

OCTOBER 2020 / ISSUE 66

WATERLOO ENGINEERING ALUMNI LETTER

weal

ENGINEERING A NEW NORMAL

Faculty researchers and alumni share their COVID-19 research and expert opinions on life now and post-pandemic.



UNIVERSITY OF
WATERLOO



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OCTOBER 2020 / ISSUE 66

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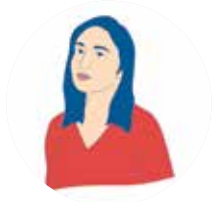
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FROM THE DEAN



HELPING ADVANCE A STRONGER, MORE RESILIENT WORLD

On July 1, I was thrilled to rejoin Waterloo Engineering, where I was a mechanical and mechatronics engineering faculty member for 10 years and associate dean of outreach between 2008 and 2017. It is good to be back home and part of this amazing institution once again.

I would like to thank my immediate predecessor, Rick Culham, who led the Faculty for six months, and to Pearl Sullivan, who served as dean for eight years until the end of 2019. I am very grateful to Pearl for establishing a clear vision for the next five years with the launch of Waterloo

Engineering's Strategic Plan 2020-2025 last fall.

The plan's priorities and goals provide a blueprint for ensuring there are enhanced opportunities for students, researchers and staff members to pursue their aspirations while also solidifying the Faculty's reputation as the dynamic hub of innovation and entrepreneurship for Canada and the world.

Highlighted in the plan is our commitment to diversity and equity throughout all programs, policies and processes, with emphasis on under-represented communities. This commitment will lead to exceptional outcomes for our Faculty in every way, including education and research.

This year has been one like no other with the COVID-19 pandemic upending our lives in ways we could never have imagined.

I am proud of our faculty members and staff for pivoting to online learning soon after the global crisis began. We continue to offer the best possible remote educational experience this fall.

Many of our researchers, students and alumni are addressing coronavirus-related challenges head-on.

From creating an antiviral coating for personal protective equipment and high-touch surfaces to developing a promising DNA-based vaccine to be delivered through a nasal spray, the innovative research coming out of our Faculty will help society emerge on the other side of the virus stronger and more resilient.

As you will read in this issue's cover story, Engineering A New Normal, seven researchers and alumni share their pandemic initiatives and opinions on how different buildings, education, work and everyday activities look now and may look in the future. Although there are a lot of uncertainties in the world at this time, our Faculty members and graduates all agree on one certainty – life will never return to 'normal' again.

I look forward to meeting you at an upcoming online alumni event and hopefully sometime soon at an actual face-to-face gathering.

Until then, stay safe and stay well.

Sincerely,

Mary Wells

MARY WELLS

Dean, Faculty of Engineering



FACULTY NEWS

Remembering four who made a difference

This past spring, Waterloo Engineering sadly lost four former faculty members who made significant contributions to our Faculty, the University and their respective fields of engineering.

Doug Wright, Park Reilly, Ralph Haas and Tom Brzustowski all leave lasting legacies and will be greatly missed. Below are just some highlights of their many accomplishments.

FOUNDING DEAN, THIRD WATERLOO PRESIDENT

Wright, the founding dean of Waterloo Engineering and the third president and vice-chancellor of the University of Waterloo, died in May at the age of 92.

In 1958, he left a teaching position at Queen's University to join the upstart University of Waterloo as the first chair of civil engineering. He soon became dean, overseeing the Faculty's growth into the largest undergraduate engineering school in Canada.

"He had a relentless curiosity compounded by a drive for relevance in university life and practice, along with a sense that in Canada we needed to change the university landscape," said Ken McLaughlin, a Waterloo historian and author. "He pushed, prodded and pulled us with him as he pursued academic excellence and social relevance."

RESPECTED SCHOLAR

Reilly, who joined the University in 1967, passed away May 2, just 12 days shy of turning 100.

The long-time chemical engineering professor was a respected scholar engaged in research and teaching on the application of statistics in engineering.

In 1986, he was the recipient of the University's Distinguished Teacher Award. The letters of support for the honour from his undergraduate, graduate and former students and faculty colleagues demonstrated that his appeal as a teacher went far beyond credibility and expertise.

One student wrote that Reilly's greatest asset in the classroom "was his willingness and desire to work with the students, rather than just present the information and leave it at that."

FATHER OF PAVEMENT ASSET MANAGEMENT

Haas, distinguished professor emeritus of civil and environmental engineering, died on June 19 at the age of 87.

A former chair of civil engineering whose pioneering concepts and technologies resulted in better-performing and less costly road networks, Haas was known throughout the engineering world as 'the father of pavement asset management.'

Among the dozens of academic and professional honours he received, Haas was a member of the Order of Canada, the Royal Society of Canada and the Engineering Institute of Canada, a fellow of the Canadian Academy of Engineering, and recipient of the Queen's Golden Jubilee and Diamond Jubilee medals.

FIRST UNIVERSITY PROVOST

Brzustowski, a long-time former mechanical engineering professor, department chair and associate dean at Waterloo Engineering, also died on June 19.

He is remembered for his many contributions to his profession, the University of Waterloo, the Province of Ontario and the Natural Sciences and Engineering Research Council.

Brzustowski held several senior leadership posts at the University, including service as its first provost, before leaving Waterloo in 1987 for a position as deputy minister of the Ministry of Colleges and Universities.

Earlier this year during the pandemic, according to his obituary, he and his wife of 56 years, Louise, "took to walking together on the empty UWaterloo campus every day ... Tom fending off the campus geese with a walking stick, a gentleman to the end."

Detecting infection in under 30 minutes

Carolyn Ren, a professor of mechanical and mechatronics engineering, received \$265,000 in federal backing to develop a palm-sized device capable of detecting COVID-19 infection within 30 minutes.

Ren will lead a one-year project with a team that includes professors Emmanuel Ho of the School of Pharmacy at Waterloo and Keith Fowke of the University of Manitoba.

The research builds on Ren's work on microfluidics and lab-on-a-chip technology to develop a portable, point-of-care instrument to rapidly diagnose COVID-19.

The device is expected to greatly expand testing and control spread of the virus through use at drive-through sites and other community locations.

The project is one of 139 across the country announced last spring for federal funding through the Canadian Institutes of Health Research.

Student project helping teach children in Pakistan

Teachers in Pakistan have an extensive online resource to draw on during the coronavirus pandemic thanks to hundreds of graduate students at Waterloo Engineering.

The students spent more than three years building an online library of over 15,000 videos, assignments and exercises that follow the national curriculum by grade and subject.

With children forced to stay home because of the COVID-19 crisis, teachers are now using the library to prepare lessons they can send to their students by email.

“Technology allows us, even being here in Canada, to help the disadvantaged and improve the world more than ever,” said Peter Carr, a management sciences lecturer who supervises the library project. “We’re using that technology to create a motivating, rewarding learning experience for our students, while at the same time doing some real good in another part of the world.”

Building a safer football helmet

A mechanical and mechatronics professor is part of a team that has been awarded US \$412,000 by the National Football League (NFL) to develop a better, safer helmet.

Duane Cronin, who graduated with all three of his degrees from the Faculty, will contribute sophisticated impact testing and advanced computer modelling to optimize helmet performance and reduce the risk of head injuries.

The goal is to develop a new helmet for evaluation using the latest test protocols by July 2021.

The project is part of the HeadTechHealth Helmet Challenge, an initiative by the NFL to encourage teams of manufacturers, academics and other experts to develop safer helmets using advanced technologies.

Cronin, a Canada Research Chair in Trauma Biomechanics and Injury Prevention, previously worked with the NFL for several years to develop a leading virtual helmet model that is publicly available for use by researchers and manufacturers in the field.

Now, he and five members of his lab – research associates Michael Bustamante and Jeffrey Barker, postdoctoral fellow Donata Gierczycka, and graduate students Miguel Corrales and David Bruneau – will be utilizing the computer model themselves.

“We get to use our own design tool and other next-generation technology to see this through to the development of a real helmet,” Cronin said. “It’s not just an academic project. We’ve got an opportunity to help make the best helmet out there.”



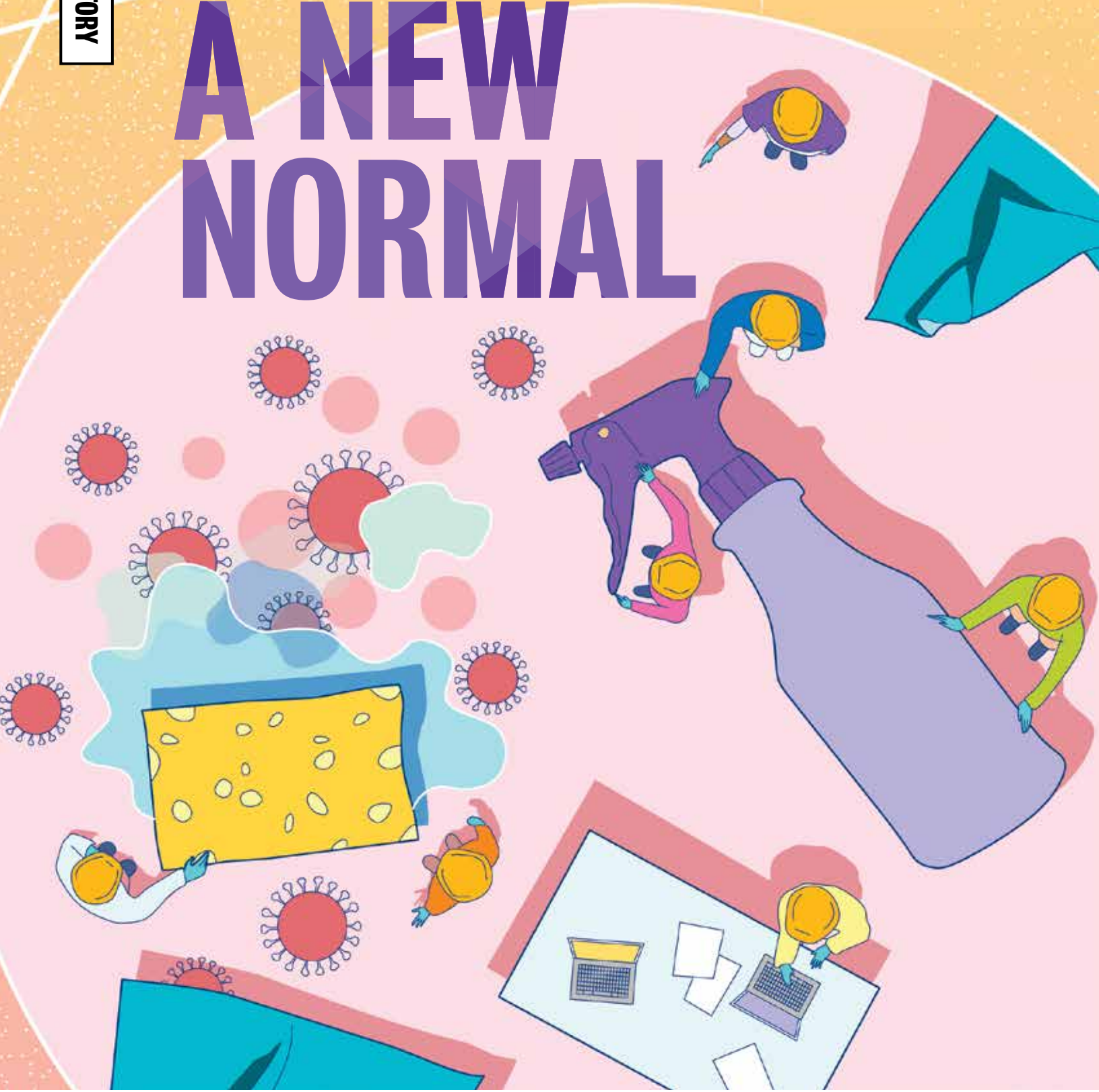
TOP PHOTO: Doug Wright, founding dean of Waterloo Engineering and the third president of the University of Waterloo, spoke at the Engineering 7 ground-breaking event in 2015. He died this past spring.

BOTTOM LEFT PHOTO: Engineering researchers are using a virtual model as a design tool to help make safer helmets for the NFL.

BOTTOM RIGHT PHOTO: Professor Carolyn Ren is developing a palm-sized device capable of detecting COVID-19 infection within 30 minutes.

FEATURED STORY

ENGINEERING A NEW NORMAL



WITH OUR WORLD TURNED UPSIDE DOWN BY A DEADLY HEALTH CRISIS, WATERLOO ENGINEERING EXPERTS ARE WORKING TO MAKE A DIFFERENCE.

It is no exaggeration to say that the silent, unseen coronavirus has turned our lives, institutions and systems upside down and inside out.

Assessing the social, economic and psychological fallout of changes that are both big – millions of people suddenly working from home – and small – elbow bumps instead of time-tested handshakes – will no doubt keep academics busy for years.

For engineers dedicated to the development and application of technology, plus all of its related fields of endeavour, that process of examination, analysis and learning is already well under way.

To help understand and appreciate their work, seven alumni and faculty members of Waterloo Engineering – from a tech entrepreneur who teaches yoga, to a researcher with plans to make buildings immune – were asked about their pandemic insights and initiatives.

Here is a look at how they are both contributing in the here and now, and paying heed to lasting lessons that could help make life after COVID-19 better.

DEVELOPING A VACCINE

After 15 years as a researcher, **MARC AUCOIN'S** work has never been more urgent or more exciting than it is right now.

Aucoin, a Waterloo Engineering alumnus and chemical engineering professor, is a key member of a team working to develop a DNA-based vaccine for COVID-19 to be delivered via a nasal spray.

“There is a clear feeling we can make a real difference and my entire team has doubled and tripled their efforts since this started,” he says. “It’s all out of a pure desire to help.”

Aucoin (BASc '00, MASc '03, chemical engineering) and four core members in his lab are working on the project with Waterloo pharmacy professors Roderick Slavcev and Emmanuel Ho.

Their approach – one of only a handful of similar efforts worldwide – involves engineering synthetic DNA.

That DNA would contain instructions for cells within the body to make particles that resemble SARS-CoV-2, the virus that causes COVID-19, but are not harmful.

Once present, the virus-like particles would trigger the body’s immune system to produce antibodies. Particles produced in cultured cells in the lab would also be administered to boost immunity.

“The idea is that if we get the human body to make its own particles and proteins to serve as the vaccine, you achieve a better, stronger overall immune response,” Aucoin says.

With over 100 research teams around the world working on vaccines, even promising approaches face long odds to make it into mass production and ultimately protect people.

Still, researchers logging long days and seven-day weeks to put a Waterloo vaccine in the mix are confident their work will have a lasting impact one way or another.

“Even if we don’t hit it out of the park, we’re learning a lot and this work is still very relevant,” Aucoin says. “It positions us to be prepared to respond to situations like this in the future.”

TAPPING INTO CREATIVITY

That old adage about adversity creating strength is holding true for a lot of entrepreneurs who have been put to a severe test during the pandemic.

JANET BOEKHORST, a professor at the Conrad School of Entrepreneurship and Business at Waterloo Engineering, fully expected to find a lot of people struggling when she surveyed entrepreneurs, self-employed workers, and small and medium-sized business owners in Canada to gauge how they were faring.



“

Spaces play an extremely important role in terms of framing different activities and establishing boundaries.”

ANNE BORDELEAU

Director of the Waterloo School of Architecture

That was certainly the case, with about half of survey respondents expressing concerns about their ability to keep their businesses afloat.

Boekhorst was surprised and encouraged, however, by reports from many people who have adapted by making changes that could actually strengthen their businesses over the long haul.

“I think it’s the nature of entrepreneurship,” says Boekhorst, who is handling the Canadian portion of an ambitious, 28-country study led by researchers at King’s College London in the United Kingdom. “Entrepreneurs tend to be good at rolling with the punches. They’re problem-solvers by nature and that is really boding well for a lot of them.”

Examples include brick-and-mortar retailers opening online shops, adding parcel delivery and consequently expanding their customer bases, and restaurants pivoting to take-out when they were forced to shut down, then retaining it as a permanent new revenue stream.

Boekhorst credits the creativity and resilience of entrepreneurs for such successes, as well as the willingness of consumers to accept new ways of doing business during challenging times.

“There has been a lot of exploration and that has really opened up some windows of opportunity,” she says. “It’s great to see people using their skill sets and energy to figure out ways to keep moving forward.”

ESTABLISHING WORK BOUNDARIES

Forced office closures during the pandemic have demonstrated that many people can work productively from home using online tools and platforms.

But for **ANNE BORDELEAU**, director of the Waterloo School of Architecture, that fact – a surprise to some, mere confirmation to others – is only the start of an important examination of how we live and work.

“For architecture, the pandemic brings large questions about interconnectedness and vulnerable populations, but also very simply foregrounds the importance of our built environment,” she says.

Bordeleau wonders, for instance, if people will actually want to work from home – and, if so, how much of the time – even if remote technology continues to make it possible when the health crisis is over.



“For a number of people there is a real concern that their domestic space is now being fully invaded by work,” she says.

That invasion highlights the significance of spaces that are both conducive to work and create clear lines, physically as well as psychologically, between our professional and personal lives.

“Spaces play an extremely important role in terms of framing different activities and establishing boundaries, of distinguishing a place where you can relax and a place where you can work,” Bordeleau says.

She also believes there is growing recognition that shared workplace spaces – even the hallways we take from one meeting to another – are valuable sources of socialization, energy and spontaneous collaboration.

In practical terms, that could lead to offices redesigned to emphasize their informal, impromptu functions and the in-between spaces that ultimately keep us all together.

“Technology is so portable that we think we can work anywhere – and it’s kind of true,” Bordeleau says. “But at the same time, it may also mean that we can relax nowhere, and this situation should make us acutely aware of the role spaces play in framing our activities and interactions.”

IMMUNIZING PUBLIC STRUCTURES

After more than a decade of work on a system to protect people in public buildings from biological agents and chemical toxins, **JANUSZ KOZINSKI** is optimistic its time has come.

Concerns heightened by the COVID-19 crisis, plus advances in technology, give him hope the system will gain widespread adoption.

“There is a completely different environment now,” says Kozinski, an adjunct professor of chemical engineering at Waterloo. “Many stars have aligned.”





Work on his concept to effectively immunize buildings goes back to the late-2000s, when Kozinski was the engineering dean at the University of Saskatchewan, one of many senior positions he has held.

He led a research team in the development of a system to monitor ventilation systems in public buildings such as schools, hospitals and shopping malls.

The system uses a network of sensors and computer software to identify threats, then issue warnings and take steps to neutralize them.

“The key here is to prevent the potential propagation of the harmful agent from one area to another,” Kozinski says.

The system, dubbed eWARN (Early Warning and Response Network), worked well on computer models, in the lab and during limited field trials, but never got much real-world traction.

When the pandemic hit, Kozinski and colleagues at Waterloo and several other Canadian schools revived the concept, tweaking it for detection of the coronavirus. Ongoing efforts are focused on the use of nanoscale sensors to dramatically improve its response time to split seconds.

In the case of SARS-CoV-2 – or some new variation of it in the future – the system would emit UV light to try to kill it, activate HVAC filters to prevent its spread via ducts and alert people in the detection area to take precautions.

“We believe this will be very, very useful,” Kozinski says. “The whole purpose is to save lives. The next time around we will be much better prepared.”

CREATING BREATHING SPACE FOR OUR MINDS

KUNAL GUPTA (BSE '08) couldn't be less impressed with how the pandemic is highlighting the ability of workers to meet just as often as before it, maybe even more, using remote technology.

His key take-away from the global health crisis is that less is more, that fewer meetings and less collaboration actually equal more focus and increased productivity.

“Productivity isn't working more,” he says from his home in New York. “It's working on the right things at the right times.”

Gupta comes to the question as an entrepreneur who proudly wears two hats.



In his professional life, he is a co-founder and CEO of Polar, a Toronto-based, 25-member company that provides digital advertising technology to hundreds of publishers and advertising agencies in over 30 countries.

As an active and avid volunteer, he works with several mental health organizations, teaches meditation and yoga, and blogs about leadership, mindfulness and technology culture.

Gupta says that by disrupting ordinary life and business, the coronavirus has forced everyone to reflect on what they do and why they do it.

In the process, it has provided a much-needed boost to awareness around the importance of mental health – who hasn't experienced some anxiety or depression, or seen someone close to them struggling? – and the value of better work-life balance.

“This time has given everybody more mental space,” says Gupta, who started Polar with classmates while he was still an undergraduate student at Waterloo. “We've cut out a lot of what we thought of as essential – and now know isn't essential – and that has created breathing room for our minds.”

One lasting lesson for companies, he says, is that their employees clearly can be trusted to work from home with little or no supervision and still pull their weight.

“It's kind of funny that we are surprised by that,” Gupta says. “It took a pandemic for us to get to the point where we have more trust in our people, but that's fine. We're here now.”

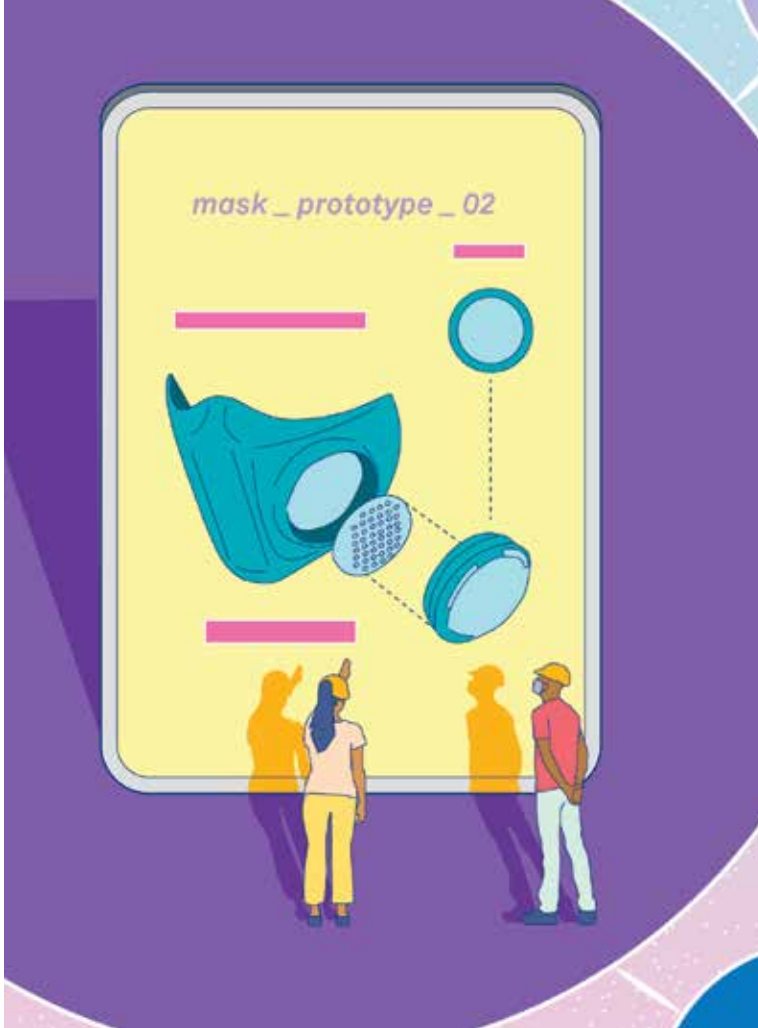
3D PRINTING PROVES ITS POTENTIAL

When one-size-fits-all just isn't good enough, additive manufacturing (AM) is up for the challenge.



That became clear early in the COVID-19 crisis as **MIHAELA VLASEA** and other researchers at the Multi-Scale Additive Manufacturing (MSAM) Laboratory were flooded with inquiries from doctors, hospital administrators and other healthcare workers in need of help.

The lab's innovative technology, also known as industrial 3D printing, proved itself nimble enough to quickly produce parts for face shields and frames for reusable N95 masks to protect medical professionals and patients.



And because AM processes – essentially printing parts layer by layer and with multiple raw materials – are so flexible, MSAM could customize personal protective equipment to better fit people of different ethnicities, ages, sizes and genders.

One tweak of its mask frames even prevents fogging for users who wear glasses.

“That’s not a problem for us,” says Vlasea, associate research director of the world-class lab. “We just iterate a few times and provide the product.”

The crisis also demonstrated how well local AM facilities can work directly with local clients to design and manufacture the products they need, eliminating long supply chains, speeding up delivery and enabling modifications on the fly.

“Imagine having a tool that you can deploy for multiple purposes very quickly,” says Vlasea, a Waterloo Engineering professor and alumnus (BASC ’08, PhD ’14, mechanical and mechatronics engineering). “The flexibility to print one thing today and another thing tomorrow, or quickly calibrate a product to make it better, is hugely important.”

By boosting awareness of its potential, Vlasea expects high-profile examples of AM providing precise solutions to help speed its adoption by industry leaders now and on the other side of the pandemic.

“An unexpected outcome of an extremely unfortunate situation is that it has shown people this is not a fringe technology or a technology of tomorrow,” she says. “These tools are available today and they can be effectively deployed in sensitive sectors such as healthcare.”

ENHANCING ONLINE LEARNING



It took office closures during the pandemic to show **MOHSEN SHAHINI** that employees at the company he co-founded could be just as productive working remotely from home.

In a similar way, he believes the forced move to online classes is opening the eyes of educators, students and parents to what technology can bring to higher learning.

“Once we are out of this, you’ll find fewer professors are afraid of technology because they had no choice but to use it,” says Shahini (PhD ’11, mechatronics engineering), an entrepreneur and Waterloo Engineering alumnus. “That will expedite the transition of classroom learning, which really hasn’t changed much for centuries.”

Shahini was still working on his doctorate when he launched Top Hat, a learning software company, with former roommate and fellow alumnus Mike Silagadze (BASC ’07, electrical engineering) a decade ago.

Currently, with well over 400 employees and four million users, the Toronto-based company’s core “active learning” product allows students to engage with course content using interactive textbooks and take part in in-class activities, online or in-person, using their mobile devices or laptops.

Last year, Shahini took a leave and launched a startup called Kritik, which develops high-level critical thinking by enabling students to collaborate, provide feedback and analysis, and learn from each other.

Now he sees nothing but growth ahead as changes necessitated by the health crisis showcase the possibilities and increase the acceptance of online learning.

“We expect massive adoption of technology and massive innovation post-pandemic,” he says.

Key questions for Shahini include how institutions will permanently adapt and adopt lessons from the pandemic, and what changes the people who pay to attend them will expect or demand.

“For the first time, there is a challenge to the value proposition of higher education,” he says. “It’s great for students to be on campus, but will it be worth it to spend that much money when most courses can be delivered online? Probably not, but we will have to see how demands and expectations from return on investment in higher education change post-pandemic.”

CLASS NOTES

1961

CLASS REUNION – 60-YEAR ANNIVERSARY
JUNE 4-5, 2021

1964



MICHAEL GOSS (CHEM '64) says "thanks to the University of Waterloo I have been retired for 28 years with my wife of 55 years Pat, (Harmer), BSc 1965. After many tropical winter adventures, we now enjoy our green therapy on Vancouver Island." mikegoss@shaw.ca

IAN WATSON (MECH '64) has been retired since 2005 following a career with Union Carbide Canada Ltd. and its various divisions. He now resides in North Toronto, curling in winter and playing golf in the summer. ianwatson@bell.net

1965

CLASS REUNION – 55-YEAR ANNIVERSARY
JUNE 4-5, 2021

1966

CLASS REUNION – 55-YEAR ANNIVERSARY
JUNE 4-5, 2021

1968



GEORGE RHODEY (CHEM '68, '70) reports that he has "patents to make any refinery more profitable with payout in less than two years. Solution to Bitumen asphaltene problem no diluent required to meet pipeline viscosity. Lowering sulphur and nitrogen of petcoke and recovering the metals that are worth more than petcoke; on our way also to carbon steel. LNG process that is unlike Shell's 40 billion plant on west coast. All liqualfraction and vapourization of natural gas on ship i.e. transportation cost only, therefore no capital cost." george@rhodey.ca

GEE TSANG (MECH '68) says "as a senior over 80 years old, my wife and I have been travelling widely in the past several years. We have been in the UK, Italy, Spain, Portugal, Germany, Austria, Hungary and Russia in Europe. In South America, we were in Chile, Argentina and Peru. All these privileges were permitted because of my graduate study at U of W and subsequent professional career with the federal government. However, at this stage of my life, I believe it is not how much you own that is important, but how much you can give to the underprivileged that counts."

1970

CLASS REUNION – 50-YEAR ANNIVERSARY
JUNE 4-5, 2021



BERNARD D'LIMA (ELECT '70) retired in 2001 after 27 years with Telesat, an Ottawa-based satellite communications company. During his tenure he worked in satellite engineering, ground systems engineering and in international sales. bernard.dlima@gmail.com



L. BRIAN ROSS (ELECT '70) was inducted as an Officer in the Order of Honour by Professional Engineers Ontario (PEO) this year. Since being inducted as a Member of the Order of Honour in 2002, Ross has continued his volunteer efforts. In his many roles as a PEO volunteer, Brian has been an ambassador for the engineering profession. For the past 36 years, he has been serving with integrity and dedication with PEO chapters, on council and various committees and subcommittees.

ALFEO (AL) SOLIGO (CHEM '70) says "I have a seven-piece 'Zoomer band' called The Greytones. We play '50s, '60s, '70s music to 55+ seniors who love to dance to the old pop and rock 'n roll songs. We play at seniors centres, retirement homes, pubs, adult community centres, Sportsplex in Fergus, legions, etc. Here is our website: www.greytones.wixsite.com/band. I've been doing this for 12 years now and loving my passion for singing and playing guitar." absoligo@gmail.com

1971

CLASS REUNION – 50-YEAR ANNIVERSARY
JUNE 4-5, 2021

ANDRE ARVANITIS (ELECT '71) reports "I am 81 years old and retired since 2001. Most of my working years were spent at the Bruce Nuclear Power Generating facility, the biggest in the world comprised of eight generating units and support facilities."



BOB FLOYD (MECH '71) says "I've been a ski instructor/coach at Mt. Pakenham since 1991. I celebrated my 50th wedding anniversary with my wife Carol on October 10, 2020.

We have three adult children, three adult grandchildren, one teenage granddaughter and one grandson. I'm retired now."

bfloyd@storm.ca



DENNIS VASS (CIVIL '71) reports "I retired as the managing partner of +VG ARCHITECTS a few years back but I still go in one day a week to help out. I play with my tractors

on my hobby farm. I have a cottage at Long Point on Lake Erie with a couple of boats and belong to a hunt camp on Manitoulin Island and a fish camp on Lake Temiskaming." dvass@bell.net

1972



LAURI GREGG (ELECT '72) formed LCG Energy Management Group after retirement from Falconbridge Ltd. in 2007. He is a certified ISO 50001 energy management systems implementor and auditor with experience across industrial, commercial and manufacturing sectors. Lauri.Gregg@sympatico.ca



MARK HYMERS (CIVIL '72) reports that after 41 years of project engineering for rail, marine, highway, and municipal fields in New Brunswick, he retired along with his spouse, Heather, to enjoy time with their four daughters and six grandchildren. markhymers@hotmail.com

1973



ANTHONY EDWARDS (CIVIL '73) says "I've been working for five years for a company that has expertise in trenchless technology and we do cured-in-place plastic and sewer system grouting work. It's been interesting and challenging to explore this facet of municipal engineering." tony.edwards@scsgroup.ca

1974



SANTOSH GUPTA (CIVIL '74) recently was awarded the Sovereign Medal by the Governor General of Canada. Last year, he was inducted by PEO as an

Officer of the Awards of Honour. He's been recommended for the Citizenship Award for volunteer services to Community and Engineering Profession.

santoshgupta.gupta@gmail.com

1975

CLASS REUNION – 45-YEAR ANNIVERSARY JUNE 4-5, 2021



RON MITCHELL (CIVIL '75) has never retired 47 years after starting a rail career as a University of Waterloo student at CP Rail and three long careers later.

Having worked as a railroader, regulator and consultant, Ron decided to start working for himself and launched his own company in 2019. This past year, Ron worked on jobs in BC and the Yukon as well as Toronto and Cameroon. Ron and his wife, Barbara (BMath '74), enjoy living in BC. They both plan to attend the Glory Seekers reunion (45 years) at Waterloo.

ron@roadraileng.com

S.J. (JIM) SCHOFIELD (CIVIL '75) retired in August 2018, after 43 years of heavy industrial construction across Canada. Jim says "Alberta has been my base except for two years in Sarnia."

jamesschofield@shaw.ca

1976

CLASS REUNION – 45-YEAR ANNIVERSARY JUNE 4-5, 2021



MIKE BURRELL (SD '76) retired this year after 40-plus years in quality, production and design engineering management positions in automotive parts

manufacturing in Ontario.

hmburrell@hotmail.com



TOM CULHAM (CIVIL '76) held leadership roles in engineering consulting, and the BC forest industry. Following completing a PhD in education in 2012, he recently joined SFU Beedie Business School to lecture and conduct ethics education research.

tom.culham@gmail.com

TED PIERCE (MECH '76) says "I'm still designing for Supertrak, Punta Gorda in Florida. We have recently designed and built three recovery vehicles for Disney World monorail – a hi-tech 38,000-lb and diesel-powered locomotive that pulls disabled monorail trains or carts for rail maintenance."

time502000@yahoo.com

1977



TIM BOWLAND (ELECT '77) was principal and VP of engineering for The Baranti Group, a consulting electronic design and

manufacturing house in Toronto, for 12 years until 2002. He was then senior hardware design engineer for Harris Corp in Toronto from 2005 to 2007. Since 2007, he's been retired with his wife and no kids.

DOUGLAS HOLM (MECH '77) retired September 2017 and is enjoying golf whenever he wants.

holmd1977@gmail.com

GARY SHORTT (CIVIL '77) retired in 2016 from his position as chief operating officer at the Toronto Transit Commission. He and his wife, Kathy, are enjoying Florida, their Toronto condo, cottage and two grandsons.

garyshortt@sympatico.ca



LEN TREMBLEY (ELECT '77) has retired and spends his time with woodworking, community theatre and volunteering with the Kin Club of Russell.

Somehow, he is busier now than when he was working full-time. The attached photo is Len as Selsdon Mowbrey in the production "Noises Off."

lentrembley@rogers.com

1978



RAYMOND KEITH (CIVIL '78) reports "I'm wrapping up my consulting career (heavy industrial construction and commercial buildings)

and heading to Vancouver Island for retirement."

rkeith7573@shaw.ca

1979



HUGH ALLEY'S (SD '79) book, *Becoming the Supervisor: Achieving the Company's Mission and Building Your Team*, was published

by Productivity Press in June 2020.

Written as a story, readers learn the core skills front-line leaders need to succeed.

hughralley@gmail.com



RAINER HOFF (MECH '79) is founder and president of Gateway Group, a provider of process safety management solutions. Despite being

a mechanical engineer, he was recently elected to fellow of the American Institute of Chemical Engineers. Now empty-nesters, Rainer and his wife Martha live in Buffalo, NY.

rhoff@gatewaygroup.com

1980

CLASS REUNION – 40-YEAR ANNIVERSARY JUNE 4-5, 2021



JIM ESTILL (SD '80) has founded ShipperBee, a revolutionary new courier that saves 73.1 per cent of

greenhouse gases per parcel. He also continues to be CEO at Danby Appliances and was awarded the Order of Canada for sponsoring over 100 refugee families to Canada.

jestill@danby.com



RON FINLAY (ELECT '80) is a DJ/MC specializing in weddings with the best sound, lighting, and five-star, award-winning MC skills to create the most emotionally

engaging wedding experience. He says “we help couples save thousands of dollars with our planning services to bring a wedding experience beyond! So much fun.”

info@perpetualrhythms.com

GLEN JOHNSON (CHEM '80) retired in September 2019 from full-time employment after a 39-year career in the upstream petroleum industry. Highlights included leading the subsurface teams in the Pluto (producing since 2010) and Browse (deferred) LNG mega-projects, offshore of western Australia. He now lives in Melbourne, Australia and does occasional consulting through Airswift as an oil and gas development advisor.

gaba@inet.net.au



WAYNE SHAW (MECH '80) has finally retired after successful careers at Babcock-Wilcox, Honda of Canada Mfg and Deloitte & Touche. He keeps busy

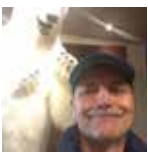
making his own rye whiskies, gin and rum, cottaging on Lake Muskoka and day-trading, energy commodities (he says “yes, you can make money doing that.”) Recently, a granddaughter arrived on the scene.

PAUL VERHEYEN (MECH '80) says “after a 30-year career at Chrysler, Ford and GM, Tracy and I spend our winters in Avon Park, Florida. Days are spent golfing, biking, swimming and cruising with an occasional trip to see Mickey.”

ptverheyen2@gmail.com

1981

CLASS REUNION – 40-YEAR ANNIVERSARY JUNE 4-5, 2021



JOHN MCVEY (CHEM '81) joined the Procon Group of Companies in 2015 as CEO based in the Burnaby, BC corporate offices. Procon is a privately-held Canadian

underground mine development contractor with operations and projects across Canada and select international locations. The company specializes in working in challenging remote northern locations, often with Indigenous business partners.

jmcvey@procongroup.com

1982

BRIAN BASKERVILLE (ELECT '82) liked Ottawa so much during all of his work terms, that he's lived in the area ever since. Currently on the Quebec side of the Ottawa River, Brian lives a stone's throw away from Gatineau Park in Chelsea, and works as a software quality engineer at QNX Software Systems (a subsidiary of BlackBerry) in the Kanata North hi-tech business park.

brian.baskerville95@gmail.com



FERNANDO BRANCO (CIVIL '82) is a full professor at University of Lisbon. He was president of the European Council of Civil Engineers (ECCE) and of the

International Association for Bridge and Structural Engineering (IABSE). He was a consultant for major public works: the S. João Bridge in Porto, Macau-Taipa Bridge in China and the Vasco da Gama Bridge, the longest in Europa. He has received six international awards. He says “I'm always remembering my supervisor Professor Roger Green.”

fernando.branco@tecnico.utlisboa.pt



KEVIN O'SULLIVAN (MECH '82) says “after 40 years of working at NELS Consulting in Niagara, I'm fully retired.”

misterkos@cogeco.ca

1983



PETER BAIN (ELECT '83, '85) retired in September 2019 from IBM's Runtimes group where he worked since 2007 on the OpenJ9 Java Virtual Machine.

Previously, he spent 11 years at Bell-Northern Research doing hardware, IC, and wireless system design. After BNR, he worked at a startup, later acquired by Altera, designing communication cores for FPGAs. He continues to do consulting and plans to expand his volunteer activities.

pd bain@acm.org



RICHARD LESLIE (CHEM '83) reports “40 years after my first work term, I retired at the end of April. The production of oil and gas to meet

the world's energy needs has provided me with an incredible career.”

ries0459@telus.net

1984

FRANK GERENCSE (SD '84) pivoted 300+ instructors teaching 3000+ students at his triOS College & Eastern College campuses to online learning over a weekend because of the COVID-19 crisis. He says “our world has changed forever.”

frank.gerencser@trios.com

PAUL HAMILTON (ELECT '84) is currently working as a high-tech program management consultant with the defence industry and as COO of his property management company in the Ottawa area. He is moving gradually towards retirement, but still enjoys working and is active in the community.

pHamilton57@gmail.com



LAUREN LITTLE (CHEM '84) says “life changes. Both Ian van Staaldunen (Chem '84) and I retired a few years ago from the oil industry – just before the

big bust. Now we enjoy time at the ranch, helping our son raise beef cattle for direct sale to the public through the Tall Timber Cattle Co. We continue to breed and start quarter horses and enjoy ranch versatility and cowhorse work. Horses are the only way to move or round up cattle in our foothills area with the dense aspen and spruce cover. This January, we welcomed a litter of seven lovely Entlebucher Mountain Dog puppies. Check them out at bar-tt-entlebuchers.com.”

littlelauren@gmail.com



JAMES RAMAGE (ELECT '84) has been working as a security engineer at Lightship Engineering since May 2019. Previously, he was a systems engineer at JSI

Telcom after he spent 20 years in engineering with Nortel Networks.

james.ramage@rogers.com

1985

CLASS REUNION – 35-YEAR ANNIVERSARY JUNE 4-5, 2021

CHAMPIONING ALUMNI CONNECTIONS

YURI QUINTANA

**BASc '88, ELECTRICAL;
MASc '90, SYSTEMS DESIGN;
PhD '95, SYSTEMS DESIGN**

Twenty-five years after circumstance bumped him onto a different path, Quintana is still roaring down it as a professor at Harvard Medical School and chief of clinical informatics at one of its teaching hospitals.

With a freshly minted doctorate from Waterloo in hand, Quintana landed his first faculty job at Western University to develop internet search engines.

But when his boss was diagnosed with breast cancer and asked him to investigate how technology could help her manage the disease, it led to a string of increasingly responsible positions in the healthcare field.

"Each time I think I'm only going to do this for a few years," Quintana says, "but the ability to have social and human impacts has been so rewarding I keep expanding my work."

The son of Waterloo Engineering professor emeritus Victor Quintana and father of computer engineering student Nicolas, he is also an enthusiastic champion of his alma mater.

Quintana is a global ambassador for the University, and launched a Boston-area group to bring engineering alumni together and mentor co-op students.

"I'm so proud of the evolution of Waterloo and I hope more alumni connect with each other because it's such a great community of innovators," Quintana says.

boston@alumni.uwaterloo.ca



1986

CLASS REUNION – 35-YEAR ANNIVERSARY JUNE 4-5, 2021



ERIC BOUTIN (MECH '86) works for Tetra Tech as a senior mechanical engineer on the most interesting mining project going: 26 pieces of hoisting equipment and four shafts with state-of-the-art sinking equipment.

eric.boutin@tetratech.com



JACQUELINE WHITE (CIVIL '86) owns Raindrop Gardening, a landscaping business in Toronto. After 31 years at the City of Toronto, Jacqueline went back to school to earn her college diploma. Now, she's designing gardens, planting flowers, and loving every minute of it!

raindropgardening@gmail.com

1987



NICK COLUCCI (CIVIL '87) is working at the Town of Erin as the director of infrastructure services. He also volunteers with Professional Engineers Ontario, the Municipal Engineers Association and the Ontario Public Works Association. In his spare time, he enjoys cycling, hiking and trail running.

landpeng@hotmail.ca



SUSAN MOOTE (NEE HAUSFELD) (MECH '87) retired from Daimler Trucks in 2018 where she was director of IT operations for North America. She's now pursuing the dream of travel and riding anything with two wheels. When home, she's in Vancouver, WA.

mootefam@msn.com

KEITH TYNDALL (SD '87) and Beverley are moving to Hawkestone, ON, following the graduation of their twins from UW this year! Keith plans to do some consulting and Bev some supply teaching, but mostly they plan to enjoy life.

keith.tyndall@gmail.com



LARRY WOOLNER (MECH '87) has been the general manager at Shaw Almex and Stanley Boats, both in Parry Sound, Ontario. He has started Diamond Waters Sailing (www.diamondwaters.ca), teaching keel boat cruising on beautiful Georgian Bay.

info@diamondwaters.ca

1988

TOM LEE (SD '88) was recently inducted into the Canadian Academy of Engineering and honoured by China's Tsinghua University as Honorary Distinguished Visiting Professor. Both were in recognition of his work in new methods of engineering education in advanced robotics and mechatronics. His spare time is spent developing a sustainable, off-grid home near Owen Sound.

www.linkedin.com/in/tom-lee-8480111/



LYNNE PATENAUDE (MECH '88) says "I'm retiring this summer after 30 amazing years working at Environment and Climate Change Canada, mainly on policy and regulations to reduce air pollutant and greenhouse gas emissions from industry. I'm planning on bike touring and other travel."

lynne.patenaude@yahoo.ca



LISA RAPOPORT (ARCH '88) reports that "the Town of Newmarket, ON, has selected PLANT Architect for the Concept Master Plan to repurpose Sir

William Mulock's former home and transform the 4.6-ha Mulock Estate into signature park space. PLANT's three co-founders, myself, Chris Pommer (Arch '88), and Mary Tremain (Arch '86) are Waterloo Architecture alumni."

lisa@branchplant.com



TAMARA WILSON (CHEM '88, '94) has retired and volunteers as VP for the Bruce Trail Peninsula Section. Along with husband Tim (Physics '84), they are both trail

captains for the area around Devil's Monument. Tamara and Tim work with local Indigenous leaders promoting STEM for Indigenous Youth. Tamara and Tim built and live in an eco-home on Cape Chin, overlooking beautiful Georgian Bay.

Contact Tamara through social media.

1989

BRUCE TAYLOR (CHEM '89) announces that Enviro-Stewards, founded by him, is celebrating its 20th anniversary this year. It is the only Canadian company to receive a Global SDG award and recipient of B lab's Best for the World award.

btaylor@enviro-stewards.com

1990

CLASS REUNION – 30-YEAR ANNIVERSARY JUNE 4-5, 2021



WILLIAM CHIANG (COMP '90) owns two businesses in Asia – one offers VR solution for health industry and the other one manufactures

industrial ceramics. He is now seeking academic co-operations and funding possibilities on the VR project.

williamchiang@chinam.com.hk

SEAN MAW (SD '90) is the University of Saskatchewan's Huff Chair in Innovative Teaching. He was recently awarded the 2020 Provost's College Teaching Award and is the PI for Saskatchewan's Cubesat program, a space mission.

sean.maw@usask.ca



KEN MCQUARRIE (MSCI '90) retired in September 2019. After graduation, Ken worked with Accenture (fka Andersen Consulting) in Canada

and the USA. He is currently living in Littleton, Colorado, with his wonderful wife of 30 years, Diana.

kmcquarrie007@aol.com

1991

CLASS REUNION – 30-YEAR ANNIVERSARY JUNE 4-5, 2021

1992

DOUG MACINTOSH (ELECT '92) continues to sell enterprise communication solutions, most recently at Rogers. He's very proud of his daughter Sarah who is in systems design engineering at Waterloo, focusing on UX/CX.

1993



ALI KHAMSI (CIVIL '93) has been with KPFF Consulting Engineers for over 21 years. He is currently the managing principal for KPFF Civil

Engineering Division in Irvine, California. The type of work Ali is currently involved with is primarily land development projects serving both public and private clients.

ali.khamisi@kpff.com

MATT MANUEL (SD '93) works at Microsoft Vancouver as a principal group program manager in the Office Media Group. He remarried in June 2019.

matt@mattmanuel.com

CRAIG MCQUEEN (SD '93) is vice president of innovation at Softchoice. Softchoice helps companies across North America with the adoption of technology to improve their businesses. He and his wife, Sophie McQueen (Chem '93), live in Oakville and their three kids are starting to spread across Canada.

craig_mcqueen@hotmail.com



JASBA SIMPSON (SD '93, '94) has been splitting his time between Canada and Curacao, his second home, while remotely advising corporations on digital

transformation and doing volunteer work.

Jasba is enjoying a welcomed change of pace after retiring from a career as a chief information officer. Get in touch with Jasba for some SCUBA diving and mountain biking in Curacao.

jasba@jasba.ca

1994

MARCELO S. ALENCAR (ELECT '94) just started working at CIMATEC, Salvador, Brazil, after retiring from the Federal University of Campina Grande, and publishing his 25th book, Music Science (River Publishers, Delft, The Netherlands). Marcelo has a grandson, Vicente, and a granddaughter, Cora, who live in France.



MARK ROSS (COMP '94) became president and CEO at SEH Computer Systems in July 2019.

Previously, he was director of business

process automation and application development at Sun Life Financial.

mross@sehcomp.ca

1995

CLASS REUNION – 25-YEAR ANNIVERSARY JUNE 4-5, 2021

TREVOR STEWART (CIVIL '95) has been appointed as chief building and planning officer for the Children's Hospital of Eastern Ontario.

trstewart@cheo.on.ca

ADVOCATING FOR WOMEN

KIM JONES

BASc '95, CHEMICAL

The horrific massacre of 14 women at École Polytechnique in Montreal in 1989 was the deciding factor for Jones choosing to study engineering rather than science for her undergrad degree.

She wanted to prove women deserve a place in engineering because, in her words, “they are every bit as smart and capable as any man.”

During her time at Waterloo, part of which she served as VP External for the Engineering Society, Jones was a passionate advocate for diversity and inclusion in engineering.

After completing her Waterloo degree and graduating with a master’s in biology from University of Guelph and doctorate in biomedical engineering from University of Toronto, she joined McMaster University as a chemical engineering professor.

A strong role model and inclusion advocate, she became chair of the Ontario Network of Women in Engineering (ONWiE) two years ago, succeeding Mary Wells, Waterloo’s new dean of engineering.

Her focus is to inspire young women to consider engineering as a profession and discover how many possibilities there are for an engineer to change the world.

Jones encourages other Waterloo female alumni to share their stories by becoming ONWiE ambassadors.

“We’d love to highlight their amazing accomplishments through social media,” she says.

www.onwie.ca



1996

CLASS REUNION – 25-YEAR ANNIVERSARY JUNE 4-5, 2021

FRANK BABIC (CIVIL '96) is an Acoustic Practice Lead for Stantec and continuing his passion for working in acoustics, noise and vibration. He is married with two beautiful boys who keep him busy. He also continues to be involved in music with his project High Park Society (www.high-park-society.com).
frank.babic@stantec.com



JON EVANS (ELECT '96) is directing a GitHub program to secure the world’s open-source software for future generations, including a 1,000-year archive beneath an Arctic mountain in Svalbard (archiveprogram.github.com). He reports he is also still a CTO, a novelist and a journalist (rezendi.com).
jon@rezendi.com

1997

STAN ALI (CIVIL '97) has been working as a senior civil engineer at Contra Costa Water District in California since November 2018. Previously, he was an associate civil engineer at East Bay Municipal Utility District, also in California.
sali@ccwater.com



SHALIGRAM POKHAREL (SD '97) is a professor in Industrial and Systems Design Engineering at Qatar University, one of the prominent universities in the Middle East. Prior to this, he worked at the School of Mechanical and Aerospace Engineering at Nanyang Technological University, Singapore, another prominent university. He has also worked as an energy planner with the Government of Nepal and as a production engineer with the Mechanical Engineering factory, a Swiss-assisted technical industry in Nepal.
shaligram.pokharel@gmail.com

1998



TOM NAGY (ELECT '98) co-owns ProVisionIP, a patent and IP management and strategy firm, with clients ranging from the smallest Canadian startups to the largest international organizations.
Tom@proVisionIP.com



CARMEN WONG (ELECT '98) recently completed her PhD in business at the University of Notre Dame Australia. As part of the Boral Australia’s Project Management Office, she continues to sell rocks (construction materials) required in mega infrastructure projects.
cwong@uwaterloo.ca

1999



ARJUN MOORTHY (COMP '99) launched The Factual, which rates the credibility of news using a machine-learning engine. The Factual's daily newsletter

curates the best stories across the political spectrum on trending topics.

amoorthy@thefactual.com

2000

CLASS REUNION – 20-YEAR ANNIVERSARY
JUNE 4-5, 2021

2001

CLASS REUNION – 20-YEAR ANNIVERSARY
JUNE 4-5, 2021



MARCO ANTONIAIDES (ELECT '01) is the director of the Microwaves and Antennas Laboratory, and an assistant professor in the Department of Electrical,

Computer and Biomedical Engineering at Ryerson University in Toronto.

mantoniasdes@ryerson.ca

LEILI CHEPELKEVITCH (ENVIRO, CIVIL '01) has been working as a hydrogeologist at several Calgary-based environmental engineering firms since May 2001. Currently, she is an air emissions specialist at Paramount Resources Ltd.

leili.chepelkevitch@paramountres.com



KIRAN KONANUR (COMP '01) is a managing director and partner at the Boston Consulting Group.

kirankonanur@gmail.com

2002

PHIL ZOLDAK (MECH '02) recently started a position as the manager of engine development and testing operations for Hyundai America Technical Center Inc., where he is the principal investigator for the development of the next-generation advanced gasoline compression ignition engine (GCI). He is also nearing completion of his PhD studies at Michigan Technological University in Mechanical Engineering with a focus on combustion and fuel Injection.

pzoldak@hatci.com

2004



BRYAN BELL-SMITH (COMP '04) has been working as a director of development at RBC since May 2016. Previously, he was an architect at BlackBerry.

bryan_b_@hotmail.com

LEANNE WHITELEY-LAGACE (CIVIL '04) was awarded an Engineers Canada Fellowship for her service with the PEO Niagara Chapter over the past decade.

2005

CLASS REUNION – 15-YEAR ANNIVERSARY
JUNE 4-5, 2021



RENE CHUNG (CHEM '05) has been working as a headhunter for the past 15 years. Based in London and jet-setting all over the world, she is

now a partner of Adamson & Partners, an executive search firm operating exclusively in Intellectual Property on a global basis.

rene.chung@adamsons.com

2006

CLASS REUNION – 15-YEAR ANNIVERSARY
JUNE 4-5, 2021



KHALED AL SABAWI (COMP '06) was awarded the Young Alumni Achievement Medal by the University of Waterloo in 2016. He leads Open Screenplay,

a tech business in Toronto, and UCI/TABO, a social impact real estate investment business in Palestine.

khaled@openscreenplay.com

2007

ALEX CICUTTINI (GEO '07) has been a Shell employee since 2007. He moved to Oman LNG in 2017 and was promoted to construction manager of Power Project in January 2019. This project is a 180 MW gas-engine-driven power plant with completion scheduled for Q2 2021.

2008



PEIHAO JIN (MSCI '08) has worked as director of development at Precima, a Nielsen Company, since June 2011. Previously, she was a reporting specialist

at BlackBerry Limited.

peihao.jin@gmail.com

HANIF POOYA (COMP '08) is a global account director at SAP, managing partners and a team of sales reps selling software and digital transformation to companies in the gold/mining, manufacturing, utility, healthcare and cannabis industries.

hanifkp@gmail.com

PETER SZABO (SD '08) has been a systems engineer at MDA since 2016 and is the systems team lead for payloads handled by the Canadarm2 and Dextre robotic arms on the ISS. Before that, he did his PhD in aerospace science and engineering at the University of Toronto.

szabo.pa@gmail.com

2009

BAREND DRONKERS (MTRON '09) has been helping businesses and homeowners invest in energy efficiency and renewables at Energy Efficiency Alberta since 2017. Previously, he was an analyst at the Pembina Institute and an energy transition researcher.

[linkedin.com/in/bpdronkers/](https://www.linkedin.com/in/bpdronkers/)

2010

CLASS REUNION – 10-YEAR ANNIVERSARY
JUNE 4-5, 2021



CHRIS BEST (SD '10) is working on his new company, Substack.



ALIM KHAMISA (MBET '10) recently joined the innovation and emerging technology team at the Ontario Teachers' Pension Plan, where he's exploring

blockchain, RPA, ML, and NLP use cases in asset management. He also teaches in George Brown College's Blockchain Development Program.

alimkhamisa@gmail.com



SARA SALARI (MSCI '10) successfully obtained her PEng in 2013 and started seeking her first managerial role. She moved from UHN, where she spent approximately eight years of her career, to Grand River Hospital, where she started her first managerial role in biomedical engineering. From there, she moved to Trillium Health Partners as a corporate manager. She then moved to Olympus Canada, where she learned more about managing a quality assurance team. She is now provincial director at the Nova Scotia Health Authority for biomedical engineering.
sarasalari1981@gmail.com

2011

CLASS REUNION – 10-YEAR ANNIVERSARY JUNE 4-5, 2021



SUNDEEP KHANDPUR (SWE '11) has been an engineering manager at Google since August 2011. His team recently published a research paper that was presented at the IEEE/ACM International Conference.
sundeeepkhandpur@yahoo.com

ANNE MA (ARCH '11) has been an integral member of the architectural team at Hariri Pontarini Architects for the new Tom Patterson Theatre at the Stratford Festival.
annemony@gmail.com



JONGMU OH (ELECT '11) is working as an analytics manager at Canada Post helping teams find actionable insights to help Canadians receive shipments on time.
joshua.oh.eng@gmail.com

JEFF PEACOCK (MTRON '11) has worked as a senior product owner at National Instruments since 2011. He is based in Toronto.
jrpeacoc@gmail.com

2012



RAHIL ALY JIVANI (MTRON '12) has worked as an industrial automation consultant for Fortune 500 companies since graduating from UW.

He graduated with an MBA from IESE Business School this May and plans to join a tech startup.

rahilaly.jivani@gmail.com



ALJOSA KRAJISNIK (MECH '12) says “when I turned 30 this year, I started a new career in Florida at the largest healthcare manufacturing solutions

provider after seven years of employment by American Automakers.”

ljosakrajjsnik90@gmail.com

DAVID NGUYEN (MECH '12) became engaged to Brandy Alexander and has become fully vegan. They aspire to make a positive impact on the community through continuing their guided meditation sessions and young adult outreach program.



ARTHUR YIP (CHEM '12) just started a new job at NREL after completing his PhD in engineering and public policy. He also reports just having

a chance reunion with Yuree and Isaac in Ottawa.

arthurhc.yip@gmail.com

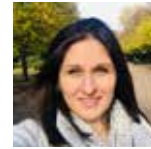
2013



BRANDON VAN ASSELDONK (MECH '13) previously worked at Apple Inc. in California as a supply base engineer and has since returned to

Canada and completed medical school at the University of Toronto. He is two years into a five-year vascular surgery residency in Toronto.

bvanasseldonk@gmail.com



SONJA VANGJELI (ARCH '13) is a planning and design project manager at Waterfront Toronto, where she oversees design and implementation of public realm projects, improving connectivity to Lake Ontario. The waterfront has been on her mind since her Waterloo architecture days, so she describes this work as a real pleasure.

svangjeli@gmail.com

2014



REHANA RAJWANI (MGMT '14) is an executive coaching and agile consultant. She is also the captain of a women's cricket team in Toronto.

rehana.rajwani@gmail.com

2015

CLASS REUNION – 5-YEAR ANNIVERSARY JUNE 4-5, 2021



RAKAN ELSHERBINY (MMSG '15) is a manager at Deloitte and has been working as a strategic sourcing and procurement solutions advisor. He is now

based in London, UK.
rmelsherbiny@deloitte.co.uk

SUNG HONG (SD '15) has been a senior product manager at Udemy, one of the leading global online learning marketplaces, based in San Francisco, since 2017. Previously, he was a product manager at Groupon based in its Palo Alto office.



STEPHANE LEE (COMP '15) says he is “still writing software for hardware in a hoodie.”
seflee@uwaterloo.ca

SANDY MAGUIRE (SWE '15) has published a book on type-level programming, and is now writing one about designing elegant software via algebraic manipulation.

sandy@sandymaguire.me

MICHAEL PAN (CHEM '15) has been an energy consultant at Guidehouse in Boston since 2019. Previously, he worked at Shell in Edmonton and earned a master of science in chemical engineering at MIT.
michaelsypan@gmail.com

2016

CLASS REUNION – 5-YEAR ANNIVERSARY

JUNE 4-5, 2021



GEORGIOS BALOMENOS (CIVIL '16) has been an assistant professor since September 2018 with the Department of Civil Engineering at McMaster University in

Hamilton. Previously, he was the Shell Center for Sustainability Postdoctoral Fellow at Rice University in Houston, Texas.

balomeng@mcmaster.ca



JACK FORBES (MGMT '16) reports that “my FYDP/capstone project that I presented as PadPiper four years ago has evolved into Kopa.co! We are a fully remote,

YC-backed company that has now helped over 5,000 co-op students find housing and housemates.”

jack@kopa.co



APURVA NARAYAN (SD '16) has been an assistant professor at the University of British Columbia since 2018. He works in the area of making AI-based

autonomous systems safe. He also holds an appointment in systems design engineering at the University of Waterloo.

apurva.narayan@ubc.ca

PARMINDER SAGGU (NANO '16) says “I shall be telling this with a sigh Somewhere ages and ages hence: Two roads diverged in a wood, and I – I took the one less traveled by, And that has made all the difference. – Robert Frost”

psaggu02@gmail.com



KRISTANTO TANUSDJAJA (CHEM '16) has been an environmental specialist at Tremco Canada, a division of RPM International, since

2020. Previously, he was a nuclear operator for Bruce Power.

ktanusdj@uwaterloo.ca

MINGXIN (MICHAEL) WU (SWE '16) is working as a software engineer at Google in the San Francisco Bay Area.

WARRIOR HOOP DREAMS



TROY STEVENSON

BASc '15, CHEMICAL

The new head coach of the Waterloo Warriors basketball program has been passionate about all things basketball since he was a toddler.

The youngest of five, Stevenson spent years watching his siblings play high school basketball.

“I was the half-time show – the chubby little guy running around trying to shoot baskets,” he laughs.

Stevenson took to the court himself as a high school student and then as a Waterloo Warrior. Although his sights were set on a professional basketball career, he quit Waterloo’s team after three seasons to focus on school.

Shortly after hanging up his jersey, Stevenson was hired as an assistant for McMaster University’s basketball program, a role he held while finishing his degree.

When McMaster’s lead assistant, Justin Gunter, became head coach of Waterloo’s basketball program in 2015, Stevenson moved with him. After Gunter left for a financial role at McMaster last year, Stevenson was named interim coach of the Warriors, a position that is now permanent.

Although COVID-19 sidelined his team members, Stevenson expects they will return to action in early 2021 putting into motion new skills and game plays learned remotely.

One of Stevenson’s main goals is to have a nationally recognized basketball program.

“I don’t see the value in not aiming high,” he says.

EARNING MORE THAN A DEGREE



MARIKO SHIMODA

BASc '20, MECHANICAL

Shimoda graduated from mechanical engineering this year with a full-time job with Clearpath Robotics, her last co-op employer, along with invaluable volunteer experience gained over the past five years.

Passionate about giving back, Shimoda racked up an impressive list of extracurricular roles in the community and on campus including co-op and experiential affairs commissioner with the Waterloo Undergraduate Student Association, and first-year commissioner, vice-president of student life and president of the Engineering Society (EngSoc).

Committed to the well-being of her fellow students, she ran several mental health initiatives, wrote a mental health blog and developed a mental health resource guide for students located on EngSoc's website.

She was also the external director for the University's Racial Advocacy for Inclusion, Solidarity and Equity (RAISE) group.

"It's a student-run group that is more important than ever right now and deserves recognition for its hard work," she says.

Last fall, Shimoda received one of two Community Leader Awards through the President's Community Impact Awards initiative.

"I think if you can give back, it's great because you become more connected to the people living in your city," she says.

2017



FATIMA AWAN (CHEM '17) says that "after having lived and worked in New York City for the past 1.5 years, I moved back to Kitchener and officially launched my own tech company, Finitiite, in January.

We're developing a facial recognition platform that drives product recommendations based on predictive AI/computer vision models."

f.awan001@gmail.com



SALMAN LADHA (MBET '17) is a product marketing manager at Miovision, where he acts as a linchpin between the go-to-market and technical side of the business for its analytics solutions.

salman883@gmail.com



MOHAMMED RIDWANUL ISLAM (ELECT '17) has been a product manager at Dessa (a startup recently acquired by Square Inc.) since mid-2019. Previously, he was a data platform engineer at Shopify Inc., an

e-commerce company based out of Toronto.

mohammed.ridwanul@gmail.com



PAOLA RUSSO (MEGH '17) received her PhD in mechanical engineering's nanotechnology program in 2017, and continued to work at UW as a post-doc in the MSAM group. In July 2019, she started working as

an applications scientist at Angstrom Engineering, a company in Kitchener that custom-builds physical vapour deposition systems and coating equipment. Her work focuses on coating development.

p3russo@uwaterloo.ca

2018



PAULO DE CARVALHO (MSCI '18) is continuing his studies to earn a PhD in management sciences at the University of Waterloo. He has been working on the application of blockchain

technology in supply chain network design.

p2decarv@uwaterloo.ca



BARAA HAMODI (MTRON '18) works on the misinformation team at Facebook tackling the spread of viral fake news across the world. With the rise of coronavirus and the 2020

US presidential election, he says misinformation is at an all-time high.

bhamodi@fb.com

SHEHRYAR KHAN (MECH '18) has continued on at the University of Waterloo as a PhD student working in the field of laser welding of advanced high-strength steels for automotive applications. He urges people to reach out to him if they are looking to collaborate on a research project in a similar field.

shehryar.khan@uwaterloo.ca

2019

MOSTAFA ALIZADEH (ELECT '19) is a research associate in the University of Waterloo's Centre for Intelligent Antenna and Radio Systems (CIARS) group under the supervision of professor Safieddin Safavi-Naeini.

m.alizadehe@gmail.com



NANA BEDIAKO (MSCI '19) has been a senior finance business manager for Coca-Cola Canada Bottling Ltd. since completing his master's degree in management sciences last year.

He's currently earning his CPA designation from the CPA Western School of Business.

nana.bediako@uwaterloo.ca

KEMBA HUGHES (MEGH '19) is the project manager/lead engineer with a mechanical subcontracting company, and a partner in a design and management startup. She is also very involved with youth and education on her island.



KRISTOFF MALEJCZUK (NANO '19) is a camera hardware engineer at Apple. In January 2020, he converted his graduate internship to a full-time position, forgoing the pursuit of graduate education upon realizing

that none of his heroes have degrees.

kamalejc@edu.uwaterloo.ca



ANKUSH MALHOTRA (MSCI '19) has been a data scientist at BDO Canada LLP since May 2019. He specializes in developing state-of-the-art prediction, time-series and text-classification models for clients enveloping

industries such as automobile, finance and insurance.

malhotra.ankush1990@yahoo.com



BIANGA WEEKO MARTIN (ARCH '19) is a designer and publications manager with Philip Beesley, and is writing a book on Modern Manila architecture with DOM Publishers.

bweeko@gmail.com

SHERMAN YING (COMP '19) has started a software engineering position at Google Cloud Canada.

fishermanying@gmail.com

IN MEMORIAM

The Faculty of Engineering expresses deepest sympathy to the family and friends of the following graduates who have passed away:

Alan Armstrong (SD '94)

Duane Baker (Chem '95, Mech '97)

Thomas Brzustowski (DENG '97)

Mojgan Daneshmand (ECE '06)

Awn Duqoum (Mton '19)

Harry Durham (Mech '70)

Ralph Haas (Civil '68)

John Hodgson (SD '95)

Zachary Jacobi (Nano '15)

Timothy Jewell (Elect '88)

Kevin Keats (Mech '66)

Wayne Louie (Elect '65)

Douglas Mair (Elect '67)

Stephan Matusch (SD '91)

George Roberts (Chem '79)

James Stasiuk (Civil '66)

Ronald Stoltz (Civil '63)

Gerald Thomas (Elect '70)

David (Bowen) Tritter (Elect '77)

Christopher Van Gerwen (Civil '89)

David White (Mech '72)

Scott Wilson (Chem '89)

Douglas Wright (LLD '95)

David Zakutin (Mech '96)

Haixia (Heather) Zhang (Chem '01)



GREETINGS ALUMNI

As the world adjusts to the pandemic and various stages of the “new normal,” so does Waterloo Engineering.

In March, when much of the world went into lockdown, Waterloo Engineering quickly moved to delivering 100 per cent of our courses online to follow Canadian public safety guidelines. It was inspiring to see the effective collaboration from everyone – students, faculty members and staff – to make this online pivot so successful.

Our co-op employers were equally adaptive. In the Spring Term, many continued to hire our co-op students for remote work terms.

In June, we saw our 50,000th student graduate from Waterloo Engineering in a virtual ceremony. Then, on July 1, Mary Wells began her term as our ninth dean of the Faculty. She returned to the University with an extraordinary depth of leadership experience in academia and industry, which perfectly positions Waterloo for the next five years.

EMBRACING CHANGE IN A TRANSFORMED WORLD

Illustrated by talented architecture graduate Julia Nakanishi, our cover feature highlights some of the lessons learned during the pandemic that have the potential to make our world a better place as we move forward. All researchers and alumni in this story are embracing change and opportunity in a transformed society.

If you find yourself on campus after we reopen to visitors, please let me know. I'd be happy to buy you a cup of coffee at the C&D and give you a tour of the newest buildings on campus. In the meantime, you can always follow us on LinkedIn, YouTube and Facebook.

Sincerely,

GOSIA BRESTOVACKI

gosia.brestovacki@uwaterloo.ca

Senior Alumni Officer, Faculty of Engineering

LinkedIn: [linkedin.com/in/gosiabrestovacki](https://www.linkedin.com/in/gosiabrestovacki)

P.S. If you have a story suggestion for a future issue of WEAL or eWEAL, please send it to me. Some of our best stories come from your ideas.

JOIN THE GLOBAL NETWORK

We've made networking and connecting with Waterloo Engineering alumni and students easy to do with the Ten Thousand Coffees platform. This online networking service (free to users) is a University of Waterloo alumni-founded company and offers a personal approach to alumni networking.

The concept is that once a month you are introduced to other engineering alumni or students (no matter the year of graduation) for a virtual or real-life coffee in the future and see where that conversation takes you. It might be discovering a new career opportunity, a new idea, a new employee or finding old friends.

Join for free at: uwaterloo.ca/engineering/waterloo-engineering-global-alumni-network

UPCOMING EVENTS

FOR THE LATEST
WATERLOO ENGINEERING
ALUMNI EVENTS AND
REGISTRATION DETAILS VISIT:

uwaterloo.ca/engineering/alumni

NOVEMBER 24, 2020

Alumni Speaker Series

1:00 P.M. / ONLINE

RISE OF THE ROBOTS IN A POST-PANDEMIC WORLD

Discover the important role robots will play in the future. Speakers include Kerstin Dautenhahn, Canada 150 Research Chair in Intelligent Robotics, and alumni Joel Blit, a Waterloo economics professor, and Pablo Molina, co-founder and chairman of Avidbots.

JANUARY 22, 2021

Waterloo Engineering Alumni Ski Day

8:30 A.M. – 5:30 P.M.

OSLER BLUFF SKI CLUB, TOWN OF THE BLUE MOUNTAINS (NEAR COLLINGWOOD), ON

Join your University of Waterloo classmates at this breathtaking private ski resort to ski and snowboard for the day. Snowshoeing trails are also available.

MARCH 10–26, 2021

Waterloo Engineering Capstone Design Symposia

ALL DAY, VARIOUS TIMES

UNIVERSITY OF WATERLOO, WATERLOO, ON

You're invited back to campus to check out a showcase of Waterloo Engineering student innovation. Each undergraduate program presents its projects on a different day.

JUNE 4 AND 5, 2021

Department of Management Sciences 50th Anniversary Celebration

ALL DAY / UNIVERSITY OF WATERLOO, WATERLOO, ON

You're invited to celebrate the 50th Anniversary of Management Sciences! There are various activities taking place on both days to help you to mark the department's milestone.

JUNE 4 AND 5, 2021

Waterloo Engineering Class Reunions in 2021

ALL DAY / UNIVERSITY OF WATERLOO, WATERLOO, ON

Due to the cancellation of an in-person Reunion in 2020 because of the pandemic, the Waterloo Engineering Class Reunion in 2021 is scheduled to welcome two cohorts of classes!

Feel like you're a student once again by attending a lecture from the Back-to-the-Classroom lecture series or the Dean's Reunion Lecture. Explore campus by attending the Open House in the Engineering 7 building and take a student-led tour featuring cutting-edge labs. Then, celebrate the anniversary of your graduation from Waterloo Engineering in style with a special Reunion Marché-style Dinner Party taking place in the evening.

THIS YEAR'S REUNIONS INCLUDE:

- 60-Year Reunion for the Classes of 1960 and 1961
- 55-Year Reunion for the Classes of 1965 and 1966
- 50-Year Reunion for the Classes of 1970 and 1971
- 45-Year Reunion for the Classes of 1975 and 1976
- 40-Year Reunion for the Classes of 1980 and 1981
- 35-Year Reunion for the Classes of 1985 and 1986
- 30-Year Reunion for the Classes of 1990 and 1991
- 25-Year Reunion for the Classes of 1995 and 1996
- 20-Year Reunion for the Classes of 2000 and 2001
- 15-Year Reunion for the Classes of 2005 and 2006
- 10-Year Reunion for the Classes of 2010 and 2011
- 5-Year Reunion for the Classes of 2015 and 2016

Register for
reunion events at:
[uwaterloo.ca/
engineering/
alumni/reunions](http://uwaterloo.ca/engineering/alumni/reunions)

REUNION
CLASS REPS
WANTED

Volunteer to be a Reunion Class Rep for your upcoming class reunion and be part of the action! Register today by emailing engineering.alumni@uwaterloo.ca or calling Gosia Brestovacki, senior alumni officer, at 519-888-4567, ext. 46838.

BRINGING RENEWABLE ENERGY TO NUNAVUT

Martha Lenio's eclectic career has included working as a photovoltaic process engineer, an entrepreneur, a fake astronaut (and a potential real one) and her current role as an Arctic renewable energy specialist.

The 2004 Waterloo mechanical engineering graduate, who went on to complete a doctorate in photovoltaic engineering at the University of New South Wales in Australia, moved to Nunavut two years ago with World Wildlife Fund (WWF)-Canada after working with the NGO for a year in Toronto.

"It was on my list of places I wanted to live," she says. "So, when the opportunity came up to work in Iqaluit, I jumped on it."

Lenio is now focused on moving Nunavut communities off diesel fuel and onto sustainable and less expensive forms of energy, such as wind and solar energy.



"I work on two levels – one is providing policy advice to government about what kind of programs they need to put in place to make renewable energy and energy transition a viable option," she explains. "The other is working with residents to help them determine what solutions will be best for their communities."

Launching training programs

Lenio loves the small-town atmosphere of Iqaluit, where she is a member of the local utility board and co-founder of a society to bring green energy training programs to help people living there become solar installers and home energy auditors.

The team commander of the NASA-funded Hawaii Space Exploration Analog and Simulation mission in 2014, Lenio was one of 23 women shortlisted three years later by the Canadian Space Agency for its astronaut program.

While her current working environment seems light years away from one in space, it does have at least one similarity. "Getting dressed to go outside here in the winter is kind of like putting on a full spacesuit," she laughs.

PUBLICATION NUMBER 40065122

WATERLOO | ENGINEERING

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