

# MM



## Disentangling the Mess of Stress

UTM researchers are diving deep into what stresses us,  
and how we can cope with it



### The Photographer

Mike Slater is the technical director at the Erindale Studio Theatre. For *Metamorphoses*, Slater was also the lighting designer, an adventure he thoroughly enjoyed with an amazingly talented cast and crew.

### VIEWFINDER

## Staging intimacy Mike Slater

Issues of gender power dynamics dominate the cultural conversation—how do they come into play in the world of theatre, where actors must sometimes navigate intimate scenes? For Theatre and Drama Studies' 2018-19 production of *Metamorphoses*, the University of Toronto Mississauga and Sheridan College joint program worked to ensure students could practise their craft in a safe and comfortable way. Program coordinator and Theatre Erindale artistic director David Matheson hired intimacy director Siobhan Richardson to provide guidance on performing physically intimate scenes in ways that respect personal boundaries. The actors learned about consent and communicating personal boundaries. Creating a psychologically safe rehearsal space wasn't only an end in itself; it let the actors be vulnerable and drop internalized barriers, which helped improve the quality of intimate scenes.

Office of Communications  
3359 Mississauga Rd.  
Mississauga, Ontario  
Canada L5L 1C6

Executive Editor  
Nicolle Wahl

Guest Editor  
Sharon Aschaiek

Design and Production  
Hamby & Woolley Inc.

Cover Illustration  
Jeannie Phan

Canadian Publications Mail  
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# Contents

## FEATURES

12

### DISENTANGLING THE MESS OF STRESS

UTM researchers are shedding new light on why we're under pressure, and what we can do about it

18

### REMEMBERING GENOCIDE

Students in experiential sociology course analyze how we construct memories of the Holocaust

20

### OUTSTANDING IN THEIR FIELDS

UTM celebrates female academics at the top of their game

27

### THE GENDER DYNAMICS OF PAIN

UTM study shows women and men react differently to physical aches



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#### DEPARTMENTS

CAMPUS NEWS	2
UTMETRICS	7
SNAPSHOT	8
SPARK	26
CLASS NOTES	28
ALUMNI EVENTS	31
VAULT	32

# Campus News



**Future Thinking**  
New science building  
to expand UTM's  
research capacity

## RESEARCH TRANSFORMATION

### Advancing the pursuit of science

**The University of Toronto Mississauga will break ground** in 2019/early 2020 on a new building dedicated to the sciences.

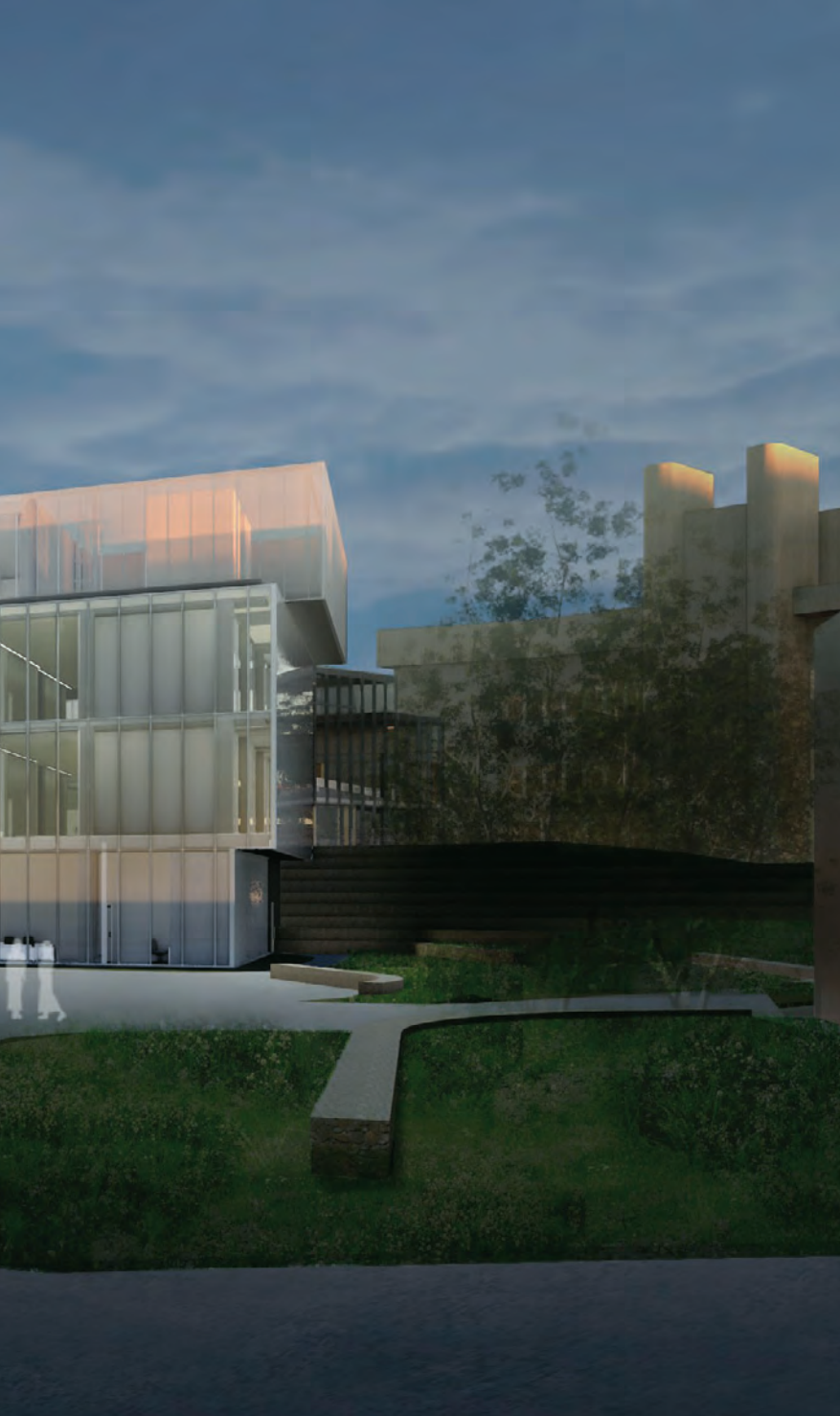
Located in the space between the William G. Davis Building and the Terrence Donnelly Health Sciences Complex, the UTM science building will provide much-needed wet laboratory space for the campus's current and planned research needs. It is expected to be completed in 2021.

"This is a tremendously exciting development for UTM," says Professor Ulrich Krull, UTM's vice-president and principal. "A new building focused on research will result in a cultural change across the campus that will take UTM forward as a full contributor to the goals and aspirations of U of T."

Approved in February 2018, the new space will consist of 7,134 net assignable square metres that will house laboratories, offices and a high-performance computing data centre across four floors as well as a fifth-floor mechanical penthouse. The space will accommodate UTM's Forensic Science program as well as the Centre for Medicinal Chemistry, which focuses on developing drugs targeting cancer and other diseases. The CMC is projected to grow to

# 1

RENDERING: KIERANTIMBERLAKE



include approximately 130 graduate students, research associates and post-doctoral fellows by 2022-23.

With a budget exceeding \$20 million, the building is the largest capital project ever built by U of T on any of its three campuses. It is being funded by capital reserves, long-term borrowing, donations and a contribution from the U of T Office of the Vice-President & Provost.

Continuing with its tradition of sustainable development, UTM will aim for a minimum of silver certification in the Leadership in Energy and Environmental Design (LEED) green building certification process.

“This building marks a critical pivot in the perception of UTM as being focused on undergraduate studies,” Krull says. “UTM is strategically investing in research support at a level that is commensurate with that of a leading university of international stature.”



**IN MEMORIAM: LUBA ESTHER ELEEN, 1928-2018**

## 2 REMEMBERING LUBA ELEEN

*UTM academic was visual arts champion and human rights activist*

**Luba Eleen was an intellectual force** and women’s rights activist who significantly expanded academics at UTM and advanced pay equity within U of T as a whole. UTM colleagues remembered her academic achievements and contributions at a memorial service on Nov. 11 at U of T’s Hart House.

Born in Winnipeg and educated at Sarah Lawrence College in New York and then at U of T, Eleen was the founding member of the Department of Visual Studies (DVS) at UTM, which was then called Erindale College. Hired in 1972, she helped launch the new and precedent-setting Art and Art History program, the first collaborative program offered by U of T and Sheridan College.

An influential and highly respected scholar of medieval manuscripts and Italian painting, Eleen took a path into academics that was circuitous. After years of work as an activist and mother, she returned to U of T to complete her undergraduate degree. It was during those years that she was struck by the relationship of art to social and political life, and decided to pursue a PhD.

Eleen’s intellectual interests were vast, encompassing text-image relationships, medieval theology, avant-garde cinema and classical music. She remained a political and social activist throughout her career. She was instrumental in changing U of T’s salary structure so that female professors could earn the same as men.

She greatly enjoyed being part of the UTM community, attending student exhibitions, dinners and other events before and after her retirement in 1994. She was missed at DVS’ 2018 Art and Art History Awards Ceremony; an award she endowed with her colleagues Bogomila Welsh and Tom Martone was given to recognize outstanding achievement in DVS’ Art History program.



#### CAMPUS REVITALIZATION

# 3

## BREATHING NEW LIFE INTO THE MEETING PLACE

*Renovation leads to more welcoming, accessible hangout space*

**A major renovation** to one of the University of Toronto Mississauga’s original buildings is almost complete, which will result in a revitalized chill-out space for students.

The Meeting Place, a central public space located in the William G. Davis Building, has long been a go-to hangout spot on campus, but the space has not changed substantially since the building’s development in 1972. In the summer of 2018, UTM began working to transform the Meeting Place into a larger and more accommodating area for students to gather, grab a bite or take a break between classes. Construction is expected to wrap up this fall.

“This project reimagines the entire Meeting Place as a student-focused hub,” says Greg Karavelis, senior facilities planner with UTM’s Facilities Management

& Planning department. “It will breathe new life into this space.”

The first phase of construction involved redeveloping seating space and building a new food services area with 10 food outlets. Seating capacity will more than double to 900 seats from 400, and will include the addition of an enclosed dining room in the courtyard behind Tim Hortons. A new prep kitchen has been built in the space between Davis and the Recreation, Athletics & Wellness Centre. The renovations will include plenty of options to recharge devices.

“The new space will include fluid seating arrangements that will make the space feel bigger and allow people to have group meetings or meet one-on-one away from the main space,” Karavelis says. “This will be a new hangout place or ‘living room’ for the university.”

The Temporary Food Court has been changed into a new seating area that includes two stand-alone food kiosks, and new space has been created for Student Services offices. New and renovated washrooms have been added in this area.

Finally, exterior renovations have been made to the entrance of the Davis Building that feature improved accessibility, a new outdoor seating area, landscaping and the addition of a large new vestibule and exterior canopy.

“This provides a new face for the building so it has the kind of presence it deserves,” Karavelis says.

Designed by Moriyama & Teshima Architects, the project achieved LEED Silver certification.

#### HEALTHY SPACES

# 4

## UTM IS SMOKE FREE

*Clearing the air to create a safer environment*

**Quitting smoking is a common New Year’s resolution**, but the University of Toronto Mississauga has made it a rule: As of Jan. 1, 2019, the campus officially became smoke free.

The move aligns with U of T’s new policy that prohibits smoking and vaping tobacco, cannabis and other products on all U of T property, including in vehicles.

The new policy is being implemented on all three U of T campuses to ensure students, faculty and staff as well as visitors and the surrounding community enjoy a safe and healthy environment.

The university has launched a website, [www.utoronto.ca/smoke-free](http://www.utoronto.ca/smoke-free), that answers questions about the new policy and provides links to resources.

To allow for a smooth transition to a fully smoke-free campus, UTM has introduced 12 temporary designated smoking areas across campus.

UTM will enforce this policy by providing education on the risks of smoking and offer support to those seeking to quit.

Students can meet with a health-care professional at UTM’s Health & Counselling Centre to learn about smoking cessation options and access free nicotine-replacement therapy.

Faculty and staff, meanwhile, can take part in information sessions on key strategies for successfully quitting smoking, and learn about resources to assist in the process.



PHOTOS: (TOP) TK; (BOTTOM) MATHEW/MACQUARRIE

EXPANDING LEARNING OPTIONS

# 5

## UTM INTRODUCES OCCUPATIONAL THERAPY TRAINING

*New program better meets student demand, community health needs*

**Occupational therapy education has arrived** at the University of Toronto Mississauga to meet high student demand and help better address the health-care needs of community members. This past fall, U of T’s Master of Science in Occupational Therapy (MScOT) program, which was historically offered only at the St. George campus, was expanded to UTM. In 2017, the full-time, 24-month program attracted 953 applications for its 90 available spots. With the program now offered at Mississauga, 40 new spots have been created. The expansion will help address the OT shortage in Ontario.

“Our program is in high demand, and previously, we could only accept less than 10 per cent of those who applied. At the same time, Ontario has one of the lowest numbers of OTs per capita. So, this expansion is badly needed,” said Professor Trevor Young, dean of the Faculty of Medicine and vice-provost, relations with health care institutions.

The expansion to UTM positions the program and its graduates to respond to anticipated population growth in the western Greater Toronto Area. By 2041, the population of the GTA is expected to increase by just over 35 per cent. However, Peel region is projected to grow by more than 47 per cent.

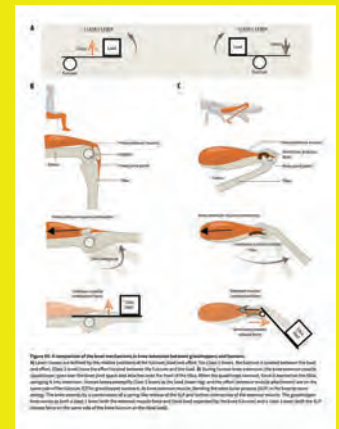
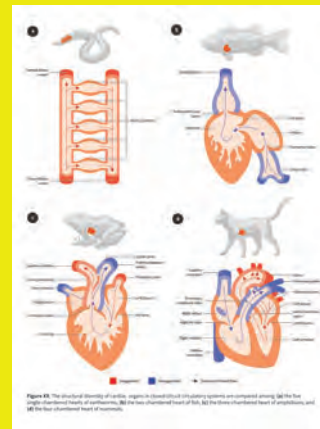
MScOT students at UTM study at the Terrence Donnelly Health Sciences Complex, and have access to onsite faculty and staff, labs, mentorship, study groups and fieldwork placements. Lectures are video-conferenced between UTM and the St. George campuses.

“This expansion is perfectly timed to place more emphasis on community-based practice, which is where the discipline began,” says Professor Susan Rappolt, chair, Department of Occupational Science & Occupational Therapy. “Occupational therapists can do a lot to help people live well in their communities and prevent admissions to institutional care.”

Students in the inaugural class of the MScOT program at UTM with program administrative assistant Edward Myerscough



PHOTO: HORST HERGET



First-year biomedical communications students contributed illustrations to the open-access digital textbook: heart structures, left, by Miranda MacAskill; and knee extensions, right, by Deniz Kaya and Evelyn Lockhart

EDUCATION INNOVATION

# 6

## FIRST OPEN-ACCESS DIGITAL TEXTBOOK ARRIVES AT UTM

*Making learning more relevant and affordable*

**University of Toronto Mississauga biology students have** begun using an innovative new learning resource: an open-access digital textbook.

In January 2019, UTM introduced its first-ever such textbook, for the course Introductory Animal Physiology. It served as the primary text for 480 undergraduate students enrolled in the second-year biology course. Custom-tailored to the course, the textbook was made available to students free of charge.

Sanja Hinić-Frlog, an assistant professor (teaching stream) with UTM’s Department of Biology, led the creation of the textbook. She says she was frustrated with traditional textbooks that were expensive, outdated and didn’t meet the specific needs of her students or her course structure.

With a \$15,000 provincial grant, Hinić-Frlog worked with staff from the UTM Library and U of T’s Centre for Teaching Support & Innovation to create the nine-chapter text book. Built around her biology course, it includes review questions, learning objectives and links to additional resources.

“It fits exactly what I want to do in every lecture,” Hinić-Frlog says. “This is a living document and can change as we are using it.”

“The textbook material comes from peer-reviewed open-access journals and publishers,” says project collaborator and science liaison librarian Jessica Hanley. “The materials are scientifically sound and from reputable resources.”

The grant provided support to hire three students to source and create images for the textbook, and to adapt the content to the Pressbooks platform, which makes the content accessible on a variety of devices.

Introductory Animal Physiology is among 21 higher education projects in the Open Library initiative led by eCampusOntario with \$1 million in funding from Ontario’s former Ministry of Advanced Education & Skills Development.

# Campus News

# 7

SOCIAL MEDIA

## UTM in the moment

At UTM, something amazing is happening around every corner. Here are a few of the moments that caught our eye:

Follow UTM on:

Twitter @UTM

Facebook [www.facebook.com/UTMississauga](http://www.facebook.com/UTMississauga)

Instagram @uoftmississauga



Greg Roberts, left, scores career high of 47 points in game against Niagara Knights, via @UTM\_Athletics #UTMEagles



Promoting conversations about mental health at #LetsTalkUTM, via @utmHCC



A red-tailed hawk flying above campus, via @JohnAtTheNews



Beauty is blooming at UTM's research greenhouse, via @publicsafetygta



Social entrepreneur Sultan Akif at TEDxUoFT-Mississauga 2019, speaking about how pursuing purpose fills our lives with meaning



MScSM students teach local high schoolers about food waste impacts and urban pollinators, via @IMIUoFT



Beating the winter blues with colouring, cookie decorating and a screening of Smallfoot at Frosty Flicks, via @Alumni\_UTM

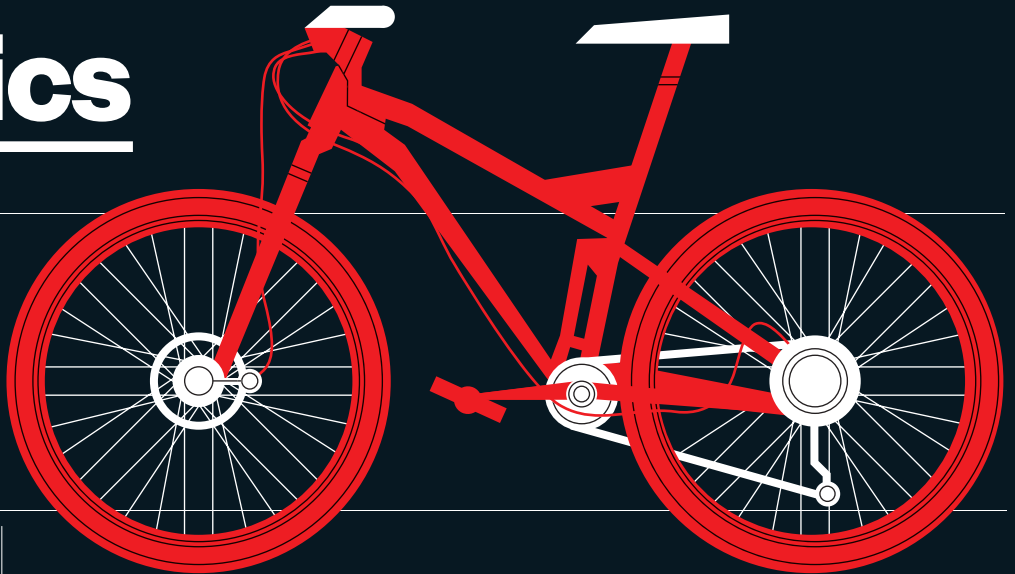
ILLUSTRATIONS: (OPPOSITE PAGE) TAYLOR KRISTAN



# UTMetrics



UTM's community BikeShare program provides access to 25 bikes for 48 hours per session. These bikes were rented 808 times in 2018



**+** Heat for the Instructional Centre comes from 168 metres below ground through geothermal energy extraction



UTM collects

# 8

types of items from campus community members for recycling:

glass, plastic, metal, paper, electronics, printer cartridges, batteries, cigarette butts

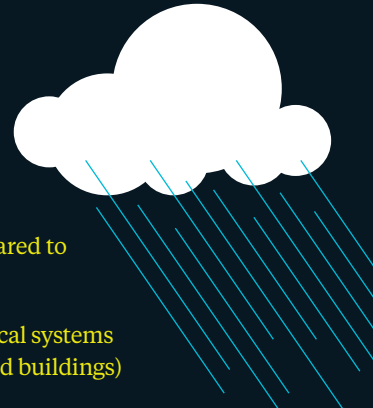


The new North Building's sustainability features include:

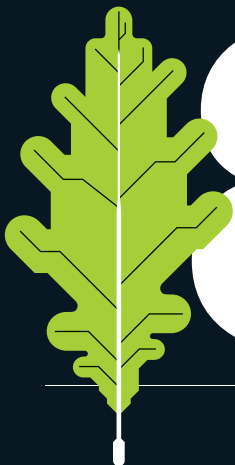
**88%** potable water savings (compared to conventionally designed buildings)

**22%** energy savings in its mechanical systems (compared to conventionally designed buildings)

**75,700-litre** rainwater reuse system



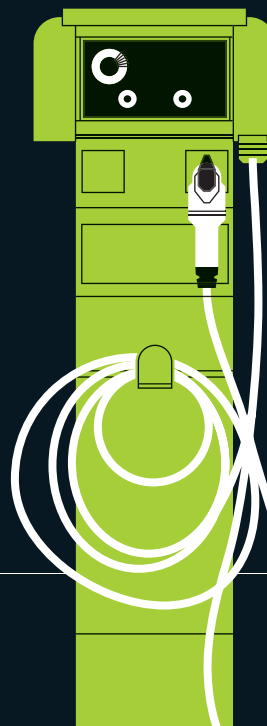
Greenhouse gas reduction projects at UTM are expected to result in 824 tonnes of annual CO<sub>2</sub> reduction



# 8



buildings at UTM have green roofs, which provide insulation, reduce urban heat, provide habitat for wildlife and reduce storm water runoff



# 6

**+** electric car chargers are available on campus

# Snapshot



## FASHION STATEMENT LESLEY HAMPTON design strikes an inclusive and diverse pose

**Lesley Hampton is making it look easy.**

At 24, she is president and creative director of the company that bears her name. The First Nations fashion designer has already launched six LESLEY HAMPTON collections, known for promoting inclusivity and diversity.

She's been celebrated in magazines such as *Elle UK* and *Marie Claire*.

The *Toronto Star* called her “the designer to watch” at the 2019 Toronto Fashion Week.

She's been nominated as an emerging talent for high-profile awards, including the 2018 Canadian Arts and Fashion Awards (dubbed the Grammys for fashion); the 2018 RBC Canadian Women Entrepreneur Awards; and the 2018 City MOGULS, an event that recognizes some of Toronto's most innovative and newsworthy entrepreneurs and influencers.

She has dressed Canadian celebrities such as Olympian Penny Oleksiak, who is too tall to fit fashion's usual tiny sample sizes.

“I had that thrilling ‘Who are you wearing?’ moment when Ben Mulroney interviewed Penny on the red carpet at the 2017 Canadian Screen Awards,” Hampton recalls. She had another “pinch me” moment sitting in the Winter Garden Theatre at the Toronto International Film Festival premiere of *Through Black Spruce*, which featured one of her dresses.

But don't let her success fool you. She's worked hard for her achievements.

Hampton calls herself a “third-culture kid,” referring to her father's Scottish ancestry, and her mother's Indigenous roots (Anishinaabe and Mohawk) and adoption by parents of French and British backgrounds.

Born in Newfoundland, Hampton spent much of her early life on the move. Her father's work in mining took the family around the world, including to Canada's Arctic and Indonesia. Middle school was in Australia; high school, an International Baccalaureate in England.

“I walk between two worlds,” Hampton says. “I am an Indigenous person, but grew



Above, Margaret Trudeau participating in a LESLEY HAMPTON fashion show with the theme of erasing mental health stigma; left and below, images of Hampton's fashion designs.



# Lesley Hampton

CLASS OF 2015



HAMPTON and invited her to appear there. Her star was already rising.

Hampton's "third culture" experience shaped her desire to make a statement through fashion.

"I use my fashion to encourage diversity and body positivity," Hampton says. "I want to show that lack of representation doesn't restrict you from doing whatever you want to do."

In Vancouver, Boston Marathon bombing survivor Adrienne Haslet walked the runway in a dress that showed off her prosthetic leg. One collection celebrated the ability to live a successful life with mental health issues, casting advocates such as Margaret Trudeau as models. Hampton has collaborated in the Be Body Aware project to increase plus-size representation on the runway. In other shows, Hampton "streetcasts" models who are Indigenous, use a cane, or have alopecia or other visible physical differences.

Feedback is positive, with fans praising LESLEY HAMPTON fashion for exactly what it promotes: wearable fashion representative of real life, not frivolity.

What's most important to Hampton, though, are the messages that reinforce the value of her approach, including one from an Indigenous woman whose daughter is now motivated to pursue a career as a model.

With visible representation, maybe everybody will find making their way as easy as Hampton makes it look. —Sue Horner

up outside that culture. I also grew up outside Canadian culture because I spent so much time out of the country until my late teens. I always felt like the odd one out."

When the family returned to Ontario, Hampton struggled with what to do. She had loved sewing since age 4, when her mother—a talented quilter—introduced her to a sewing machine, but was uncertain about making it a career. She had always enjoyed art history and decided to study that, choosing the University of Toronto Mississauga to be close to family.

During the first week of school, she realized fashion was her real calling. Instead of

dropping out ("I'm not much of a quitter, and I did like what UTM offered"), she fast-tracked her studies. She "powered through" her BA, then completed the Fashion Techniques and Design, then completed the diploma program at George Brown College.

"My UTM education gave me a grounding in who I wanted to be and what I wanted to say," Hampton explains. "I was ready to begin my brand but missing a few technical construction skills. I created my first collection with self-taught skills polished at George Brown."

While preparing that collection for the 2016 Fashion Art Toronto showcase, Vancouver Fashion Week got wind of LESLEY

# PUTTING A NEW SPIN ON CYCLING

## Doctoral student studies the connections between gender and bike riding

### What does bicycling have to do with gender?

It turns out gender dynamics influence the cycling activity of men and women much more than we may think.

That's what University of Toronto Mississauga student Léa Ravensbergen discovered through her PhD research, which examines the gender gap in urban cycling, particularly among immigrants. For her research, she is applying the lens of feminist geography, which considers the spatiality of women's lives.

"The existing data doesn't explain why women might bike less than men," Ravensbergen says. "What are the underpinning gender reasons for why men and women experience biking differently throughout their life experience?"

Ravensbergen has been using a bicycle as her main mode of transportation since 2012,

when she moved to Toronto from her family's maple syrup farm in rural Quebec. She discovered a great freedom and efficiency with navigating the city on two wheels. Her enthusiasm for cycling even propelled her to build her own winter bicycle through the organization Bike Pirates.

Understanding the extent to which other women in Toronto access and enjoy cycling led her in the summer of 2017 to BikeHost. The program by settlement services organization CultureLink matches newcomers with willing cycling mentors to explore Toronto by bike. She conducted interviews with 17 women and 13 men about their experiences with cycling throughout their lives, and their perceptions of cycling in the city.

Many of the women reported they had received little encouragement, or were actively discouraged, when it came to riding bikes in their native countries. Typically, this was because cycling for women was considered culturally inappropriate, or a risk for being harassed by men on city streets. As a result, these program participants had little experience with cycling or confidence in their abilities.

"The components of confidence and encouragement really influenced the women's attitudes to cycling in the city," Ravensbergen says.

As well, the female participants were more concerned than the males about how cycling might affect their appearance: Could they dress appropriately for work when commuting by bike? Would they arrive at work sweaty and dishevelled?

With funding support from UTM, Ravensbergen has presented these findings at annual meetings held by three industry groups: the Ontario division of the Canadian Association of Geographers; the U.S.-based Transportation Research Board; and the American Association of Geographers. She is aiming to complete and defend her thesis this summer or fall.

Ravensbergen says the most rewarding part of her research was witnessing how the female participants' views of urban cycling transformed.

"The women saw that with some practice, they could become confident, comfortable and happy cyclists." —Sharon Aschajek

Léa Ravensbergen riding the winter bicycle she built herself on the St. George campus.

Léa  
Ravensbergen

CLASS OF 2019



# Pardeep Singh Nagra

CLASS OF 1993

## CHAMPIONING HUMAN RIGHTS

### Former pro boxer advocates for equity in and out of the ring

In the fall of 2018, during one of his public appearances at a theatre for the screening of the Hollywood movie *Tiger*, Etobicoke boxer Pardeep Singh Nagra was asked by a curious bystander if the movie had subtitles. The film is based on Nagra's own battle against Ontario's and Canada's amateur boxing associations to allow beards in the boxing ring. And the question was based on a deeply rooted stereotype that it couldn't be about a Canadian, and wasn't in English.

To Nagra, who's been advocating for his religious faith and Canadian identity since childhood within what he calls a "Eurocentric" establishment, that seemingly innocent question was just another reminder that his fight must go on. "I'm standing on the shoulders of a (Sikh) settler and pioneer community that's been in Canada for over 120 years," Nagra says.

As a result of his victory against Ontario Boxing, Sikh boxers today can fight with beards, not just in Canada but in the U.K., as well.

In 2000, after completing his BA at the University of Toronto Mississauga and retiring from professional boxing, Nagra returned to UTM as its first diversity officer. He broke ground at UTM by creating a safe and supportive environment for students to request faith accommodations. He was also instrumental in helping launch OUT at UTM, the university's official group for the LGBTQ+ community and its allies.

After three years, when he was ready to move on, he received letters from students and staff saying, "It was great to know that your position even just existed, whether I needed to drop by your office or not," he reminisces fondly.

Nagra is a self-professed "man of many turbans." He is now the manager of the Toronto District School Board's Employment Equity Office. In this role, he works to eliminate pejorative uses of Indigenous mascots and logos, and to create more inclusive work environments. He confronts the fact that his athletic legacy, which also involved running marathons, includes winning medals engraved with the mascots of Indigenous chiefs. While he's proud of winning them, he doesn't forget that they represent a systemic violation of Indigenous rights.

Nagra is also the executive director of the Sikh Heritage Museum of Canada, which in 2018 received \$300,000 in federal funding to create more awareness about Sikh history in Canada.

Whether it's his boxing medals, or having a Trivial Pursuit question dedicated to him, or chapters on him in books about noteworthy Canadians, Nagra uses his accolades as

teaching tools—starting points to advocate against racism and marginalization.

Says Nagra, "Fighting for human rights is like sports—you can't be on the sidelines, you have to participate, you have to engage."

—Sohini Bhattacharya



# Disentangling the Mess of Stress

UTM researchers are shedding new light on why we're under pressure, and what we can do about it

By **David Silverberg**  
Illustrations by **Jeannie Phan**







**Dealing with stress is now woven into the fabric of our everyday lives,** whether we're students tackling a week of exams, or faculty overloaded with papers to grade, or parents dealing with too many tasks and not enough sleep.

How we navigate the complex landscape of anxiety is critical, considering its many negative effects: upset stomach, insomnia, tension headaches, irritability, fractured relationships and even violence.

The University of Toronto Mississauga has become a hotbed of fascinating research on the many nuances of managing stress. The findings of UTM researchers carry significant weight for what stress means to our health, and how we can manage it. We don't often stop to think about the pressure rising in our throats or the sweat dampening our palms. But the more we know about avenues for stress relief, the better we can recognize and address the triggers that give stress free rein over us.

"What I wanted to do with my research is focus more on positive emotions because so much psychological research focuses on negative emotions," says Jennifer Stellar, an assistant psychology professor at UTM.

One area of Stellar's work examines a subset of positive emotions that can help lower levels of inflammation in the body. One study, published in 2015 in *Emotion*, analyzed how a pro-inflammatory protein known as interleukin-6, or IL-6, was related to positive emotions in participants.

"They were negatively correlated, such that more positive emotions correlated with lower levels of IL-6," adds Stellar.

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## **“Adolescents who showed more sympathy to their disadvantaged peers displayed lower levels of aggression, and were less likely to be victimized by bullies.”**

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What surfaced from that study led to another area of Stellar's research of emotional well-being: she found that participants' positive emotions often highlighted awe as a key indicator of feeling great about yourself. Awe is an emotion that is often linked to being around things or events that evoke wonder and feelings of grandeur, but it is rarely dissected.

"We found that awe is an easy emotion to induce," she notes, "and it's important for ego resilience and building stronger social relationships." She says people under stress can place themselves in situations that could push stress out of the mind and body.

Stellar's advice to anxiety-stricken people? "Build in awe at a daily or weekly frequency by taking walks in nature or going to museums or concerts."

Her next major study will take her and her research team to a Toronto museum "to look at how seeing art might have benefits to health and well-being, precisely because art often elicits awe."

While Stellar studies awe, Tina Malti researches an oft-ignored emotion in its relation to mental health: sympathy. The UTM psychology professor has published studies with titles such as "The co-development of sympathy and overt aggression from childhood to early adolescence" and "Children's sympathy and sensitivity to excluding economically disadvantaged peers". The latter, published last year in the journal *Developmental Psychology*, found that with increasing sympathy and age, children become more sensitive to the needs of their disadvantaged peers.

"Being sympathetic is not just important for the person having the sympathy but also for those around him or her," Malti says.

In various studies Malti has led, adolescent participants who showed more sympathy than others displayed lower levels of aggression, and they were also less likely to be victimized by bullies.

"Parents can play a role in this," Malti says. "They can tell their child about the consequences of their actions, to make them aware how other kids feel about their own actions. You can say, 'You hit your brother and that makes him cry because that's painful to him.'" Spelling out the reactions of those around a negative event can help that child develop sympathetic feelings and refrain from that behaviour, Malti adds.





She also targets guilt as another subject area of interest. Some children who don't feel guilt about their negative antisocial acts may be perpetuating stress to those around them by continuing to do harm, while those who report high levels of guilt are less aggressive.

"If someone shows guilt about some wrongdoing, that's actually healthy and positive," Malti says. "When guilt can trigger reparative behaviour, that's a useful chain of reactions."

Malti's next project is launching a study to identify factors that predict kindness in GTA children who grow up in adverse environments, such as poverty. "How do these children overcome these tragedies and still be kind and sympathetic?" Malti wonders.

That subject matter is top-of-mind for many researchers examining how stress can impact developmental outcomes in children. A study published in the March 2019 edition of the journal *Child Development* found evidence that conflict between caregivers and children, as well as financial duress, are linked with impeded cognitive abilities related to academic success in low-income families.

Embarking down a similar path, but focusing on mothers instead of children, Neda Maghbouleh, an assistant professor of sociology at UTM, has been looking at how stress affects newcomers to Canada in her position as lead researcher and principal investigator on the RISE (Refugee Integration, Stress, and Equity) team.

When Maghbouleh heard about the 2015 escalated armed conflict in Syria and the wave of Syrian refugees being welcomed to Canada shortly after, "I felt compelled to bring academic knowledge to inform the support systems helping this unique population," she says.

Researching immigrant experiences is hardly new to Maghbouleh. In 2017, she wrote *The Limits of Whiteness: Iranian Americans and the Everyday Politics of Race* (Stanford University Press), which examined how Iranians and other Middle Eastern Americans navigate issues of race.

The first phase of the RISE study interviewed 41 Syrian mothers new to Canada about the stressors they feel, and what support they lack in handling that pressure. Maghbouleh and her team highlighted three key areas of stress for Syrian refugee mothers: first, taking stock of the new environment in Canada and eventually processing the grief of the many losses incurred in Syria; second, ensuring their children were safe and managing the everyday demands of parenting; and third, as "teen children barrel towards adulthood, mothers are worried about their fate, wondering if they'll get a good education, if they'll get a job."

Maghbouleh says these refugees endured such heavy emotional trauma that anxiety won't dissipate instantly, but learning English and better acclimatizing to Canada helps ease that stress.

The RISE team will release its first paper on the first round of research in the journal *Meridians*, and a book chapter in an edited volume about Syrian refugees in Canada published by McGill-Queen's University Press.

Heading down a different route to better understand mental health, Norman Farb has long been drawn to how mindful meditation can help ease stress.

“As someone who studies meditation and mindfulness a lot, my goal is not to prove mindfulness is better than any other method of self-improvement, but rather to understand how these practices provide different access points to a more common pathway of improved resilience and well-being,” says the assistant psychology professor at UTM.

One of his most intriguing studies probed how meditation apps, which guide the user through meditative practices, can help lower stress levels.

“We found that even just doing 10 minutes of these apps a day can be like a slow burn to help fight stress and depression,” Farb says.

In one study Farb published in 2018, the most frequently reported feelings by participants after undertaking meditation were calmness, being focused and emotional management.

**“We found that even just doing 10 minutes of meditation apps a day can be like a slow burn to help fight stress and depression.”**



Also, meditation promotes a key process called decentering, which is the idea of taking a step back to assess an experience from multiple perspectives before trying to figure out what it means for yourself or the future.

“If what we normally do is take an experience and immediately try to figure out what it means for us and how to deal with it, we may be oversimplifying our understanding of an experience without getting to know all the nuance,” he explains. “Twitter and Facebook battles often exemplify this type of reactive ‘side taking’ rather than taking time to explore and understand. Decentering involves delaying this knee-jerk reactivity/elaboration of implications, and intentionally spending more time exploring before responding.”

Farb didn’t note in his work that quitting social media and those “side-taking” arguments could benefit your health, but other research has said as much. Using social media networks such as Facebook has been found to increase people’s stress levels, produce anxiety and negatively influence a person’s sense of self.

Farb has also found that meditation can “re-engage sensory exploration,” which can help someone to spend “more time taking in information before figuring out what to do. This can reduce deeply entrenched response patterns that show up as rumination or obsession over negative events and thoughts.”

Tossing and turning over negative thoughts often hurts our chances of a good night’s sleep, but that’s where David Samson comes in. The assistant professor of anthropology at UTM has been neck-deep in sleep research for years, publishing more than 20 papers on the topic.

When turning to stress and sleep, it’s hard to disentangle the two, Samson notes. “Which came first: stress which causes poor sleep, or bad sleep which causes that stress? It’s a bit of column A and B,” Samson says.

While Samson has researched sleep patterns in primates—analyzing animals such as lemurs, baboons and chimpanzees—he found a common denominator: sleep helps with emotional regulation.

“If you don’t get enough sleep regularly, you are more prone to act aggressively and to not inhibit your behaviour,” he says.

Sleep is especially vital for those with PTSD, Samson says. "Sleep can help you process that trauma in an effective way, but if you're not getting enough shut-eye, that negative feedback loop can keep going."

Samson's work riffs off various studies on the detrimental consequences of sleeplessness. Researchers at the University of California, Berkeley, found that sleep-deprived people feel lonelier and less encouraged to engage with others, avoiding close contact in much the same way as people with social anxiety.

Thankfully, sleeplessness is self-correctable. Samson advises people with sleeping disorders to refrain from cellphone or TV use before bed ("that blue wave light will keep you up"), read something bland rather than exciting before sleeping and, if possible, stick to the same sleep routine.

Samson's research and that of his UTM colleagues offer a more comprehensive picture of the various branches of stress, and how it touches many aspects of our lives. But when we can see its underlying roots, we can learn how to prepare ourselves for those needling anxieties bound to ruin our otherwise peaceful day. **M**



## ***Stress-busting resources on campus***

UTM offers many resources to help students and staff combat high stress and promote wellness and mental well-being.

At UTM's Health & Counselling Centre, a monthly workshop called Building Resilience is available to "help students understand stress and provide the skills and support needed to cope with university and bouncing back from an overwhelming workload," says Erin Kraftcheck, medical director of the centre.

One-on-one counselling sessions are also available, with resources in place to make those counsellors available on demand, Kraftcheck adds.

A weekly mindfulness meditation class is open to all students and faculty that doesn't require prior registration, she notes. A consulting psychiatrist is also available on campus two days a week, in case students or staff need to work with someone on more pressing concerns.

Also, the centre will host a fall fair focused on mental health and well-being. This four-hour fair will feature booths and information on what's available on campus, as well as talks on wellness and mental health.

Another UTM event focused on managing stress is the Exam Jam. This campus-wide biannual event, coordinated by the Centre for Student Engagement and the Health & Counselling Centre, draws more than 3,000 students looking for academic support or stress-management techniques leading into examination periods.

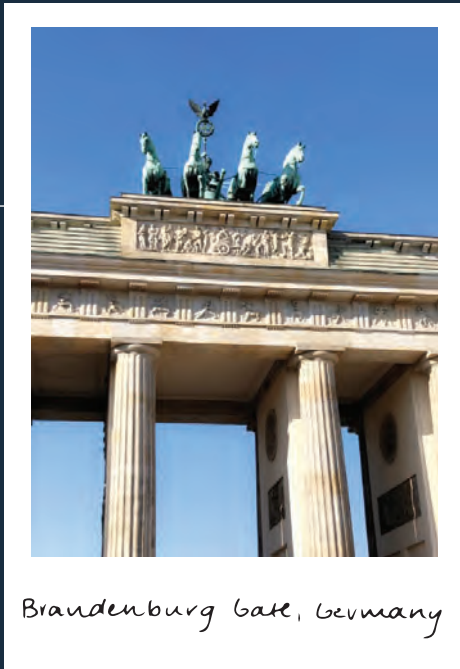
"The event merges academic and wellness initiatives by offering academic review sessions and workshops alongside various wellness activities designed to help students relax and unwind during this stressful time of year," says Andrea Carter, assistant dean, student wellness, support and success.

In Athletics, staff and faculty can buy memberships and join the Varsity Eagles in recreation and athletic activities. Mindfulness Wednesdays, Wellness Routes and drop-in sports programs are all open to staff, faculty and students.

"We certainly believe that if you model well-being and resiliency, students are encouraged to do the same in their own lives," Carter says.

Finally, in Student Housing & Residence Life, a variety of staff are available to students who live in residence to address needs such as isolation, home sickness and mental health.

# Remembering

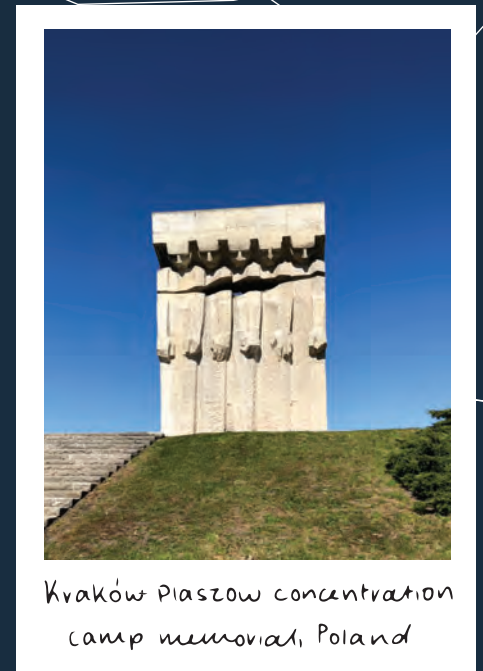


Brandenburg Gate, Germany

**GERMANY**



**POLAND**



Kraków Plaszow concentration camp memorial, Poland



Auschwitz concentration camp, Poland



CZECHIA

SLOVAKIA

AUSTRIA

HUNGARY

ITALY

ROMANIA

CROATIA

SERBIA

# Genocide

UTM students in experiential sociology course analyze how we construct memories of the Holocaust

**T**hese feel like topsy-turvy, troubled times for many Canadians. News headlines are full of worrisome and upsetting stories. Conversations across the country reveal our concerns about the future. We are writing to show you there is reason for hope.

We recently returned from a two-week course trip with 14 students from University of Toronto Mississauga. The course, Genocide and Memory, is part of a new program called UTM Abroad, where faculty members embed in and lead international experiences within courses. The course asks students to examine how the memory of the Holocaust is constructed and reconstructed at museums and other cultural sites in Poland and Germany. At concentration camps such as Kraków-Plaszów, Auschwitz-Birkenau and Sachsenhausen, the students bore witness to sites of unspeakable cruelty and evil. They visited the POLIN Museum of the History of the Polish Jews, the Warsaw Rising Museum, Oskar Schindler's Enamel Factory, the Topography of Terror museum and many other such sites, observing tourists and analyzing competing narratives of why the Holocaust happened.

We finished the trip with a visit to the stunning Memorial to the Murdered Jews of Europe in Berlin, then spent some time in the park across the street processing what we had seen and experienced. Disorientation, sadness, irritation (at the tourists taking selfies), overwhelm. In our final reflection, we asked: What do you do with this? Where do you go with what you have seen and come to understand? Was this UTM course on Genocide and Memory informative or transformative? How might this experience shape one's life?

Processing this type of learning experience can be challenging, and the students struggled to find answers. So we talked for a few minutes until we couldn't quite hear each other because of a noisy throng of people coming our way. Music, chanting, banners, placards carried by a diverse group of people—young, old, rainbow coloured. It was a protest march. But what was this group protesting? Quickly translating the German signs throughout the crowd, it became clear that this was a march against racism, nationalism, homophobia, xenophobia and the shocking rise of far-right wing and neo-Nazi movements within Germany. The #Unteilbar (Indivisible) movement had gathered a broad coalition of groups from across Germany to march against the Alternative for Germany party that has seen significant gains in recent elections.



Genocide and Memory students Patrick LeDuc, Jasmine Anthony, Dolunay Asmakaya, Rose Davis, Claire Ford and Alexandra Godzisz in front of the Reichstag building, which housed the Parliament of Germany from 1871 to 1918, and is now home to today's Bundestag

"More Love, Less Hate," "No Room for Nazis" and "Racism is no Alternative" read the placards.

Our students, all of whom were burdened with what they had seen and experienced across the trip, who were at a loss for words about what all of this would mean for them, and who had tasted something of the despair of the concentration camps, began to smile. They had found their answer. Here, marching by them, were some 240,000 Germans showing them what to do. You engage. You become vigilant. The phrase "Never again" becomes personal. You stand up against the erosion of human rights. You fight to protect against the dilution of democracy. You commit to the care of your neighbour, next door and around the world. You refuse to be complicit in any political and cultural shift that could again plant the seed of genocide. Anything less is a betrayal of those peoples who have suffered and died in genocides before, during and after the Holocaust.

The students were struggling with hope. And then hope walked by in a beautifully multicultural, multiethnic and intergenerational community that is saying again that love wins, and hatred is always on the wrong side of history. **M**

*Dale Mullings is Assistant Dean, Students & International Initiatives, UTM*

*Erik Schneiderhan is an associate professor of sociology, UTM*

*Brian Walsh is a campus minister and adjunct professor of theology at the University of Toronto.*

BELARUS

UKRAINE





# Outstanding In Their Fields

UTM celebrates female academics at the top of their game

By **Suzanne Bowness** Photography by **Riley Stewart**

**clockwise from top**  
Alexandra Gillespie,  
Iva Zovkic,  
**Lindsay Schoenbohm,**  
**Voula Kanelis,**  
*Jessica Burgner-Kahrs*

A book historian working to reshape her discipline; **a chemist investigating disease at the molecular level**; a psychology specialist examining the relationship between genetics and memory; *a computer scientist who builds tiny repair robots*; **and an explorer willing to camp out at 4,300 feet to better understand wind erosion.** From winning awards to working in the community to appearing in the media, these female UTM faculty members are making an impact in their disciplines.

“Gillespie’s latest project explores how books developed as a technology along the Silk Roads, an ancient network of trade routes connecting the East and West.”



# Alexandra Gillespie

**Already chair of the English and Drama department at UTM,** a renowned scholar of

14th century writer Geoffrey Chaucer and the curator of the U of T Old Books New Science Lab for digital humanities, Alexandra Gillespie is now leading a new project that has attracted \$1.25 million in funding to the University of Toronto from The Andrew W. Mellon Foundation.

Along with co-principal investigators Suzanne Akbari (Centre for Medieval Studies) and Sian Meikle (University of Toronto Libraries Information Technology Services), Gillespie heads an international initiative to investigate

the origins and development of book bindings in the project, *The Book and the Silk Roads*.

Bringing together scholars from across U of T as well as internationally, the endeavour aims to tell a new story about how books developed as a technology through the sharing of ideas along the Silk Roads, the ancient network of trade routes connecting the East and West.

The project will also employ equipment more often found in the lab than the library, such as MRI and CT machines. “We’re collaborating with scientists and using scientific analysis techniques to find out more about the structure of these early codices [handwritten books], which you can’t handle a lot because they tend to fall apart,” Gillespie says. They will also investigate the genetic makeup of organic materials such as leather bindings to see how the materials reveal evidence of technology transfer along the route. “We will use science to answer some of those questions and we’ll use history to answer others and bring them together,” Gillespie says.

All of this scholarship has startling implications for the field as a whole. “We hope eventually to capture a big new narrative about the way the book developed,” says Gillespie, adding that she anticipates the collaboration will help break down barriers in the field. “The book is a global technology developed around the world, but we often tell the story in a very siloed lens, and in the Anglosphere, in a very Eurocentric way. So we’re trying to really enrich that narrative and also disrupt some of the assumptions.”

Besides leading the Silk Roads project, Gillespie is busy with other initiatives. She’s writing a book for Cambridge University Press that offers a new framework for bibliographical inquiry based on a reading of Chaucer’s work. Cross-appointed to the Centre for Medieval Studies, Gillespie teaches medieval literature to undergraduates, and a graduate course on the history of manuscripts and their construction in the university’s Book History and Print Culture program.



# Voula Kanelis

**Voula Kanelis is an associate professor** in the Department of Chemical & Physical Sciences who uses MRI-type technology to study the three-dimensional shapes of molecules and their changes over time. Analyzing one protein complex, which forms a pore in cells in the pancreas, heart and brain, Kanelis studies how disease-causing mutations in that protein disrupt the opening and closing of pores. Her work is important to understanding insulin-related disorders like diabetes, cardiac disease and epilepsy.

“We’re interested in understanding the underlying molecular basis of how genetic mutations can cause disease,” Kanelis says.

Kanelis is also examining proteins that help with virus production. She and her team actually grow, extract and purify proteins in bacteria, a practice that boosts her students’ lab learning. “It’s a really good experience doing molecular biology and working with the bacteria,” says Kanelis, who currently has three graduate students and two undergraduates working in her lab. She also teaches a fourth-year course on these lab techniques alongside her standard introductory biochemistry course.

Yet another facet of Kanelis’ teaching is in the Amgen Biotech Experience ABE@UTM program, where she co-leads, with Professor Steven Chatfield and technician Kristina Han, two-day workshops for local high school teachers, who then take the labs back to their students. A collaboration between UTM, biotechnology company Amgen Canada and the Amgen Foundation, the project is the first Canadian import of a program that’s been successful in the U.S. for many years. Along with training, the program provides free professional equipment and curriculum guides. Launched in 2017, the program today serves 32 schools across seven school boards in Ontario and has reached more than 1,600 post-secondary students, often those who live in neighbourhoods of lower socioeconomic status.

“It’s wonderful to see how it has impacted how students’ view a career in science. The student feedback has been very impressive,” Kanelis says.

Kanelis says working with a biology professor as her co-lead is yet another example of the collaborative atmosphere she values at UTM.

“I’m in a chemical and physical sciences department but my lab is on the floor with all the biologists. And I think that’s wonderful. I really like the fact that we’re not segregated into different geographical locations. It’s a very enriching environment, and I think my students very much benefit from that,” she says.



# Iva Zovkic

**Figuring out new ways to help patients** with memory-related conditions such as Alzheimer’s disease is a central focus for Iva Zovkic, assistant professor in the Department of Psychology. Her efforts were recently celebrated with the 2018 Dorothy Shoichet Women Faculty Science Award of Excellence.



“I was super excited as I was nominated by my department, and it was great to get the recognition that things are going well,” Zovkic says.

Understanding what makes memories permanent in the brain, and especially how these processes go wrong in the brains of people with certain diseases, is Zovkic’s primary interest. Knowing that changes in gene expression are necessary for memory formation, Zovkic investigates these changes to understand conditions that might turn a gene on or off, a field called “epigenetics”. Genes are packaged in the cell nucleus and wrapped around a set of proteins called histones to regulate their expression. Whereas most researchers study how to modify histones already present to influence memory and, therefore, gene expression, Zovkic is investigating the effects of swapping one histone group with another.

Now, Zovkic has taken the experiment a step further by using viruses to eliminate a histone where necessary, and her experiments have improved memory in mice. She is experimenting with drugs that can remove the histone pharmaceutically, an easier intervention than surgery. Zovkic says it’s rewarding to work in a developing field.

“This is a new branch of research in the brain,” she says. “We really are wide open to study any and all aspects of the mechanism because there’s really nothing known.”

She adds that her graduate students are now looking into other relevant aspects, for example, relationships with drug addiction and post-traumatic stress disorder. Zovkic further shares her research through a course on behavioural epigenetics (she also teaches a course in human neuropsychology).

Zovkic says she likes the collaborative nature of her department at UTM and the fact that it’s expanding. “There’s tons of new faculty being hired at this moment, so being here is exciting because you’re getting so many new colleagues and you have a say in how the department is shaped.”

# Jessica Burgner-Kahrs



**Jessica Burgner-Kahrs is a newcomer to UTM,**

but her work is already being noticed internationally, as is evidenced by her most recent accolade—inclusion on the World Economic Forum’s list of Young Global Leaders for 2019. It’s just the latest recognition in a list that already includes Germany’s Young Researcher of the Year and the Heinz Maier-Leibnitz Prize in 2015.

“It was quite a great honour to see that people perceived my work as being eligible for these kinds of awards, and it also helped me to realize myself that this research was having an impact,” says Burgner-Kahrs, an associate professor in the Department of Mathematical & Computational Sciences.

Burgner-Kahrs comes to UTM after six years as a professor at Leibniz University in Hanover, Germany. Two of her graduate students will be moving to Canada with her, and she hopes to build her lab to include more students and postdocs. Burgner-Kahrs is one of three hires for a new robotics program at UTM. She will also teach an introduction to robotics design course as well as a graduate course on this topic.

Burgner-Kahrs’ research interest was sparked in her teens when she lost a beloved uncle to a brain tumour after he received radiation therapy in the wrong location. She had been contemplating a career in medicine, but his death changed her focus.

“I was already excited about computers, and I was thinking maybe I can help surgeons and doctors to become more accurate, providing the means and tools to help them do their work better,” she recalls.

Today, she makes tiny robots. “I build the smallest robots out there,” she says, describing them as worm-like and made of elastic nickel titanium. “Just a millimeter, they can really snake within the human body to treat diseases that are not reachable today.” Besides creeping up a nostril to get rid of a brain tumour, the tiny robots already have other applications, for example, as tools to maintain and repair airplane jet engines. “My robots can sneak inside and help them inspect for faults that no human can get to,” she says.

With her dual background in mechanical engineering and computer science, she also does a lot of mathematical modelling to determine the physics behind robot motion, and works collaboratively with doctors on issues of human-robot interaction. She’s already established a collaboration with The Hospital for Sick Children, and regularly attends conferences with surgeons and engineers.

“I was already excited about computers, and I was thinking maybe I can help surgeons and doctors to become more accurate, providing the means and tools to help them do their work better.”

# Lindsay Schoenbohm

**Most days, Lindsay Schoenbohm can be found at UTM**, but on occasion, she is also hanging out in places such as the remote Argentinian wilderness, at 4,300 feet above sea level. “You have to drive 16 hours out from the closest town to get there, and it is six hours from the other closest human habitation,” says Schoenbohm of the place she spent five nights camping to study wind erosion.

Schoenbohm, an assistant professor of chemical and physical sciences, researches tectonics, the study of the plates on the Earth’s surface that push into each other to build up mountains or cause erosion. While she collects samples from the field and maps the geology, the work is equally aided by computer modelling.

Earthquakes are another focus for Schoenbohm and her students, who measure how fast rocks are moving on either side of a fault. “If you find the right spot and you dig across it, ideally what you see is the effects of a series of earthquakes. One earthquake will cut the rock, and then you’ll see more sediment deposited on top that isn’t affected by that earthquake. If you can date the rocks you can tell when that earthquake happened,” she says.

A third research area is river erosion, specifically, how water pathways migrate over time in response to tectonic changes. One graduate student is focused on a mountain range in Argentina and another on mountains in western Nepal, each mapping evidence that these divides are moving. It’s careful work assessing changes that have happened over millions of years.

Schoenbohm says she first became interested in her field of study when she saw a map of underwater mountains in high school. “It was really striking to see these huge underwater mountain ranges that literally wrap around the globe,” she recalls. “The cool thing about geology is the timescales—millions of years is no big deal.”

Today, she inspires others to consider these marvels through her own teaching. For 10 years, she taught an introductory earth sciences course, and now teaches a second-year structural geology class and a third-year tectonics class. In the fall, she took a group of students on a geological field trip to the Canadian Rockies.

At UTM, Schoenbohm enjoys the multidisciplinary environment.

“I regularly run into biologists, chemists, physicists and geographers...We’re able to build interdisciplinary connections in a way that I just don’t see happening in most places.” **M**



## Superstar students

UTM also supports undergraduates conducting transformative research. These include:

### ROMINA PIUNNO

Romina Piunno is a fourth-year physics and computer science student who discovered a love for chasing cyclones in the Arctic. Her presentation on the topic won third prize at last fall’s Canadian Undergraduate Physics Conference, and she’s starting a PhD in atmospheric physics this fall.

Supervised by chemical and physical sciences professor Kent Moore, Piunno studied the collapse of the Beaufort High, a pressure region around the Beaufort Sea located north of Alaska. In winter 2017, cyclones cut through the region and disrupted the atmosphere. While most researchers fixated on the event itself, Piunno decided to investigate the movement of the cyclone across the globe.

To map the movement, Piunno took pressure data readings from different geographical points and connected the dots between them. She used her computer science skills to design a grid to map the cyclone movement around the world.

Her results identified some anomalies—cyclones that started in the North Atlantic and then headed into the Western Arctic. “That’s strange. That doesn’t usually happen,” Piunno says.

Moore and his colleagues suspect the change may be due to melting sea ice, presenting an unforeseen effect of global warming. With the sea ice melting, heat is exchanged between the (warmer) water and the (colder) atmosphere, and introduces more energy into the atmosphere, creating odd cyclone paths.

Piunno says what attracts her to this field of physics is its tangibility. “We experience climate every day—it’s easy to talk about and engage people because it’s so ingrained in our everyday life.”

### LOHANA CAPANEMA

Lohana Capanema is a fourth-year criminology and political science major who is also an international transfer student from Brazil. Capanema arrived at UTM in her second year and recently won a Global Undergraduate Award for her research.

Her research focused on Canadian intergovernmental relations, examining the autonomy granted by federal and provincial governments to Canadian cities. Her award included travel to a three-day conference in Dublin, Ireland, to share her work with undergraduate students from across the globe. “It was an awesome experience for me to see what other students are interested in and also see the high quality of their work,” Capanema says.

She valued having her research appreciated. “Most recognition goes towards the master’s and PhD levels. I feel that there’s much to learn from what undergraduates are studying—that can lead to better research in the future,” she says.

A busy student, Capanema is also very engaged in student life at UTM. She holds three volunteer roles, as wellness ambassador for the Health & Counselling Centre; and in two roles for the Office of the Registrar—orientation and outreach ambassador, and tour ambassador. She also works at the Career Centre, a position she hopes to maintain after graduation.

“I love helping other people and interacting with the students. They see me on campus and say, ‘I followed your advice!’ she says. “That makes me feel very useful. It makes me want to do more because I see the real impact on the students’ lives.”

# Spark



Left, forensic science student Sandy Wang, left, administers sobriety screening device on a participant in control group tests at UTM. Above, two volunteer students from the Erindale College Special Response Team, Jihwa Lim, right, and Marvimar Castroverde, centre, screen a UTM control group participant to ensure she is healthy before undergoing sobriety testing

## RETHINKING SOBRIETY TESTING

### Does standard assessment fully capture one's impairment level?

**For about four decades**, the primary way law enforcement officers have determined the impairment of drivers is through the standard field sobriety test (SFST).

Developed in the late 1970s and in broad use since the 1980s, the SFST consists of three tests: the horizontal gaze nystagmus test, which looks at involuntary jerkiness of the eyes; the walk-and-turn; and the one-leg stand.

“Essentially, drivers are being tested for divided attention and the ability to perform complex tasks,” says University of Toronto Mississauga forensic chemistry professor Vivienne Luk. “Can they follow instruction? Can they keep balance? Can they walk in a straight line? They are measuring them on these factors to see if they are potentially impaired by drugs or alcohol.”

But Luk says there's a significant problem with the SFST: very limited scientific research supports it as a good predictor of impairment. She hopes her research on the efficacy of the test will fill that gap.

“What we're trying to do is measure the degree of relatedness of one's blood alcohol concentration and their performance on the SFST,” Luk says.

For seven years, Luk worked as a forensic toxicologist at the Centre of Forensic Sciences in Toronto. Her job was to analyze biological samples for the presence of drugs, alcohol and poisons for medical and legal investigations, and she also provided expert testimony in court.

In July 2017, Luk returned to UTM, where she had earned her Honours Bachelor of Science degree, but this time, as an assistant professor in the Forensic Science degree program. Her research into SFST may yield important insights on the strengths and weaknesses of the test, and influence future court testimony involving toxicology.

The project is a collaboration between UTM and the Ontario Police College, where Luk has been working with chief instructor Laura Gorczynski. During SFST training sessions for officers, volunteer participants are dosed with up to and beyond 80 milligrams of alcohol per 100 millilitres of blood, or 0.08, the legal limit for drivers. Luk's team members take measurements using an Intoxilyzer 8,000C, commonly known as a “breathalyzer,” a device that determines blood alcohol concentration.

“We're still analyzing the data, but what we want to see is what works, what doesn't work, what can we improve,” Luk says. “Scientific rigour is much more questioned now, so publishing this data can allow experts and officers, when testifying in court, to point to something that says, ‘I have grounds to arrest this person because I'm using these tests that have been scientifically validated.’”

Two of Luk's students received funding from UTM's Experiential Education Unit. “We got lots of support from the program itself and from the university,” Luk says. “The students have had the opportunity to go to different police detachments, meet different professionals. From a career standpoint, this is good. They have a bright future in front of them.”

Once the research project is complete and depending on the outcome, Luk would like to expand her investigation.

“Certainly with cannabis being legal now, I think the next step is to apply the SFST to cannabis.” —**Carolyn Camilleri**

# THE GENDER DYNAMICS OF PAIN

## Study shows women and men react differently to physical aches

**Chronic pain is one of Canada's leading health problems.** About one in five people suffers from chronic pain, and its economic toll surpasses that of cancer, heart disease and HIV combined.

But what if we could erase our memories of acute pain, which is thought to be a key driver of chronic pain?

That question intrigues Loren Martin, an assistant professor of psychology at the University of Toronto Mississauga and a Tier II Canada Research Chair in Translational Pain Research. Recently, he and colleagues at McGill University in Quebec and the University of Zurich conducted a study that suggests that men and women react differently to pain.

The team tested pain memory in people and mice. Initially, men and women were tested for their sensitivity to heat pain. "We placed heat sensors on their arm and asked them to rate how painful that was on a scale of 0 to 100," says Martin. The average rating was about 40. Participants were then fitted with a tightly inflated blood pressure cuff for 20 minutes and asked to squeeze hand weights 20 to 30 times to intensify their already significant pain. They rated their pain between 80 and 100, typically.

The next day, the participants returned. Some were led to the same testing room as the first day (with the blood pressure cuff in

plain view), while others were led to a different building. The heat sensitivity test was repeated on the subjects, but not the cuff test.

The men in the same room on the first day reported more pain than they had experienced from the initial heat sensitivity test and, interestingly, more pain and stress than the women. "The pain ratings by the females didn't change even though they were in the same [environment]," says Martin, who believes the men reported greater pain sensitivity because they were more stressed than the women by the possibility of another cuff test.

The research team hypothesized that the men's response was linked to sex and stress hormones, so they performed similar, or translational, experiments on mice. In one experiment, both male and female mice were exposed to mild heat and each was given an injection to produce mild stomach pain. When heat was applied in the same environment the next day, the male mice showed an increased pain response, but not the female mice. "Their heat pain thresholds changed and their stress hormones skyrocketed," says Martin.

In another of the team's experiments, female mice given testosterone showed heightened sensitivity to pain, while castrated mice did not. And when the researchers injected a peptide into the brains of the male mice to block communication between neurons, which is important to memory, the mice didn't appear to remember their earlier pain.

These are important findings for scientists who want to better understand the neurobiological mechanisms of the brain and how chronic pain develops. Says Martin: "We are now looking at whether or not there are brain regions that hold pain memories and whether we can target those neurons to erase pain memories." —Sara Bedal



ILLUSTRATION: MARIEL RUTHERFORD

# Class Notes



## In Memoriam (1949-2018) Champion of Students

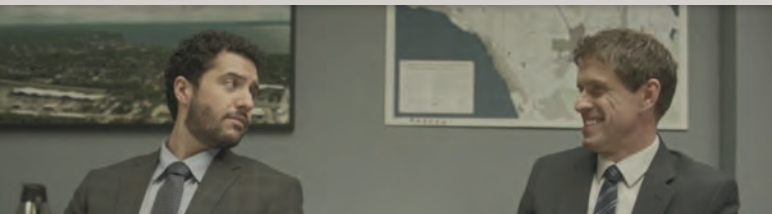
**Ronald Douglas Leeies (BA 1971) was a University of Toronto Mississauga alumnus and long-time staff member who had great pride in his alma mater.** In 1968, he joined with a fellow student to start UTM's first campus newspaper, *The Erindalian* (now *The Medium*), and served as its editor for part of the following year. Leeies held various academic advising and recruiting positions at UTM spanning almost three decades, from 1983 to 2011, and completed his career as the assistant registrar of student success. During his time at UTM, he guided several thousand students to make sound choices in their educational paths. Leeies brought great energy and enthusiasm to everything he did for the campus. He loved working with students, and is remembered for his incredible stories and friendship. To honour his significant contributions to UTM's students and operations, UTM established the In Memory of Doug Leeies fund. Gifts to the fund are directed to the 50th Anniversary Boundless Promise Award, which benefits UTM students in financial need.

## Soaring High

**Technology is transforming every aspect of the business world**, and among the forward-thinking leaders driving this change in the aviation sphere is Alfredo Tan (HBS 1998). In March 2018, after several years of working in technology leadership roles at companies such as Facebook, Yahoo! and Bell, Tan was hired by WestJet for its new position of chief digital and innovation officer. He is spearheading efforts to optimize the company's use of technology to increase revenues and improve customer service. His job includes: enhancing the WestJet website and app; making better use of AI chatbots; using data analytics to gather useful business insights; overseeing a team of digital strategists and web/app developers; and liaising with technology business partners such as Google, Facebook, Microsoft and Amazon.

"The work we do impacts millions of our guests, and will be increasingly critical in improving the guest experience and driving commercial performance," he says. "If you love travel, technology, people and the jet-set life, there are very few better jobs that are as rewarding."





## Small Screen Success

**Zach Smadu (BA 2005) has come a long way** from his early days in Saskatchewan's musical theatre scene. Since graduating from the University of Toronto Mississauga, the Regina-born, Toronto-based actor has added 26 film and television productions to his list of credits, including roles that have found him sharing the small screen with big-name actors. Today, he is a recurring character on the Canadian network crime drama *Cardinal*. Based on novels by fellow UTM alumnus Giles Blunt, the TV show features Smadu as detective Ash Kular, who helps investigate crime in the fictional northern Ontario city of Algonquin Bay. The show has been filmed in Sudbury, North Bay and two First Nation reserves.

"One of my real joys is that we've collaboratively developed Kular over the past three seasons to be at times a spark of levity amidst the heavy tones of the show. I wouldn't call it comic relief but more so a sigh of relief," says Smadu, who has acted on the show for two seasons.

Smadu is returning for season four of *Cardinal*, which airs in Canada on CTV, and on channels in Europe, Australia, Spain, Israel and the United States.

"My training at UTM was foundational and gave me a good base and understanding to grow my craft," he says. "I feel like I'm just getting started and I'm really looking forward to what's next."

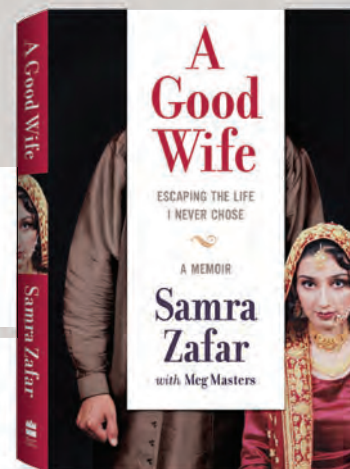
## Her Own Heroine

**This year, International Women's Day on March 8 held extra significance for**

**Samra Zafar (B.Sc. 2013, MA 2014).** It was the day she launched her memoir about surviving and then thriving after domestic abuse, *A Good Wife: Escaping the Life I Never Chose*. The book details how Zafar was forced to marry a stranger at age 17 and leave behind her family in Pakistan for Canada, which meant putting her dream of going to university on hold. She found her home slowly turning into a prison, but drawing on her considerable ambition, she hatched an escape plan for herself and her two daughters, becoming, as she puts it, the heroine who saved her own life. "I wrote this book because I know my story is the story of millions of women and girls around the world trapped in cycles of abuse, perpetuated by shame, stigma and other barriers. The first step towards creating change is to break the silence—for the millions of silences that are still waiting to be broken," she says.

Today, Zafar is an award-winning international speaker, scholar and social entrepreneur who advocates for equity, inclusion, human rights and life after trauma. She is the founder of Brave Beginnings, a charity that matches women in the GTA who have recently escaped oppression with understanding and supportive mentors. She says the network of caring faculty members, mentors and friends she gained at the University of Toronto Mississauga has been critical to her success.

"UTM gave me a community that enabled me to find my own strength and resilience," she says.



# Class Notes



## Social Sensations

**Madeleine and Samantha Caleon (BCom 2018) are creating a lot of buzz on social media with their fun, light-hearted videos about their lives.** The Philippines-born, Canada-raised twin sisters started their YouTube channel as a hobby during their first year at the University of Toronto Mississauga, vlogging about their twin relationship, birthday parties and holidays. They then hopped on the social music app musical.ly (now TikTok), where they posted videos of themselves dancing to popular songs with carefully choreographed moves. Today, the pair's presence on social media is stronger than ever with about 300,000 YouTube subscribers, 118,000 Instagram followers and an incredible 3.3 million TikTok fans. Many of their videos now involve the sisters performing covers of pop songs, and trying different trending challenges, such as putting on makeup without a mirror, and staying handcuffed to each other for 24 hours. But these videos aren't just for fun but for business, as the twins are building their social media brand full time, and have hired a manager to help. So far, they have expanded their business into fashion: you can check out their clothing line on StarSpender, the online shop for TikTok stars.



## Spicing Things Up

**Preena Chauhan (Honours BA 2001) describes herself as being “born to cook”.** Now, she is sharing her talent and passion with the public: together with her brother, she launched Arvinda's Indian Spice Blends. Located in the new Food District at Square One Shopping Centre in Mississauga, the 34,000-sq.-ft. store offers what lies at the heart of Chauhan's family recipes—premium spice blends that have been freshly roasted, ground and mixed in Canada. Also taking place are interactive cooking classes that teach how to create authentic Indian meals. Starting as a teenager, Chauhan has cooked Indian food, taught cooking classes, studied first-hand the spice-growing regions of India and Sri Lanka, and conducted cooking demos of her family's masalas. Her signature spice blends are available for sale at dozens of food markets and culinary shops across Canada. At her shop in Square One, she finally has not only a retail home for her cooking ingredients, but a space to help others discover the delicious rewards of cooking Indian food from scratch.





# Alumni Events

Discover the benefits of being a UTM alum! Enjoy social and learning events and activities and stay connected to your fellow alumni. Faculty, staff and friends of UTM are welcome to attend. See [www.utm.utoronto.ca/alumni/events](http://www.utm.utoronto.ca/alumni/events).



## Toronto Harbour Alumni Boat Cruise

Ahoy! Take in a spectacular view of the Toronto skyline from a classic river showboat as we dine and dance the night away.

JUNE  
**14**



## Family Fun Swim & BBQ

A fun, family-friendly swim on campus. Enjoy a barbecue lunch on us!

JULY  
**7**



## Alumni Day at African Lion Safari

The roar of the lions! Majestic elephants! A tour of the reserve, lunch and a "creature feature" are included in this family-friendly event.

JULY  
**21**



## Alumni Day at Rogers Cup

Watch the world's best female tennis players at the 2019 Rogers Cup from UTM's private suite.

AUGUST  
**7**



## Summer Social on the Patio

Get your weekend started with an after-work summer social for UTM alumni and friends on the Faculty Club patio.

AUGUST  
**9**



## Alumni Day at the CNE & Toronto FC

Let's go to The Ex for a day of fun and attractions, and then a TFC match at BMO Field.

AUGUST  
**24**



## Send us your memories

[m.magazine@utoronto.ca](mailto:m.magazine@utoronto.ca)

Some of our favourite pictures of UTM have been taken by students, alumni, faculty and staff. We love to see the campus through your eyes—send your photos to [m.magazine@utoronto.ca](mailto:m.magazine@utoronto.ca) and they could be featured in the magazine or on social media!

# Vault

**When the South Building at Erindale College opened in 1972**, a new student hot spot was born. The building's central public space, dubbed the Meeting Place, quickly became a popular place on campus to study or socialize. Since that time, major changes have taken place at the school: in 1998, Erindale was renamed the University of Toronto Mississauga, while in 2009, the South Building became the William G. Davis Building, in honour of the former Ontario premier. But what stayed the same over all those years was the look, feel and popularity of the Meeting Place. Now, to accommodate UTM's steadily growing student population, a renovation commenced in March 2018 to make the space more functional and attractive. Find out about the new and improved Meeting Place on page 4.

1970s



PHOTO: STEVE JAJUNZEMIS

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## Not all surprises are good ones.

Especially the ones that you aren't financially prepared for – like a root canal, an accident that prevents you from working, or if the unthinkable happens and a loved one is suddenly no longer there. That's why there's **Alumni Insurance Plans.**

They can help protect you against life changing events that can happen at any stage of your life. Choose from Health & Dental, Term Life, Major Accident Protection, Income Protection and more. With Alumni Insurance Plans, affordable rates and financial security are a piece of cake.



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