvest in our operations to improve the quality of our services and expand our reach to more communities in need.

The social enterprise model allows us to engage with a wider range of stakeholders, including government, donors, investors and local communities. By demonstrating our social impact alongside our financial sustainability, we can attract support from a variety of sources and create partnerships that further our mission.

### **What is your vision for the future of health care across Africa?**

Our vision is for a future where everyone on the African continent has access to affordable, reliable, quality health care. We believe technology can help bridge the gap in access to emergency care, improve the quality of care and reduce costs for patients.

Our long-term goal is to create a sustainable health-care ecosystem that is accessible to all Africans, regardless of their location or financial situation. We are collaborating with governments, health-care providers and other stakeholders to develop solutions that address the unique challenges facing the African health-care system.

We believe that by working together, we can create a future where health care is no longer a luxury but a basic human right that is accessible to all. ♥

# TRAILBLAZING ECO ENTREPRENEURS



*Rania Al-Sheikhly  
(BSc '22, MBET  
in progress)*



*Adrian Simone (BASC in progress)*

## Bio-Brick

Two University of Waterloo engineering students are redesigning a more sustainable way to make bricks with the help of bacteria.

Adrian Simone (BASC in progress) and Rania Al-Sheikhly (BSc '22, MBET in progress) founded Bio-Brick Labs, a biotech company focusing on the research, development and manufacturing of sustainable building materials. Using a naturally occurring microbial process, bricks are made without the need for cement or ovens, which cuts the carbon emissions in the process to zero.

“Current masonry manufacturing is inefficient, and the methods used release one kilogram of CO<sub>2</sub> for every kilo of material produced,” Bio-Brick Labs CEO Simone said. Existing green alternatives have issues with installation and costs; Bio-Brick offers a competitively priced alternative with the exact same installation time and method as current masonry.

This technology breakthrough has garnered media headlines and significant national and international attention. In 2022, Bio-Brick was the national runner-up in the James Dyson Award, a prestigious international design competition. This year, Bio-Brick was named the innovation winner at the 2023 Canadian Construction Association annual conference.

“We saw that there was a real need for green materials in construction,” Simone said. “Landowners and clients have become the driving force for net-zero construction, and that demand will only continue to grow. After validating the problem and our solution, we saw that people are willing to try a new material. Being named the innovation award winner by the Canadian Construction Association gave us the extra validation we needed to keep moving forward.”

Simone wants their products to become the standard for what green supply should look like in the construction industry. Theirs is not only a net-zero alternative, but one that can be easily adopted into existing projects to help expand the use of more sustainable materials.

Green founders are disrupting traditional industries to create a sustainable future



## Material Futures

Canadian entrepreneur Iris Redinger (BAS '21) has made headlines with her breakthrough technology that uses bacteria to produce sustainable colourants for textiles.

Redinger is the founder and CEO of Material Futures, a startup that's developed a bioprocess to manufacture coloured pigments using cells instead of petroleum. The innovation has the potential to revolutionize the dyes and colourants industry by reducing the environmental impact of textile dyes. Currently, the textile industry is responsible for an estimated 20 per cent of global industrial water pollution.

Traditionally, colourants have been produced using chemical synthesis, which can be harmful to the environment and human health. But Redinger is using bacteria to produce colourants, which offers a more sustainable alternative to conventional methods.

"Our technology harnesses the power of nature to create vibrant, durable colours that are both beautiful and environmentally friendly," Redinger said. "By using bacteria to produce colourants, we can reduce waste, energy consumption and carbon emissions associated with traditional dyeing processes."

Redinger, who studied architecture at the University of Waterloo, was inspired by biomimicry and the natural world to create this technology. After a few years of research and development, she successfully demonstrated and scaled her novel process, achieving a working process at a commercial scale.

In December 2022, Material Futures was chosen to take part in a highly selective trade mission to Japan, where Redinger presented her innovation to leading Japanese organizations, Her Imperial Highness Princess Takamado and Canadian delegates including the Canadian ambassador to Japan, Ian McKay. This spring, Material Futures was granted SDTC Seed Funding, a highly competitive program that supports Canadian entrepreneurs working toward environmental sustainability.

With Redinger and her team planning to boost their manufacturing capacity as they bring this innovation to market, the potential to reduce the environmental impact of textile dyeing is poised to make a significant impact in the fashion industry and beyond.

*Iris Redinger (BAS '21)*

# Nfinite

Nfinite Nanotechnology Inc. is a Waterloo-based company that makes smart nanocoatings for sustainable consumer-packaged goods. Eliminating plastic waste is the company's mission, so it's no coincidence that Nfinite was founded on Earth Day in 2021 by Chee Hau Teoh (MAsc '20), Jhi Yong Loke (MAsc '21) and Dr. Kevin Musselman, a professor of mechanical and mechatronics engineering.

"300 million tonnes of plastic waste are produced annually. This is a pressing global challenge, and 170 nations have pledged to significantly reduce plastic use by 2030," said Chee Hau Teoh, CEO of Nfinite. The government and consumer demand for innovation in this sector has spurred the company's rapid international success and has led to some major partnerships with Amcor, PepsiCo and Mitsubishi Corporation (Americas).

**"We are currently working with consumer-packaged goods companies and packaging converters such as PepsiCo, Amcor and others to enable the barrier function of sustainable packaging materials to extend the shelf life of products and reduce plastic waste."**

Nfinite's spatial atomic layer deposition technology lays down one atomic layer at a time, producing nanocoatings that are uniform, pinhole-free and ultrathin. The process is applied at low temperatures in the open air without a vacuum chamber, making it possible to integrate into current manufacturing facilities.

Chee Hau Teoh envisions a future where all packaging in the world will be recyclable and compostable, and he hopes that Nfinite's nanocoating technology will be the trusted solution for eco-conscious consumers. "Seeing our logo on food products on the shelf will mean that consumers can be confident the food is safe and the packaging is part of a circular economy."



*L to R: Chee Hau Teoh (MAsc '20), Dr. Kevin Musselman, Jhi Yong Loke (MAsc '21)*

# Recyclable Materials Marketing

Since launching in 1996, Recyclable Materials Marketing (ReMM Group) has diverted millions of tonnes of recyclable materials from landfills and disposal outlets. Atul Nanda (BES '89) founded the company with a vision to offer a centralized recycling service that has since become a leader in the full-service recycled materials market.

To combat the environmental impact of consumer goods, governments around the world are adopting policies that make it the producer's responsibility to ensure the proper disposal management of post-consumer products such as paint, batteries, electronics and more.

"Extended producer responsibility, or EPR, is changing the recycling landscape across North America, making brand owners responsible for managing their own packaging," Nanda said. "ReMM Group is uniquely positioned to assist with commodities marketing and provide consulting services to brand owners as EPR expands across North America."

On top of buying and selling recovered recyclable materials, ReMM Group sources recyclable raw material for paper mills and plastics recyclers. ReMM Group also provides consulting services to help companies pursue their sustainability goals, including Zero Waste Certification, packaging redesign, and waste and recycling cost-saving initiatives.

The combination of ReMM's long-term material services and consulting work has helped the company establish strong relationships with suppliers and broaden sources for finding new sustainable solutions.

"My parents and the University of Waterloo provided the foundation to look at environmental problems from a multi-disciplinary approach and operate in an ethical manner. Our dedicated team continues to use these principles to seek creative solutions for our clients."

This approach has helped ReMM Group reinvent itself every few years to remain successful over the past 27 years and to position the company for future growth. ♣

*Atul Nanda (BES '89)*

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# AI personalization is transforming e-commerce

Digital expert Nicolas Darveau-Garneau explains how AI is reshaping the customer experience

By Megan Vander Woude (BKI '12, MA '13)

As Chief Evangelist at Google, Nicolas Darveau-Garneau (BMath '92) spent his time with top e-commerce executives, explaining how AI could drive more traffic to their platforms and increase sales. About three years ago, he noticed executives were more interested in a new topic. They wanted AI to improve the customer experience on their websites and apps.

“If you go to Amazon as a customer, and you’re logged in, they know who you are,” Darveau-Garneau said. “Your entire experience is completely personalized to you in an extraordinary way. Also extraordinary, if you’re not logged in, what you’re searching for, what you look at, what you click on is all analyzed in real-time by machine learning. The whole site changes automatically. It’s personalized to you in a very, very powerful way.”

This is what CEOs want for their own digital experiences and, according to Darveau-Garneau, customers are coming to expect this level of personalization as well. It’s a turning point for e-commerce.

It also inspired a change for Darveau-Garneau. Today, he works at Coveo, a company offering AI-powered technology that can change



an e-commerce website depending on how a customer interacts with it – even if that customer isn't logged in. It creates an experience he calls "one-to-one personalization," in which product recommendations and rankings are optimized for each user.

"It's easy to see how one-to-one personalization improves the customer experience. As an avid online shopper, I can attest to the frustrations that come with the search functions on certain sites. Not surprisingly, we are more likely to buy from sites where we can find what we're looking for," Darveau-Garneau said, adding that increased sales don't necessarily mean increased profitability.

For example, if a shopper searches the web for an ergonomic office chair, an AI program can show tailored results ranked by the likelihood that shopper will buy them – all based on his or her previous activity. Those products may not be profitable for the business, however. As a bargain shopper, Darveau-Garneau said he's likely to buy something marked 50 per cent off which won't generate much profit. "I might also buy a chair that most people find uncomfortable, increasing the chance that you'll lose profit when I return it," he said.

Without AI, site managers get around these issues by writing rules into the backend, ensuring that a new item is shown in recommendations and search results, while others are less visible. But these rules are difficult to manage manually, interrupting the customer's personalized experience.

Darveau-Garneau describes the tension between personalization and profitability as a Gordian Knot. A human can't untangle all the factors on their own. Given today's customer expectations and the fierce competition in e-commerce, Darveau-Garneau believes businesses need AI to survive. "The majority of retailers that did not shift from printed flyers to digital marketing did not survive," he said. "The majority that did not shift from purely store sales to a mix of e-commerce and in-store did not survive. This is the next wave."

For many workers who fear AI could replace humans in e-commerce, this might sound alarming. But Darveau-Garneau is clear that humans will still play an important role in managing e-commerce sites. Instead of writing rules, they will manage and

**"The majority that did not shift from purely store sales to a mix of e-commerce and in-store did not survive. This is the next wave."**

- Nicolas Darveau-Garneau (BMath '92)

coach the AI, while testing new strategies to improve the customer experience and increase revenue. In the end, the change will be good for business, good for customers and good for workers.

Darveau-Garneau believes this change will start with thoughtful leadership: "Every single executive at every company should take a pause right now. What parts of your business are about to be massively disrupted by AI to make things better? What is it that your customers are going to love? What can you do that's very different? Be open-minded." ♥

**TAP INTO EMERGING TALENT**

**Hire a Waterloo co-op student**

Then, Mark was an engineering co-op student at R.J. Burnside & Associates Limited. Now, he hires co-op students to work on community-driven development projects for the company.

Finding his own passion while on co-op, Mark understands the low risk and high-reward of hiring co-op students.

Hiring students (like Mark) can have a lasting impact at your organization.

**MARK KABBES**  
Co-op alum, B.A.Sc '13

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UNIVERSITY OF WATERLOO

FP23/45

# LiftOff takes flight to support Black entrepreneurs in Waterloo region

Dr. Trevor Charles  
creates an incubator  
and accelerator  
program for Black  
early-stage and growth  
entrepreneurs

By Claire Francis (BA '99)

Dr. Trevor Charles is no stranger to entrepreneurship.

Charles co-founded Metagenom Bio Life Science Inc. and is the executive director of LiftOff by Caribbean Canadian Association of Waterloo Region (CCAWR), the region's first and only Black-led incubator and accelerator program for Black early-stage and growth entrepreneurs. It officially launched in January 2022.

LiftOff was made possible by Government of Canada funding through the Federal Economic Development Agency for Southern Ontario (FedDev Ontario). The almost \$3-million contribution from the Black Entrepreneurship Program (BEP) Ecosystem Fund is supporting the CCAWR in partnership with the University of Waterloo, Conestoga College, Wilfrid Laurier University and the Waterloo Region Small Business Centre.

Charles' team oversees a diverse group of businesses across various industries. Since its inception, it has welcomed more than 70 companies through six cohorts, spanning sectors like health care, food services, retail, technology and transportation.



Referencing the local entrepreneurial ecosystem, Charles noted that the University of Waterloo's IP policy embraces innovators: "Most universities take an ownership stake in any intellectual property that comes out of research or activities. Yet at Waterloo, the default is that everything belongs to the person who invented it. This practice provides much more flexibility for somebody who wants to build a business based on the creator-owned IP rights policy they've developed."

In his experience working with LiftOff, Charles highlighted his pride in its community network and the recent move to a new collaborative space in Kitchener's SDG Idea Factory.

"We're forming a network with a purpose," he said. "At the core, the purpose is to help Black entrepreneurs build their businesses. But along with that, we've become embedded within Waterloo region's entrepreneurship network."

And what a network it is. In addition to Velocity, Charles explained, "The University of Waterloo's robust entrepreneurship ecosystem includes GreenHouse and the Grebel Peace Incubator. Overall, it is the best in Canada. We're still pretty small on an international scale, but we're trying to have as much impact as possible to increase the area's diversity, representation and participation. Entrepreneurship includes all types of businesses, so we need to be as inclusive as possible."

Charles added that LiftOff is looking beyond the Waterloo region and is interested in exploring opportunities in Guelph.

LiftOff's growing community of Black entrepreneurs welcomes the opportunity to contribute to the greater entrepreneurial landscape in the area. An example of this idea in action is the University's summer camps for kids, including the STEMpowered camp for Black youth run through Engineering Outreach. Charles said LiftOff quickly connected the University to local Ethiopian and Nigerian community organizations.

"The University of Waterloo wanted to get in touch with some community organizations they could work with," Charles said. "It would have been difficult for the University to find them without access to the network we can provide." The network activation illustrates the value of empowering people from diverse perspectives to contribute to their environment.

Beyond organizational partnerships, LiftOff encourages networking within the local community. It hosts events known as LiftOff C.H.A.T.S every couple of months and others related to its startups. Their potential impact is reflected in the greater entrepreneurial community. At this year's Velocity \$5K pitch competition, "In the final round, of the eight finalists, three of the pitches were given by Black women. So that's really quite something," Charles said.

"LiftOff is bound to be influential because it's not the only organization funded by the federal government. There are programs for Black entrepreneurs across Canada. This reach allows us to participate in conversations that are not just limited to our region and have an impact internationally. ♥

**"In the final round, of the eight finalists, three of the pitches were given by Black women. So that's really quite something."**

- Dr. Trevor Charles



# A RADICAL RESPONSE TO THE HOUSING CRISIS



# Waterloo PhD student and entrepreneur Sean Campbell is creating a new model for affordable housing

By Jon Parsons



Sean Campbell (MES '16, PhD in progress) is best described as restless in his work to create a more liveable community for people in Waterloo region. He has devoted his studies, teaching, professional career and his heart and soul to making positive change.

“I’m a lifelong Waterloo region resident,” Campbell said. “It’s a great place to live and it’s been exciting to see all the changes happening in our community, welcoming more folks to town and seeing our region grow.”

But as Campbell points out, even with so much growth and change, more people are struggling to make ends meet.

“It’s not working right for everybody,” Campbell continued. “What we’re seeing in our community is a rapid increase in the cost to rent or own a home. And there’s a real lack of housing that’s affordable for someone who’s working a minimum wage to living-wage job. Everyday working people are increasingly being priced out.”

## A passion for change

Campbell’s solution to the housing crunch? It’s a social enterprise called Union Co-operative, which is working to buy residential and commercial properties in Waterloo region for permanent rental affordability through community ownership. The initiative has a lot of moving pieces and partnerships, and it’s also the centrepiece of Campbell’s current PhD research with the School of Environment, Enterprise and Development (SEED).

“We think Union Co-operative is the first of its kind in Canada, using a co-operative to raise funds from community members, charitable foundations and institutional partners to address the affordable housing crisis,” Campbell said. “The way it works is that community members – folks like you and I who care about affordability and local ownership – can become members of the co-operative and invest. That’s how we form the down payment to purchase our properties.”

Union Co-operative is hosted as a startup out of the Kindred Credit Union Centre for Peace Advancement at Conrad Grebel University College, an affiliated institution of the University of Waterloo. The project is supported by governments,



# “THERE’S A REAL LACK OF HOUSING THAT’S AFFORDABLE”

- Sean Campbell (MES '16, PhD in progress)

local businesses, philanthropists and by everyday people living in Waterloo region.

Along with investing in Union Co-operative, those involved also get a say in the way the organization functions. In this sense, a co-operative is something of a hybrid of a not-for-profit and a shareholder company, with democratic control. Union Co-operative currently has more than 220 members and continues to grow as people look to have a positive impact in their community and support their neighbours.

Along with people who may invest in the co-operative, tenants who rent the properties can also be members. They can run for the board and participate in decisions that impact the home they live in.

Union Co-operative purchased its first property for \$16.5 million in October 2022, a multi-level apartment complex with 58 two-bedroom units.

“It’s on Lancaster Street, right at the border of Kitchener and Waterloo,” Campbell said. “It’s a great example of what is sometimes called naturally occurring affordable housing. It wasn’t designed to be affordable housing, but it’s an older property, built in the 1970s. And rather than granite top and stainless steel, it has long-term tenants and low rents.”

“These are the types of properties that are increasingly targeted by big profit-maximizing investors, because they can quickly slap on a fresh coat of paint and increase the rents.”

## **Business for social good**

Social enterprises like Union Co-operative are part of a wave of entrepreneurship setting out to address the triple-bottom line of people, planet and profit. Whereas many traditional companies are fundamentally responsible only to their shareholders and to generating profit, social enterprises see factors of social purpose, sustainability, equity and inclusion as equally important metrics of success.

As for what’s next, Campbell said Union Co-operative is looking to both expand and to serve as a model for how social enterprise can address important societal issues. Campbell and the team are adding more apartment units to their property on Lancaster Street and are hoping to support other communities in Ontario to create their own versions of Union Co-operative.

“For us, we’re happy and proud that this was our first property, and that we’re able to maintain these existing low rents and also be more intentional with how we’re recruiting tenants as well,” Campbell said.

“Anyone who lives and works or has a connection to Waterloo region, including a former student of the University of Waterloo, is eligible to become a member of Union Co-operative. We invite everyone to get involved to help make decisions about how our community grows so it works for all.”

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# HOW UNIVERSITIES GROW ENTREPRENEURS

## **Opinion: Universities are drivers of entrepreneur-led economic growth**

By Dr. Karim S. Karim (BASc '99, PhD '03), associate  
vice-president of Commercialization and Entrepreneurship



The growth of the Canadian economy depends on the success of its entrepreneurs. But the country's current innovation and productivity gap risks stymying its entrepreneurial ambitions. Government efforts to address this gap typically focus on research and development within existing private companies – and leave post-secondary institutions out in the cold.

Yet these post-secondary institutions play a crucial role in fostering innovation that businesses often can't afford. A shift in thinking is required based on strong evidence that many universities are actively creating and supporting Canada's new entrepreneurs.

### **Super-charged startups**

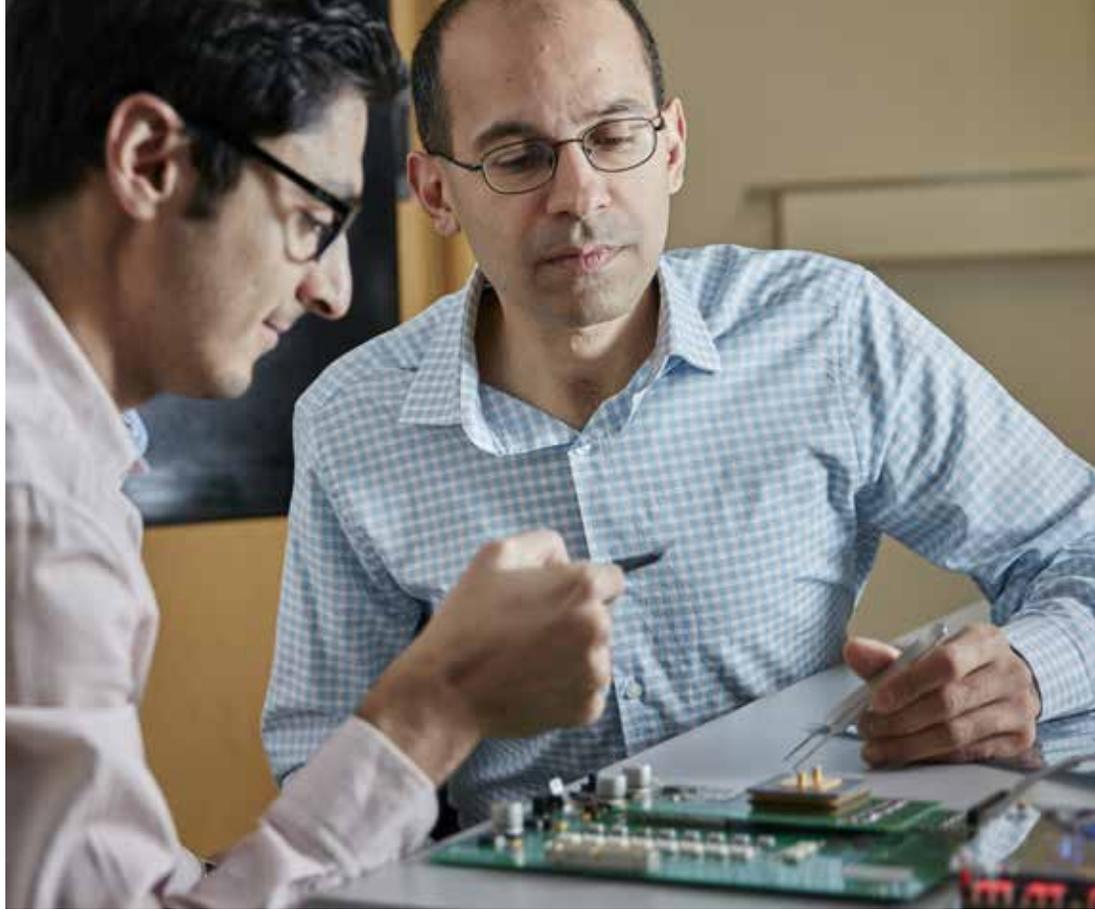
Universities like Waterloo train large volumes of highly entrepreneurial students who, thanks to their extensive co-op education experience, are motivated to bring innovations to market. They often achieve this faster than existing companies because, unlike most established enterprises, students aren't constrained by a particular business model.

With the right support, such as the Velocity Incubator program, these students become agents of change. Many have established successful startups in Canada, with recent examples including big names like ApplyBoard and Faire as well as those on the rise like Avidbots and Vena Medical.

Waterloo's entrepreneurial energy is fuelled by the institution's creator-owned intellectual property rights policy, which grants full ownership to the inventor. This policy has given rise to a university culture that has become the engine for driving commercialization and the success of student-led and research-based innovation.

### **Deep tech disruption**

Deep tech startups disrupt the status quo with significant scientific advances and engineering innovation. Good examples include digital cameras and online search engines, which have forever altered the likes of Kodak and the Yellow Pages. What might come as a surprise is that post-secondary institutions in Canada, rather than businesses, generate many of the unique research and development-based deep tech discoveries. This differs to the U.S. primarily because Canada is not home to technology giants such as Apple, Google, Microsoft, IBM and Intel.



**“An integrative approach that acknowledges universities as active enablers of entrepreneurial success is key.”**

- Dr. Karim S. Karim (BASc '99, PhD '03)

To commercialize deep tech requires capital and specialized technical labour. But most small or medium-sized Canadian companies don't have the will or ability to allocate the necessary resources. Commercializing deep tech through university startups is a great – and very viable – alternative approach. But it needs government and industry support to succeed.

Not only do these startups engage the university inventor who is the prime repository of deep technical knowledge, they also benefit from a supply of capable graduate students with the requisite deep tech knowledge. What's more, these students often take up leadership positions within the startups instead of heading to the U.S. for what can appear to be more lucrative opportunities. In other words, talent stays here.

#### **Social impact success**

The current cohort of entrepreneurs is quite different from past generations. Many of today's young people are motivated by the social mission and desire to deliver real change for an improved world. Their business



ambitions are driven more by positive human impact than financial metrics.

And who can blame them? Despite decades of economic growth, challenges such as climate change, sustainable health care, economic inequality and food insecurity continue to put humanity's future at risk. Traditional business with its profit-making priorities has failed to align economic growth and social impact because the financial returns are modest and the time to returns are lengthy.

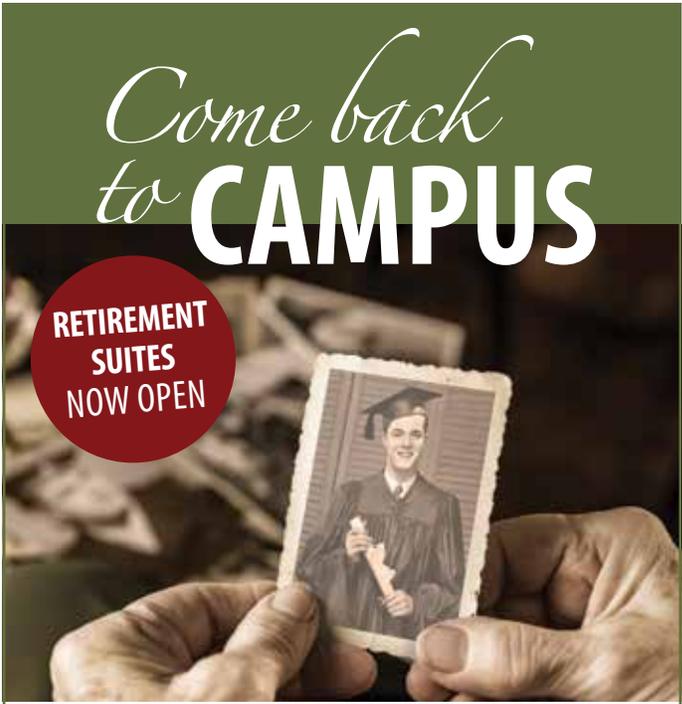
Sustainable social enterprises founded on university campuses like Waterloo can and do take on these societal challenges with financial success. They attract qualified employees who are motivated by the social mission, and they find capital to grow from a new generation of social impact investors and programs that value social impact alongside financial returns.

**Integrate, innovate, improve**

To achieve a thriving, entrepreneurially rich economy, the Canadian government needs to invite universities to the table. Research, innovation and commercialization are part of a continuum; they are not mutually exclusive. If we constrain one part of the pipeline in favour of another, the whole ecosystem – and Canadian society – suffers.

An integrative approach that acknowledges universities as active enablers of entrepreneurial success is key. With greater support from programs such as the Canadian Innovation Corporation (CIC), universities can advance the commercial readiness of new technologies for startup development and private sector use.

The government and the CIC have a golden opportunity to engage with experts at universities and incubators who have proven track records of commercializing specialized technologies. A co-ordinated and integrated approach is crucial. It will help close the productivity gap and improve Canada's socioeconomic prospects for all. ♥



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**“One of the reasons I loved going to Microsoft is everybody there had the entrepreneurial attitude that of course anything’s possible. That’s not true at a lot of places but it’s true at Microsoft and Waterloo.”**

- Chris Pratley (BSc '91)

# **AN OUTLOOK TO CHANGE THE WORLD**

# Microsoft's partnerships and talent pipeline help create world-changing products and services

By Nancy Harper

As one of the largest tech companies in the world, Microsoft employs more than 500 University of Waterloo alumni.

Chris Pratley (BASC '91), a 28-year Microsoft veteran, describes the company as having “a rare combination of enough money and talent to change the world,” combined with a respect for ‘intrapreneurship.’

A talent pipeline between the University of Waterloo and Microsoft has endured for 35-plus years, with more than 2,600 co-op students hired since 1987.

The quality of the candidate pool makes it an exceptionally strong partnership, but it goes deeper than co-op. Microsoft also funds Waterloo research, scholarships and internships, and there's an alumni network for which Pratley is the public face.

“[For a Waterloo grad coming to Microsoft], what you make could be used by everyone in the world,” said Pratley, who is the corporate vice-president of Microsoft's Office Media Group and the co-founder of OneNote. “The chance to have an impact with world-changing products and services is thrilling!

“Our principles and commitment to world citizenship set Microsoft apart. We don't view ourselves as trying to extract revenue from customers and companies and countries. We approach everything as a mutual win-win.

“It sounds trite to say this, but Microsoft is a nice place to work. Our CEO [Satya Nadella] is seen as a rock star CEO and for good reason. He came into a company that was more focused on ‘How do we defeat the competition?’ and transformed it to be more thoughtful about our role in the world and how we treat the customer.”

Pratley, who accepted the University's Friend of the Faculty of Engineering award on behalf of Microsoft last year, is laser-focused on making the partnership even more impactful.

“The University of Waterloo is very well known at Microsoft,” he said. “Great students give the University a great reputation, which attracts more great students. When we go to hire, they're a cut above.”

In his own student days at Waterloo, Pratley bounced around between a program or

two before finding his passion in Systems Design Engineering, where the opportunity to create things people could use to be more successful proved irresistible.

After a stint working in project management in Japan, and then in the design of tools and software, he was encouraged by another Waterloo grad to pursue a job at Microsoft.

Turns out that being able to relate to people, being able to think like an entrepreneur and having a solid grounding in tech was a magic combination for Pratley, who's known these days as “the guy who does new things in the company.”

“If you're in an environment where everybody around you believes that things can be changed, you raise your own expectations and you're not drawn away by cynicism,” he said. “That attitude that the world is your oyster helps a lot. One of the reasons I loved going to Microsoft is that everybody there had the entrepreneurial attitude that of course anything's possible. That's not true at a lot of places but it's true at Microsoft and Waterloo.”

→ Waterloo collaborates with industry partners like Microsoft to offer co-op students work term experiences that set them up for future success. Learn about WE Accelerate:

[uwaterloo.ca/co-operative-education/waterloo-experience-accelerate-home](https://uwaterloo.ca/co-operative-education/waterloo-experience-accelerate-home)

# CLASS NOTES

## 1960s

Harbour Publishing released *So You Girls Remember That*, a book compiled by **Jenny Nelson (BA '65)**. The book is an oral history of Haida Elder Naanii Nora.

**Carol Gregory (BMath '68)** and her husband Raymond published a two-volume book, *Numismatic History of Canada and United States*.

## 1970s

**Nirmal Sinha (PhD '71)** released a new book, *Engineering Physics of High-Temperature Materials: Metals, Ice, Rocks and Ceramics*, co-authored with his daughter Shoma Sinha and published by Wiley.

**Dr. Francis Zwiers (BMath '74)** has once again been named a Clarivate Highly Cited Researcher. Clarivate's Web of Science recognizes citations in scientific publications; the annual Highly Cited Researchers are the top one per cent in their respective fields.

**Marsha Faubert (BA '75)** released her non-fiction book *Wanda's War*, published by Goose Lane Editions.

Bowtie appointed **James Lau (BMath '76, MMath '77)** to its board of directors as an independent non-executive director.

**Timothy Paleczny (BA '77, MA '85)** released two books over the last year: *The Tale of Indigo* (poetry book) and *A Life on Water First* (novel). He was also featured as Opal Magazine's May 2023 Author of the Month.

## 1980s

**Kevin M. Duguay (BES '81)** was elected to Peterborough City Council (Ward 1).

After 40 years in K-12 education, **Ted Fransen (BSc '81)** retired as Superintendent/CEO in Winnipeg's Pembina Trails School Division. His retirement was short-lived, as he answered the call to lead the building and launch of Manitoba's provincial online high school, opening in September 2023.

DBS Group Holdings appointed **David Ho (BASC '83, MASc '89)** to the boards of DBS Group Holdings and DBS Bank.

Saint Sarkis Armenian Church, designed by **David Hotson (BES '83)**, won American Architects' Building of the Year Award.

Easy Math for Kids, led by chief executive officer **Annie Hardock (BMath '85)**, was selected for 2022 Blueprint: Backing BIPOC Businesses, a mentorship and grant program from American Express.

**Sue Campbell (BA '86)** published her book *Spirit Refresh: Reflections to Comfort, Challenge and Deepen Your Relationship with God Throughout the Year*. The book is endorsed by a variety of denominational church leaders.

**Lynn Lange (BMath '86)** was named one of Canada's Top Women Wealth Advisors in 2023.

At the age of 93, **W. Paul Loofs (BES '86, BSc '89)** released the third and last edition of his book *In His Hands: True Stories of Wondrous Events in an Unusual Life*.

Tamarack Valley appointed **Caralyn Bennett (BASC '87)** to its board of directors.

Royal Bank of Canada's **Dave McKay (BMath '87, DMath '18)** was named Canada's Outstanding CEO of the Year.

Sun Life appointed **Joe Natale (BASC '87)** to its board of directors.

**Ron Wortel (BASC '87)** is now a senior mining analyst at Couloir Capital.

Thunderbird Entertainment welcomed **Lisa Coulman (BA '88)** to its board of directors.

**Jean Andrey (PhD '89)**, dean emeritus of Waterloo's Faculty of Environment, was recognized with a Clean50 Lifetime Achievement Award.

## 1990s

**Carol Phillips (BES '90, BArch '92)**, a partner at Moriyma and Teshima Architects, was named to MacLean's Power List 2023, a ranking of 100 Canadians shaping the country.

Ecobee, co-founded by **Mark Malchiondo (BMath '91)**, was named Best Home Tech Innovator at the Canadian Business Innovation Awards.

Coherent appointed **Beck Mason (BASC '91)** as executive vice-president, telecommunications.

*The Sea Beast*, a film directed by **Christopher Williams (BA '91)**, was nominated for Best Animated Feature at the 2023 Academy Awards.

Harmonic appointed **Walter Jankovic (BA '91, MAcc '91)** as its chief financial officer.

**Antonia Cetin (BA '92)** launched decodehabile.com, a publishing company with instructional resources and reading materials to help French language learners learn how to decode in French.

**Ruth Latta (BA '93)** published her sixth Canadian historical novel, *A Striking Woman*.

**Laura Barclay-Herod (BA '94)** was recognized as one of Canada's Top Women Wealth Advisors in 2023.



Doris Lewis pictured in 1960. Lewis joined the University of Waterloo in 1959 as the first University Librarian. She held the position until 1969.



Donald Brown drives his prized 1914 model T Ford in 1968. Brown worked in the University of Waterloo's Athletics Department and became a popular fixture at Warrior games.

Meliora Therapeutics appointed **Claudio Chuaqui (PhD '94)** as head of drug discovery.

**Martin Wainwright (BMath '94)** was named the new director of the Institute for Data, Systems and Society.

KnowBe4 hired **David Boschler (BAsc '96)** as its new vice-president of sales for Asia-Pacific.

**Martha Cook (BSc '96)** was appointed a Judge of the Superior Court of Ontario in London.

**Tomi Poutanen (BAsc '96)**, co-founder and chief executive officer of Signal 1, was named to MacLean's Power List 2023, a ranking of 100 Canadians shaping the country.

Corentec appointed **Michael Son (BA '96)** as executive vice-president.

Sigyn Therapeutics appointed **Annette Marleau (BSc '97)** as chief scientific officer.

**Dr. Erin Tjam (PhD '97)** released her book *Skin Sobering*, co-written with Dr. Ryuichi Utsugi.

ISARA appointed **Atsushi Yamada (PhD '97)** as its new CEO.

**Joelle Pineau (BAsc '98)**, the co-managing director, AI research at Meta, was named to MacLean's Power List 2023, a ranking of 100 Canadians shaping the country.

**Tracy Primeau (BA '98)** received a Women's Executive Network 2023 Canadian Equity, Diversity and Inclusion Award, in the Corporate Board Directors category.

**Rahim Suleman (BA '98, MAcc '98)** was named the new chief executive officer of Neo Performance Materials Inc.

**Jennifer Clipsham (BES '99)**, executive director of the Anthesis Group, was the Clean16 winner in the Consultants and Enablers category.

**Sean Monkman (MAsc '99)** was granted honorary membership at the ACI Concrete Convention, the institution's highest honour.

## 2000s

**Jeremy Auger (BMath '01)**, chief strategy officer at Desire2Learn, was named to the Globe and Mail's list of Canada's Best Executives 2023.

Mako Mining appointed **Brian Szeto (BA '02, MA '05)** as an independent director.

**Ron Saporta (BAsc '02, MEng '05)**, chief operating officer at the University of Toronto, was the Clean16 winner in the Building: Design, Development and Management category.

**Charlotte Clarke (BA '03, MA '08)** and **Michael Hancock (PhD '16)** were married on April 22, 2023 at the Princess Twin Cinemas in Waterloo, Ontario.

**Dinah Davis (MMath '04)** won the Oktoberfest Woman of the Year Award, STEM.

**Dr. Robert McDermid (BA '04, MA '06)**, a senior lecturer of sports business at Stephen F. Austin State University, was recognized with a Teaching Excellence Award.

**Leanne Davidson (BA '05)** was named the new chief executive officer of West Perth Village.

**Alice Hanov (BA '06)** released the second book in her Young Adult series *The Head, The Heart and The Heir*. She plans to release the third book in December 2023.

Geosyntec appointed **Paula Hutchison (BAsc '06)** one of 23 new senior principals.

Geosyntec appointed **Ali Nasserri Moghaddam (PhD '06)** one of 23 new senior principals.

The Spiders and the Bees, a solo survey exhibition by **Francois Saint Pierre (MFA '06)**, was presented at Palazzo Borghese in Rome. Versions of this exhibition were previously presented at Koffler Gallery in Toronto and at the 2022 Venice Biennale.

**Dr. Aaron Barrie (OD, '07)** opened the Monashee Optometry clinic in Vernon, British Columbia.



Prof. M.M. Young (left) with Derek Whitworth, PhD candidate from England, pictured in 1968 with engineering equipment used in research about the economical production of foods from petroleum.

**Briar Beers (BASC '07)**, vice-president of Cutting Edge Consulting, was recognized in On-Site's 40 Under 40 in Canadian Construction.

**Ibraheem Khan (MASC '07, PhD '11)**, chief executive officer of Extract Energy, was the Clean16 winner in the Research and Development category.

**Chris Biederman (BASC '08)**, chief technology officer of Li-Cycle Holdings, was named to the Globe and Mail's list of Canada's Best Executives 2023.

**Majid Mirza (BA '08, MBET '09, PhD in progress)** was named to Report on Business's list of Changemakers, 50 emerging leaders reinventing how Canada does business.

Manulife appointed **Thaddeus Yu (BMath '08)** as chief strategy officer for its Hong Kong and Macau operations.

**Grahame Booker (PhD '09)** released his new book *Coercion, Authority and Democracy: Toward an Apolitical Order*, published by Springer.

**Jeff Robertson (BASC '09)**, director of environment and sustainability at Bimbo Canada, was recognized as a Clean50 Emerging Leader.

## 2010s

**Alexandra Horwood (BA '10)** was named one of Canada's Top Women Wealth Advisors in 2023.

Agam Capital promoted **Gaurav Rastogi (BMath '10)** to partner.

**Faizan Sheikh (BASC '11)** and **Pablo Molina (BASC '11)**, the co-founders of Avidbots, were named to MacLean's Power List 2023, a ranking of 100 Canadians shaping the country.

**Rosemary Horwood (BA '12)** was named one of Canada's Top Women Wealth Advisors in 2023.

AXA XL appointed **Patrick Lee (BAFM '12, MAcc '12)** as chief financial officer for Canada.

WONDRINN, founded by **Zamir Janmohamed (BES '13)**, was selected for 2022 Blueprint: Backing BIPOC Businesses, a mentorship and grant program from American Express.

**Rachel Bartholomew (MBET '14)** won the Oktoberfest Woman of the Year Award, Entrepreneur Under 40.

**Truzaar Dordi (BA '14, MES '16, PhD in progress)**, vice-president of the Canadian Society of Ecological Economics, was recognized as a Clean50 Emerging Leader.

**Marc Lafleur (BSc '14)** released his first book, *True Founder: What No One Else Has the Guts to Teach You About Starting Your Own Business*.

Scottie Resources appointed **Ellie Owens (BSc '14)** to its board of directors.

**Michelle Yeap (BAFM '14, MAcc '14)**, senior manager, business analytics at BMO, was named to the Globe and Mail's list of Canada's Best Executives 2023.

JG Wentworth appointed **Jason Yin (BCS '14)** as its new vice-president of front-end engineering.

**Ahmad Basalah (PhD '15)** was named the 2023 ambassador of innovation in the health care sector in the Kingdom of Saudi Arabia.

Cadence Health Analysis, co-founded by **Stefan Gertz (BASC '15)**, was one of seven national finalists for the 2023 Arthritis Ideator Awards.

Dyster, co-founded by **Nabeel Allana (BASC '16)**, released a product that helps scientists and engineers run code in collaborative, interactive environments with a natural language interface powered by Generative AI.

**Devin Fitzpatrick (BES '18)** was named one of 100 women selected to participate in Homeward Bound, a leadership and visibility program created to increase women's influence on global environmental policy.

## 2020s

**Zain Bandali (BES '20)** released the children's book *Mehndi Boy*.

*But Are You Really Sorry: The poetry journal to bring colour & healing back into your life* written by **Aniqah Beharry (BMath '20)** was named TCK Publishing's 2022 Reader's Choice Grand Prize winner.

**Navya Vikraman Nair (MES '21)** was a top-25 finalist in the Social Sciences and Humanities Research Council of Canada's (SSHRC) 2023 Storytellers Challenge.

**Tyrell Ford (BA '22)** signed a contract with the National Football League's Green Bay Packers. Ford previously played for Waterloo's football team and the Winnipeg Blue Bombers.

# BEYOND CAMPUS

## REMEMBER WHEN

In June, alumni from near and far flocked to campus for Alumni Weekend. Attendees celebrated milestone anniversaries, reminisced with old friends and saw how campus has changed.



Roll over Beethoven! A special presentation at Alumni Weekend, the Waterloo community gathered in Federation Hall for a screening of the documentary *Rock This Town*. Produced by Betty Anne Keller (BA '69), the film follows the rich and surprising history of the local live music scene.



## WATERLOO, WORLDWIDE

Thanks to our volunteer-led chapters, Waterloo alumni can attend regular events all around the world.

Alumni in New York City gathered in central park for refreshments and outdoor activities in June.



Across the pond, alumni in London, England enjoyed special event with University President and Vice-Chancellor Vivek Goel in May.



On a sunny Saturday in June, the Vancouver Chapter hosted a hike in Deep Cove.

waterlooworldwide.com  
upcoming events



# A BOLD LEGACY

## supports student entrepreneurs

The Joanna Duong Chang Memorial Award honours an exceptional alum while supporting students who share her ambitious spirit

By Megan Vander Woude (BKI '12, MA '13)

“She was gutsy. She believed what she believed in, and she was always willing to try what she believed would be the best outcome for the situation.”

When Stanley Chang (BMath '00) created a foundation in memory of his late wife Joanna (“Jo”) Duong Chang (BMath '04), he hoped to continue that spirit.

“Jo was 38 when she passed away,” he explained. “Anyone passing away at that age — it’s a disservice to the world. I kept thinking about all the different ways she would have made a difference, if she was still here. Even though Jo isn’t physically here anymore, we can carry on her spirit and her legacy.”

Today, the Joanna Duong Chang Memorial Foundation supports several initiatives that reflect her passions, including a scholarship for entrepreneurial students.

Gutsy is just one way to describe Jo. She was also extremely ambitious and inventive, carving a unique career path as soon as she graduated from Waterloo. When she accepted her first job with the sales team at Xerox, she boldly negotiated a 100 per cent commission structure for her compensation. A few years later, as many of her friends prepared to buy homes, she saw an opportunity and got her real estate license to support her friends as they embarked in the next phase of their lives. Although they hadn’t started dating yet, Chang was her first client in a very successful real estate career.



*Joanna Duong Chang (BMath '04), Stanley Chang (BMath '00) and their children.*

When they did start dating, Jo had another idea. As a bridesmaid and guest at countless weddings, Jo was spending way too much money on single-use outfits and found it challenging to find clothing that suited her changing body type, size and personal style. If she was experiencing this, wouldn’t there be other women dealing with this too? So, she created Henkaa, an online store of Canadian-made convertible clothing. At first, Jo juggled running her new business with a full-time real estate career.

During this time, her entrepreneurial spirit overflowed from her own career and into others. “Despite being a mother, a wife, a business owner and part-time real estate agent, she also found time to mentor other young people trying to build their own business and brand,” Chang said. “There were quite a few nights where she would leave after dinner to meet someone who needed guidance on executing on their own business ideas. She always made the time for others.”

With the Joanna Duong Chang Memorial Award, her support of young female entrepreneurs continues. Rachel Butler (BCFM in progress), a current student with a small jewelry business and many volunteer roles within the student community, is one of the impressive recipients. For Butler, the award brought more than financial support.

“Jo is inspiring to me, both because she accomplished such amazing things and comes from a background and education similar to mine,” Butler said. “I think the path to entrepreneurship is hard because there is a lot of flexibility in it and no ‘one size fits all’ method to learn. But that is also the beauty in it, seeing where you can use your personal talents and vision to shape the way you run your business. It helps to know that I have someone in my corner.”

Chang is equally inspired by the award winners: “After meeting the first recipients, I knew we did the right thing. I just couldn’t believe how accomplished they were at their ages.”

He said Jo would be blown away. ♥

# In Memoriam



“  
Even though  
Joanna isn't  
physically  
here anymore,  
we can carry  
on her spirit  
and her  
nature.

- Stanley Chang  
(BMath '00)



*Joanna Duong Chang*  
(BMath '04)

- Marvin Argatoff (OD '78)  
Janet Babcock (BES '74)  
Jane Ballantyne (Ferguson)  
(BSc '71)  
Jack Bennett (BASC '73)  
David Bennett (BMath '74)  
Dianne Beveridge (BSc '82)  
David Bialo (BMath '73)  
Andrew Billings (BASC '89)  
Janet Boyd (BMath '68)  
Peter Cammaert (BPE '68)  
Carl Christensen (MASC '64)  
Jack Cottenie (BSc '67)  
Gary Craig (BASC '79)  
Susan Culliton (Hardman) (BA '93)  
Ranald Curry (BASC '64)  
Harriette Davies (BA '90)  
Paul Dirksen (BSc '63)  
Paul Dorney (BSc '72)  
Robert (Brett) Dunlop (BASC '73)  
Stephen Fagyas (BES '72, MA '76)  
Peter Fowlie (BSc '72)  
James (Mike) Garrah (BSc '80)  
Lilian Gobbi (PhD '97)  
John Hanley (BASC '00)  
David Hill (BSc '64)  
Orest Hryniuk (OD '58)  
Dennis Huss (MASC '92)  
Norman Hyxley (BASC '70)  
Kristine Jantzi-Shapiro  
(BA '90, MA '92)  
Gary Laevens (BASC '97)  
Ronald Lang (BA '68, MA '69, LLD '14)  
Raymond Legge (PhD '83)  
Victor Lei (BSc '18, PharmD '18)  
Doris Lemon (BIS '11)  
Bernhard Long (BASC '63)  
Edward Lopenon (BASC '71)  
Jay Lydiatt (MMath '72)  
Douglas MacPherson (BSc '66)  
Gordon Marasco (BASC '64)  
Karen Marischuk (BA '76)  
Nicholas Marischuk (BMath '76)  
David McAnerney (BASC '87)  
Anne McConnell (BA '94)  
James McConnell (BMath '69)  
Sheila McGraw (BA '87, BA '88)  
Marvin McDonald (BASC '70)  
Fred Meissner (BA '90)  
Bernard Meyerink (BASC '82)  
Michael Morris (BA '73)  
Daniel O'Brien (BASC '92)  
Paul O'Neil (BMath '93)  
Jan Overduin (MA '69)  
Robert Palmerton (BASC '77)  
Erik Panthel (BA '96)  
Jeffrey Parkinson (BASC '79)  
Robert Perry (BSc '86)  
Carol Pitt (BSc '82)  
James Pointing (BMath '80)  
Dylan Reany-Dubreuil (BES '22)  
Hugh Rogers (BA '70)  
James Rosien (BASC '76)  
Elizabeth Ruge (MA '74, PhD '89)  
Michael Schaeffer (BASC '71)  
William (Wayne) Schlote (BASC '74)  
Chris Schumilas (BSc '97)  
Barry Scott (BMath '71)  
Cindy Sharp (BA '03)  
Murray Shaw (BSc '66, PhD '71)  
Ken Seng Tan  
(BMath '92, MMath '94, PhD '98)  
James Tupman (BA '65)  
Alan Walker (BMath '75)  
Wendy Warnock (Osbourne) (BA '78)  
William Weichel (BPE '66)  
David Williams (BA '95)  
Alane Wilson (BA '81)  
Mary Wilson Sharkoff (BA '86)  
Ursula Wyman (Fischer) (MA '73)  
Hua-Hsuing (Ray) Yang (MASC '66)

# Navigating uncertainty with entrepreneurial insight

Bonnie Foley-Wong said she didn't know what she was doing as a first-time entrepreneur



“It wasn't easy by any means, but I can proudly say I built a community investing with leadership diversity in mind.”

- Bonnie Foley-Wong  
(BMath '97 MAcc '97)

Bonnie Foley-Wong (BMath '97, MAcc '97) is a finance and investment executive, entrepreneur and author. She currently focuses on sustainable and impact investment, helps leaders plan strategically for the future and turns sustainability strategies into results.

My parents are not entrepreneurs. They don't have university degrees and they couldn't have imagined what would become of their youngest daughter thanks to their sacrifice and investment in post-secondary education.

At times my dad was filled with worry and anxiety about an uncertain future and seemingly insurmountable problems that lay ahead, especially when I left lucrative jobs with large institutions for a more precarious pursuit as an entrepreneur.

In 2012, I founded Pique Ventures, a boutique consulting firm, and Pique Fund, an impact venture fund. I met investors who wanted to invest in impact startups but didn't have the time, resources or experience to form their own venture portfolios, and women who faced challenges in accessing capital. I sought to bridge this gap with Pique Fund. There are 42 individual investors in Pique Fund, 32 of which identify as women. We invested in eight women-founded technology ventures and have had two exits so far – enough to return the fund.

But the impact of Pique extends beyond that. At least a handful of Pique investors went on to invest in other startups, one investor started her own fund, and another now leads an institutional investment fund.

It wasn't easy by any means, but I can proudly say I built a community investing with leadership diversity in mind. I also gained lifelong business skills such as identifying needs and gaps in a market and meeting those needs while educating and serving others. Along this journey, I also authored my first book, *Integrated Investing*. I now apply the entrepreneurial skills I gained in a different context and scale. I joined a large institution to lead a team focused on sustainable investment.

I've reassured my dad that I now have the skills and experience to navigate uncertainty and that gathering information and taking informed risks is part of my job. I'm a relentless optimist and believe there is a solution for everything. I was an unexpected and somewhat reluctant entrepreneur but now that I've developed the skills, the world looks different. ♥

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