human trafficking P2
Police arrest two people for human trafficking in Waterloo.

HELPING DIABETICS P5 UW researchers have created a device to make needle pricks a thing of the past.

## MENTAL HEALTH Q\&A

Dr. Christine Purdon, UW psychology prof answers questions about mental health and online learning. P6

WORRIES FOR STUDENT SAFETY
Professors are concerned for international students

MORE SHUT-DOWNS P7 Find out what has shut down due to COVID-I9.


## news

# 'Shoe strike' a silent protest to highlight climate change in Waterloo 

Neha Lakshman

Assistant News Editor

Global youth climate movement, Fridays for Future, organized a shoe strike in order to bring attention to the current global climate emergency.
The event was hosted at Waterloo Public Square from 9 a.m. to to a.m. on Friday, Sept. 25, - a global day for climate action.
The event marked the one-year anniversary of the Global Climate Strike, hosted in Sept. 2019, with more than 5,000 participants from the Waterloo Region.
Due to the onset of COVID-19, this year's event was hosted on a smaller scale, following social distancing guidelines with the aim of building a "thriving, caring, low-carbon society in Waterloo Region."
"Last year, over 5,000 people gathered in-person for the 2019 Climate Strike in Waterloo Public Square - while of course we could not have a similar gathering this year, it was very clear from the generous donations of shoes and boots made, and all the positive messages we received, that this region still cares deeply about the need for climate action," Kai Reimer-Watts, a core organizer of the event, said.
"All shoes and boots will be passed on to people living unsheltered in the region, in partnership with Unsheltered Campaign."
Donations including warm winter shoes and boots were made by participants.
The public response to the shoe strike was positively large the organizers of the event said.
"Turnout in terms of in-person volunteers was small but mighty, as we wanted
to limit the number of in-person volunteers due to COVID. Hence, the focus of the event was not on the number of people who showed up, but rather on the symbolic message sent by the over 400 shoes and boots donated from across the community, representing the hundreds of people who would have liked to attend but couldn't," Re-imer-Watts said.
The main goal of Fridays for Future is to educate the public on the adverse effects of climate change and reduce the carbon emissions in the region by at least 50 per cent by 2030 - also known as $50 \times 30$ - in order to uphold the country's commitment to the Paris Climate Agreement, and leaving a more sustainable environment for future generations.

The shoe strike also symbolizes the launch of 50x30WR.
" $50 \times 30 W R$, which aims to push councils and the region to adopt a 50 per cent emissions reduction target by 2030 - as climate science makes clear that this is really the minimum commitment required to protect us all from accelerating, disastrous climate change impacts," Reimer-Watts said.
"By committing to 50x30, Waterloo Region can accelerate the much-needed transition to a low-carbon, more sustainable and just economy for all. In the face of the climate crisis, we can choose not to wait as the crisis worsens, but instead act now for a better future, developing much-needed solutions while building and celebrating together the growth of a more sustainable and equitable community that we aspire to be."
Similar events will be held in the coming months to raise awareness on justice-based action on climate change.


Natalie Wennyk at the shoe strike organized to bring attention to the climate crisis.


All donated shoes will be passed onto people living unsheltered in the region.

## Police Briefs

A
woman from Quebec was rescued from human traffickers.
On September 27, Waterloo Regional Police responded to reports of a disturbance the area of Victoria St. N. in Kitchener. As a result of the investigation, they discovered a female from Montreal was the victim of human trafficking.
An adult male and adult female, both from Montreal were arrested and charged with human trafficking offences. WRPS continue to urge residents to stay vigilant and look for the signs of human

## trafficking.

Residents are asked to contact Crime Stoppers at 1-800-222-8477 or email intel. ht@wrps.on.ca with any information.
Two teens were arrested after lighting a couch on fire in the middle of the road.
On Thursday, September 24, at 2:40 a.m., members of the Waterloo Regional Police Service, Waterloo Fire Department, and Wilfrid Laurier University Special Constable Service, responded to the area of Bricker Ave. at Clayfield Ave. in Waterloo after receiving reports of couch on fire in the
middle of Bricker Ave. The Waterloo Fire Department extinguished the fire and there were no reported injuries as a result of the fire.
On September 25, the WRPS's North Community Oriented Response and Enforcement team arrested an 18-year-old male and a 19 -year-old male.
Both individuals have been charged with arson - damage to property and mischief under $\$ 5,000$. They are scheduled to appear in the Ontario Court of Justice on November 9, 2020.

Aman was arrested after a robbery. On September 26, at 1:50 a.m., Waterloo Regional Police responded to a report of a robbery at a business located in the area of Victoria St. N. and Lancaster St. W. in Kitchener. A male entered the store and demanded cash. The male fled with an undisclosed amount of cash and merchandise. The suspect was located hiding in the area of Weber St. W. and Wilhelm St. by members of WRPS's Canine Unit. A 39 -year-old male was charged with robbery.

# Four WLU students test positive, UW reassures students safety protocols will be enforced 

## Claudia Tavara-Tello <br> Reporter

Flour students tested positive for COVID-19 at Laurier University. None of these students live on-campus and are all currently in quarantine.

On Sept. 20, 2020, Wilfrid Laurier University announced that two have directly reported to the Waterloo Public Health Unit, while the other two are under the jurisdiction of the Wellington-Dufferin-Guelph Public Health department.

Despite the quick response, other students at Laurier are concerned about exposure to COVID-I9 and wonder where the outbreaks originated.

While not confirmed, some have speculated that it could be traced back to Western
going well so far."
Regarding the possibility of locations becoming quarantined, Kalaichaniran thinks "that is the responsible thing to do now that the cases are going up, so it's better to lock things down to try to flatten the curve more."

Chandu Subramaniam, a UW student in her fourth year of Biomedical Engineering, expressed her thoughts on this matter, "I feel like students needed to be more responsible," Subramaniam said.
"With the second wave coming and more students interacting, people do not know if they are the carriers so it can affect other students. Ultimately, we need to be responsible."
Much like Kalaichaniran, Subramaniam is also confident that UW is well prepared.
"I do see that because there is someone who is always patrolling and we make sure
said.
As for new and substantial ideas Elming stated, "The University will also be opening a new testing center for staff and students, details of which will be made available
shortly."
While the possibility of a second wave remains uncertain, UW will continue to keep students updated on their efforts to mitigate the spread of COVID-19.


Upper right: Changes implemented at SLC for social distance learning.
Lower right: Stickers put in place at UW to prevent the spread of COVID-19 to students, faculty, and staff.

# UW professors worried about international students 

Vidyut Ghuwalewala
News Editor

With university classes conducted remotely and utilizing alternative means, professors teaching in universities worry about international students and their access to online lectures and discussions.
UW is among many universities around the world that have taken a remote-first approach to teaching and learning, with all classes going online for the fall term.

Many professors have raised concerns, highlighting accessibility issues for international students as well as the difference in time zones affecting their schedules.
Many international students returned to their home countries during the onset of the pandemic. Unable to come back due to immigration restrictions, they now deal with accessibility issues due to the nature of their home countries.
Authoritarian states like China have internet restrictions in place that ban access to YouTube and other internet sources use-

ful for students to complete their courses.
"I have a section on Asia. This year, for the safety of my students... I have decided not to include China. I'm just afraid my students would be vulnerable. Most important to me is things we might consider innocent
.. might not be read as such by the authorities," Professor Bojana Videkanic, whose course focuses on modern art in the context of censorship, the cold war, decolonization, and propaganda, said.

On the other hand, UW Political Science

Professor Emmet Macfarlane tweeted out early this month saying, "If I have students in China and I'm teaching politics I'm sure as hell not gonna change content on the basis of what a totalitarian, repressive regime allows people to see."
Professors have had to adapt to different methods of teaching in order to accommodate students from all over the world.
International students studying in the fall term have expressed their concerns as well. Janhvi, a second year Accounting and Financial Management student at UW, explains how he believes online school isn't the same.
"It took me a while to get used to it, especially having to learn everything online through recordings and having to deal with being in a different time zone that is almost nine hours ahead of Canada," she said.
The university has made accommodations for students who have accessibility issues. If the student can't watch a documentary or access a particular website due to internet restrictions in their country, the professor may make special arrangements for students or consider alternatives.

# Ottawa, Windsor, and Montreal may feel a lot closer 

Pivot Airlines partners with the Region of Waterloo International Airport

Tashfin Salam Orna Reporter

Flying within the province just got easier.
Pivot Airlines announced in a re-
cent press release that they are partnering with the Region of Waterloo International Airport (YKF) to provide scheduled flights to Toronto, Ottawa, Montreal, and Windsor.
The press release states that service will commence upon receipt of the necessary approvals and is contingent on the removal of COVID-I9 travel-related restrictions. Flights will be operated with Canadian made CRJ Jets and De Havilland Dash 8 Regional Turboprops.

Brock Henderson, Vice President of Operations Control at Pivot Airlines, said "COVID-I9 is affecting our launch date and we are watching very carefully how September plays out as students return to school. We are probably going to adjust our launch date."

When flights start, Pivot will maintain
safety standards to prevent the spread of COVID-19. "We intend for the launch the airlines to be highly focused on sanitization procedures and seating arrangements when boarding the aircraft. We are also focusing on smaller facilities that are easier for facility keepers to maintain a high level of sanitization," Henderson said.
The agreement will allow Pivot to build maintenance, operations, and office facilities at YKF.
"[The] Region of Waterloo has for a very long time maintained an excellent facility at the YKF. When we were looking for opportunities to re-enter the scheduled airline business, we looked around the Province and YKF stood out as the single really best opportunity in Southern Ontario and even in the country," Henderson said.
Chris Wood, Airport General Manager for the Region of Waterloo International Airport, said they have tried to secure more airline services at the airport for a long time
and Pivot was interested in the market in KW.
"We have a large affluent population that want to travel to these destinations, and they haven't historically been able to do that from their local airport. The only way to travel is through another airport. So, this will allow them to save time and also potentially allow same day trips," Wood said.
Toronto, Ottawa, Montreal, and Windsor are being offered as part of Pivot's launch routes.
"These cities are in our launch plan and our intention is to serve as many airports in Ontario as quickly as we can," Henderson said. "From a market point of view, there are about 800,000 people who aren't really served, so we saw this as an opportunity to serve."

The Region expressed interest in catering their services to students.
"The university students are a market we are interested in working with," said Wood. "We are also planning to implement a GRT bus route directly to the airport. Students can potentially board directly from the Uni-
versity of Waterloo LRT station and that will connect to the GRT route."
The partnership hopes to serve the community while also creating local jobs.
"It is absolutely critical that the community responds and utilizes the service being provided," Wood said.
"YKF is also helping with the marketing as the Region has an established marketing team," Henderson said.
Pivot plans to expand its operations to serve other cities across Canada and the US.
"We are collecting market data and are looking at other destinations in Quebec, Maritimes and possibly Manitoba. We are also definitely watching south of the border as well," Henderson said.
Pivot intends to provide services yearround.
"Our intention is to operate year-round, and Kitchener is going to become a hub to our operation," Henderson said.
"We are really excited to be starting this partnership with the Region of Waterloo, and I really hope the people of Kitchener embrace this (Pivot) as Kitchener's airline."

# sports \& health <br> WRITE FOR SPORTS <br> Want to go to UW games for Imprint? <br> You'll be able to talk to players, coaches, and fans! For more info, email sports@uwimprint.ca. 

# Paving the way to pain-free glucose checks for diabetics 

Julie Daugavietis
Sports \& Health editor

Researchers from UW's Centre for Intelligent Antenna and Radio Systems and Wireless Sensors and Devices Lab have developed a revolutionary device that could be life-changing for people with diabetes.

The palm-sized device uses radar and artificial intelligence (AI) to non-invasively read blood vitals inside the human body.

The new device helps people with diabetes monitor their glucose levels without painful finger pricks.
"The key advantage is simply no pricking," George Shaker, an engineering professor at UW, said in a media release. "That is extremely important for a lot of people, especially elderly people with very sensitive skin and children who require multiple tests throughout the day."

To use the device, users simply place their fingertip on the touchpad of the device. Radio waves are sent through the skin and into the blood vessels before reflecting back to the device for the AI software to process and analyze. Within seconds, the device will tell users whether their blood sugar levels have increased, decreased or remained stable.

Users would need a regular glucometer or laboratory blood tests every few weeks to compare with the device's readings for accuracy.
Researchers expect the device could be commercially available in a few years.

While currently exploring options for commercialization, they estimate the device would retail for less than $\$ 500$.

They said the device could be available in a wearable form like a smartwatch that patients could wear at all times and receive


UW researchers are working to make sure diabetics no longer have to prick themselves multiple times a day.

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glucose alerts similar to breathing and heart rate sensing.
"This finding paves the way for continuous monitoring," Shaker said. "Given the current pace of progress, I expect the technology to be available in a wearable form within the next couple of years."
For diabetes patients, who prick their skin several times per day to release a drop of blood for testing using a glucometer device, the revolutionary new technology is a non-invasive alternative.
"Our safe, reusable, pain-free device would eliminate the need for implanted sensors, patches or devices that use chemical reactions or fluid transfer through the skin," Ala Eldin Omer, an engineering PhD student who led the project said.
Engineering professor Safieddin (Ali) Sa-favi-Naeini said the science used in creating the device has several other potential applications. Since many ingredients of blood have distinct electromagnetic properties, the same technology could be extended to other types of blood analysis and medical diagnosis.
This new technology has great potential to make multiple medical procedures safer and less invasive.
The full research paper on the device, Low-cost portable microwave sensor for non-invasive monitoring of blood glucose level: novel design utilizing a four-cell CSRR hexagonal configuration (www.na-ture.com/articles/s41598-020-72114-3.pdf), can be read online in Scientific Reports, a Nature Research journal.


# Dr. Christine Purdon, psychology prof on student mental health 

Julie Daugavietis Sports \& Health editor

Post-secondary students are facing the new experience of online learning as fall classes begin in the midst of the COVID-19 pandemic. Dr. Christine Purdon, UW Professor of Psychology and registered psychologist, answers some questions about how the shift to learning online could affect the mental health of students.

Q: How will the transition to remote learning affect the mental health of post-secondary students?
A: For some people, it might make things easier. It might reduce their mental health issues, sol think it depends on people's

## Q: Are there positive benefits to remote learning? <br> Q: Are there positive benefits to remote learning?

A: There are positive benefits in the sense that some people with anxiety issues, for example, may find that their anxiety is alleviated. You don't have to be out and about in public as much and you can turn your mic and video off, so there are lots of ways you can kind of hide a little bit. People with panic disorders may also find that they don't have to be out and about. People with OCD may have more control over their environment. The problem for those people might arise when there is a return to classes. We're certainly noticing in our Centre for Mental Health Research that with students going back to school, we have a lot more referrals than we had when they were at home. There could be a lot of reasons for that, but a lot of students were fine during the pandemic. Now that they have to

A: There are positive benefits in the sense that some people with anxiety issues, for example, may find that their anxiety is alleviated. You don't have to be out and about in public as much and you can turn your mic and video off, so there are lots of ways you can kind of hide a little bit. People with panic disorders may also find that they don't have to be out and about. People with OCD may have more control over their environment. The problem for those people might arise when there is a return to classes. We're certainly noticing in our Centre for Mental Health Research that with students going back to school, we have a lot more referrals than we had when they were at home. There could be a lot of reasons for that, but a lot of students were fine during the pandemic. Now that
situations. Overall, I think that if people are in a stres ful environment at home, where there are a lot of people competing for computers, internet, and privacy, it can be stressful to try to focus and concentrate on your work when there's lots of other things happening. I think that's a big issue, not so much the online learring but the fact that people are required to participate in online learning from wherever they are.

Q: How will e-learning affect learning and retention? A: It depends on if you're in an environment where there's all kinds of stuff going on. If you have family members who are fighting, or if you're easily distracted, all kinds of things might make learning harder. If you'ye got social media on and such it can be so much easier to get distracted, so I think there's something about coming to a class physically and just carving out that space and time in your day. I think it's harder for some people for sure.
go back, things are getting really hard for them again.

## Q: Do you have any further

 advice for maintaining mental health during online learning?A: I do think it's really important to carve out time in a day to get outside, read a book, or listen to some music to stay offline. Try to find something different, you know, get out into nature. I also think structure is really important. When you're doing asynchronous learning, it's up to you to schedule things. I think that if you don't structure your time, it will catch up with you very quickly, and it'll sort of lead to this aimlessness, and then you get overwhelmed, and it's really hard to get engaged again. So even though your days aren't really structured for you the way they were when you had lectures and such, that's really one thing that you can do to help yourself.

## arts \& life

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## Review: It's All Good (Unless It's Not) <br> 

Vishal Lilman
Reporter

Looking for a book recommendation? Look no further than It's All Good (Unless It's Not): Mental Health Tips and Self-Care Strategies. If you're a post-secondary or senior year student, especially one in or about to be in the "important to the academic mission" culture of UW, this book is a must-read.

Nicole Malette, author and PhD candidate at UBC, has outdone herself with her debut book. It's All Good... reads less like the technical manual the title suggests it is and more like a written conversation. Throughout the book, Malette weighs in on her own personal experiences on campus as a student dealing with mental health challenges. Her ability to talk about her experiences brings much-needed comfort and delicacy to the discussion of mental health. Furthermore, it adds to her credibility as someone who can help the reader benefit and grow from whatever struggles they are going through. Malette brings in expert advice and statistics to back her guidance, as well as excerpts from students detailing their struggles with caring for their mental health while dealing with the stressors of balancing study, work, and life as a university student. It's All Good... goes beyond self-care habits that are glorified on social media: unplugging, drinking eight or more glasses of water, bubble baths, "follow this page," etc. Mind you, the aforementioned are good tactics, aside from following yet another Instagram account. However, they are superficial and don't elaborate on the benefits reaped. Malette presents different self-care and mental wellness strategies while explor-
ing the "why" and "how" of it all. Malette also suggests ways to integrate those strategies into a busy schedule. For example, Malette endorses the idea of writing down two things you are grateful for a day, instead of just "journaling" or "practice gratitude."

Another thing It's All Good... does well is taking into account and catering to the various university experiences one may have depending on their situation. The voices of students featured in excerpts include, to name a few: BIPOC, LQBTQIA+, first-generation university students, international and domestic students, a commuter, and someone who switched their majors. Malette also provides scenarios that are bound to happen in student-life (talking to your parents about grades, sex, party culture, study habits, speaking to faculty) and endorses feasible ways to navigate and handle those situations, without compromising your mental wellbeing.

Malette's writing style is simple yet eloquent. Although Malette is a PhD candidate, this book is an easy and engaging read, unlike the assigned journal articles for your courses. It's written in a way that speaks to high schoolers and undergrads who may or may not be avid readers: informative, but without the scientific jargon of a PSYCH ioi module. The key to having good mental health is understanding what mental health is, and Malette does just that. The book is sandwiched by an introduction stating the importance of mental wellbeing and a conclusion to recapitulate the key takeaways from the book's 120 pages. Each chapter also has a short introduction of its own to prime the reader for what they are about to learn. Malette also uses bullet points appropriately to add to the functionality of the book as a guide


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## Spreading closures: the businesses COVID-19 shut down

## Nathan Lee <br> Reporter

With almost 30 million infected and almost one million dead, COVID-I9 has brought ruin in spades. With this ruin change has come in equal measure, for better and for worse. We've traded in-person classes for recorded lectures, hangouts with friends for calls on our platform of choice, and office jobs for Zoom jobs. And the crazy thing? Many of these changes are likely to leave their marks for years to come.

Some of these changes might even last longer - they could last forever. One in seven small businesses in Canada are on the brink of closing down. Almost half of them are making less than 75 per cent of their usual revenues. And 53 per cent of them are hiring less staff than usual. For small businesses, these sorts of losses are not easily recovered, and many local names may very well be no names when the dust settles.
All this said, large businesses haven't been spared, either. Here are three businesses you might know that are headed towards closure because of COVID-19.

## DavidsTea

The Montreal-based company
specializes in selling a variety of teas. These range from the tried and true, such as chamomile teas, to the more eccentric, such as a hot chocolate flavored tea. Here unusual does not translate to bad - their hot chocolate flavored tea is quite good.

Despite their great products, the company's fate has been steeped in struggle. Since their inception, DavidsTea has been plagued by annual losses on their income statements, and the pandemic has only worsened this struggle. As of today, they have already closed 82 stores in Canada in addition to abandoning the entirety of their American store presence. Unfortunately for them, this seems to be just the beginning. With DavidsTea filing for bankruptcy, expect more closures to come in the future.

For those of you still interested in teas, DavidsTea's plans to maintain an online presence as they aim to transition away from brick-and-mortar stores.

## Squish

Another Canadian-based company from Quebec, Squish is a candy store that specializes in gummies, though they also do chocolates. Their claim to fame? The fact that they use natural ingredients, such as fruits, spices,

and herbs to create their different gummy products. Like most gummy makers, Squish's gummies vary in shape and size, from Hal-loween-themed eyeball gummies to the classic bear gummies. Unlike most gummy makers however, Squish also hosts flavors for the more adventurous. This is best illustrated by the fact that they have an entire line dedicated to spicy gummies.
Squish may carry spicy hot candies, but their COVID-19 performance has not been hot in the slightest. Similar to DavidsTea, Squish has been forced to close several of their stores due to a lack of customers and demand. In fact, the impact of COVID-19 on Squish has been even worse, with all but one store in Downtown Toronto being shut down.

Gummy aficionados need not fear too much, though. Squish will continue to sell their candies online. Just don't expect to find them in your nearby malls.

## The Gap

You've probably heard of Gap - a San Francisco-based clothing store that was once a common sight. If you're like me, you may remember having your parents dragging you through their stores to pick out clothing you didn't want at the time. But did you know that The Gap operates a number of other stores? Stores like Banana Republic and Old Navy may not have Gap in their name, but they are definitely owned by The Gap.

The Gapwas already on a downward trend before the pandemic began, but COVID-19 turned that trend into a steep drop. Currently, there haven't been too many closures. However, The Gap and their associated stores have failed to pay rent throughout the past few months of the pandemic. With one store already forcefully closed by landlords, expect more closures and disappearing stores to come.

Like most of the stores on this list, The Gap will continue to be available for online purchases. Unfortunately, you will be unable to try on clothing over the internet. The technology just isn't there yet - at least for now.

## Stories from home

In a time when we are questioning our faith in humanity, Imprint brings you stories that try to capture the core of humanity: hapiness. Stories to give you hope; one person, one story at a time. In out physically distanced world, you never know who you might feel closer to.

This summer, I got to do a lot of local touristy things as well as travel to Ottawa and Quebec. I've lived in Ontario for three years, but haven't explored much. With quarantine, I got an excuse to do just that. In Ottawa, my boyfriend and I went to the Art Gallery, and got in for free because it had just opened. Because of quarantine, it was super empty and everyone was being really safe - it was nice to get to explore without having to avoid people constantly. Even though most fireworks were cancelled this year, we got lucky! We knew there were going to be fireworks, but we weren't sure when. Nevertheless, we were going to a beach in Quebec, and
we got the perfect view of the fireworks right from the shore in the evening. I think the best part about the exploration was that we didn't have to wait in long lines or be in a giant crowd trying to take photos. It was nice to see the city without feeling claustrophobic.
I was on my co-op term, and while working remotely isn't necessarily the most fun, I think I enjoyed working at my own pace. If I was in an office, there would also be an added commute time. But now it's nice to work exact hours, and know that when I end work, I can go out exploring, go out and have fun.

Gina Hsu


# science \& tech 

## Neuroscience: a computational problem

Kartikey Sinha<br>Reporter

$\square$an humans be replaced by robots? Can we actually have a human-like conversation with Siri? More specifically, can we create an artificial brain that functions just like ours?
"A lot of progress is needed in psychology, behavioral economics, biology, and neurosciences. But a big part of it is computational." Dr. Jeff Orchard, an associate professor of Computer Science at UW, said.

There are a handful of neural network algorithms made in the past few decades by humans that try to harness the power of neurons computationally.

The main focus of Dr. Orchard's research is to find out if the brain does something similar to the established algorithms. And if so, what the exact mechanisms are.
"The brain has certain constraints. Each neuron only knows the neurons in its neighbour-hood-the ones that it is connected to. But a neuron doesn't really know what's going on at the other side of the brain," Dr. Orchard said.
"It doesn't really know what a photoreceptor in the eyeball is doing, except through interaction with other neurons. That creates a different environment from the

Dr. Jeff Orchard, an associate professor of Computer Science at UW is comparing neural network algorithims to the human brain.
artificial neural networks humans have created."
"With artificial neural networks, there is input, feed forward, and output. But that is not the case with our brain. We have feedforward and feedback. So why do we have feedback? How is it implemented? Why does the brain have cortical reciprocal connectivity?" Dr. Orchard said.

Dr. Orchard is also the head of the Neuroscience Cognitive Lab at UW, where he collaborates with graduate students from Waterloo and China, along with associate professor Dr. Lin Wang from the University of Jinan, to answer some pressing questions in computational neuroscience.
"When you actually see a hockey stick, the information goes through your eyeballs and travels through to your brain and part of your visual cortex will form a state that means a hockey stick to your visual system. When you imagine a hockey stick, part of that visual system takes the same state as if you are seeing it. The question is how?" Dr. Orchard said.

Dr. Orchard is also interested in studying the effects of expectations on our perceptions.
"Suppose you are looking at a photograph and it's very blurry. You don't know what it is. Then I say, think of a mammal. And now you are able to suddenly recognize that the picture is that of an ele-



Students showcasing their findings at the neurocognative computing lab.
phant. So how does a brain implement that?" Dr. Orchard said.
Elon Musk is working to create a Neuralink brain chip that enables brain-to-machine interface. According to a BBC article, the interface could allow people with neurological conditions to control phones or computers with their minds.

Musk argues that such chips could eventually be used to help cure conditions such as dementia, Parkinson's disease, and spinal cord injuries.

When asked about Elon Musk's Neuralink chip, Dr. Orchard said, Work in this field has been going on for over a decade.

These cortical implants can enable you to speak words into the brain, send information to the brain, type out text messages, and receive notifications, for example. As of now, sending output from the brain seems easier than receiving input.

When it comes to the role of artificial intelligence in mental health, having a clear-cut answer may be challenging now and in the near future.


Elon Musk is working to create a Neuralink brain chip that enables brain-to-machine interfaces.
"It is not very clear how to define what happiness is [in a computational sense]. You can measure it subjectively, but it's not really clear what you're measuring," Dr. Orchard said.
He said addiction is a big problem.
"We are learning a lot about the
circuits in the brain that drive addictive behavior. I don't see any reason why we cannot hijack an addictive brain and get it back on track. Depression [is another problem]. I don't see why we couldn't figure out some mechanism that sort of drives that mechanism and fixes that too," Dr. Orchard said.

## imprint

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Next scheduled post-mortem meeting: Virtual due to Covid-19
Next scheduled board of directors meeting: Saturday October, 2412 p.m. Virtual due to Covid-19

## opinion

## Why fall term is important

FTall is quite significant, both in the beauty it brings to nature and the myriad of students it brings to UW. For many students, the fall term is their first university experience. While COVID-19 restricts us from studying and interacting in person, I still believe that the fall term is very important, especially for first year students.

The IA term is the foundational term for university students. Most concepts taught in the first term carry forward to future terms. I actively use many mathematical proof methods that I've learned in IA (MATH 135) and I've even applied them to solve complex graph theory problems as recently as my 2 B term. A good grasp of prerequisite concepts gave me the confidence to tackle challenging problems in advanced math and computer science courses. This confidence empowers me to freely pursue

what I love without getting lost in theory or being unable to solve problems,something that demotivates many of us.

A good first term is essential as it is the easiest period of university in terms of academic workload which only grows exponentially after that. This, along with other responsibilities that accrue over the course of university, means that it is plausible for one to have a couple rough academic terms over their university journey. Knowing one's true potential through academic prowess in their first year assures them of their capabilities and is a huge morale booster.

Even with social distancing, first year is a good time to meet new people. Making friends and



For first year university students, fall semester is their first opportunity to interact with the new environment.
acquaintances is an important part of university life, and the best time to do so is in the beginning. This is when most students haven't met each other so they feel encouraged to be extroverted and make new friends.

Ultimately, it is what you make of it. For me, my first term was the most exciting experience of my life where I started a new chapter with some of the best people I've ever known, and I wish the same for all of you too.


# campus bulletin 

## WHAT'S HAPPENING AROUND TOWN

Submit your 30-word announcement or upcoming event to ads@uwimprint.ca for free.

## upcoming events

## September 2020

For all of UpTown Waterloo Fall activities visit www.uptownwaterloobia.com. Savour in Stratford - Saturday morning Market from 7 a.m. to 12 p.m. at the Rotary Complex, and more, www. visitstratford.com.
Savour in Stratford - Saturday morning Market from 7 a.m. to 12 p.m. at the Rotary Complex, and more, www. visitstratford.com.

Friday, November 27
Virtual 2020 Tree of Bright Stars memorial event presented by Bereaved Families of Ontario-Midwestern Region is now being organized. Personalized ornaments will be available as well. More info to come.

## WEDNESDAYS

September to November at 12:30 p.m. Conrad Grebel University College presents Noon Hour Concerts @ Home. Enjoy weekly noon hour recitals by professional musicians from the comfort of home. Free / no registration required. grebel.ca/music/ events.

## volunteering

> Your student newspaper, Imprint, is looking for volunteers for Fall term. Email editor @uwimprint.ca for more information.
> Bereaved Families of Ontario - Midwestern Region, The Family Centre, 65 Hanson Ave., Suite IO42, Kitchener. We currently have a number of exciting volunteer opportunities. For more info, jaime@ bfomidwest.org or 519-603-ol96. Become a Meals On Wheels volunteer! Call 519-772-8787 or www.communitysupportconnections.org/volunteer/apply.

## service

 directorySPREAD THE WORD
Buy your ad for I month at \$99 and get I month free! Contact ads@uwimprint.ca.


## NO EXPERIENCE NEEDED

Section Editors for News, Opinion, Arts, Sports, Science, Distractions. Other positions available. Apply to editor@uwimprint.ca.

## EDITORIAL ASSISTANT

## -

Sept 14 start ; Monday to Friday, part-time; \$14.00/hour. Enthusiastic attitude about writing and Imprint in general. Experience in transcribing, interviewing, research and the ability to plan and write full articles quickly and without assistance.

For further information on job description or applying for this job, please email cover letter/ resume/portfolio samples to editor@uwimprint.ca or drop in to the office, SLCOI37.

Position available upon funding.

## VOLUNTEER COORDINATOR

## -

Sept 14 start ; Monday to Friday, part-time; \$14.00/hour. Highly organized with excellent verbal and written skills, along with group management. Assisting the Executive Editor and Advertising and Production Manager with recruiting, Imprint training workshops, volunteer team spirit, appreciation, etc.

For further information on job description or applying for this job, please email cover letter and resume to editor@uwimprint.ca or drop in to the office, SLCOI37.

Position available upon funding.

## AVAILABLE UW

 WORK STUDY POSITION REQUIREMENTS You must be a full-time student and OSAP elgible.Candidates must first apply to Student Award and Financial Aid Office for approval. If approved, candidates are required to bring Declaration of Student's Eligibility/Hiring Form to Imprint interview.

## distractions

## Sudoku

Easy

|  | 6 |  |  | 5 |  |  |  | 4 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 2 | 4 |  | 3 |  |  | 7 | 9 |  |
|  | 9 | 5 |  | 1 |  |  |  |  |
| 3 |  |  | 8 | 9 |  |  | 7 |  |
| 6 |  |  | 5 |  | 1 |  |  | 2 |
|  | 1 |  |  | 7 | 3 |  |  | 8 |
|  |  |  |  | 2 |  | 5 | 8 |  |
|  | 8 | 9 |  |  | 7 |  | 6 | 1 |
| 1 |  |  |  | 8 |  |  | 4 |  |



Hard

| 1 |  |  |  |  | 4 |  |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |
| 2 | 3 |  |  |  | 5 | 9 |  | 4 |
| 5 |  |  | 9 |  |  |  | 7 |  |
|  | 7 |  |  |  |  |  | 8 |  |
| 6 |  | 2 |  |  |  | 4 |  | 9 |
|  | 8 |  |  |  |  |  | 5 |  |
|  | 1 |  |  |  | 7 |  |  | 3 |
| 4 |  | 6 | 5 |  |  |  | 2 | 1 |
|  |  |  | 1 |  |  |  |  | 5 |



BRIANA OENPUTERA

