



OCTOBER 2019 / ISSUE 65

**WATERLOO ENGINEERING ALUMNI LETTER**

# weal

## **ONES TO WATCH**

Seven researchers to keep an eye on as their soaring achievements continue to shake things up.

UNIVERSITY OF  
**WATERLOO**



# weal

OCTOBER 2019 / ISSUE 65

**Faculty News** **04**

**Featured Story** **06**  
Ones to watch

**Class Notes** **11**

**Upcoming Events** **23**

**CONTACT US:**

Waterloo Engineering  
Alumni Affairs  
University of Waterloo  
200 University Ave. West  
Waterloo, ON N2L 3G1  
[engineering.alumni@uwaterloo.ca](mailto:engineering.alumni@uwaterloo.ca)

We respect your privacy and communication preferences. To learn more, please go to: [alumni.uwaterloo.ca/privacy](http://alumni.uwaterloo.ca/privacy)

**EDITOR:**

Carol Truemner

**WRITERS:**

Brian Caldwell  
Carol Truemner

**DESIGN:**

University of Waterloo  
Creative Services

**ILLUSTRATION:**

Dorothy Leung, a Waterloo School of Architecture alumnus. Leung is featured on page 19.





# FROM THE DEAN

## GOING BEYOND THE EXPECTED TO ACHIEVE THE EXTRAORDINARY

It's been a year since Engineering 7 opened its doors as the main entrance to the Faculty of Engineering. Our spectacular new building has far exceeded expectations in all ways imaginable with every square inch in full use by our students, faculty members and research groups.



Before the end of 2018, we began construction of a smaller building, a \$4.5-million research facility for autonomous vehicles located beside Engineering 7. Research in the one-storey, 7,050-square-foot Autonomous Vehicle Research and Intelligence Lab, better known as AVRIL, focuses on areas including perception by self-driving vehicles in all weather conditions, coordination with other vehicles and safety assurance. AVRIL is expected to officially open later this fall.

This issue's cover story highlights the research being advanced by seven of our exceptional students, recent alumni and new faculty members to improve quality of life.

Among our 'Ones to watch' is Professor Katja Mombaur, who will join Waterloo Engineering in March 2020 as the Canada Excellence Research Chair in Human-Centred Robotics and Machine Intelligence to lead a major research program in social robotics.

Now a renowned robotics expert in her native Germany, Katja's work involves the study of how people move to improve the motion of robots ranging from humanoids

to wearable devices such as exoskeletons. Her work will undoubtedly impact those with disabilities and the elderly.

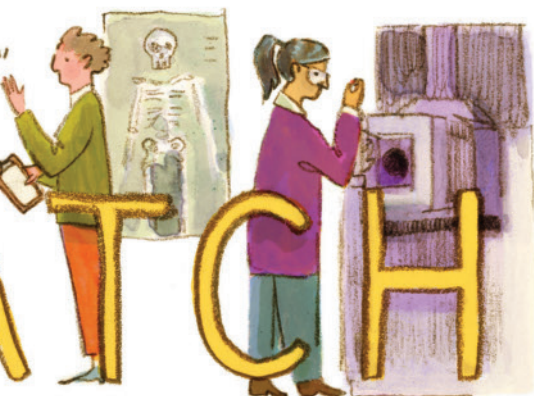
Also within the 'ones to watch' category is our new cohort of students. The Class of 2024 includes Elin Liu, who graduated with a remarkable 99.3 per cent from her Toronto high school. The first-year mechatronics engineering student is an excellent example of the incredibly bright students our Faculty attracts each year.

As we prepare to launch our 2025 strategic plan, we are committed to going beyond the expected to achieve the extraordinary. From breaking open new frontiers of research that will transform lives and industry to redefining the educational experience for undergraduate and graduate students, Waterloo Engineering will continue to build on our international reputation as the destination of choice for students and researchers.

It's because of you and your outstanding contributions to engineering and architecture that we are recognized as the epicentre of innovation and entrepreneurship for Canada and the world. I look forward to connecting with many of you at the various events we have planned throughout the year both on and off campus!

Sincerely,

**PEARL SULLIVAN**  
Dean, Faculty of Engineering



# FACULTY NEWS

## A golden win

Waterloo Engineering captured gold from the international Council for Advancement and Support of Education (CASE) for its Engineering 7 official opening and campaign close event held last October.

The gold Circle of Excellence award was won in CASE's special single-day events category.

Waterloo's entry was one of 2,856 from 611 higher education institutions, schools, and non-profit organizations in 20 countries.

In awarding gold, the judges said the Faculty's E7 opening event "serves as a great example of how to showcase a new building but also display its usage and engage constituents through interactive experiences [and a] collaborative and multi-faceted approach to donor recognition and stewardship."

---

## Engineering professor appointed deputy provost

Susan Tighe, a civil and environmental engineering professor, has been appointed the University of Waterloo's deputy provost and associate vice-president integrated planning and budgeting for a five-year term.

Tighe, a Waterloo Engineering alumnus, has been a faculty member since 2000 and is the Norman McLeod Chair in Sustainable Pavement Engineering.

---

## Faculty and graduate inducted into CAE

Two Waterloo Engineering faculty members and an alumnus are new members of the Canadian Academy of Engineering (CAE).

Pearl Sullivan, a mechanical and mechatronics engineering professor and dean of the Faculty, Peter Huck, a civil and environmental engineering professor and NSERC Industrial Research Chair, and Tom Lee, the chief education officer

for Quanser Consulting who has three Waterloo Engineering degrees, were inducted into the CAE as part of its 2019 annual general meeting.

The CAE is the national institution through which Canada's most distinguished and experienced engineers provide strategic advice on matters of critical importance to the country.

---

## Lab selected for 'thrilling' medical AI project

Waterloo Engineering researchers are teaming up with a leading artificial intelligence (AI) institute and a network of Toronto hospitals to help doctors better read x-rays and diagnose patients.

Hamid Tizhoosh, who heads the Laboratory for Knowledge Inference in Medical Image Analysis (KIMIA Lab) at Waterloo, called working with hospitals to use AI "the most thrilling thing I have ever done in my career."

"I want to look back and say 'This is what I did as a computer scientist,'" says Tizhoosh, a systems design engineering professor.

The KIMIA Lab was selected by the Vector Institute, a Toronto-based research institute, to collaborate with the University Health Network (UHN) to improve a software system that assists with diagnosis from medical images.

Tizhoosh and his lab developed an AI algorithm to enhance that system by scanning thousands of existing x-rays to find similar ones and automatically recommend a diagnosis to the attending doctor.

Their AI system now has about a 70-per-cent accuracy rate. With the backing of Vector, the goal is to refine it and push the accuracy rate over 90 per cent within the next year.

---

## Replacing fossil fuels with table scraps

Faculty researchers have developed technology to convert wasted food into a clean substitute for fossil fuels.

The system engineers natural fermentation to yield a chemical called carboxylate, which can be used to produce fuel and chemicals for products including drugs and plastic packaging instead of those derived from petroleum.

"The amount of food we waste is staggering," says Hyung-Sool Lee, a civil and environmental engineering professor, and director of the Waterloo Environmental Biotechnology Lab. "That's what motivated me to find a better way to utilize it to mitigate the damage caused by fossil fuels."

The technology developed at Waterloo collects and recirculates leachate – a microbial cocktail mixed with microorganisms and nutrients – that trickles through the food waste in holding tanks, rather than stimulating biodegradation by intensive mixing.

In addition to being cheaper and more productive than existing technology, Lee says, the system is designed for use on small and medium scales.

“Even small towns could have their own systems,” says Lee, who collaborates with GHD, a consulting firm in the clean-technology market. “Food waste collected in green bin programs wouldn’t have to be transported long distances to enormous, centralized facilities.”

The next step in the research involves testing the technology on a larger scale, with a long-term goal to commercialize it within four to five years.

---

## Love of cricket turns into a winning project

Aravind Ravi doesn’t really know how many hours he and two partners logged while developing technology to find and save the highlights in video footage from cricket matches.

“We didn’t count,” says Ravi, a systems design engineering master’s student. “It was a passion, so we just spent time until it started to work.”

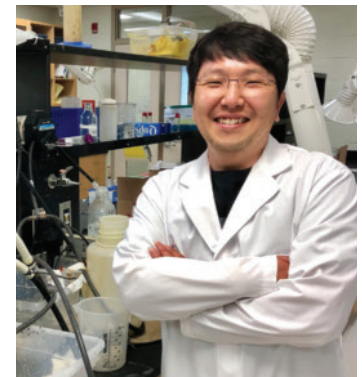
The system he built with fellow engineering graduate students Harshwin Venugopal and Sruthy Paul uses deep-learning artificial intelligence (AI) to process video from matches frame by frame and recognize when an umpire is shown making an important call.

The program then automatically saves the previous 10 seconds of action in the match, a buffer sufficient to capture the events that led up to the umpire’s gesture.

It’s believed to be the first time that cricket umpires – who make simple, deliberate signals with their hands and arms after significant plays on the field – have been used with AI technology as the key to picking out highlights.

The system was developed as a tool for television broadcasters to save time and effort while putting together highlight packages from matches.

The three grad students believe the AI software could be modified to find and save highlights in any other sport that involves officials who signal important events with gestures.



**TOP PHOTO:** It was a gold-medal win for Engineering 7’s official opening and campaign close event.

**BOTTOM LEFT PHOTO:** Faculty member **Susan Tighe** is the University’s new deputy provost and associate vice-president integrated planning and budgeting.

**BOTTOM RIGHT PHOTO:** **Hyung-Sool Lee**, a civil and environmental engineering professor, and his team have developed technology to turn food waste into a substitute for fossil fuels.



# ONES TO WATCH







**T**hey shine at stages all along the timeline, from an award-winning biomedical engineering undergraduate student to a mid-career professor and robotics expert with an international reputation.

But while they are at different places in terms of achievements to date, these seven researchers share the same curiosity, drive and determination to make a difference that have always characterized the work done at Waterloo Engineering.

They've developed a new bio-ink, improved water testing, added evidence to the climate change debate, invented a medical imaging system, used technology to motivate people with dementia to exercise, refined robot motion and helped robots assist people who need support.

And they aren't finished yet.

Keep an eye out for Nathan Duarte, Jason Deglint, Rebecca Saari, Parsin Haji Reza, Jennifer Boger, Katja Mombaur and Kerstin Dautenhahn – all relatively new to Waterloo Engineering – as they continue to make their marks on the world.

Whether just getting started or already well-established, they are among those to watch at a place where great things just keep happening.



#### **NATHAN DUARTE,**

a third-year biomedical engineering student at Waterloo, wasted no time distinguishing himself during his first two co-op work terms at a Harvard

University lab. He spent three months developing a new bio-ink to enable the 3D printing of kidney tissues, an achievement that earned him co-authorship on a research publication and recognition as one of the top co-op students in Canada for 2018. Made of proteins, human cells and other bio-materials, these kidney tissues allow for more accurate drug screening, and may eventually be used therapeutically to treat kidney failure.

#### **Q. What was it like to make such a difference at such a young age?**

**A.** It was really exciting. This is the type of project I hope to continue for the rest of my life. Honestly, research isn't glamorous. You don't make that much money and you work late hours in the lab. But for me, this research was a chance to work on something incredibly impactful and be as ambitious as I wanted, driven by curiosity about what might be possible. I loved the experience and I'm fortunate that I had it.

#### **Q. How do you see your career unfolding?**

**A.** My goal long-term is to start my own company developing products that improve healthcare outcomes. I'm fascinated by the potential for consumer electronics and wearables to collect medical data using sensors. This would be a big step towards democratizing and personalizing healthcare, and I'm eager to tackle big problems in this space. My focus in the short-term – whether I go to graduate school or work in industry – is on acquiring the skills and knowledge I need to achieve that goal.



#### **JASON DEGLINT,**

a doctoral candidate in systems design engineering, is a co-founder of Blue Lion Labs, a startup company that is developing a custom

microscope to automatically identify algae in water for on-site analysis by treatment plants and other users. The technology combines a microscope and a camera with artificial intelligence to detect toxin-producing blue-green algae – the culprit in algae blooms in lakes that can make people sick and are potentially fatal – based on their shape and colour in images. The goal is to produce results in minutes, compared to the three to seven days it now takes for manual lab tests.

“

I'm fascinated with how we can use complex technology and make it so slick that it's almost invisible. I call it zero-effort technology, which basically means it is designed so well that its use is completely intuitive.”

**JENNIFER BOGER**, a systems design engineering professor and Schlegel Research Chair in Technology for Independent Living at Waterloo

**Q. Why are you pursuing this line of research?**

**A.** During my master's degree, I did a lot more theoretical work around algorithms. For my PhD, I wanted to tackle a big, practical problem that has a direct impact on the way we live, our health and well-being as humans. I chose to research water because water impacts everyone as we all need it to live. This work allows me to utilize both my skill set in imaging and computer vision, and my passion to help people on a world-wide problem.

**Q. How do you hope your device will be used?**

**A.** The best way to think about it is as an early warning system for algae blooms. The technology itself is a detection system, not a prevention system, but if the people working in treatment plants, for instance, know soon enough that there is harmful algae in the water, they can take steps to deal with it appropriately. The more time they have to prepare, the better.



**REBECCA SAARI**,

who came to Waterloo as a civil and environmental engineering professor in 2015, uses sophisticated computer modelling to study the benefits of government air-pollution and climate policies in terms of human health. Her work on fine particulate matter, an airborne villain that is one of the leading environmental risk factors for premature death in the world, quantifies the economic impact of lower health-care costs, higher productivity and other factors to help make the case for change. Ultimately, Saari aims to contribute critical evidence to bolster the fight against climate change.

**Q. What inspired you to tackle such a huge, complex problem?**

**A.** I grew up in northern Ontario on a beautiful, pristine lake in the woods. When I moved to downtown Toronto to

do my undergraduate degree, I would go out to exercise and the air quality was terrible. That was really it. I didn't like how it smelled. I didn't like how it felt breathing when I was working out. And I was inspired by some of the researchers already working in this area. I saw it as a problem that combines important developments in science and engineering, and that is extremely relevant to people.

**Q. Are you optimistic or pessimistic about our chances of halting climate change?**

**A.** It's an incredibly urgent problem. The most recent estimates suggest we only have about a decade to stop emitting, but there is still time and, even if we don't hit the two-degree target, every half a degree of warming counts because of all the lives we could save. We can't give up. We can never say it's too late.

We're a creative, adaptive species, and I have hope we'll figure this out.



**PARSIN HAJI**

**REZA**, who joined Waterloo as a professor of systems design engineering in 2018, is director of the Photomedicine Lab and co-founder of startup illumiSonics. He invented a new type of non-contact photoacoustic imaging with potential applications in cancer and brain surgery, virtual biopsies via endoscopy and eye exams for early detection of blinding diseases. The new system has better resolution and can go deeper than other optical imaging techniques. Most importantly, it works when the target tissue can't be touched.

**Q. Where did your idea for remote optical imaging come from?**

**A.** It was an accident while I was a PhD researcher in 2014. It was about 10 p.m. and I was working alone in the lab to make a transducer, the device that touches the body in traditional photoacoustic imaging. At one point,



the transducer fell and I was still getting something on my monitor. I was lucky that night that I didn't just ignore it as noise, like people usually do. It made me realize it might be possible to do non-contact imaging. My PhD supervisor said I was crazy, but I worked on the side to prove it and it has been the focus of my life ever since.

**Q. How could your invention help cancer doctors?**

**A.** Right now, there is no way for clinicians to know the exact tumor margin intraoperatively and general lab tests to determine if they got everything, or need to operate again, take up to two weeks. Our technology uses two lasers – one generating sound and one detecting it – to do that without any contact in real-time during operations. If we achieve our goal in terms of accuracy, it could basically revolutionize the surgical oncology field.



**JENNIFER BOGER,**  
a systems design  
engineering  
professor and  
Schlegel Research  
Chair in Technology  
for Independent Living  
at Waterloo since 2016,

is director of the Intelligent Technologies for Wellness and Independent Living Lab. Her work involves the development of technologies to support the needs and abilities of people as they age, with emphasis on their health, quality of life and well-being. Examples include a head-mounted virtual reality game to encourage people with dementia to exercise, a portable seat cushion that monitors vital signs and an online tool for self-assessment of driving abilities.

**Q. What is your approach to design?**

**A.** I employ user-centred, participatory co-design, which is a fancy way of saying I involve the people I'm designing for throughout the entire process - ideation, prototyping, build and evaluation. They're

the ones envisioning and driving the direction of the technology, and we as engineers are executing - grabbing the bits off the shelf and getting them to actually work. You have to access and complement the lived experiences of people, almost like the user is right on your shoulder the whole time saying "yes, yes, no, yes, no." If it doesn't work for the person who has to use it every day, then for them it's a piece of junk.

**Q. How do you hope the resulting devices function?**

**A.** I'm fascinated with how we can use complex technology and make it so slick that it's almost invisible. I call it zero-effort technology, which basically means it is designed so well that its use is completely intuitive. The task the user is trying to achieve might be a lot of effort – like stroke rehabilitation, for example – but the technology that is supporting them requires zero effort to use. They just sit down and don't have to think about how it works because it is so well-suited to their expectations and abilities.

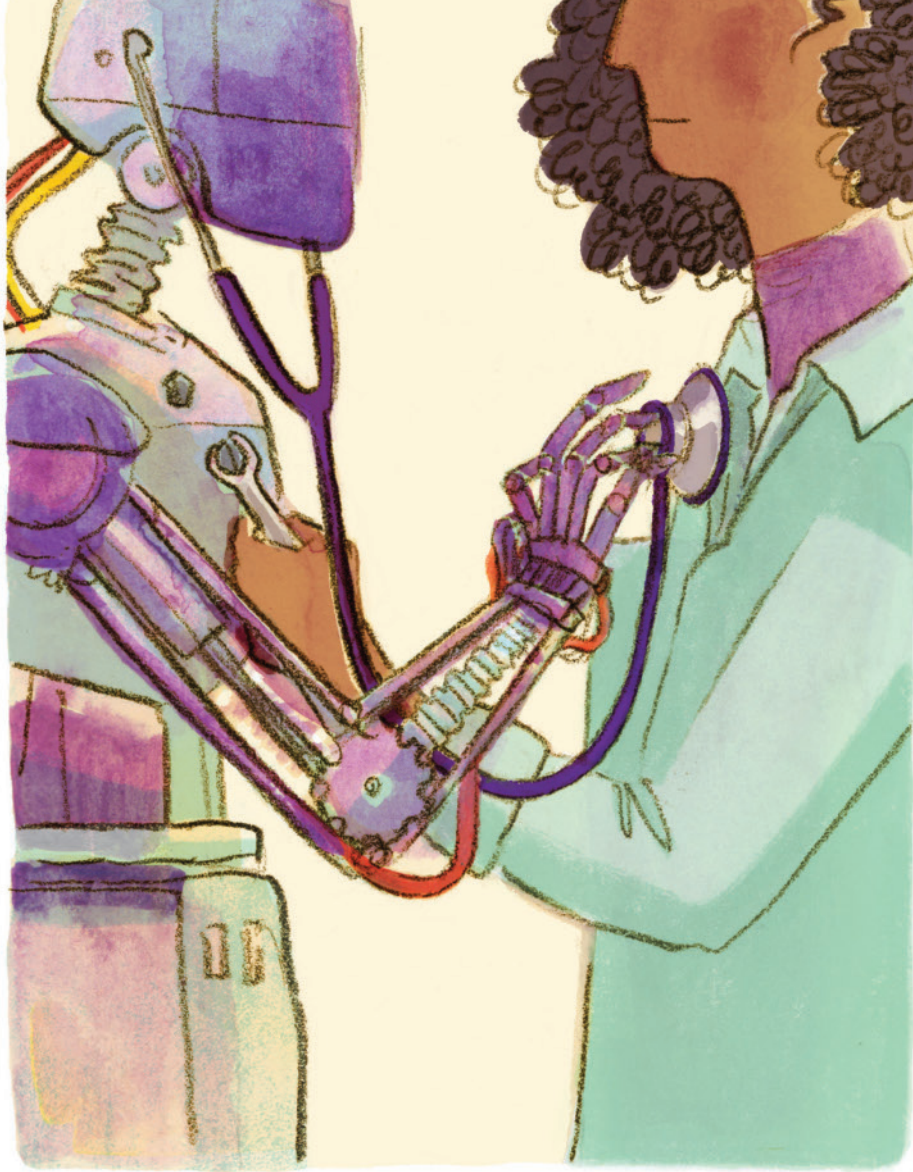


**KATJA MOMBAUR**  
is scheduled to join  
Waterloo in March 2020  
as the Canada Excellence  
Research Chair in  
Human-Centred Robotics  
and Machine Intelligence,  
and a cross-appointed professor

of systems design engineering and mechanical and mechatronics engineering. Currently an international robotics expert in her native Germany, Mombaur's work involves the study of how people move to improve the motion of robots ranging from humanoids to wearable devices such as exoskeletons. The ultimate goal is robotic technology that works as compatibly, effectively and safely as possible with people.

**Q. What are the key issues now facing robotics researchers?**

**A.** There is a lot of development to be done on the hardware and software sides to make it leaner and more stable, but we can't just concentrate on the technology. We must also



engineering, has been the Canada 150 Research Chair in Intelligent Robotics since coming to Waterloo from the United Kingdom in 2018. She is one of the founders of the field of social robotics, with expertise in how robots can pleasantly and naturally interact with people to assist them. Applications and potential applications include the use of robots to help autistic children, people with social anxiety disorders and older adults with dementia.

**Q. How could a robot help people with anxiety?**

**A.** Well, unfortunately, we all have unconscious biases with respect to gender, age, ethnicity and so on. You can't just switch it off. What that means is that when you talk to a therapist, especially if you are already anxious, you feel judged. That prevents people from opening up. Robots, on the other hand, don't judge. They listen and whatever you say is fine with them. They are completely neutral. I love that about robots and I want to investigate how they can be used as conversation partners, as tools, to help people start to discuss difficult issues without feeling judged.

**Q. Will people “like” robots as they become a bigger part of our lives?**

**A.** Hopefully not. I don't want people forming bonds with robots as they do with family members and friends. After all, they are machines and they are replaceable. The type of relationship I have in mind would involve caring and mutual understanding of roles, but not in the sense that you might cry if your robot suddenly left. We have this idea that robots could be our best friends – to combat loneliness, for instance – but for me this is a horror story. They are just machines. You can program them to look deeply into your eyes and say ‘I love you,’ but it is fake. Robots don't know anything about what it means to be human.

involve many other disciplines, areas such as psychology, medicine, the law and ethics, and major stakeholders in order to have these new technologies accepted. These stakeholders include patients, caregivers and relatives, in the case of wearable robots, and workers in different environments, in the case of humanoids. The robots I want to contribute to can affect the lives of many people and it is important to have them engaged at a very early stage of development.

**Q. What will robots be capable of within the next 10 years?**

**A.** In the context of wearable robots and assistive devices, in 10 years we expect to have developed dedicated systems that allow people with a variety

of problems to move again. This ranges from exoskeletons to enable people with paraplegia to walk, to mobility assistance robots for the elderly. In the case of humanoid robots, in 10 years they will support humans in a number of situations that are too dangerous or too remote or too boring. When there is a nuclear plant disaster or an earthquake, robots will be able to go where it's just not safe for people to go.



**KERSTIN DAUTENHAHN**, a cross-appointed professor of systems design engineering and electrical and computer



# CLASS NOTES

---

## 1962

---

**WILLIAM ROHMER** (MECH '62) has been retired for 25 years after 25 years of employment at Campbell Soup Company, residing in four countries and travelling internationally. He previously worked for W.R. Grace Chemical Co. in Trinidad, W.I., and Procter and Gamble in Hamilton, ON. He currently lives in Lumberton, NJ, U.S.

---

## 1964

---

**DAVE CLARK** (ELECT '64) reports he's "retired and living comfortably with my dogs in Maple Ridge, BC. Lots of grandkids all around. Would enjoy hearing from any classmates." [dave.riverlink@gmail.com](mailto:dave.riverlink@gmail.com)

---

## 1965

---

**CLASS REUNION – 55-YEAR ANNIVERSARY**  
**JUNE 6, 2020**

---

## 1966

---



**JOSEPH WONG** (CIVIL '66), now retired from the Government of Canada for 16 years (he was responsible for bridges and dams), was awarded the Queen's Golden Jubilee Medal in 2002. He and his wife, Myra, live in Ottawa. [myra.joe@bell.net](mailto:myra.joe@bell.net)

---

## 1967

---

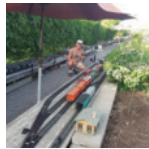


**DENNIS HEACOCK** (MECH '67) says "now that I am 77 years old, I have slowed down and am instructing students in the Energy Department at SAIT in economics, basic and advanced drilling, heavy oil recovery and reservoir engineering. It's a program that I enjoy immensely." [dheacock818@gmail.com](mailto:dheacock818@gmail.com)

---

## 1968

---



**BARRY BIRKETT** (ELECT '68) keeps busy after retiring from the Coast Guard in 2010 to Belleville where he volunteers. He's the founding chair of the Mission Thrift Store, Belleville, and is the FSNA internal reviewer. Barry enjoys singing with the Ontario Presbyterian Chorus, church work, and operating his large scale garden railway. [bbirkett@yahoo.com](mailto:bbirkett@yahoo.com)

**CLENDON WOODRIDGE** (ENVIRO '68) worked in orthopaedic research before moving into children's rehab engineering. He spent three years at Michigan State University and is currently self-employed as a rehab consultant in Ontario. He earned an MA in psychology in 1998 and is now working as a psychotherapist. [clendon.wooldridge@gmail.com](mailto:clendon.wooldridge@gmail.com)

---

## 1969

---

**ROMESH BATRA** (MECH '69) was awarded Virginia Tech University's distinguished professor designation. His citation says he's an international leader in applied mechanics whose research on material failure is recognized by his peers to be pioneering.

**MICHAEL GORDON** (CHEM '69) spent the last 33 years as an engineer for the Canadian division of Carmeuse Lime Co. He had numerous interesting positions from combustion engineer to management before retiring in 2018. He's enjoying life as a golfing, fishing and watercolour-painting grandpa. [michael.gordon0960@gmail.com](mailto:michael.gordon0960@gmail.com)

**DOUG HEWGILL** (CHEM '69) worked for Alcan in Arvida, QC and Kitimat, BC until 1993. He then worked in Krasnoyarsk, Russia helping to modernize a smelter until 1998. He spent a couple of years in the U.S. until the smelter was shut down due to the Enron crisis. After that, he was in Richards Bay, South Africa until retiring to Courtenay, BC in 2008. He currently volunteers as a math and science tutor at a local learning centre. [tdhewgill@gmail.com](mailto:tdhewgill@gmail.com)



**REINHARD ROSCH** (ELECT '69) retired from Nortel Networks in 1999. He is now busy with organic gardening, kayaking, skiing, music, etc.

and celebrated his 80th birthday this past June. He says "I still have a lot of - now antique - electronic stuff, but I am too busy in retirement to get back to it. Any antique collectors out there?" [rrosch@gmail.com](mailto:rrosch@gmail.com)

---

## 1970

---

**CLASS REUNION – 50-YEAR ANNIVERSARY**  
**JUNE 6, 2020**



**MURRAY ETHERINGTON** (MECH '70) reports he's been "in Mississauga for 26 years. I'm socially involved as a volunteer at the Mississauga Food Bank and CARP Mississauga Chapter. I'm still working as a consultant PEng in warehouse safety." [md.etherington@gmail.com](mailto:md.etherington@gmail.com)



**BRUCE MORGAN** (CIVIL '70) currently lives in Ottawa. Along with his wife Tonia, he has been enjoying retirement for the last four years and travelling much of the world, including a multi-month Pacific cruise to Hawaii, Bora Bora, Fiji, Samoa and Australia. [bruce.morgan1946@gmail.com](mailto:bruce.morgan1946@gmail.com)



**VINOD WADHAWAN** (SD '70) says "I am Heartwood Inc.'s CFO. Heartwood's virtual interactive simulations and guides help operations, maintenance, and field service teams perform complex procedures faster, safer and with less errors. Our visual, 3D interactive and portable applications allow them to practice procedures on equipment virtually via the web, PC, mobile, AR and VR platforms. Our customers reduce workforce training time by up to 60 per cent and see an ROI of up to seven times. Besides retiring every night, I have no plans to actually retire." [timowadhawan@gmail.com](mailto:timowadhawan@gmail.com)

# NAVIGATING THE ROAD AHEAD

## RAY QUAN

BASc '72, CHEMICAL

Quan had no intention of easing into a rocking chair when he retired a decade ago after a 30-year career at the Point Lepreau Nuclear Generating Station near his home in Saint John, New Brunswick.

Already an avid hiker and backpacker, he added long-distance cycling to his ambitious activities and has gone on to complete trips including a solo ride from Vancouver to Toronto and, just last year, the 13,000-km Silk Route from Beijing, China to Istanbul, Turkey.

"I get bored being relaxed," he says. "I'm capable of doing this, so I want to keep doing it until I can't."

Hiking and biking have taught Quan to focus and maintain control. They've also helped him shed the stress from his former job in heavy water management, where he often referred to his Waterloo Engineering notes right up until the end.

"When you're doing these long-term trips, there's only one thing you worry about and that's your next day of hiking or biking," he says. "All other day-to-day worries, you don't have them."

xenon@nb.sympatico.ca



---

## 1972

---

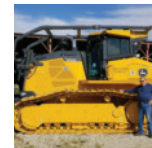
**JOHN CROSBY** (CIVIL '72) worked as an engineer with Totten Sims and Hubicki Assoc., the City of Calgary and Baymag Inc. He retired in 2016 to Penticton, BC.

[jgcrosby68@gmail.com](mailto:jgcrosby68@gmail.com)



**RICHARD EVES** (CIVIL '72) reports "retirement is in the picture; however, I would like to find a hands-on engineer who would like to continue my practice in aerial device testing and inspection with a guaranteed clientele and repeat business."

[richard@trefoils.ca](mailto:richard@trefoils.ca)



**WAYNE LYLE** (CIVIL '72) sold his precast concrete company ConArt Inc. several years ago and is now operating a 2,500-acre farm with pecans and cotton in Southwest Georgia along with his 4/10 mile asphalt race track Watermelon Capital Speedway at Crisp Motorsports Park.

[wayne@lylefarms.com](mailto:wayne@lylefarms.com)



**RON NORTON** (CIVIL '72) retired in December 2017 after completing a career as a city engineer, subdivision developer and home builder in Elliot Lake,

Ottawa and Sudbury.

[ronnorton1972@gmail.com](mailto:ronnorton1972@gmail.com)

---

## 1973

---



**WILLIAM MCCURDY** (CHEM '73) is still enjoying working in software development. Last May, he checked off a bucket list item by completing the rim-to-rim hike across the

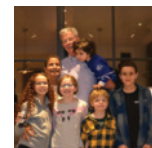
Grand Canyon in Arizona.

[WAMcCurdy@rogers.com](mailto:WAMcCurdy@rogers.com)

---

## 1974

---



**SHAHEERA BIEBER** (MSCI '74) says "It's been 45 years and I miss my classmates – get in touch if you have time. I am retired and live in Memphis and spend

summers in Toronto."

[shaheerabieber@comcast.net](mailto:shaheerabieber@comcast.net)



**PETER GOLEM** (CHEM '74, MECH '76) spent two years as a CUSO volunteer teaching chemical engineering courses at Prince of Songkla University in Thailand. He returned to Waterloo and was hired by Chorley & Bisset Ltd., London, becoming its president in 1995. Peter retired in 2015.  
[ptgolem@gmail.com](mailto:ptgolem@gmail.com)

**VERNE MILOT** (MECH '74) says "after retirement from a management career with multinational corporations, I am actively involved as a Niagara-based advisor to business owners and executive teams."  
[verne@growth-associates.com](mailto:verne@growth-associates.com)

**YUNG CHIU WAN** (MECH '74) says "since my graduation, I worked at AECL in Mississauga as an instrumentation and control engineer until 1997. Then, I worked at OPG until retirement in 2007.  
[ycwan8@gmail.com](mailto:ycwan8@gmail.com)

**RAE WATSON** (ELECT '74) reports "I'm in my 45th year working for a local nuclear instrumentation manufacturing company. I progressed from engineering project coordinator through R&D programs coordinator to engineering manager to sales manager to manager - technical sales, all working within the same organization (but through several different company names) at the same location. Looking forward to at least another couple of years!"  
[rwatson@ieee.org](mailto:rwatson@ieee.org)

---

## 1975

---

### CLASS REUNION – 45-YEAR ANNIVERSARY JUNE 6, 2020

**RON ALLEN** (CIVIL '75) retired in January 2019.  
[ronallen1@rogers.com](mailto:ronallen1@rogers.com)

---

## 1976

---

**DAVE HARRINGTON** (SD '76) says "I am now happily retired in Fernie, BC. Come visit me in the beautiful Elk Valley anytime if you're into golfing, fishing, biking, hiking, camping, boating, skiing or laying in a hammock with a refreshment."  
[dwharrington53@gmail.com](mailto:dwharrington53@gmail.com)

---

## 1977

---

**JOHN CHINNECK** (SD '77) reports "that the Systems Design Engineering Class of 1977 Award for accomplishments and creativity is now endowed: the first award to be given out next fall. It was a whole-class effort in memory of our fallen classmates. System'77 rocks!"

**SAMUEL LAM** (MECH '77) has been retired since 2016. He keeps busy on various side projects and by travelling.  
[sflam168@gmail.com](mailto:sflam168@gmail.com)

**PAUL NEPHIN** (ELECT '77) recently retired after selling his space sensor company Neptec. He's continuing entrepreneurial pursuits as chair of LiDAR company: Neptec Technologies Corp.  
[paul@nephin.ca](mailto:paul@nephin.ca)



**DAVID ROWAT** (SD '77) reflects that "I may be the last Steamer to retire. After a career with 75 different hi-tech companies in

Vancouver, I am now supposed to work only part-time arranging the sale of tech firms worldwide. But the work is cutting into my skiing and biking time too much. Great to catch up at the reunions."  
[dwrowat@stratcat.com](mailto:dwrowat@stratcat.com)

---

## 1978

---

**ANTHONY C K CHING** (CIVIL '78) has been retired since April 2017. He worked in the land development industry for about 30 years with developers and builders, as well as the City of Vaughan.  
[anthonyck.ching@gmail.com](mailto:anthonyck.ching@gmail.com)

---

## 1979

---



**TOM DEAN** (MECH '79) enjoyed seeing his classmates at their 40th reunion this past June. He continues to work as director-technical operations

in chemical engineering at the University of Waterloo.  
[tjdean@uwaterloo.ca](mailto:tjdean@uwaterloo.ca)

**PATRICK FINAN** (CIVIL '79) is president of Finan Financial Corp and is a private equity/venture capital investor. Previously, he was principal, private wealth solutions at National Bank of Canada, and senior VP of Bank of Montreal. After his engineering degree, he completed the Wharton Executive Business Program. He's a Whistler and Maui part-time resident and proud dad of three.

**JIM STOTHERS** (MECH '79) retired from Pratt & Whitney Canada after 32 years plus another four years on contract. He's now spending time riding and restoring old motorcycles, skiing, hiking, bicycling, kayaking, canoeing, and with his grandchild.  
[jim.stothers@bell.net](mailto:jim.stothers@bell.net)

---

## 1980

---

### CLASS REUNION – 40-YEAR ANNIVERSARY JUNE 6, 2020



**GORDON BRITTON** (MECH '80) says "my work at INTEGRA Technologies Limited is exciting. I bought out my partner a few years ago and I'm 'all in.' I'm proud of our

team that spans North America in 11 offices. We ensure the safety and reliability of the energy industry. Our speciality is detecting and preventing leaks."  
[gordbritton@gmail.com](mailto:gordbritton@gmail.com)

---

## 1981

---

**DOUG HINCKS** (CIVIL '81) reports "following eight years in Tanzania and three years in Waterloo, I have been working in England for the past 25 years with HSBC Bank property and then the health sector, refurbishing medical centres."  
[d\\_hincks@yahoo.co.uk](mailto:d_hincks@yahoo.co.uk)



**ROB SHAVE** (SD '81) says "I've had career success! Finally, I can pay down my accumulated carbon debt. Setting aside 10 acres with covenants that run with the

land should allow the 7,500 trees time to offset our family's CO2 emissions."  
[robshave.saugeenshores@gmail.com](mailto:robshave.saugeenshores@gmail.com)

---

## 1982

---

**BERT VAN DEN BERG** (MECH '82) is retiring after a career that included research on manufacturing at NRC, technology development at Hymarc, and research funding at NSERC.  
[bvmm@ncf.ca](mailto:bvmm@ncf.ca)

---

## 1983

---

**DICK KAULING** (MECH '83) says "I've had a 34-year marathon run with GM in product development. I've been running my victory lap for the past five years at Kauling Solutions doing part-time consulting focused on alternative propulsion – fuel cell, electric, natural gas, etc."  
[dick@kaulingsolutions.com](mailto:dick@kaulingsolutions.com)

# THE NEXT CHAPTER



## KEN OGILVIE

**BASc '75, CIVIL**

To help cope with the high demands of his position as executive director of Pollution Probe, Ogilvie turned to murder – on paper, that is.

He found an outlet for his fast-paced job of 12 years by rising early in the morning and writing fiction, which led to a suspense thriller featuring Rebecca Bradley, a 24-year-old officer with the Ontario Provincial Police.

Written sporadically for more than a decade, Ogilvie's first novel, *Her Dark Path*, was published in 2017. His second, entitled *Hound*, took just two years to complete and was released earlier this year.

Prior to taking up writing, Ogilvie held a variety of roles in the environmental policy domain with three governments in Canada. Now officially retired from Pollution Probe, he still acts as a policy consultant for the organization. He has been recognized for his outstanding environmental work with honorary doctorates from the University of Waterloo and Thompson Rivers University.

Currently working on his next book, Ogilvie says his engineering background informs his approach to writing.

“Engineering was valuable because you have to think things through and figure out the logical next step,” he explains. “But the writing itself I let go – I let it flow.”

[www.kenogilvie.com](http://www.kenogilvie.com)

**STEVE MCINNIS** (CHEM '83) has been retired since May 2015. Soon, he and his wife will be volunteering as teachers in a prison in Malawi. In his last regular job, he was a project manager at Flowserve in Cainsville, ON.  
[stevenora331@gmail.com](mailto:stevenora331@gmail.com)

**CHARLES WATSON** (CHEM '83) is semi-retired and living on Florida's nature coast, 80 miles north of Tampa.  
[watson4484@brighthouse.com](mailto:watson4484@brighthouse.com)

---

## 1984

---



**MATTHEW HURAS** (ELECT '84) recently retired from IBM Canada, where he enjoyed a 35-year career primarily in the database industry. Matt retired as an IBM

Fellow and was granted 54 patents while at IBM. Matt can now be found spending the majority of his time exploring the wild outdoors.

**WINSTON LAU** (CHEM '84) runs a trading company in HK SAR, specializing in exporting safety products to North America and European countries.  
[winstonlau@asiasafety.com.hk](mailto:winstonlau@asiasafety.com.hk)



**LOUISE MALLORY** (MECH '84, '86) is quality specialist for QAi Quality Assurance in Edmonton, managing third party inspection for pipeline components.

Her off-hours passion is theatre – writing, directing, stage managing, performing.  
[louise.mallory@gmail.com](mailto:louise.mallory@gmail.com)

---

## 1985

---

### CLASS REUNION – 35-YEAR ANNIVERSARY JUNE 6, 2020

**CALVIN CHANG** (ELECT '85) is enjoying freedom 55, no yacht, no mansion, just a Smart Fortwo Cabrio.  
[ccwchang@gmail.com](mailto:ccwchang@gmail.com)



**SERGIO E. SERRANO** (CIVIL '85) has been appointed professor emeritus at Temple University in Philadelphia. His newest book is *Riding The Waves of the Stock*

*Market: Applications of Environmental Astronomical Cycles to Market Prediction and Portfolio Management.*  
[sserrano@temple.edu](mailto:sserrano@temple.edu)





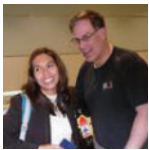
**GERASIMOS (MIKE) STANITSAS** (CHEM '85) has been working in various managerial positions at Hellenic Petroleum SA for the past 30 years. Currently, he is the group's chief procurement officer.  
[gstanitsas@helpe.gr](mailto:gstanitsas@helpe.gr)

## 1986

**ELLIOTT ATKINS** (ELECT '86) recently sold AddMirror, which he started in 2008. He is a full-time professor in Seneca College's School of Marketing, entrepreneurship coach with York University's LaunchYU coaching program and co-founder of IoT company Opilio Labs.  
[elliott@opiliolabs.com](mailto:elliott@opiliolabs.com)

**ED TOEWS** (SD '86) joined iMEC Corporation as vice president operations, U.S. and Mexico in 2017 to build the U.S. and Mexican divisions, augmenting this successful Canadian instrumentation, measurement, environmental, and controls consulting company.  
[Ed.Toews@IMECCorp.com](mailto:Ed.Toews@IMECCorp.com)

## 1987



**STEPHEN GREGORY** (MECH '87) says "I have come a long way back from the coma I suffered and started [www.afterabirehab.com](http://www.afterabirehab.com) to share some of the

lessons learned. Making a new way in brain injury rehabilitation."  
[afterrehab@gmail.com](mailto:afterrehab@gmail.com)



**JOHN GREUEL** (CHEM '87) reports "I retired from Shell after 31 years in the field of real-time optimization. It was a great career but I am ready for a change of

pace. Section two of my four section Trans Canada ride was in May 2019."  
[JLGreuel@shaw.ca](mailto:JLGreuel@shaw.ca)



**CHRIS PREISS** (CIVIL '87) has completed his "mandate" at TD Bank after working for SNC Lavalin. Both positions included modernizing project

delivery and capital planning processes as well as delivery.  
[cpreiss1006@gmail.com](mailto:cpreiss1006@gmail.com)

**KEITH TYNDALL** (SD '87) reports that with all three children in university (twins at Waterloo, the youngest at McMaster), he and his wife Beverley are building their next home in Hawkestone, ON to help them enjoy life even more.  
[keith.tyndall@gmail.com](mailto:keith.tyndall@gmail.com)

## 1988



**ABYD KARMALI** (CHEM '88) is the climate finance executive at Bank of America Merrill Lynch based in its London, UK office. He received an OBE for services to climate change and sustainable finance in the Queen's New Year's Honours List.

## 1989

**ZOUBIR LOUNIS** (CIVIL '89; '93) says "I am currently a principal research officer at the National Research Council Canada. I was awarded the 2018 Ernest E. Howard Award by the American Society of Civil Engineers, which recognizes significant achievements that advance the field of structural engineering, for a paper that I co-authored with Dr. Therese McAllister. The paper, titled Risk-Based Decision Making for Sustainable and Resilient Infrastructure Systems, was published in the ASCE Journal of Structural Engineering, Vol. 142, Issue 9, 2016."

## 1990

### CLASS REUNION – 30-YEAR ANNIVERSARY JUNE 6, 2020

**RICHARD BRATH** (ARCH '90) recently completed a part-time PhD in computer science data visualization at LSBU. He continues to work at Uncharted Software Inc. in Toronto on visualization, analytics and machine learning.  
[rbrath@unchartedsoftware.com](mailto:rbrath@unchartedsoftware.com)



**DAVID CLAUSI** (SD '90) has enjoyed being a professor in systems design engineering since 1999. Recently, he accepted the role

of associate dean, research and external partnerships to help shape the future of research within Waterloo Engineering.  
[dclausi@uwaterloo.ca](mailto:dclausi@uwaterloo.ca)

**GREG MILLS** (CHEM '90) has been working in Ontario Nuclear since 1995, is married and has two boys, both 13 years old. They live in the town of Uxbridge, about 30 minutes north of Pickering. He remains a fan of science fiction, technology and renovating his 1940's era house.  
[greg.p.mills@gmail.com](mailto:greg.p.mills@gmail.com)



**WA IAT ALBANY TAM** (CHEM '90) has not stopped his work-term lifestyle since graduation. After 12 years in Hong Kong and eight years in the Middle East,

he is now back in Asia between Singapore and Taipei working on airport utilities infrastructure design and MEP team/business development in different markets and sectors.  
[albanytam@gmail.com](mailto:albanytam@gmail.com)

## 1991



**PAUL MARTIN** (CIVIL '91) founded Aqua Insight Inc. in 2018 to continue offering water resource management consulting during his "semi-retirement."

Previously, in 2003, he founded Aqua-Resource Inc., which merged with Matrix Solutions in 2012.  
[pmartin@aqua-insight.com](mailto:pmartin@aqua-insight.com)

## 1992



**GERMAIN BERGERON** (CHEM '92) is the founder/owner of a winery/cidery in Nova Scotia.

[germain@bulwarkcider.com](mailto:germain@bulwarkcider.com)



**ALEXANDRE PINTO ALVES DA SILVA** (ELECT '92) has been working as chief researcher for electrification at the mining company Vale since March 2018.

Previously, he led energy and automation R&D initiatives for Latin America at GE Global Research Center in Rio de Janeiro. He was recently elevated to the grade of IEEE Fellow.  
[alexpas@uol.com.br](mailto:alexpas@uol.com.br)

---

## 1993

---



**MATT MANUEL** (SD '93) has been working at Microsoft Vancouver for the past two years as a principal program manager.

Previously, he was senior

director of development for Capcom Game Studio Vancouver.

[matt@mattmanuel.com](mailto:matt@mattmanuel.com)

---

## 1994

---



**MARCELO ALENCAR** (ELECT '94) says "I'm now at the Federal University of Bahia, Brazil as visiting professor after retiring from the Federal University of Campina

Grande. I just published my 23rd book, Modulation Theory (River Publishers, Delft, The Netherlands). Silvana and I have two beautiful grandchildren, who live in France. I plan to publish two more books this year and visit Waterloo again."

[sampaio.alencar@gmail.com](mailto:sampaio.alencar@gmail.com)



**BRIAN WHITE** (COMP '94) has spent the last 12 years at Google (first Zurich, now Montreal) both coding and managing production jobs. He previously started a couple

of small companies (games, point-of-sale) with varying successes.

[bcwhite@pobox.com](mailto:bcwhite@pobox.com)

---

## 1995

---

### CLASS REUNION – 25-YEAR ANNIVERSARY JUNE 6, 2020

**NISHAD ALANI** (SD '95) works as CEO for Retail Zoo, a retail multi-brand business out of Melbourne, Australia after many years working in leadership roles in Asia Pacific. Nishad, his wife Dinar Somani (Elect '95) and their two kids have settled in down under and love Melbourne's relaxed urban vibe. Coming home to Canada to visit is now definitely trickier!  
[nishad.alani@gmail.com](mailto:nishad.alani@gmail.com)



**ROBERT SELBY** (MECH '95) has been working at Tigercat Industries since graduation. He's married to Dayna Furukawa (Kinesiology '95) and lives in Kelowna, BC. Their son Brett is currently at Waterloo in software engineering. Robert is a partner in Hatch and Perseus Wineries so come visit for a wine tasting!

[selbywest@gmail.com](mailto:selbywest@gmail.com)



**JERRY VANKOOTEN'S** (CIVIL '95) construction drilling company, Earthline Foundations and Shoring Ltd., has received the Canadian Business

Magazine Growth 500 award for both 2017 and 2018. Headquartered in Mississauga, the business is growing steadily.

[jvankooten@elfoundations.ca](mailto:jvankooten@elfoundations.ca)

---

## 1996

---

**KARIM HIRJI** (MSCI '96) is an executive principal with IBM Data and AI, where he is passionate about pursuing business strategy solutions for clients that blend insight, innovation, automation and augmentation.

[khirji@ca.ibm.com](mailto:khirji@ca.ibm.com)

---

## 1999

---



**BLANKA SHARMA** (CHEM '99) received the National Science Foundation Career Award. This achievement will allow her to develop engineering approaches to

understand and direct immune cell responses in both cancer and tissue regeneration.

Blanka is currently a professor of biomedical engineering at the University of Florida.

[blanka.sharma@gmail.com](mailto:blanka.sharma@gmail.com)

---

## 2000

---

### CLASS REUNION – 20-YEAR ANNIVERSARY JUNE 6, 2020

**JEREMY CARKNER** (CIVIL '00), transitioned in November 2018 from an 18-year career at Morrison Hershfield Limited to join EllisDon Corporation, where he is the director of quality assurance and quality control for the Toronto Buildings Group.

---

## 2002

---



**DAVID KROETSCH** (COMP '02) reports that 12 years after founding Aeryon, he and his team sold their high-end drone business to FLIR Systems in January

for US \$200M.



**SHAHRAM YOUSEFI** (ELECT '02) has moved to San Francisco, where he runs his academic mission as associate-dean corporate relations for Queen's

University and a research program in 5G at UC Santa Cruz. He co-founded a healthcare SaaS startup (his third) in 2018. MESH AI is the world's first socially intelligent staff scheduler for hospitals and clinics.

[president@canarmony.ca](mailto:president@canarmony.ca)

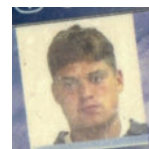
**PHILIP ZOLDAK** (MECH '02) joined Hyundai-Kia Technical Center Inc. in 2017 as the manager of engine development and testing. He is also the principal investigator on a recently awarded Department of Energy-funded project to meet future fuel economy and emission regulations. The project is in collaboration with Michigan Technological University (MTU), Phillips 66 and the Department of Energy. He is also pursuing a PhD in mechanical engineering with MTU.

[Pzoldak@hatci.com](mailto:Pzoldak@hatci.com)

---

## 2003

---



**DAVID BENDL** (MECH '03) says "I retired in 2009 around my birthday. I will be employed, I believe, a decade later - 2019. By the way, that is my high-

school license photo. I was like LeBron James, but in engineering."

[dbendl@hotmail.com](mailto:dbendl@hotmail.com)

---

## 2004

---



**TAMER RIAD** (ELECT '04) has been working as a hardware engineer at Apple since August 2016. Previously, he was an analog circuit designer

with Fujitsu Labs of America. He also held prior positions in RF and mixed signal modeling and verification.

[tfahim@gmail.com](mailto:tfahim@gmail.com)





**DAVID SHALABY** (ELECT '04) has launched a new startup called WristCoin that offers cashless technology to venues, events, and festivals of all sizes.

[dave@mywristcoin.com](mailto:dave@mywristcoin.com)

**ERIC STEPHENS** (MECH '04) lives with his wife Emily in New York City, where he has worked as a litigator at the law firm Jones Day since 2009 and joined the partnership in January 2019.

[epstephens@gmail.com](mailto:epstephens@gmail.com)



**JOYCE KYEYUNE TONDA** (BET '04), formerly the publisher of Enterprise Technology Magazine, currently manages a communications

and documentation consultancy firm in East Africa supporting development partners to creatively document the impact of aid support.

[jonaiga@gmail.com](mailto:jonaiga@gmail.com)

---

## 2005

---

**CLASS REUNION – 15-YEAR ANNIVERSARY**  
JUNE 6, 2020

---

## 2006

---

**FELIX AUDIRAC** (BET '06) is currently CEO of CartoData and Droidika, solution providers in the geospatial and smart cities domain with core focus on data acquisition, processing and data science to support decision-making process.

[felix@audirac.com](mailto:felix@audirac.com)

---

## 2007

---



**ALEX GICUTTINI** (GEO '07) has been working for Shell since 2007 and is currently in Oman. In January 2019, he was promoted to construction manager of

the 180MW Gas Engine Power Plant being built onsite.



**EMILY JOHNSTON** (SD '07) is the product engineering manager at Color Genomics, a health analytics and genetic testing company based in

the San Francisco Bay Area. Previously, Emily was an engineering manager at Pinterest and Google.

[tehmle@color.com](mailto:tehmle@color.com)



# A LIFE-CHANGING EXPERIENCE

## ATHENA D'AMATO

### MBET '08

If you've seen a Waterloo Engineering video lately, it was likely produced by Angle Media Group, a digital media company co-founded in 2008 by D'Amato and fellow alumnus Jordan Monaghan (MBET '07).

The company created the Faculty's Educating the Engineer of the Future Campaign videos, plus all other campaign digital content, and recently completed a Waterloo geological engineering promotional video.

Angle Media's 15 employees, located in Toronto and Calgary, work with startups, educational institutions, as well as tech and other companies. Besides the University of Waterloo, major clients include Facebook, Moët Hennessy USA, and more.

D'Amato enrolled in the Faculty's Master of Business, Entrepreneurship and Technology program after completing a media studies undergraduate degree, followed by a public relations diploma and related work experience in Hollywood, California.

Along with invaluable business and entrepreneurial knowledge, she graduated from the Conrad School of Entrepreneurship and Business with a close-knit network of classmates from all over the world. More than a decade later, they still work together to help achieve their goals.

D'Amato says her MBET experience was life-changing.

"You start the program on one path, but with an open mind the opportunities are endless," she says. "The skills you learn and the people you meet are forever."

---

## 2008

---



**LUC GALLANT** (COMP '08) is still working at OPG in Timmins as a senior plant engineer. Last October, his family welcomed Dominique. [lucgallant@gmail.com](mailto:lucgallant@gmail.com)



**KAMIL SZYNNKARCZUK** (COMP '08) has been working for three years as a portfolio manager at Stone Milliner in Pfäffikon, Switzerland. He and his wife Denan have a six-month-old daughter, Olivia. [kszyznkar@gmail.com](mailto:kszyznkar@gmail.com)

---

## 2009

---



**MARIA ARSHAD** (MECH '09) is working as the chief customer officer for LaunchGood. Previously, she worked as head of operations for an award-winning startup called SSIMWAVE and scaled it from five to 40 people. She currently lives in Calgary, AB. [mariarshad@gmail.com](mailto:mariarshad@gmail.com)



**JACKY YI JIANG CHEN** (CIVIL '09) says he's "currently on my sabbatical and travelling around the world, backpacking in South America for eight months. I just visited Torres del Paine Park in Patagonia."



**MAGDALENA MIŁOSZ** (ARCH '09, '15) is a doctoral candidate in architectural history at McGill University. Her research examines architecture as a site of encounter between Indigenous peoples and the Canadian state, 1920-1970s. [magdalena.milosz@mail.mcgill.ca](mailto:magdalena.milosz@mail.mcgill.ca)

---



**MAJID MIRZA** (BET '09) has just completed three years working for the Mennonite Economic Development Associates as senior project manager. He recently received an offer into University of Waterloo's PhD program in sustainability management. [majid.org@gmail.com](mailto:majid.org@gmail.com)

**ANDREW RAHAMAN** (MECH '09) is currently working as a lead engineer in the Innovation Vehicle Engineering group at GM in Michigan. He's the design-responsible engineer for the Multimatic DSSV dampers on the Chevrolet Colorado ZR2. [andrew.rahaman@gm.com](mailto:andrew.rahaman@gm.com)

**SUNNY TO** (SD '09) is running a boutique custom software development shop, Latero Labs, in Vancouver with classmate Derek Yau (SD '09). [sunny@laterolabs.com](mailto:sunny@laterolabs.com)



**BRANDON TULLOCH** (MECH '09) is working as engineering manager at Apple Inc. in Cupertino, CA. He's working on the next big thing! [brandon.b.tulloch@gmail.com](mailto:brandon.b.tulloch@gmail.com)

---

## 2010

---

### CLASS REUNION – 10-YEAR ANNIVERSARY JUNE 6, 2020

**ABDUL AL-HAIMI** (BET '10, MSCI '16) was busy establishing and growing PerkinElmer's innovation lab last year. Currently, he is leading the company's AI research efforts to solve key healthcare problems. In addition, he is pursuing his entrepreneurial passions through personal side projects. [abdul.alhaimi@perkinelmer.com](mailto:abdul.alhaimi@perkinelmer.com)



**REZA NIAZMAND** (ELECT '10) says "after 5 years and a couple patents building Facebook's infrastructure and HW, I moved to Uber to help them build out their next generation data center technologies." [reza.niazmand@gmail.com](mailto:reza.niazmand@gmail.com)

---

---

## 2011

---



**AHSAN HASHMI** (ELECT '11) switched jobs in 2017 and is now working as a power systems engineer at Stantec. He continues to volunteer as secretary of the Thousand Islands Chapter of Professional Engineers Ontario.



**JONGMU (JOSHUA) OH** (ELECT '11) is working in Canada Post's business intelligence and analytics team helping with marketing and sales analytics to give customers the best experience receiving parcels. [joshua.oh@gatech.edu](mailto:joshua.oh@gatech.edu)

**YAN YIN** (ARCH '11) says "I am currently pursuing a master's degree in real estate development at Columbia University. Prior to this, I had spent eight years working in Beijing and Shanghai, first in architecture and later in retail development." [yan.yin@columbia.edu](mailto:yan.yin@columbia.edu)

---

## 2012

---



**HUSSEIN ATTAR** (MSCI '12) works at Tech Invest Com as an investment manager, investing in growth startups in the MENA region. [hattar@techinvestcom.com](mailto:hattar@techinvestcom.com)

**CHRISTIAN LEE** (ARCH '12) has been working for the City of Edmonton as an urban planner since July 2013. He currently leads the strategic initiatives and infill liaison teams with Development Services. [christian.lee@edmonton.ca](mailto:christian.lee@edmonton.ca)

**GRAHAM PINHEY** (SWE '12) has been working at Google's Kirkland office since December 2017. [gpinhey@gmail.com](mailto:gpinhey@gmail.com)

**TURUNA SEECHARAN** (SD '12) has been working as an assistant professor at University of Minnesota Duluth since September 2016. Previously, she was a postdoctoral fellow in the Centre for Maintenance Optimization and Reliability Engineering at the University of Toronto under the supervision of Prof. Andrew Jardine. [tseechar@d.umn.edu](mailto:tseechar@d.umn.edu)

---



**GEORGE WANG** (MTRON '12) is the North American general manager for a 200-person Chilean software development company. Previously,

he was a co-founder of a YC-backed startup, a designer at Johnson & Johnson and Huge, and a management consultant at BCG Digital Ventures.

[georgewang89@gmail.com](mailto:georgewang89@gmail.com)

---

## 2013

---



**DAVID HANNAH** (ENVIRO '13) has been working as an environmental engineer at Enviro-Stewards, an award-winning engineering company

based in Waterloo Region since 2015.

[dhannah@enviro-stewards.com](mailto:dhannah@enviro-stewards.com)



**JOHN LEE** (MECH '13) has been working as a manager, strategic initiatives at Air Canada. He received his MBA from Wilfrid

Laurier University in 2018.

[jj23lee@gmail.com](mailto:jj23lee@gmail.com)

**CHEN LU LI** (CIVIL '13) is working with a structural engineering company.  
[chen100proof2674@gmail.com](mailto:chen100proof2674@gmail.com)

**JAMES ROSSY** (SWE '13) spent time after working at Microsoft traveling around the world with a program called Remote Year. Now he's living in Berlin working with a blockchain startup called Celo.org.  
[jm.rossy@gmail.com](mailto:jm.rossy@gmail.com)



**AYAN SADHU** (CIVIL '13) joined as an assistant professor in the civil and environmental engineering department at Western University in

July 2018. Previously, he was a faculty member at Lakehead University.

[asadhu@uwo.ca](mailto:asadhu@uwo.ca)

# SKETCHING OUT A NEW CAREER



## DOROTHY LEUNG

**BArch '13**

Passionate about drawing since childhood, Leung likes to dabble in pretty much anything creative, including what she describes as “bad latte art.”

The Toronto resident demonstrates her artistic talents with unique illustrations in this WEAL issue.

Leung was attracted to Waterloo’s School of Architecture for both its co-op and Rome programs, and its design courses.

“When I was in architecture, I would construct images that tell a story of how people might go about their day in a given building,” she says.

After graduation, she worked in architecture for about 10 months before taking a year-long break.

She then went back to the drawing board – literally – by attending Sheridan College for illustration. Graduating this past spring, Leung received the 2019 Brenda Clark Visual Narrative Award. She was thrilled to meet Clark, illustrator of the Franklin the turtle children’s series.

“I grew up on those books,” she says.

Now a full-time freelance illustrator, it was meaningful for her to work on WEAL.

“It feels like everything has gone full circle after a huge detour,” Leung explains. “It’s confirmation that everything I learned in Waterloo’s architecture program has been useful in my new career.”





**MODUSSER TUFAIL** (CHEM '13) is working as a fire protection engineer in Strathcona County, AB. He is leading a PSM-based Industrial Engagement Program, the

first in Canada, and supports the Industrial Fire Inspection Program.

[modusser.tufail@strathcona.ca](mailto:modusser.tufail@strathcona.ca)

**FARIS ZAHID** (MECH '13) worked at Litens Automotive as a junior project manager and at Ford Motor Company as a design release engineer, and is currently at Magna as a systems engineer.

[zahid.faris@gmail.com](mailto:zahid.faris@gmail.com)

---

## 2014

---



**REZVAN AHMED** (ELECT '14) is currently completing his MBA at the University of Cambridge, UK. Previously, he was based in Toronto, working as an electrical

engineer at Arup, a global engineering and design firm, designing buildings and infrastructure all over the world. Rezvan is planning to move to Kenya after completing his MBA.

[rezvan.ahmed@gmail.com](mailto:rezvan.ahmed@gmail.com)



**HARMANBIR BRAR** (CHEM '14) is currently studying for his MBA at IE Business School in Madrid, Spain. Previously, he was a maintenance engineer at

Dow Chemical Canada from 2014 to 2018.

[brar369@gmail.com](mailto:brar369@gmail.com)

**SCOTT DUNCAN** (MECH '14) started a new job as a mechanical/product design engineer at Wymo (transferred from Google).

[scott.duncan@uwaterloo.ca](mailto:scott.duncan@uwaterloo.ca)



**FAHD INTIAZ** (MSCI '14) is a software product manager who loves building great products to solve real problems.

[fahd87@gmail.com](mailto:fahd87@gmail.com)

**MICHAEL LEUNG** (NANO '14) is the lead engineer at a seed-stage digital health startup in San Francisco. Previously, he was working on his PhD at Stanford University.

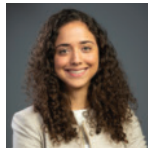
[mcleu1@gmail.com](mailto:mcleu1@gmail.com)



**PETER ROBERTSON** (MECH '14) reports he has moved from co-op to full-time at Kontek Ecology and now is electrical engineering and

automation manager. He travels the world for installation and commissioning of industrial wastewater systems, including the U.S., Mexico, the Philippines, Romania and Vietnam.

[robertson.peter.c@gmail.com](mailto:robertson.peter.c@gmail.com)



**YASAMAN SHAHTAHERI** (CIVIL '14) has been developing holistic risk-informed decision frameworks for multi-million-dollar infrastructure

projects at AECOM since July 2018. She received a PhD from Virginia Tech, where she developed a probabilistic decision support system for a performance-based design of infrastructures.

[yassh@vt.edu](mailto:yassh@vt.edu)

---

## 2015

---

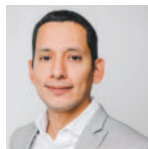
### CLASS REUNION – 5-YEAR ANNIVERSARY JUNE 6, 2020



**ALI AMIN** (MECH '15) is working at the intersection of mechanical and electrical engineering to develop novel

biosensors within Apple's Health Technologies group in California. He's passionate about bringing medical technologies to consumer electronics.

[aliamin@outlook.com](mailto:aliamin@outlook.com)



**ERNESTO CHIRINOS** (MSCI '15) has been working at RBC Technology since 2013. Initially, he joined as an enterprise architect. The last

three years he has focused on delivering transformation programs for the bank (API Engineering & Omni Channels).

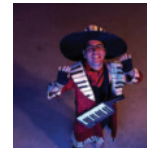
[ernesto.chirinos@gmail.com](mailto:ernesto.chirinos@gmail.com)



**JENNIFER FERNICK** (SD '15) has been named head of research and engineering at NCC Group, a global cybersecurity firm. She is now based in New York

City and would love to hear from other Waterloo Engineering alumni in the area.

[jennifer.fernick@nccgroup.com](mailto:jennifer.fernick@nccgroup.com)



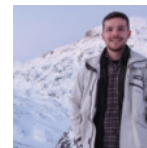
**STEPHANE LEE** (COMP '15) says he's "putting my degree to good use with LEDs and keytars."



**CAMELIA NUNEZ** (BET '15) is the associate director of the University of Waterloo's Velocity program. She works with aspiring student entrepreneurs

on campus and helps support startups at the Velocity Garage incubator. She also founded an EdTech startup, which she ran for two years after receiving her MBET degree.

[cnunez@uwaterloo.ca](mailto:cnunez@uwaterloo.ca)



**MAX TAYLOR** (ENVIRO '15) runs a desalination plant at the Meliadine Mine in Nunavut. Before this, he worked at the Brucejack Gold Mine in northern

BC and Teck's CESL Copper research facility in Vancouver.

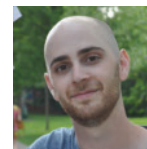
**ABDULLAH ZUBAIR** (MSCI '15) is currently working as a senior manager, digital customer experience at Bell Canada. He's leading the transformation of its mobile app program.

[a3zubair@uwaterloo.ca](mailto:a3zubair@uwaterloo.ca)

---

## 2016

---



**DAVID BIRNBAUM** (CIVIL '16) is celebrating the one-year anniversary of his company BTI Media.

Now located in Waterloo, the company is creating great podcasts and YouTube series, and setting the groundwork to change the face of media worldwide.

[david@btimedia.ca](mailto:david@btimedia.ca)

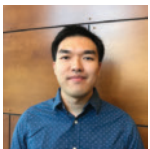


**AUSTIN COUSINEAU** (ELECT '16)

works as a network hardware engineer, previously storage hardware engineer, at Facebook in Menlo

Park, California. He keeps busy in his home workshop and exploring the national parks.

[a.j.cousineau@gmail.com](mailto:a.j.cousineau@gmail.com)

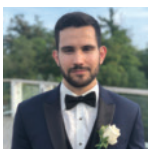


**KRISTANTO TANUSDJAJA**

(CHEM '16) says "I was an operator for the world's largest nuclear power plant. I moved to BC and am back to looking

for an engineer-in-training position in BC or AB."

[ktanusdjaja@gmail.com](mailto:ktanusdjaja@gmail.com)



**ALEX VENA** (NANO '16) has been working as a strategic project engineer at Adaptive Surface Technologies in Cambridge, MA since

August 2016, contributing to multiple polymer and coating patent applications and helping the startup launch its first official product on the market.

[alexvena16@gmail.com](mailto:alexvena16@gmail.com)



**NINA WANG** (ARCH '16) has been working at RAW Design, where she managed residential projects and created award-nominated

interactive installations. Nina is returning to Waterloo to complete her master's thesis on post-humanist territories.

[nina.wang@uwaterloo.ca](mailto:nina.wang@uwaterloo.ca)



**NATHAN WOLTMAN** (SWE '16) is developing a startup to help software engineers find jobs that fit their personal values and goals. He

says "I hope to reduce Canada's brain drain by showcasing great Canadian companies that tech talent often seems to overlook."

[nwoltman@outlook.com](mailto:nwoltman@outlook.com)

---

## 2017

---



**FATIMA AWAN** (CHEM '17) is vice-president of R&D at Bonbouton, a healthtech startup in New York City, where she heads the development of graphene

technology for smart insoles that provide early detection of developing foot ulcers in diabetic patients.

[f.awan001@gmail.com](mailto:f.awan001@gmail.com)

**FIONA DOBRIK** (CHEM '17) has been working as a data analyst at Smile.io in the KW region since October 2017.

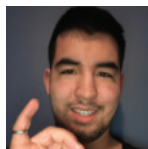
**TIMOTHY DROPPO** (CHEM '17) reports that "after skiing for a year, I moved to Sweden and am working in Europe in the food packaging industry. Europe presents lots of new opportunities and challenges!"

[timdroppo@me.com](mailto:timdroppo@me.com)

---

## 2018

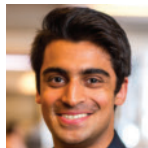
---



**AUSTIN BOUCINHA** (NANO '18) has been working as a teacher at Spirit of Math since August 2018. He will be completing his Master of Teaching program at

OISE from September 2019 to June 2021.

[apboucinha@edu.uwaterloo.ca](mailto:apboucinha@edu.uwaterloo.ca)



**SAMIR JAVER** (BET '18) says that "after graduating from the MBET program in 2018, I became a product manager at Clio, one of Canada's fastest-

growing tech companies. Clio provides cloud-based legal technology for law firms, with over 150,000 customers worldwide."

[samir.javer@uwaterloo.ca](mailto:samir.javer@uwaterloo.ca)

**RAMSEY KILANI** (NANO '18) has been working as an enterprise applications consultant at IBM since 2018.

[kilani.ramsey@gmail.com](mailto:kilani.ramsey@gmail.com)

**CINDY LU** (CIVIL '18) specialized in building technology and is now working in San Francisco with some really cool people. She says that "half my paycheque goes to rent. The other half goes to avocado toast. #CaliOrBust #WhoopsNotCS."

[clu@sgh.clm](mailto:clu@sgh.clm)

**VINCENT MAGAS** (MGMT '18) is working as a production control specialist at Toyota Motor Manufacturing Canada while pursuing a part-time MAsc with Waterloo Engineering's management sciences department starting this fall.



**ABDELBASET MIDAWI**

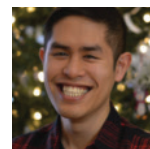
(MECH '18) graduated in fall 2018 and started a new position at the University of Waterloo as a postdoctoral

fellow in January 2019.

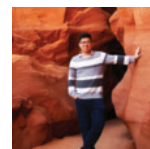
[amidawi@uwaterloo.ca](mailto:amidawi@uwaterloo.ca)

**HARLEY TONG** (MECH '18) is now pursuing his master's degree in financial engineering at UCLA. He is looking to begin his career in the field of quantitative finance after graduation.

[harleytong95@gmail.com](mailto:harleytong95@gmail.com)



**DON TU** (CHEM '18) is currently working as a process EIT at Hatch in the pyrometallurgy sector. [don.tu@outlook.com](mailto:don.tu@outlook.com)



**XIN ZOU** (COMP '18) says "I am working as a software development engineer at Amazon to enable small and medium-

sized businesses to ship billions of products around the world.

[x9zou@uwaterloo.ca](mailto:x9zou@uwaterloo.ca)



## GREETINGS ALUMNI

With now more than 46,500 Waterloo Engineering alumni around the world, the incredible impact you're making in all areas of engineering and architecture continues to grow.

You'll notice that this issue of WEAL has a new look and feel due to illustrations by Dorothy Leung, a very talented 2013 architecture graduate. You can read more about Dorothy and her artistic career on page 19.

Our cover story highlights the remarkable research advancements of seven of our own. From new faculty members to students and recent alumni, these individuals are making their mark in AI, biomedical engineering, human-robot interaction, optical imaging technology, and the development of zero-effort technologies for older adults and people with disabilities. Once again, you will be impressed by some of the best and brightest who chose Waterloo for their education or careers.

If you're planning to visit the University of Waterloo, please let me know in advance. I'd be delighted buy you a coffee at the new C&D in E7 and give you a tour of the newest buildings on campus.

Sincerely,

**GOSIA BRESTOVACKI**

gosia.brestovacki@uwaterloo.ca

Senior Alumni Officer, Faculty of Engineering

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

**Ten Thousand Coffees:** <https://uwaterloo.ca/engineering/waterloo-engineering-global-alumni-network>

P.S. If you have any story suggestions for future issues of WEAL or eWEAL, please send them to me. Some of our best stories come from you!

### IN MEMORIAM

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

- Donald Austin (Mech '66)
- Richard L. Bedding (Mech '73)
- Ralph T. Boughner (Chem '70)
- William B. Closs (Civil '63)
- Charles A. Eggert (SD '76)
- Phil Everson (Mgmt '17)
- Randolph E. Fasan (Arch '77)
- John F. Hammer (Civil '78)
- Carl R. Hevenor (Civil '63)
- Settiana G. Krishnasamy (Civil '67)
- James E. Lehmann (Mech '65)
- Christopher Joseph MacLellan (SD '79)
- William J. McCall (Mech '84)
- Stephen A. McKelvie (Civil '75)
- Walter E. Miller (Mech '67)
- Carl A. Mills (Elect '65)
- Colton J. Moore (Biomed '18)
- Lucas Parafianowicz (Mech '07)
- James K. Simpson (Chem '77)
- Kenneth N. Smith (Civil '70)
- Eric D. Soulis (Civil '72, 88)
- James D. Steele (Civil '69)
- Yulun Sze (Civil '68, '72)
- George W. Todd (Civil '71)
- Gary O. Wagner (Chem '73)
- Walter Wasson (Elect '72)
- Raymond E. Westerberg (Civil '94)
- Richard A. Wu (Civil '12)
- Charles K. Youngs (Civil '68)

### Join the global network

In addition to reunion, alumni and special campus events, we've made connecting with the Waterloo Engineering community even easier for you.

Our global network of engineering alumni continues to grow on the Ten Thousand Coffees platform! This online networking service (free to users) is a University of Waterloo alumni-founded company.

Within the platform, only Waterloo Engineering alumni and students are part of the "Waterloo Engineering Hub" so you know it's exclusive and highly relatable. The idea is to sign up and then reach out to your classmates (no matter the year of graduation) for a virtual or real-life coffee and see where that conversation takes you. It might be a new career opportunity, a new idea, a new employee or finding old friends. Join for free at <https://uwaterloo.ca/engineering/waterloo-engineering-global-alumni-network>.



# UPCOMING EVENTS

## WATCH FOR IT

A Waterloo Engineering alumni communications survey is coming your way in the next couple of weeks!

**FOR THE LATEST  
WATERLOO ENGINEERING  
ALUMNI EVENTS, VISIT:**

[uwaterloo.ca/engineering/alumni](http://uwaterloo.ca/engineering/alumni)

## OCTOBER 30–NOVEMBER 2, 2019

### ROMA XL Celebration

#### UNIVERSITY OF WATERLOO ROME CAMPUS, ROME, ITALY

Join your Waterloo School of Architecture alumni community to mark 40 years of the Rome program with a four-day celebration during which alumni will be able to reminisce about their time as students in the eternal city.

## JANUARY 17, 2020

### 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

Meet up with your classmates at this breathtaking private ski resort to ski and snowboard for the day followed by an après ski. Snowshoeing trails are also available.

## MARCH 16–27, 2020

### 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. The Capstone Design Symposia are the culmination of the undergraduate student experience, creating a blueprint for innovation in engineering design. Each undergraduate program presents its Capstone projects on a different day.

## JUNE 6, 2020

### Waterloo Engineering Class Reunions in 2020

ALL DAY

#### UNIVERSITY OF WATERLOO

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 new 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 Class of 1960
- 55-Year Reunion for the Class of 1965
- 50-Year Reunion for the Class of 1970
- 45-Year Reunion for the Class of 1975
- 40-Year Reunion for the Class of 1980
- 35-Year Reunion for the Class of 1985
- 30-Year Reunion for the Class of 1990
- 25-Year Reunion for the Class of 1995
- 20-Year Reunion for the Class of 2000
- 15-Year Reunion for the Class of 2005
- 10-Year Reunion for the Class of 2010
- 5-Year Reunion for the Class of 2015

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](mailto:engineering.alumni@uwaterloo.ca) or calling the Alumni Officer at 519-888-4567, ext. 46838.

# MENTAL HEALTH COLLABORATION

After witnessing classmates and friends struggle with depression and stress-related issues, a team of fourth-year engineering students decided to improve access to mental health resources.

Their systems design engineering Capstone Design project, now a startup called Collab Health, uses validated screening tests to direct students to the correct resource depending on the type and severity of their mental health issue.

“Initially, we thought the answer was having more counsellors available,” says co-founder Lily Ren, who graduated this past spring. “But then, when we learned more about the problem, we discovered the challenge is with the access to the resources and how students are connecting to them.”

Ren and Oscar Lo (both BSc ’19, Systems Design), two of the four-person Capstone Design team originally called Beacon Health, are continuing to develop Collab Health’s online platform thanks to a \$50,000 financial boost provided through the



Palihapitiya Venture Creation Fund. The fund was launched by alumnus Chamath Palihapitiya (BSc ’99, Electrical), the founder and CEO of Social Capital.

## Helping make change

Ren and Lo are using the money to help pay for further software development of Collab Health’s prototype, as well as the professional support of psychologists and lawyers who specialize in mental health policies and education.

Next steps include piloting their software on Waterloo’s campus.

“Mental health is such a big issue in university,” Ren says. “We really want to help make a change.”

Collab Health is something Ren wishes was available when she started her undergraduate program in 2014. An international student from China, she was the only member of her immediate family living in Canada.

“I think I’m getting better at handling stress, but it’s also the support around me that is sometimes lacking,” Ren says. “Collab Health will help provide that.”

PUBLICATION NUMBER 40065122

## WATERLOO | ENGINEERING

FACULTY OF ENGINEERING Alumni Affairs  
engineering.alumni@uwaterloo.ca  
200 University Ave., W. Waterloo, ON, N2L 3G1

