

**Getting Smarter** The father of AI / **Student Commons** Coming to St. George / **Pharmacare** A universal drug plan  
**Breaking News** Rethinking journalism / **Clutterbugs** Too much stuff! / **Survey Camp** Memories of Gull Lake

# UofT Magazine

SUMMER 2015

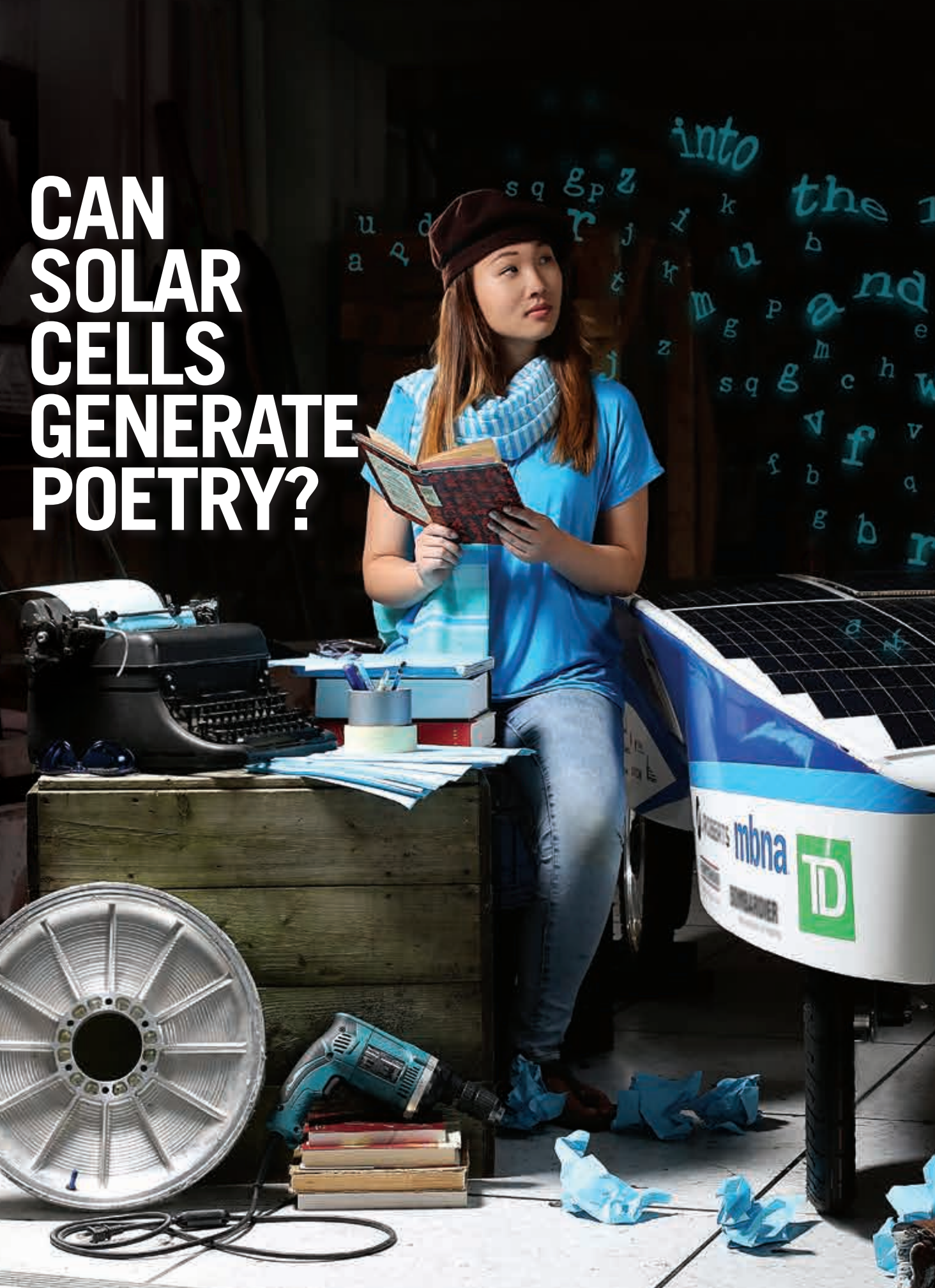


## Game On!

The Pan Am Games will leave a golden legacy for U of T, its athletes and the city



# CAN SOLAR CELLS GENERATE POETRY?



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# Summer 2015

Volume 42, No. 4



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A U of T computer scientist is helping to build a new generation of intelligent machines

BY DAN FALK

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## Departments

# Libraries have become more than about consuming content. They're now also about creating it

– Vickery Bowles (BA 1980 Victoria, MLS 1982), Toronto's new city librarian, p. 45



**50** Major job perk for grad Joelle Javier: riding all the newest roller coasters



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# Letters



## John Tory's dedication and hard work are exemplary and were sorely missing in the City of Toronto during the last four years.

**JOHN COFFEY**

BA 1989 ST. MICHAEL'S, TORONTO

### A Welcome Change

Your article about our fellow alumnus and Toronto's new mayor John Tory ("Man on the Move," Spring 2015) was most interesting and enlightening. His dedication and hard work are exemplary and were sorely missing in the City of Toronto during the last four years. I was also delighted to see that you contrasted the windows of the mayor's office during Mr. Tory's tenure with the way that they were under his predecessor. I pass by Nathan Phillips Square frequently on my way to work. Mr. Tory's wide open curtains speak to openness, transparency and a willingness to listen to other points of view. For a useful comparison, one only need look at the office of our disastrous and disgraceful former mayor, whose constantly closed blinds spoke to secrecy, close-mindedness and an us-versus-them mentality accented by a constant display of self-serving propaganda.

**JOHN COFFEY**

BA 1989 ST. MICHAEL'S, TORONTO

### Celebrating Trades Work

A photo of Convocation Hall on page six of the Spring 2015 issue brought back memories of painting the cornice on that iconic building.

I was fortunate as a student to obtain work with a number of contractors that were responsible, under the University of Toronto's direction, for the mainte-

nance and upkeep of the university's infrastructure. I recall a mason repointing brick work at Sidney Smith Hall, 40 years ago, saying, "This isn't a job. I'm doing this for my granddaughter." For many tradespeople, reroofing Convocation Hall, reslating Hart House or fabricating wrought iron for University College wasn't simply a vocation but a privilege that they would compete for.

There are a great many people both past and present whose contributions to the success of U of T's students and scholars go unacknowledged. Perhaps it is time for *U of T Magazine* to rectify this.

**DAVID PRICHARD**

VANIER, ONTARIO

### Honouring the Average

I have often felt as a graduate that the University of Toronto does not recognize former students unless they have achieved something spectacular. One reason for this is U of T is a large university and dates back to the 19<sup>th</sup> century: there simply would not be enough space to recognize those of us who have achieved a more modest life after graduation. Kudos to Jemel Ganal, then, for her efforts to recognize the average people who work and study at the university ("Uniting the Humans of U of T," Spring 2015).

**DAVID W. ROE**

BMus 1964, BARRIE, ONTARIO

### The Real Threat

In writing about archeology professor Max Friesen's Arctic research ("The North's Vanishing Past," Winter 2015), Gary Butler wrote that "erosion due to global warming" "as the Beaufort Sea rises" is threatening to "swallow" the archeological record – so much so that "the entire pan-Arctic region's cultural history stands at risk" and "time is of the essence."

First, weather station data in nearby Tuktoyaktuk indicate that over the last few decades, air temperature has not increased and neither has storminess, apparently. Over most of the Arctic, relative sea level has been going down, not up, because of post-glacial isostatic rebound. The Mackenzie Delta, however, is subsiding ever so gently because of the weight of sediment. So, channel erosion is likely the main threat to the site, and it has nothing to do with putative climate – or weather – variation over short time scales.

**BRIAN PRATT**

PhD 1989, SASKATOON

### A+ for Email

Whoever redesigned and is editing your email newsletter is doing a very good job. I enjoy reading this digital version with the multiple links to other sites and videos fleshing out the topics covered – some of which I did not even think to wonder about. Keep up the great efforts!

**STEVEN BLEVINS**

BLA 1985, UTTERTON, ONTARIO

### Write to us!

*U of T Magazine* welcomes letters at [uoft.magazine@utoronto.ca](mailto:uoft.magazine@utoronto.ca). All letters may be edited for clarity, civility and length.

# Calendar

**MORE EVENTS!**  
Check out the latest  
campus happenings at  
[utoronto.ca](http://utoronto.ca).



Toronto Pan Am Sports Centre

JULY 10 TO 26, AUGUST 7 TO 15

## Pan Am and Parapan Am Games

The spectacular new Toronto Pan Am Sports Centre at U of T's Scarborough campus will host swimming, diving and fencing at this summer's Pan Am Games, as well as sitting volleyball at the Parapan Am Games. For details on the Pan Am and Parapan Am sports taking place at UTSC, Varsity Stadium and the Back Campus Fields, from archery to wheelchair tennis, visit [panam2015.utoronto.ca](http://panam2015.utoronto.ca).

For tickets, visit [toronto2015.org](http://toronto2015.org) or [ticketmaster.ca](http://ticketmaster.ca), or call 1-855-726-2015.

### Alumni

July 1

#### New York City

##### UTSC Alumni Event in New York.

Come celebrate Canada Day and meet fellow UTSC alumni in an evening of food and conversation. Free. 6:30 p.m. Location TBD; for info please contact [rtigno@utsc.utoronto.ca](mailto:rtigno@utsc.utoronto.ca)

July 15

#### Calgary

##### Calgary Engineering Student

**Send-Off.** Come and share your student and alumni experiences with new U of T students leaving the Calgary area for the upcoming 2015-16 academic year. Free. 6 p.m. Bow Valley Club, 250 – 6 Ave. SW, Suite 370, Calgary. For info: [sonia@ecf.utoronto.ca](mailto:sonia@ecf.utoronto.ca), 416-946-8143

September 26

#### Knox College

##### Knox College's 100<sup>th</sup> Anniversary

**Gala Dinner.** Knox College invites former residents, alumni and friends to celebrate the 100<sup>th</sup> anniversary of our home at the heart of the university. Price TBD. 5:30 p.m. reception, 7 p.m. dinner. 23 King's College Circle. For info: [knox.communications@utoronto.ca](mailto:knox.communications@utoronto.ca), [knox.utoronto.ca](http://knox.utoronto.ca)

September 30

#### Toronto

##### SAA Trip to the Shaw Festival.

Join the Senior Alumni Association for a performance of *Pygmalion*. \$150, includes transportation, lunch at the Prince of Wales Hotel in Niagara-on-the-Lake, and all taxes. To register: [senior.alumni@utoronto.ca](mailto:senior.alumni@utoronto.ca) or 416-978-0544

### Exhibitions

May 23 to September 4

#### Thomas Fisher Rare Book Library

**Aviators and the Academy: Early Aeronautics in Canada.** A history of aviation in the First World War era with a Toronto emphasis. Free. Mon.–Fri., 9 a.m.–5 p.m. 120 St. George St. 416-978-5285

June 2015 to April 2016

#### St. George and Mississauga

**The Change Room Project** is a multi-venue exhibition addressing barriers to sports participation for LGBTQ students. Free. For locations and times, visit [harthouse.ca](http://harthouse.ca)

### Lectures and Symposia

September 16 to November 25

#### Faculty Club

##### Senior College Weekly Program.

Presentation and discussion sessions, every Wednesday. Free. 10 a.m.–12 noon. 41 Willcocks St. For info: 416-978-7553, [senior.college@utoronto.ca](mailto:senior.college@utoronto.ca). To register: [faculty.utoronto.ca/arc/college](http://faculty.utoronto.ca/arc/college)

### Music

July 1, July 8, August 3

#### Soldiers' Tower

**Carillon Recitals.** These outdoor events will proceed rain or shine. Seating provided. Free. 7 Hart House Circle. For info: 416-978-3485, [soldiers.tower@utoronto.ca](mailto:soldiers.tower@utoronto.ca) **July 1:** Canada Day Recital, 1–2 p.m. **July 8:** Summer Recital, 5:30–6:30 p.m. **Aug. 3:** Simcoe Day Recital, 7–8 p.m.

### Special Events

July 13 to 17, August 4 to 14,

August 10 to 14

#### St. George Campus

##### Math Kangaroo Camps, Math

##### Academy, High School Math

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available. 9 a.m.–4 p.m.

To register: 416-978-4948, [outreach@math.toronto.edu](mailto:outreach@math.toronto.edu), [mathplus.math.toronto.edu](http://mathplus.math.toronto.edu)

July 30

#### Hart House

##### The 2015 Hart House Craft

**Beer Festival.** Featuring small breweries from across Canada and mouth-watering BBQ fare. \$36 (\$31 students) for festival, \$16 (\$11) for ExBEERential Learning. 7 p.m. 7 Hart House Circle. Hurry, tickets sell out early: [harthouse.ca](http://harthouse.ca)

August 4 to 5

#### U of T Scarborough

**Pan Am Path Art Relay** hosted by Hart House and UTSC. Get active with the *Fairgrounds* kinetic sculpture. Music, bike tour led by Bruce Kidd, VP and Principal of UTSC, First Nations storytelling, Playing For Keeps and more. Free. 5–7:30 p.m. Ravine north of tennis facilities, 130 Old Kingston Rd. [PanAmPath.org](http://PanAmPath.org)

### Sports

September 26

#### Varsity Stadium

##### Football: Toronto Varsity Blues vs

##### Queen's Gaels.

Come cheer on the Blues as they take on an Old Four rival! 1 p.m. 299 Bloor St. W. For tickets: [varsityblues.ca/tickets](http://varsityblues.ca/tickets)

### Theatre

August 13

#### Robert Gill Theatre

##### In Search of Mrs. Pirandello –

##### A Staged Reading.

Written and performed by alumna Michaela Di Cesare. Free. 7:30 p.m. 214 College St. [dramacentre.utoronto.ca](http://dramacentre.utoronto.ca)

September 10 to 12, 17 to 19

#### Helen Gardiner Phelam Playhouse

##### Albertine in Five Times.

Enjoy the Centre for Drama, Theatre and Performance Studies' Alumni show. Price: TBD. 8 p.m. 79 St. George St. Tickets: [dramacentre.utoronto.ca](http://dramacentre.utoronto.ca)



## The Enduring Relevance of the Humanities

They open our minds to the world – and the possibilities – around us



The University of Toronto has a well-deserved reputation for strength in medicine, engineering and the sciences. But U of T is also a powerhouse in the humanities. Recent rankings place us in the top 20 worldwide in English, philosophy, history and modern languages. Our Centre for Medieval Studies is world-renowned. Our faculty regularly win major national and international awards, such as the Holberg Prize, which is often called the “Nobel Prize for the humanities” (Natalie Zemon Davis, history; and Ian Hacking, philosophy) and the Molson Prize (Keren Rice, linguistics; Linda Hutcheon, English; and Wayne Sumner, philosophy). We host globally significant editorial projects such as the *Dictionary of Old English*, and our Jackman Humanities Institute is a hotbed of intellectual ferment.

Why do the humanities matter? The study of philosophy, religion, literature, languages, history, drama and art engages us in a conversation about what it means to be human. It enables us to think broadly and deeply about our problems and the values that guide us in forging solutions. The humanities foster cross-cultural understanding and engagement. They investigate the meaning of practices, texts and artifacts and thus encourage a critical rethinking of individual happiness and cultural vitality.

For these reasons, an education in the humanities provides its own intrinsic rewards. But a humanities degree also helps prepare graduates for a wide range of careers. As I noted in my column in the Spring 2014 issue, there is a great deal of pressure on universities these days to produce “job ready” graduates. Some see this as providing the rationale to give priority to the sciences and professional disciplines. On the contrary, experience indicates that a humanities education prepares students not only for specific jobs, but for a career and a lifetime of success.

In a 1985 interview, Northrop Frye said, “The businessman who hires someone totally inarticulate soon finds out that such a person is no more use to him than someone who falls asleep on the job. But the humanities graduate who has developed good verbal skills, whose mind has been framed to be flexible and adjustable, will find many options open.”

What was true three decades ago is even truer today. Many employers see great value in the competencies shown by employees with a humanities background. The American Academy of Arts and Sciences reported in 2013 that more than 90 per cent of business leaders regard liberal education as important because it imparts knowledge, both broad and specific, while fostering the qualities highlighted by Frye.

Still, there is work to be done. While defending the value of the humanities we must also help our graduates in these disciplines to extract the full benefit of their education. This is part of one of the three priorities for the university that I identified when I became president – to re-examine or perhaps even reinvent undergraduate education. To that end, recently Professor Donald Ainslie was appointed provostial advisor on undergraduate humanities education. Professor Ainslie has a great record of leadership and creativity in the field – both in his current role as principal of University College and from his time as chair of the philosophy department. In this new assignment, he will work with the office of the vice-provost (students), with humanities chairs on all three campuses and with Professor Susan McCahan, who was recently appointed to the new position of vice-provost for innovations in undergraduate education (see page 14).

I will return to the topic of liberal education in a future column. For now, I offer this additional argument for the enduring value of the humanities. In the digital age, facts are instantly available to anyone with an Internet connection. But one must also be able to analyze information critically and marshal key points to form persuasive arguments. And this is just a starting point. The study of the humanities empowers us to question our assumptions, to communicate and to collaborate, to understand our history and culture and those of others, to evaluate what is and to imagine what could be. The humanities, therefore, are not only relevant – they are crucial to individual and societal progress and well-being.

*Sincerely,*  
Meric Gertler

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## New Alumni Travel Destinations for 2016

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From \$5,040 US + air

### Eastern & Oriental

#### Express: Bangkok to Bali

(Thailand, Singapore, Indonesia)

**Jan 21–Feb 2**

From \$6,595 US + air

### Jewels of Central America

(Costa Rica, Panama, Colombia)

**Jan 22–31**

From \$4,499 US + air

### Spice Route and Beyond

(Sri Lanka to Singapore)

**Feb 4–25**

From \$5,395 US + air

### Alluring Andes & Majestic Fjords

(Peru, Chile, Falkland Islands, Uruguay, Argentina)

**Feb 6–28**

From \$6,999 US incl. air

### Indian Ocean Passage

(South Africa to Singapore)

**Feb 8–Mar 15**

From \$11,999 US incl. air

### Treasures of Southern Africa

(South Africa, Zimbabwe)

**Feb 10–24**

From \$6,995 US + air

### Build a School in Ecuador: Intergenerational Trip

**March 12–20**

\$3,295 US + air (adult)

\$3,095 US + air

(16 yrs & under)

### Myanmar River Cruise

**March 12–23**

From \$5,295 US + air

### Barcelona Immersion

(Spain)

**Mar 25–Apr 5**

\$3,495 US + air

### Holland & Belgium

**April 14–22**

From \$2,595 US + air

### Ancient Spain to

#### Classical Italy

**April 21–29**

From \$4,295 US + air

### Stepping Stones of

#### Western Civilization

(France, Channel Islands, Britain)

**Apr 23–May 1**

From \$4,295 US + air

### Alumni Campus

#### Abroad: Ronda\*

(Spain)

**Apr 26–May 4**

\$2,995 US + air

### Ancient Traditions of the

#### Inland Sea of Japan

(Japan, South Korea)

**May 5–15**

From \$6,095 US + air

### Art of Living: Tuscany

(Italy)

**May 13–Jun 4**

From \$4,595 US + air

### Waterways of France

**May 19–30**

From \$4,995 US + air

### Alumni Campus

#### Abroad: Sorrento\*

(Italy)

**May 25–Jun 2**

\$2,995 US + air

### Cruise Europe\*

(Netherlands, Germany, Austria, Slovakia, Hungary)

**May 26–Jun 10**

From \$4,895 US + air

### Fogo Island

(Canada)

**June 5–9**

\$2,995 CAD + air

### In the Wake of the Vikings

(Scotland, Norway, Denmark)

**June 8–16**

From \$4,695 US + air

### Baltic Sea

(Denmark, Poland, Estonia, Russia, Finland, Sweden)

**June 15–24**

From \$6,295 US + air

### Paris Immersion

(France)

**Jun 25–Jul 6**

\$3,495 US + air

### Grand Danube Passage\*

(Bulgaria to Czech Republic)

**Aug 20–Sep 4**

From \$4,595 US + air

### Mekong River Cruise

(Vietnam, Cambodia)

**Sep 8–23**

From \$4,995 US incl. air

### Island Life in Greece

#### & Turkey

**Sep 26–Oct 4**

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### Canary Island

#### Celebration Cruise

(Italy, Monaco, Spain, Morocco, Canary Islands, Portugal)

**Oct 5–18**

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### Ethiopia

**Oct 11–23**

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### Alumni Campus Abroad:

#### Italy's Lake District\*

**Oct 12–20**

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### Croatia's Adriatic Coast

**Oct 17–28**

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### China, Yangtze River & Tibet

**Oct 23–Nov 5**

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(Spain, Morocco)

**Nov 4–16**

From \$4,695 US + air

### Riviera Romance

(Italy, Croatia, Montenegro, Monaco, France, Spain)

**Nov 8–21**

From \$4,299 US incl. air

### Holiday Markets\*

(Germany, France)

**Nov 25–Dec 6**

From \$2,995 US + air

\* no single supplement

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# Life on Campus

**“He was only here six years, but he did wonders”**

President Emeritus David Naylor remembers  
President Emeritus George Connell

p. 16

Vita Carlino and Ben Coleman, of the U of T Students' Union, at 230 College, the future site of U of T's new Student Commons



## Green Light for Student Commons

### Long-awaited St. George student centre to open on College Street in 2017

**IT'S BEEN A LONG TIME COMING**, but plans are finally underway for a dedicated student centre on the St. George campus. In late February, U of T's Governing Council gave the project a green light, and, if all goes as planned, a new Student Commons at 230 College Street will be ready for occupancy in September 2017 – with much-needed space for students to relax, rehearse, take advantage of student services and meet like-minded peers.

University can often be stressful for students, particularly for those who are away from friends and family for the first

time, so opportunities for becoming part of new communities are essential, says Tina Saban, a student leader at Trinity College this past year. “We frequently hear students who don't live in residence, in particular, say they feel surrounded by people but alone.”

With few places to congregate, students often leave campus once their classes are done. “We need places that can foster student experience outside the classroom, foster interaction among diverse groups of students, provide a meeting place for students as well as lots of opportunities for social engagement,” says Jill Matus, vice-provost, students.

The Student Commons will take over the John H. Daniels Faculty of Architecture, Landscape and Design's former space when the faculty moves to its new home at 1 Spadina Crescent. It is envisioned that the fully accessible, five-storey building will include multi-faith spaces, rehearsal areas, meeting ➤



## Using Their Words

### Student startup gives kids a better start



#### LANGUAGE LEARNING DEPENDS ON INPUT.

By age three, a child from a high-income family will generally have been exposed to 30 million more words than a child from a poorer socio-economic background (research shows that higher-income parents have more time and energy to talk to their toddlers). By closing this “word gap,” the playing field can be levelled and the underprivileged, empowered.

U of T’s Team Attollo – alumni Peter Cinat (MBA, BAsc 2014), Lak Chinta (PhD 2015), Aisha Bukhari (MAsc 2015) and Jamie Austin (PhD 2015) – have found a way to do that. Their Talking Sticker project is one of six finalists for the US\$1-million Hult Prize – the world’s largest student competition to solve global problems and implement social

change. The winner will be announced in September.

How do stickers talk? A child points a \$10 electronic reader at a coded sticker (which cost just pennies apiece) and the sticker responds – speaking, reading or even singing – with pre-recorded content that can include the voices of their own parents. Talking Stickers can speak different languages, present a range of age-appropriate content, and, as Austin explains, “turn any household item into an educational toy.”

They’re already raising funds, are partnered with U of T’s Semaphore Research Cluster and Toronto’s Autodesk Research, and are in talks with global organizations such as Right to Play, Aga Khan Foundation and UNICEF. – DALE SPROULE

#### EPHEMERA



#### SWEET SUCCESS

A tasty morsel only lasts until it’s eaten – but pharmacy student Christopher Siu has reaped a permanent benefit from showcasing his culinary skills on CTV’s *MasterChef Canada*.

Siu, who is finishing his degree this summer, is in talks to open a dessert café and bakeshop – a venture he hopes to combine with part-time pharmacy work. “I learned so much on the show,” says Siu. “It’s really opened up the culinary world for me.”

Pictured: Siu’s *Pickled Strawberries* – a creation he loves to pair with a no-crust cheesecake, in honour of the birthday cheesecakes his dad used to make. For the recipe, visit [magazine.utoronto.ca](http://magazine.utoronto.ca). – JANET ROWE

rooms and lounges, student-run food services and even a bike repair shop. Student services will provide everything from transit tickets to dental plan information. A food and clothing bank, now open only once a week, will be accessible at least five days a week to meet the high demand for both fresh and nonperishable food. (A rooftop garden will provide some of that fresh food.) The Student Commons will also increase the space on the St. George campus available to clubs.

“It will make a very big difference to students,” says Saban. “There’s always going to be something to do.”

Plans for the new student centre have been underway for almost a decade. In 2007, members of the U of T Students’ Union voted in favour of a levy – now \$9.02 per student per session – to build the Commons. When the building actually opens, the fee will rise to an estimated \$20.75, to cover both capital and operating costs. A management committee,

made up entirely of students from the St. George campus, will be responsible for the operation of the Commons and, among other duties, will determine how space in the building is allocated. Once the architect and design team have been selected, construction and renovation will begin, likely next summer.

Ben Coleman, the recently elected University of Toronto Students’ Union president, is excited about what lies ahead. “Students who can’t find somewhere to relax and hang out with friends will be able to hang out at a space where every last detail, down to the furniture, is decided by them,” he says. “Clubs that would have had to compete with other groups to book space will have bookable space that is truly their own. Hopefully, this means that students a couple of years from now will be more relaxed, have more friends and do better in their studies.”

– NORA UNDERWOOD





George Bernard Shaw is the only person who has won both a Nobel Prize for Literature and an Oscar



Actor Sharry Flett talks costumes with student Tatiana Haas

## Theatre Students in Spotlight at Shaw Festival

### UTM students pull back the curtain on the unique world of repertory theatre

“**REPERTORY THEATRE IN PRACTICE**” IS an innovative new summer field course offered by U of T Mississauga’s department of English and Drama that provides students with behind-the-scenes experience at the Shaw Festival. With its Niagara-on-the-Lake location, the second-largest repertory theatre company in North America is almost in U of T’s backyard.

Premiering last July with 19 students, the 10-day course is open to second-, third- and fourth-year students. They not only dive into literature and history, but also learn about the repertory system of theatre production, which involves performing multiple plays at once, with actors playing parts in more than one production, and using commercially viable shows to fund the development of new plays.

Last summer’s students spent each day learning directly from actors, directors, designers and administrators. They

were able to interview Shaw dramaturges (writers who adapt plays to fit the logistics of a particular company), and Shaw associate director Eda Holmes led them in activities such as a scene study and staged readings. The students also learned from a theatre historian about the festival’s evolution, and saw five Shaw productions.

“We have a unique opportunity right on our doorstep to acquaint students with the greatest English-language plays on Earth, and then to let them learn from and with the people they’ve just been watching on stage,” says professor Lawrence Switzky, who organized the course. “In exchange, the students energize the company with their passion, their skepticism and their curiosity.”

The course, which is running again this summer, has three costs: a half-course tuition fee; a \$350 laboratory fee for additional instructional and transportation expenses and theatre tickets; and \$45 per night for lodging.

What enhanced the course, Switzky says, were the many informal conversations students had with artists, such as veteran Shaw performer Fiona Reid, who he says made time to offer personalized career advice to each student.

Another unscripted learning experience occurred when Holmes conducted mock auditions with the students, which participant Laura McCallum found particularly helpful.

“She talked to us about what to wear and what to say, and we all got to practise walking into a room and introducing ourselves. It was such a great nugget to get out of someone who casts the shows,” says McCallum, who just graduated from the UTM Theatre and Drama Studies program.

Another big highlight, she says, was talking one-on-one with those responsible for marketing, public outreach and actor scheduling at the festival.

“I had no intention to become an actor when I started in the UTM theatre program, but I wanted to work in theatre,” McCallum says. “This opened my eyes to so many administrative roles I didn’t even know existed, and that without them the Shaw doesn’t happen. So it helped me secure some new goals.” – **SHARON ASCHAIK**

NAMECHECK

## Gonfalon



Students with U of T’s first gonfalons in 2013

At Convocation this June, blue-and-white banners bobbed among the parading new graduates. These are gonfalons – an ancient tradition recently revived at U of T.

Gonfalon, an Old French word meaning “war flag,” originally referred to the pennant on a knight’s lance, but came to mean a long banner swinging from a pole. And the name for the banner-bearer, gonfalonier, became a distinguished municipal and royal office in medieval Europe.

Gonfalons have been popular at American universities for some time but were only introduced at U of T in November 2013, when student gonfaloniers carried banners representing the university’s faculties, colleges and campuses at President Meric Gertler’s installation. The following June, staff members did the honours at Convocation – a fitting tribute, since the gonfalons were designed by a former staff member. Staff carried the gonfalons again this June. – **JANET ROWE**



In 2000, 44 per cent of Canadian households subscribed to a print newspaper. In 2012, only 27 per cent did



**Innis's Cinema Paradiso**

Innis College recently celebrated the reopening of Town Hall, inviting more than 250 guests – including *Degrassi* creator Linda Schuyler (BA 1974 Innis) and actor Sarah Gadon (BA 2014 Innis) – to celebrate its new state-of-the-art theatre. The event included a screening of David Cronenberg's latest film, *Maps to the Stars*, and an on-stage interview with Gadon, who played one of the lead roles.

Town Hall has always been “a magical movie place, a teaching space and the centre of the college and the film community,” says Pam Fossen

(BA 1990 Innis). “It wasn't known for its comfort or its beauty. But with the recent overhaul, it could be rightfully known for both.”

As part of the \$3-million renovation, Innis Town Hall received audio-visual enhancements, new lighting, state-of-the-art projection equipment and sound-dampening architecture. Janet Paterson, principal of Innis College, says the venue will serve as a prime screening space for both students in the Cinema Studies program and the wider university and Toronto communities. “It's a wonderful place to learn, teach and also be entertained,” she says. – ENNIS BLENTIC

**SOUND BITES**

Where do you get the majority of your news from, and why?

**Twitter. It's concise, always updated, and fav'ing a tweet with a link allows you to set aside more detailed reading for later.**

Emmett, @Emmett\_32

**BBC online. Good international coverage, unbiased (mostly) and thought-provoking opinion pieces.**

Simon Pratt, @simonmpratt

**I haven't held a printed newspaper in a decade and I don't own a TV. Internet is all I need, use and want. Timely and convenient. And no inky fingers!**

Dan Weaver, @DanWeaver\_ca

**Lately, I've been getting my news from social media. It works for me because I'm always on the go.**

Anjum Sultana, @anjumsultana

Join the conversation at [twitter.com/uoftmagazine](http://twitter.com/uoftmagazine).

**Poll | How many degrees do you plan to get in your lifetime?**

Whether students are taking on graduate school or completing specialized training, it seems that multiple higher education credits are becoming common. More than three-quarters of the students in our survey plan to get more than one university degree. In addition, 33 per cent of the students surveyed said they intended to pursue a college diploma or other kind of special training after their university degree (or degrees).

The students surveyed see further education as a way to increase their competitive advantage when entering the workforce and as a method for keeping their career options open. Ahmad Al Nasser, a second-year student in environmental management and sustainable development, feels his master's degree will prepare him to deal with such issues as water security and food and wealth inequality in both developing and developed countries. – JESSICA LAY

This highly unscientific poll of 100 U of T students was conducted on the St. George campus in April.







U of T has participated in exchanges with Chinese universities since the 1980s, including an OISE program that trained China's first PhDs in education

## East-West Art Feast

### Collaboration between U of T, China will create new perspectives on art



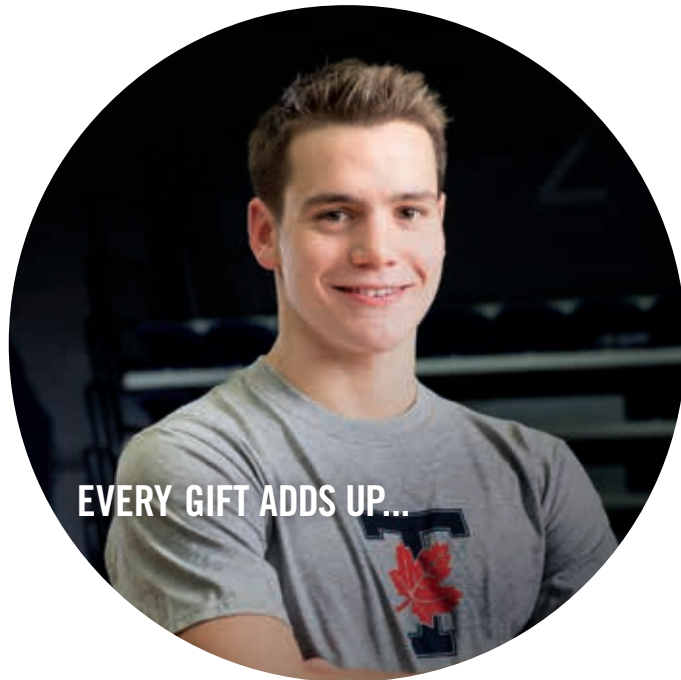
**THE DEPARTMENT OF ART** and the Tri-Campus Graduate Program in the History of Art are joining forces with the Guangzhou Academy of Fine Arts in China. Together, the two universities are launching a program designed to give students insights into art and art history from both Western and Chinese perspectives. The project is funded by a three-year, US\$250,000

grant from the Getty Foundation in Los Angeles as part of its Connecting Art Histories initiative. Project leader Prof. Jennifer Purtle describes it as “an effort to develop art history as a global discipline by generating new intellectual exchange among scholars in targeted regions.” In China, where art history hasn’t generally been taught in universities, this also means giving students a foundation to compete on a global level, she says.

Beginning this fall, graduate students at each institution will participate in identical seminars taught by a mix of faculty from both institutions. (During 2015–2016, two U of T profs and a researcher will teach in Guangzhou, while one Guangzhou professor will teach at U of T.) The top students from each school will then meet in Dunhuang, China and in Sicily to experience first-hand some of the art and architecture they have been studying.

In addition, faculty from U of T will offer Guangzhou students undergraduate and graduate lectures about art history methods, medieval art and Italian Renaissance art.

“We hope we will build lasting ties among current scholars and the next generation, and create new ways of thinking about art and art history in the post-global world,” says Prof. Adam Cohen, a U of T art historian. – **ELAINE SMITH**



EVERY GIFT ADDS UP...



In one innovative U of T classroom initiative, first-year students come up with a solution to a global challenge and then defend it in front of a panel of *Dragon's Den*-type experts

P.O.V.

## Better Ways to Learn

Susan McCahan is leading the charge to reimagine undergrad education at U of T



Susan McCahan

providing more experiential learning opportunities, where students closely mimic activities they could be doing in the world. We embed students in community projects: urban studies students are helping design new spaces; religion students are working directly with people for social change. Those are just two of many examples.

**And in the classroom?** Assignments are now sometimes based on real-life problems – so in our first-year design course in engineering, for instance, students recently worked on a project that was fictitious, but based on an actual plan that the City of Toronto had to redesign bicycle parking.

**In the 21<sup>st</sup> century, pen and paper have been slowly but surely replaced by laptops in the classroom. How else is new tech playing a part there?** Some classrooms use no technology very effectively, while other courses are fully online. Then we have everything in between. In inverted classes, information transmission is done online so the classroom can become a place for the active, collaborative use of that information.

**Does this mean instructors have to become much more digitally adept?** It is a different skill set for many. Some instructors are learning how to design their own learning modules – multimedia “book chapters” that include features such as online quizzes or videos. Once these are built, they can be transported from one course to another, leaving the instructor time to interact more directly with their students.

**How do we know if newer online teaching methods work better than the old ones?** When students are engaged with online materials, we can actually see what they’re doing. We can track how much time they spend watching videos, or how many times they tried a quiz before they got the right answer. We can see what works and what doesn’t, and draw correlations between behaviour and success.

**What do we want the ultimate impact on students to be?** We used to expect instructors to translate published work into a digestible lecture, then test – in theory – whether students could respond to that content. I think we’ve moved very dramatically away from that, to students practicing their discipline in authentic contexts more frequently, and being assessed in ways that are more authentic to the way their discipline is practiced professionally.

Susan McCahan is U of T’s new vice-provost for innovations in undergraduate education.

**You’re an engineering professor.**

**How did you get interested in being a “learning” professor as well?**

When I started working here in the early ’90s, I was discouraged by the rote learning that was the expectation for many students. I sensed there was more to education than just acquiring knowledge: it was also important to strengthen student mastery in key abilities – teaching them to reason, to work in teams, to write effectively and make credible arguments.

**So how can new teaching methods increase mastery?** We’re now

## Why I Give



Henry Wu

### A Commitment to Innovation

Henry Wu (BAsc 1975, MAsc 1979) has given \$3.5 million to support the construction of the Centre for Engineering Innovation and Entrepreneurship, to be built on St. George Street, next to Simcoe Hall. In honour of Wu’s late father, the top floor of the new centre will be named the Dr. Woo Hon Fai Innovation Floor. It will house conference rooms, a terrace and new spaces for the Institute for Sustainable Energy and the Institute for Water Innovation.

**Henry:** “I care about water sustainability. I have visited the remote mountainous regions in China to help them out, and I have experienced first-hand how difficult it is for them to access water. U of T is doing a great thing, and I’m happy to support water innovation research.

“There’s an old Chinese saying that literally says: ‘When you drink water, remember the spring.’ Respecting our roots is part of the culture I was raised in. It’s about showing appreciation for what one has been provided.

“There is no limit to giving back – it’s boundless. It could very well be a simple ‘thank you’ or a smile. It could also be in the form of a donation or volunteering your services. Giving back is never too big or too small, and it applies to all ages.”



## Putting Students First

### The Baillies' \$1-million gift is a boon for bursaries at Trinity College



**CHARLES BAILLIE** (BA 1962 Trinity) and Marilyn Baillie (BA 1965 Trinity) have advocated for education for many years – Marilyn as an award-winning children’s author and editor, and Charles as two-time Chancellor of Queen’s University.

Last year, they approached Trinity College about creating a legacy. The result is a \$1-million gift to establish the

Marilyn and Charles Baillie Award, for Trinity students in need of financial support to complete their education.

“Marilyn and I believe deeply in the power of education to help people create their own success and to help build a stronger Canada,” says Charles. “We want to help ensure that every Trinity student has the same opportunity to access a first-rate education that we both had many years ago.”

Donations for bursaries have a profound impact. The first recipient of the Baillies’ support is a second-year student (who wishes to remain anonymous). Relieved of the pressure to cover her own education costs following a family illness, she describes the Baillies’ support as a blessing. “It has allowed me to continue to live in residence, stay involved on campus and focus on my studies. The Baillies are a wonderful example of giving back, and I’m so grateful.”

The Baillies’ endowment builds on Trinity’s proud history of alumni supporting the next generation of students in achieving their dreams, says Trinity Provost Mayo Moran. It will also help the college in an era of rising education costs and reduced government funding. By establishing the endowment, the Baillies are providing \$40,000 every year for Trinity students in need. – ANJALI BAICHWAL

A large advertisement for the University of Toronto. The background is a photograph of a young man with short brown hair, wearing a grey t-shirt with a red maple leaf logo, standing in a gym with a basketball hoop in the background. The text is overlaid on the image in white and blue. Callout lines point from text boxes to various parts of the gym scene.

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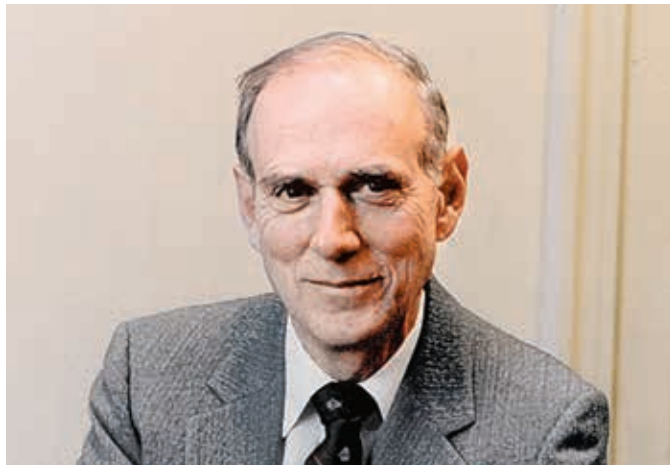
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UNIVERSITY OF TORONTO



The George E. Connell Scholarship awards a prize every year to a Woodsworth student who has completed first year with a stellar grade point average



IN MEMORIAM

## George Connell

### He set U of T on a firm foundation – and took it to the top

**GREAT SCIENTISTS ARE RATIONAL THINKERS**, capable of spending long hours alone in the service of great goals. George Connell, who passed away on March 13, was no exception. A profoundly generous and fair leader, he was more than up to the social demands of his job as U of T's 12<sup>th</sup> president. Yet he is best remembered for a project he worked on in virtual solitude.

In *Renewal 1987* – a discussion paper that took 10 months to write, following an intense period of community consultation – Connell charted a course for U of T that would vault it into the top ranks of world institutions. His wide-ranging recommendations continue to influence his successors today. Says David Naylor of his own presidency (2005–2013): “Every time I turned around, there would be an issue that George Connell had already addressed in *Renewal 1987*. He laid the foundations on which the university will continue to build for generations.”

Connell's sterling achievement was to recognize the importance of a strong endowment. Under his watch, the Breakthrough campaign was started – a \$126-million fundraising effort that enabled U of T to scale (in Connell's words) the “Pinnacle of Parnassus.”

Connell was born in Saskatchewan in 1930. The son of two dentists, he followed their lead in attending U of T (BA 1951 Trinity, PhD 1955), from which he eventually obtained a doctorate in biochemistry. As a professor in the department, he gained renown for his study of cholinesterase, an enzyme that governs how anesthetics are metabolized.

His chairmanship of that department revealed a distinct flair for administration, leading to an appointment as president of the University of Western Ontario in 1977. He so enjoyed his time there that he first resisted the opportunity to govern U of T some seven years later. Out of duty to his alma mater he accepted; and it was, as Naylor says, “a fantastic presidency. He was only here six years, but he did wonders.”

After leaving in 1990, Connell acted as principal adviser to the Krever Inquiry into Canada's blood system, and to the contaminated water inquiry in Walkerton, Ontario. He also helped to shape public policy across the country, both as a member of the Fisher Commission on the future of Ontario's universities, and as a trustee of the McLaughlin Foundation. In the latter capacity, he helped guide grants to numerous institutions, improved post-graduate training opportunities for academic research clinicians and advanced the development of molecular medicine in Canada.

A low-key man who avoided the spotlight, George Connell nonetheless demonstrated the best qualities of leadership. Meg Connell (MBA 1991) is the youngest of his four children with wife Sheila (BA 1953 Trinity) and now works as Director, Office of the Dean at U of T's Faculty of Medicine. She says: “In the outpouring of cards, letters and emails that came after he died, I was struck by the personal impact he had on people. It really brought home that he wasn't just an amazing dad: he was a great figure, who did some really great things.”

- CYNTHIA MACDONALD

## People



David Mulroney

Two U of T colleges welcome new presidents this summer: **David Mulroney** (BA 1978 St. Michael's) and **William Robins** take office at St. Mike's and Vic, respectively, on July 1.

Prof. **Keren Rice** of linguistics and Prof. **David MacLennan** of medicine have been elected members of the American Academy of Arts & Sciences, a rare honour for non-Americans. MacLennan's citation lauds his groundbreaking discoveries in muscle tissue physiology, while Rice's praises her work

preserving Dene and other Indigenous languages in Canada.

U of T profs landed three of the six E.W.R. Steacie Memorial Fellowships this year; \$250,000 each in research funding went to **Leah Cowen** (molecular genetics) to fight drug-resistant fungi, **Aaron Wheeler** (chemistry) to create a fast newborn screening test, and **Wei Yu** (electrical and computer engineering) to boost the capacity of both wired and wireless networks.



John Evans' installation as U of T President was marked by two firsts: first outdoor ceremony (it was held on Front Campus), first woman chancellor (Pauline McGibbon)



IN MEMORIAM

John Evans

This champion of innovative medical education truly changed the world

REVOLUTIONARIES AREN'T USUALLY DESCRIBED AS HUMBLE and unassuming: but then, it would be just like John Evans to redefine revolution. Over the course of his remarkable life, Evans was a force for change in the fields of medicine, technology, business and education, in Canada and beyond. His eventful term as U of T's ninth president (1972–1978) came at the midpoint of a life that touched millions of others in a positive way.

The Toronto-born Evans, who died on February 13 at age 85, lost both his parents before the age of 10. Raised by six older siblings, he graduated from U of T (MD 1952) then went to Oxford as a Rhodes Scholar. Returning to Canada, he made his first great mark at the tender age of 35.

As founding dean of McMaster University's medical school in the mid-1960s, Evans ushered in an entirely new model of medical education – one that emphasized collaboration and problem-solving over the passive ingestion of facts. Since

then, the tenets of the “McMaster model” have spread globally and become gospel in disciplines outside of medicine.

At U of T, Evans took the tiller in a stormy climate of student unrest and severe budget pressures. “It was a very challenging time,” says David Naylor, who served as the university's president from 2005 until 2013. “But he handled it all with unflappable integrity.”

Several of his innovations continue to serve the university well. Evans helped to negotiate the sale of U of T's Connaught Laboratories in 1972. The research fund set up with the proceeds has since awarded \$130 million in grants. He also created the university's unicameral governance system, and established Woodsworth College to serve part-time students.

After his time at U of T, Evans was invited by the philanthropic Rockefeller Foundation to do a review of American schools of health. He completely re-imagined the mandate of these schools. “His main argument,” says Naylor, “was that they needed to be focused more on preventive medicine – to think broadly about the social determinants of health, as well as health policy and administration.”

Evans carried this holistic view of health care into his subsequent work as founding director of the World Bank's Population, Health and Nutrition Department. He also served as the Rockefeller Foundation's first Canadian chair; headed up Allelix, Canada's first biotechnology company; and was founding chair of the Canada Foundation for Innovation. After chairing the boards of the *Toronto Star* and Alcan Aluminum, he went on to found, in his eighth decade, the MaRS Discovery District, a Toronto “convergence centre” for innovation in medicine, business and technology.

Married for 60 years and the father of six, Evans is – even for all his accomplishments – remembered as much for who he was as for what he did. His considerable intellect was matched by a legendary sense of humour that enlivened any gathering, and his best qualities included “emotional intelligence and people skills,” says Naylor. “He had, arguably, the widest and most important impact of any Canadian physician and academic of his generation.” – **CYNTHIA MACDONALD**

U of T researchers took 19 of the 150 Canada Research Chairs awarded this spring, receiving in total \$17.6 million in funding for a wide range of exciting research. Eight are renewed grants; here are the 11 new recipients and their projects: **Timothy Chan** (health analytics), **Lisa Forman** (health as a human right), **Teodor Grantcharov** (improving surgical safety), **Monica Justice** (molecular genetics), **Larissa Katz** (private law theory), **Julie Lefebvre** (how neural circuits develop), **Joel Levine** (molecular

underpinnings of social behaviour), **Jeffrey Meyer** (neurochemistry of depression), **Elizabeth Page-Gould** (how social interactions shape perception), **Catherine Sabiston** (physical activity for mental health) and **Leonardo Salmena** (molecular leukemia research).

Historian **James Retallack** won two prestigious grants this spring – the Killam Research Fellowship and the Guggenheim Fellowship. The prizes will fund his research into democ-

racy in pre-First World War Germany. **Jonathan Abbat** and **Robert Morris** of chemistry also won Killams, while **Nikolai Kremensov** of the Institute for the History & Philosophy of Science & Technology, and **Thomas Keymer** of English, also won Guggenheims.

Prof. **Chul Park** of Engineering has joined the ranks of U of T's 21 Distinguished Professors, an honour that recognizes his innovative work in making lighter, stronger plastics.



“Winning the Riddell Fellowship is not about me. I believe my research will enhance the care nurses provide.”

**GILLIAN STRUDWICK**

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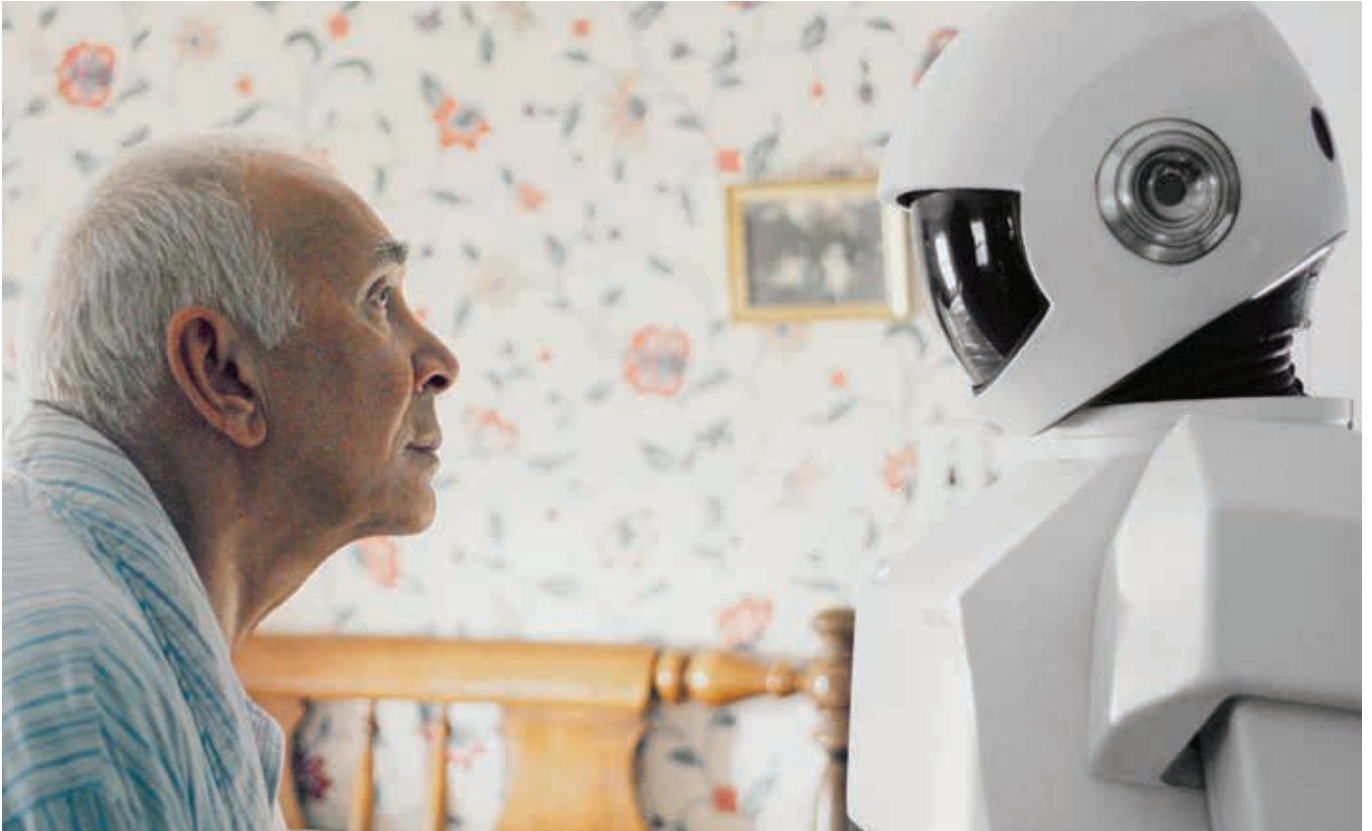


# Leading Edge

**“There is no evidence that says prison is effective in reducing crime”**

U of T Mississauga  
sociology professor  
Kelly Hannah-Moffat

p. 24



## A Robot's Helping Hand

A U of T lab is developing new technologies to assist older people with daily tasks

**ACCORDING TO RECENT STATISTICS**, about a quarter of Canadians aged 65 and up are unable to perform simple activities, such as making a meal. This takes a toll not just on seniors themselves, but also on their caregivers, many of whom take time off work to look after family members. One Canadian study puts the cost in lost productivity as equivalent to 157,000 full-time employees annually. As the number of seniors soars in coming years due to an aging population, the burden on caregivers will intensify – unless new ways are found to assist aging Canadians.

Enter Alex Mihailidis, a professor of occupational science and occupational therapy, whose lab at the Toronto Rehabilitation Institute is developing, among other things, a robot that can coach people to wash their hands and make a cup of tea. It can propel itself (like those robotic vacuum cleaners) and will eventually assist with other straightforward tasks, such as grooming, bathing, getting dressed and preparing simple meals. Studies of caregivers suggest these activities are where people need the most help.

The robot won't sympathize with your woes but it can alter its visual and verbal prompts to suit individual needs. Some people might need only verbal prompts, for example, while others might require visual ones, or to be prompted differently, depending on the time of day. “The system can recognize this and adapt its prompts automatically,” says Mihailidis.

The technology appears to work even for people with moderate and severe dementia, but it's not designed to replace personal caregivers or the human touch. “That's always ▶



Want to cut your food waste? Tammara Soma suggests using your freezer for leftovers, finding ways to use old or overripe food that is still edible and watching your portions

going to be needed,” says Mihailidis. But the innovative device does aim to reduce the burden on family members.

Mihailidis also hopes to alleviate caregivers’ concerns about injuries. Some 20 to 30 per cent of seniors fall every year and the effects can have a lasting impact. Falls cause 95 per cent of all hip fractures and 20 per cent of these cases result in the patient’s death within a year. A fall-detection system developed by Mihailidis’s lab aims to bring help quickly.

Mounted on the ceiling like a smoke alarm, the device uses a vision sensor to monitor the room. If it detects that someone has fallen, it uses speech recognition technology to ask a series of simple yes and no questions and then, depending on what it detects, either stops speaking or calls for help; 911 is automatically included in the system and other contacts, such as friends or neighbours, can be programmed in.

The fall-detection system is closer to the marketplace than the robot, but both will be affordable (under \$100 for the fall-detection system) and Mihailidis is hoping that a new research network will speed their commercialization.

Launched earlier this year, AGE-WELL (Aging Gracefully across Environments to Ensure Well-being, Engagement and Long Life) is Canada’s first research network for technology and aging. It links academic, business, government and community partners and aims to help older adults maintain their health and independence through technology. This January, the federal government announced \$36.6 million for the network over five years. As one of the network’s two scientific directors, Mihailidis can’t recommend his own lab for funding, but he’s optimistic that the network will help get his lab’s products to the people who need them. - BRENT LEDGER

## Spoiled Rotten

### A familiar problem in the West, food waste is quickly becoming a global issue



**A STAGGERING 30 TO 50 PER CENT** of the food produced on this planet goes to waste every year, says PhD student Tammara Soma (MSc 2010), a Trudeau Foundation Scholar specializing in urban planning and environmental studies. What many people don’t realize, she says, is that more and more of this waste is happening in developing countries.

It’s a serious problem, and not only because so many of the world’s people continue to go hungry. Food rotting in dumps contaminates groundwater and releases heat and methane gas into the atmosphere. Meanwhile, this waste food and the plastic increasingly used to package it feed and house cockroaches, rats and disease-carrying mosquitoes.

Growing up in West Java, Indonesia, Soma witnessed first-hand a pattern that has been playing out in cities across the developing world. As cities grow, farmland comes to be displaced by housing developments and malls, and local food markets by big-box retailers. People travel farther to do their food shopping and buy more than they need each time, leading to increased food waste. A lack of awareness seems to be part of the problem. “In urban planning, food waste is not considered an issue that planners should be worried about,” Soma says.

She hopes her research will help change this. Knowledge of the causes and consequences of food waste, she says, may spur tomorrow’s urban planners to start taking the food system into consideration. In developing countries, planners could work to prevent cities from encroaching on farmland and traditional food markets by planning for more “vertical” or denser cities, along European lines, rather than North American-style suburban sprawl.

Many cities in developing countries also need much better waste-management systems, she says – garbage is often now collected by municipalities *en masse* without being separated. Home- or community-based composting programs could simultaneously help manage food waste and increase local food production. - TALI FOLKINS

#### LINGO

### Cisgender



Starting last year, you no longer had to be a man or a woman to use Facebook. In North America, users are now allowed to select one of more than 50 custom gender options, including “cisgender,” “cis man” and “cis woman.”

Cisgender applies to someone who is not transgender, so a cis woman is someone whose experience of gender matches her sex at

birth. Nicolas Matte, a historian who teaches at U of T’s Bonham Centre for Sexual Diversity Studies, says the word was invented in academic circles about 20 years ago to recognize that all gender identities are legitimate, but that only one – cisgender – is never questioned. Using the term, he says, is a way for people who are cisgender to let others know that

they’re not trans, but that they’ve thought about trans issues. “It does convey a certain familiarity with gender politics,” he says.

The term has recently hit the mainstream with the heightened profile of trans people on TV shows such as *Orange Is the New Black* and more positive representations of trans issues in the news and on social media. - STAFF





Soliris, a potentially lifesaving treatment for two rare blood diseases, is the world's most expensive drug. In Canada, it costs at least \$500,000 a year to treat a patient



ment of family and community medicine and vice-president of medical affairs and health systems solutions at Women's College Hospital.

The study, led by University of British Columbia researcher Steve Morgan and co-authored by Martin, modelled costs based on data describing \$22.3 billion worth of retail prescription drug purchases in the fiscal year 2012-13. The researchers created three scenarios for a universal public drug plan: best- and worst-case, and a "base" scenario, which is the expected outcome.

They found that most prescriptions are already paid for by government, through tax revenues, with \$9.7 billion spent directly on public drug plans and \$2.4 billion spent on private drug plans for public-sector employees. Private-sector spending on private insurance plans currently accounts for \$5.7 billion, and uninsured patients pay \$4.5 billion out-of-pocket for prescriptions they fill.

If Canada could negotiate lower prices for drugs (comparable to the prices researchers found in

several peer countries) and raise the rate of generic drug use to that seen in some provincial drug plans, a universal public drug plan would reduce total spending on prescription drugs in Canada by \$7.3 billion per year, or 32 per cent, according to the study.

These cost savings would be due to economies of scale in drug price negotiations and better product selection, taking into account a small increase in costs from greater use by people who were uninsured.

These savings, the authors said, would be beneficial in a multitude of ways. For instance, Canadian governments could spend more on health sciences and on research into new drugs, an area in which the country currently invests little. "Better access to medically necessary prescription drugs and improved quality of care go hand in hand with these significant cost savings," says Martin.

Drug costs are rising quickly, but these costs are being driven up mostly by high prices for new classes of drugs, such as biologics (drugs synthesized from biological sources) and cancer therapies. Martin notes that a nationwide, universal pharmacare program would position Canada to negotiate better prices in the future for these expensive treatments.

"While we shouldn't sugar-coat the pressures that will be put on any payer for drugs in the future, if more and more expensive drugs come on to the market," she says, "there's no doubt that the best way to be ready and to respond is going to be under a single-payer program."

- ALLISON MULLIN

THE BIG IDEA

## Is It Time for a Universal Drug Plan?

### Canadians could save billions through a nationwide plan to cover prescription drugs for all citizens

**MOST CANADIANS HAVE COME TO THINK VERY HIGHLY** of their universal health-care system since it was established nationwide almost 50 years ago. But for all its benefits, it doesn't cover every health-related cost: medications outside hospital, for example, are exempt. Why? The commonly cited reason is that they would be too costly to include. But a study involving U of T researchers suggests a nationwide "pharmacare" program could save Canadians billions of dollars, without costing governments much more, if anything.

"In many of the scenarios that we modelled, universal pharmacare was cost-saving or cost-neutral for governments. This goes against current thinking that a universal program will cost a lot more," says Dr. Danielle Martin, one of the authors of the study, published in the *Canadian Medical Association Journal*.

Canada is the only developed country with universal health insurance that does not also offer universal prescription drug coverage, explains Martin, a professor in the depart-



In 2013, Prof. Benjamin Dillenburger and Michael Hansmeyer used a 3D printer to build a 16-square-metre room out of sandstone blocks with details as small as a tenth of a millimetre. They called it “Digital Grotto”



## Architect's Playground

This shimmering and intricate structure, designed by U of T architecture professor Benjamin Dillenburger, was a finalist in this year's Young Architects Program, an international contest hosted annually by the Museum of Modern Art's PS1 gallery in New York.

Apart from its arresting appearance, what's unusual about Dillenburger's design – conceived as a small stage and fountain for PS1's summer music festival – is how he intended to build it. The highly ornamented surface was designed entirely on computer, and is far too complex to be manufactured by traditional means. So a computer-guided mill would cut the intricate shapes into flat wood panels, which would then be stacked like 3D-printed layers for assembly on-site. Painted gold, the whole structure, he imagined, would glow and shimmer from the interplay of water and light.

His design didn't win the competition, but it serves as a telling indicator of how computer technology could revolutionize architecture.

“Our goal is to create a level of detail that is almost impossible to imagine and certainly impossible to draw manually,” he says.

Dillenburger's innovative approach extends to the materials he uses. In a studio at the Daniels Faculty sits a footstool-sized block that he has 3D-printed out of sand with a highly intricate, organic-looking design – a bit like a coral reef or a crustacean's shell. As with the wood panels, these sandstone blocks can be stacked to create highly unusual, playful spaces.

These 3D-printing techniques are not yet being used in large-scale commercial buildings, but Dillenburger is confident that eventually they will. “The way we build hasn't changed much over the years. There's a lot of space to explore.” – **SCOTT ANDERSON**

Benjamin Dillenburger's “Arabesque Wall” (not shown) is featured in 3DXL, an exhibition curated by the Design Exchange in Toronto, until August 16.





An estimated 69 per cent of people worldwide with HIV live in sub-Saharan Africa

STARTUP

## Handheld Lab

U of T startup ChipCare gets set to unveil a revolutionary portable HIV blood-testing device



**IMAGINE HAVING BLOOD DRAWN** for HIV-related testing and then never finding out the results.

Research suggests that in many low-income and middle-income countries, up to half of patients don't receive test results for treatable diseases such as HIV. Sometimes power outages prevent labs from using their equipment, or people in rural and developing areas can't make the trip back to the lab, especially if it's far or the roads are poor.

But what if the testing could be brought to them and performed on the spot?

This is the promise of "point-of-care" testing, a fast-rising trend in the global health field. And ChipCare, a startup driven by unique U of T-developed technology, is poised to revolutionize this type of in-the-field diagnostic work.

James Dou (MAsc 2007) and Stewart Aitchison, a professor in

the Edward S. Rogers Sr. Department of Electrical and Computer Engineering, founded the global health venture in 2013 with Rakesh Nayyar (BSc 1989), an expert in biological testing. Soon after, they brought in James Fraser, formerly of Dignitas International, as CEO. "Everywhere you turn, not having access to diagnostics means lack of access to appropriate treatment," says Fraser. "There is a humanitarian imperative behind this company."

ChipCare's device is about the size of a handheld grocery store scanner. It allows health-care providers to monitor levels of white blood cells called CD4 cells. HIV destroys CD4 cells, leaving patients vulnerable to infection. If the device indicates low numbers of these cells, health-care workers can administer antiretroviral drugs on the spot.

The company set up headquarters at U of T's entrepreneurship hub, the Banting & Best Centre for Innovation & Entrepreneurship, and received \$2.6 million, one of the largest-ever angel investments for a Canadian health-care startup. Today, as the company readies its prototype for market, ChipCare has exceeded its latest funding goal of \$5 million, which, says Fraser, will be used to pay for verification trials, clinical trials and sales and marketing. "The next step is to sell the device and save lives," he says.

The company is also looking into a wide range of tests – for other sexually transmitted infections but also for neglected tropical diseases and prenatal care. "We're focused on tests that could be very useful for clinical care and would directly save lives, or would provide insight into the epidemiology of a disease within a community."

Support for ChipCare has been strong from the start, says Fraser. The company relied on U of T's Innovations and Partnerships Office for help with the patent process. MaRS Innovation, which works in partnership with U of T, invested early and helped the team develop its patent portfolio and market knowledge. "U of T's been a really good home. We've received a lot of support," says Fraser. – **BRIANNA GOLDBERG**

## Findings

### Tracking Vehicle Pollution



New U of T research suggests that a small number of older or "badly-tuned" cars and trucks produce the majority of vehicle pollution.

The study, by chemical engineering professor Greg Evans and his team, made on-the-spot measurements of 100,000 vehicles as they drove past air-sampling probes on College Street in Toronto.

The team found that one-quarter of the vehicles on the road produced 95 per cent of the black carbon (soot), 93 per cent of the carbon monoxide and 76 per cent of volatile organic compounds such as benzene, toluene, ethylbenzene and xylenes, some of which are known carcinogens.

"The most surprising thing we found was how broad the range of emissions was," says Evans. "How you drive, hard acceleration, age of the vehicle, how the car is maintained – these are things we can influence that can all have an effect on pollution." – **PETER MCMAHON**

### Reducing Suicide Risk



People who survive a first attempt at suicide by poisoning are 42 times more likely than the general population to kill themselves by poisoning eventually, say the authors of the world's largest suicide-risk study.

Researchers tracked every person who visited an emergency department in Ontario for self-poisoning between April 2002 and December 2010 – more than 65,000 people in total. The researchers found that the risk of death from accidents was 10 times higher following self-poisoning.

This suggests that the first episode of deliberate self-poisoning is a strong predictor for subsequent suicide and premature death. The researchers, led by U of T's Dr. Yaron Finkelstein, hope the findings will influence suicide-prevention strategies to include long-term follow-up.

– **CAITLIN MCNAMEE-LAMB**





The documentary *Herman's House*, co-produced by Lisa Valencia-Svensson (BA 1990 UC), tells the story of a Louisiana prisoner who was kept in solitary confinement for almost 40 years

# Q&A

## Locked Away

### Is solitary confinement ever appropriate?

Writer **Jenny Hall** asked U of T Mississauga sociology professor **Kelly Hannah-Moffat** about the controversial practice of putting prisoners into solitary confinement, now under review in Ontario. Hannah-Moffat is the director of the Centre of Criminology and Sociolegal Studies at UTM.

**What does solitary confinement mean in practice?** Normally, you are in a cell alone for 23 hours a day. You are allowed out for an hour for a shower or for recreation. You can walk around, but you're by yourself. Normally, the movement to the recreation space is in shackles and handcuffs. Many cells are subject to 24-hour monitoring by camera. A prisoner in solitary confinement can also be denied access to visits, programs and services, and certain treatments.

**When is it used?** A disciplinary segregation can occur when an offender violates an institutional rule. More commonly, prisoners are placed in segregation when they might injure themselves or are difficult to manage. This might be somebody who causes fights or is prone to victimization. It might be someone suffering with acute mental health issues or who is at risk for committing suicide.

**How common is solitary confinement?** Correctional Service Canada will say that it does not use solitary confinement but instead uses "administrative segregation" or a "secure unit." This is a bit of linguistic gymnastics because each is a secured space where there is minimal freedom and high surveillance. So we don't have clear numbers. But we do know from reports from the Office of the Correctional Investigator that there were 8,328 admissions into segregation in 2013–14. This is up from 7,137 in 2003–04. The statistics do not indicate how long prisoners stay in segregation.

**How do prisoners in segregation compare to those often seen in films and on TV?** We tend to see prisoners as terrifying, violent predators. But that's not representative. Many have mental health problems or cognitive impairments and are struggling with complex and interconnected issues: addiction, abuse and trauma.



**Is it legal to place people with mental health issues in solitary confinement?** The UN says that you should not. We don't have the proper resources to address mental health needs in custody. People in custody don't have good access to psychologists or to staff with appropriate levels of training to deal with people who are ill. The Office of the Correctional Investigator and many international and local advocates have raised concerns about segregation and its damaging and sometimes lethal effects. Yet it continues.

**Does solitary confinement work when it's applied for disciplinary reasons?** You might think that if we put somebody in segregation, they're going to learn their lesson, behave properly and follow the rules. There's no empirical evidence to support this. In fact, research shows that segregation can actually exacerbate the negative behaviour you are trying to control. It can create irreversible psychological damage.

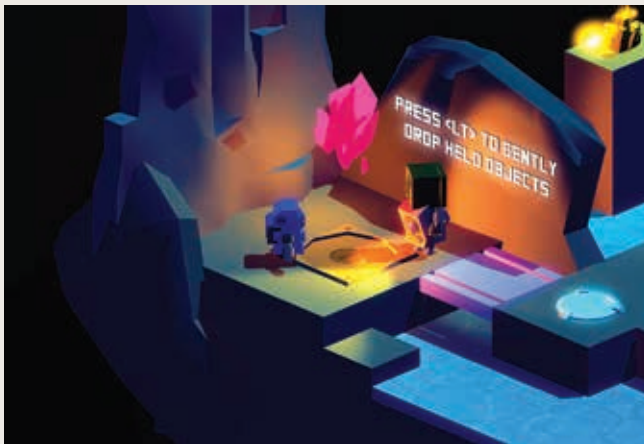
**Could that same logic mean that prison in general isn't effective?** There is no evidence that says prison is effective in reducing crime. It isolates people's mobility for a period of time, but it does very little to ensure that someone won't reoffend in the future.

**Yet being tough on crime is a popular political stance.** The desire for retribution is understandable, but it doesn't make good policy. The question is: how would you like a person who has been in prison to be returned to society? Would you like them to come back angrier and more damaged? Or would you like them to come back with a renewed sense of purpose and with the opportunity to take their life in a different direction?



## The Next Level

U of T students interested in creating the next *Angry Birds* or *Mario Brothers* video game can now work with designers from OCAD University through a joint course that mimics the real-life game development process. These screenshots were taken from *Pitfall Planet*, a fast-paced game in which two astronauts explore caves, scooping up prizes while avoiding hideous perils. The game – created by three U of T and three OCAD U students – recently won an industry-juried award at “Level Up,” an annual showcase where students strut their stuff for game company executives. – **PATCHEN BARSS**



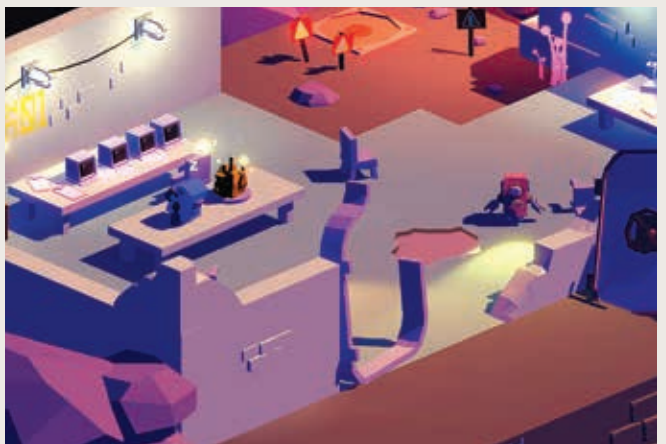
*Pitfall Planet* draws on traditional objectives – collecting objects, dodging foes, solving puzzles to overcome barriers. But unlike many games, where players compete (often to the digital death), *Pitfall Planet*'s levels can only be completed by working together.



Players must carry and toss each other across each scene to reach areas inaccessible to a single player. “When older people are playing, they try to be really helpful,” says U of T student Daphne Ippolito, one of the developers. “But some of our friends just seem to really enjoy killing each other.”



In video games, the more polygons, or “polys,” your game uses, the more detailed and realistic the visuals can be. By using simpler shapes, the team was quickly able to create new props for the levels, while maintaining a unified visual style.



The current prototype of *Pitfall Planet* has only about 15 minutes of game play. Companies expect at least three hours for a commercial release, but the team has no shortage of ideas. “We had a lot of stuff on the cutting room floor that we want to keep working on,” says U of T student Adam Robinson-Yu, another of the game’s developers.

## Our Problem with Stuff

### What is driving North America's obsession with hoarding?

**LIKE MOST ANTHROPOLOGISTS**, Katie Kilroy-Marac has no time for junk science. But the science of junk? That's another matter altogether.

The UTSC professor is currently researching the world of hoarders: people who compulsively accumulate and keep objects, regardless of their inherent value. Over the past 10 or 15 years, she says, hoarding has emerged as "a public health hazard across North America – and also a media spectacle, to the extent that there are TV shows about it." And in 2013, for the first time, the behaviour was classified as a mental illness in the *DSM-V*, the latest edition of the standard diagnostic manual for psychiatrists.

Hoarding was once considered an obscure behaviour associated with conditions such as schizophrenia or obsessive-compulsive disorder. Its current primacy in the public imagination, says Kilroy-Marac, may be related to a collective anxiety we all have about our ever-increasing amassment of

*stuff*. "When I speak about hoarding," she says, "it opens the floodgates. People are very interested in talking about their clutter, or how they're purging closets or moving a parent into a nursing home and dealing with their things."

So alongside our fascination with hoarding, it's not surprising that we now have a booming clutter-management industry: the rising popularity of personal organizers and of "storage closets that can be delivered to your front yard, loaded up, and taken away to some mysterious place." The home is where our anxiety is centred; hoarders are, by definition, not homeless, although they often face eviction.

Kilroy-Marac, who specializes in the social history of psychiatric thought, is researching a book about why society is so concerned right now about clutter. She draws an intriguing parallel between North America's long-standing concern over dieting, and its new mania for shedding material pounds. In an age of plenty, hoarders – like obese people – are often perceived by some as weaklings for their inability to surrender what weighs them down. But stuff, it seems, is the new food, and we must increasingly face up to our relationship with it. Because, says Kilroy-Marac, "We're all consumers. Whether we try to curtail our consumption or not, it's what we do." - **CYNTHIA MACDONALD**



**CHRIS LONG**  
Computer Science Student  
Recreational Swimmer  
Urban Explorer

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U of T alumna Sasha Gollish hopes to race for Canada in the Pan Am Games in July





# GAME ON!

## TORONTO'S PAN AM GAMES WILL LEAVE A GOLDEN LEGACY FOR U OF T, ITS ATHLETES AND THE CITY

**FOR YEARS THEY'VE BEEN PUSHING** their bodies to run faster, leap higher, throw farther and swim harder than they ever have before. They've been training with coaches and teammates to learn their sport inside and out, to come up with the dazzling plays and the incredible feats of athleticism that will carry them to victory – and the gold medal. This summer, almost 7,000 athletes at the very top of their game will converge on Toronto to compete in the Pan Am/Parapan Am Games, the world's third-largest international multi-sport event.

And the University of Toronto community will be right there, cheering them on, with a little extra oomph, perhaps, for the squad of current

and former Varsity athletes selected to represent Canada. What's unique about these Games is that U of T is also playing host – welcoming athletes from 41 countries in at least a dozen events to new aquatic, field and gymnasium facilities at the U of T Scarborough and St. George campuses.

In these pages, you'll meet some of the university's Pan Am athletes – and those who hoped to qualify. We hope you'll also get a sense of the renaissance in sporting facilities underway at U of T. For a few weeks this summer, we'll celebrate our athletes' achievements, but long after the Games, these new facilities will remain to inspire generations of U of T students in their own athletic ambitions.



# MANNING

# SCHULTZ

# CHETRAT



**FOR CHRIS MANNING** (BA 2015 Woodsworth), **PAIGE SCHULTZ** and **ZACK CHETRAT** (BA 2014 New), years of gruelling practices, intense weight training and inspired coaching led them to a crucial point in their swimming careers: a meet at the Toronto Pan Am Sports Centre at U of T Scarborough in early April.

There, the three veteran Varsity Blues athletes raced for the chance to swim for Canada at the Pan Am Games in July.

Chetrat made the cut. The three-time U of T male athlete of the year will compete in the 200-metre butterfly. On race day,

in front of his cheering friends and family, his main goal will be to stay calm. "Swimming is a one-shot sport," he says. "Your future's decided in the next two minutes of your life. I've learned not to worry about those minutes but to make sure everything I've done leading up to those minutes is the best it can be."

Manning and Schultz (who is entering her final year at U of T) say they'll keep swimming in the hope of qualifying for the 2016 Olympics. But this July, they'll be in the stands at the Toronto Pan Am Centre, rooting for their former teammate.



Zack Chetrat (BA 2014 New) will compete for Canada in the 200-metre butterfly



The Pan Am/Parapan Am Games will involve about 20,000 volunteers, including many members of the U of T community. More than 250,000 people are expected to visit Ontario for the Games.

The spectacular new **TORONTO PAN AM SPORTS CENTRE**, which opened last fall at U of T Scarborough, will host the aquatics, fencing and modern pentathlon components of the Pan Am Games and sitting volleyball of the Parapan Am Games.

UTSC Principal Bruce Kidd says the centre’s arrival marks a watershed moment: “When the Games are over and the international spotlight has dimmed, this world-class complex will create a powerful legacy of inspiration, recreation, education and transformation for the UTSC community and the entire eastern Greater Toronto Area.”

About the size of five football fields, the \$200-million centre includes two Olympic-size pools (doubling the number in the Toronto area) and a five-metre-deep diving tank. The centre’s field house features a recreational track, gymnasium and a rock climbing wall.





To read more about the U of T venues and athletes of the Pan Am/Parapan Am Games, visit [panam2015.utoronto.ca](http://panam2015.utoronto.ca)



## WURSTER

As a teenager, **JASON WURSTER** was playing competitive hockey when he decided to give pole vaulting a try. Weeks later, when he finished second in an Ontario championship, he opted to give up hockey to stick with his new sport. “It’s never boring because no two jumps are ever the same,” he says. “And you get to fly 18 feet through the air!”

Flash forward 15 years, and the U of T geography grad (BA 2011) has leapt into top-10 finishes at the Commonwealth Games in 2010 and Francophone Games in 2013. To compete at the Pan Am Games, he must be ranked in the top two in Canada in mid-June (he was second as of late May). Wurster, 30, hopes to compete in Rio next year as well, but says he’s taking things one step at a time, working full-time on construction management and “just happy to compete at a high level.”

## GOLLISH

**SASHA GOLLISH** (BA 2003 UC, MEng 2010) started in U of T’s junior development track program almost 20 years ago, and now this home-grown talent hopes to qualify for the Pan Am Games – in the 800-metre, 1,500-metre or 5,000-metre races.

Gollish, 33, works as an engineering consultant and is earning her PhD in engineering at U of T. Currently ranked sixth in the world for 1,000 metres (an indoor event), Gollish, like the rest of her track-and-field peers, will find out if she makes the cut for Pan Am in late June. Until then, you’ll probably find her, with her teammates, on the Varsity Centre track. “To me it is a magical place,” she says.





Varsity Centre will host archery during the Pan Am and Parapan Am Games. The facility, which replaced Varsity Stadium in 2007, includes seating for 5,000, a 400-metre, eight-lane track and an artificial turf field with a dome for winter use.



Archery has been a Pan Am sport since 1979. Trampoline, one of the newer events, was added in 2007. Making their Pan Am debut in Toronto are golf and slalom canoe/kayak

## LEE

**VANESSA LEE** (BPHE 2011), picked up archery as a teenager after taking a trip to South Korea and watching Park Sung Hyun, a South Korean archer, win two gold medals at the 2004 Olympics. “I was amazed at how cool, calm and confident she was under all the pressure and I wanted to be like her,” says Lee. “I decided I was buying a bow as soon as I came home.”

Now 25, Lee is hoping to qualify for Archery Canada’s National Team, and compete at the Pan Am Games. Her mission is straightforward but extremely challenging: standing at a distance of 70 metres, she must aim arrows at a bull’s-eye that’s only 12.2 centimetres across. Demonstrating her skills in front of a home crowd would be a dream come true, she says.





The impressive new **BACK CAMPUS FIELDS**, completed last fall, will host Pan Am field hockey, as well as five-a-side and seven-a-side Parapan Am football matches. After the Games, the fields will be open to the almost 3,000 U of T students who participate in intramural field sports – and other members of the university community.



**WOODCROFT**

**AMANDA WOODCROFT** is a concurrent education student in the Faculty of Kinesiology, but in January she put her degree on hold to devote herself to full-time training with the Canadian women's field hockey team in Vancouver. The goal: to be one of the 16 players chosen for the Pan Am Games. It's not the kind of sport where you can train individually and then come together for the competitions, she says. "You need to practice as a team. Everyone needs to learn how the others play."

Canada finished fifth in women's field hockey in the 2011 Pan Am Games. To win gold this year, they'll have to defeat Argentina and the United States, the two top-ranked teams in the Americas. But regardless of the team's final performance, Woodcroft says making the cut and playing on U of T's Back Campus Fields in front of a home crowd would be a thrill unlike any other: "I'm looking forward to every moment."

# MACLENNAN

**ROSIE MACLENNAN** (BPHE 2011), the reigning world trampoline champion, is hoping to defend her Olympic gold medal in trampoline at the Pan Am Games. MacLennan, 27, started on the trampoline two decades ago, and by the time she was 11, was competing internationally. She won her first Canadian National Women's title in 2005 and qualified for the Olympics for the first time three years later, competing in Beijing.



**THE GOLDRING CENTRE FOR HIGH PERFORMANCE SPORT** will not be a Pan Am competition site, but its international-grade field house will serve as a practice venue for men's and women's volleyball. The centre, which was made possible with donations from the Goldring, Stollery and Kimel families, also houses an expanded David L. MacIntosh Sports Medicine Clinic, classrooms and research labs, a strength and conditioning centre and a fitness studio – all for use by members of the U of T community.





# Breaking News

U of T is rethinking how journalists get trained

**WHEN THE REMOTE THREAT OF EBOLA** spreading in the United States became an all-consuming media spectacle last fall, CNN's Anderson Cooper began regularly drawing on the commentary of a young *Dallas Morning News* reporter named Seema Yasmin, who also happens to be a physician and a part-time professor of epidemiology at the University of Texas at Dallas.

The *Morning News*, which has won nine Pulitzer Prizes over the last two decades, had hired her to cover public health issues on a part-time basis a few months earlier. Cambridge-educated, Yasmin arrived at the *Morning News* via the Munk School's Fellowship in Global Journalism, which trains

people who are experts in a subject – such as health, law or science – to become journalists, and then places them as interns at news organizations. Yasmin had worked with the paper on health features during her fellowship at the Munk School of Global Affairs, and was offered a job soon after graduating. “She was ‘fully loaded’ for Ebola,” says *Morning News* editor emeritus Bob Mong, noting that Yasmin’s media profile has skyrocketed in the past year. “Without Munk, we would have never known about her.”

The innovative arrangement between U of T’s Munk School and the *Morning News* is one of nine such relationships the school has struck with media outlets around the world



since 2012, and reflects the rapid changes occurring in the news industry. Long-established companies have found themselves under sustained assault from low-cost digital upstarts that have scooped up readers, advertising dollars and investor equity. Ascendant media properties such as *BuzzFeed*, *Genius*, *Gawker* and *VICE* are growing exponentially – and hiring. Established media brands, meanwhile, have scrambled to retain readers and advertisers in a fragmented media universe.

To complicate matters, the media landscape is now humming with new information formats – from podcasts to data visualizations and “listicles” (lists of facts on a theme). There are other variants, too. For example, “Doctor Mike” Evans, a physician at St. Michael’s Hospital who teaches family medicine and public health at U of T, has created an entirely new type of health journalism in the guise of a popular YouTube channel featuring upbeat whiteboard animations on health topics ranging from exercise to cancer to concussions.

The fluidity of a media environment in which traditional distinctions among print, video and radio have evaporated is forcing journalism programs to make drastic changes in how they train their students, who have no memory of life before search engines. Many schools in the U.S. and Canada have modernized their curricula in recent years. “A lot of journalism educators are trying to figure out what mainstream media organizations want,” says Jeffrey Dvorkin, the director of UTSC’s joint journalism program with Centennial College, and a former producer at National Public Radio in the U.S. Students, he says, tend to be “way ahead” of the instructors in terms of technical knowledge, and the constantly evolving ways digital media can be used to tell stories.

Centennial journalism professor Tim Doyle, who coordinates the joint program, says the two institutions have recently introduced curriculum changes such as a “digital first” approach to publishing, techniques for telling stories in web-exclusive ways, and training in online audio, live blogging and tweeting.

In Dvorkin’s view, however, the development of core skills – critical thinking, curiosity, news judgment, interviewing and writing – continue to form the foundation of any program. “The role of journalism programs is to help people make sense of a really chaotic media environment,” he adds. “We need to help young journalists do comprehensive, contextual reporting.”

Rob Steiner, director of the Munk Fellowship in Global Journalism and a former *Wall Street Journal* correspondent, believes the program he founded has identified what media companies are looking for now: enterprising and entrepreneurial journalists who arrive with plenty of expertise instead of an expectation of regular assignments and a full-time job. “They need people with subject-matter knowledge who also have news judgment and can work without necessarily being a staff writer.”

Sarah Elton (BA 1998 UC, MA 1999), a freelance writer who teaches in the Munk program, adds that it remains impor-

tant to stress ethics (a staple of undergraduate journalism courses) in the program, which is geared toward people from other professional backgrounds. Think of a practicing lawyer who also writes about high-profile court cases; conflicts of interest could arise frequently. “We troubleshoot various situations and talk through all sorts of quandaries,” says Elton, who specializes in health issues. “I think this develops their journalistic acumen.”

**S**tephen Starr, a 32-year-old Irish-born freelance writer, didn’t set out to become a journalist when he earned a graduate degree in international security and conflict studies in 2007 from the Dublin City University. He simply wanted to go to Syria or Lebanon to look for work. Four years after arriving, he found himself with front-row seats to the civil war that erupted after the Arab Spring. Starr began freelancing full-time and went on to write a book about his experiences, *Revolt in Syria*. But despite his proximity to a major international story, he sometimes struggled to convince leading news outlets to buy his work. “I knew I was in a great spot but they weren’t as receptive as I had hoped they would be.”

After leaving Syria in 2012, Starr was accepted at Columbia University’s Graduate School of Journalism, but he couldn’t secure sufficient financial aid and opted to enroll in the Munk program instead. In hindsight, he’s glad he made that choice, given the very low student-teacher ratio (his cohort had seven fellows and four instructors) and the opportunity to spend some time in the newsroom of *The Globe and Mail*, another Munk School media partner.

The program, he says, taught him how to generate story ideas, pitch them to editors effectively and build a freelance practice around his area of expertise. Fellows pitch and report feature stories to Munk’s media partners, but the articles are thoroughly edited by the program’s instructors. The fellows also work closely with beat reporters or bureau chiefs at their assigned media partner.

Since completing the Munk Fellowship in 2013, Starr has stationed himself in Istanbul, and has focused not just on the Middle East but on maritime issues and food security. His journalism career is developing better than he expected, he says, and he’s now in a position to choose what he wants to write about. He’s got clients around the world, including *The Guardian*. But, he acknowledges, the lifestyle isn’t for everyone. “You need to enjoy the challenge of not knowing whether you’ll get enough assignments to make a living.”

Starr agrees with Steiner’s belief that freelancing – or at least a certain type of freelancing – may represent the future of journalism as a profession. Steiner’s case is built on a reading of the media environment: traditional routes into the profession – such as internships and jobs at small-town papers – are shrinking for young reporters, and full-time, unionized positions are in decline as media organizations fill holes using contract employees.



## Munk fellows learn a rigorous and repeatable approach to idea generation and get a crash course in news judgment.

“The basic rule is, ‘always, always be pitching.’”

Steiner believes the fragmented global media landscape has created new reporting opportunities as well as challenges. One way that he believes long-established media companies can differentiate themselves from newcomers such as *BuzzFeed* and *Gawker* is with specialized coverage that draws on a reporter’s deep knowledge of a topic. He cites the examples of Clive Thompson (BA 1992 Victoria), a technology writer for *Wired* and *The New York Times Magazine*, and *New Yorker* medical correspondent Atul Gawande, a surgeon and professor of medicine at Harvard. Steiner also points to Elton, whose coverage of food and health has translated into book projects and speaking appearances. In fact, Elton will be starting a PhD at U of T this fall because her coverage took her all the way to the scientific coalface. Original research, she says, “is the natural next step.”

Elton points out that the fellows who come to the Munk School tend to fall into two categories – those with a professional designation who see an opportunity to add journalism to their existing careers, and others who want to work in journalism full-time. “There are great opportunities for the former,” she says, citing the example of a physician in the program who intends to write about health issues and has sufficient technical background not to fall into the trap of breathlessly shilling for the latest health fad. “We need knowledge-based journalism. If you can work as a doctor and a freelancer, that’s the best of both worlds.” Steiner points out a second advantage of being qualified in two fields: “The kinds of people who come into the program have more options for earning a living.”

The reality of how little freelancers get paid can be a big obstacle for writers. For her doctoral research, Nicole Cohen, a professor at the Institute of Communication, Culture, Information and Technology at UTM, conducted an anonymous online survey of working conditions for 200 Canadian freelance journalists. She found that 45 per cent earned less

than \$20,000 (before tax) from freelance writing in 2009, while only 14 per cent made more than \$50,000 – barely a living wage in media hubs such as Toronto and Vancouver.

In a recent journal article, Cohen argues that the economics of freelance journalism have been getting even worse since that study. For this, she blames what she sees as a troubling surge in demand from online publications for freelancers who can churn out stories frequently, often for only a few dollars an article. “Content farms,” she continues, “use algorithms to identify common search queries online, then commission freelance writers and videographers to produce content that will match keyword searches, optimized to appear at the top of search engines.”

Steiner’s vision of freelancing is obviously very different, with its focus on specialists who figure out how to “own” a topic and then use their expertise to sell unique stories to a wide range of global media customers. “This is a very different kind of freelance game,” he says. “We are training people to be leading global journalists.” In the old model, many generalist freelancers would pitch similar stories to a small number of local editors – “a buyer’s market.” Under the Munk School model, the freelancer becomes one of the best writers in the world on a specialized topic, turning the relationship with editors into more of a seller’s market. To that end, Munk fellows learn a rigorous and repeatable approach to idea generation and get a crash course in news judgment. “The basic rule is, ‘always, always be pitching.’”

For many of the Munk fellows, freelance work (as opposed to a staff position) may be just fine. Stephen Starr, who is not angling for a full-time job, says he now can pick and choose his freelance assignments and has as much work as he wants. Nousha Kabawat, a recent Munk fellow who runs an NGO focused on helping Syrian refugees, sought out the journalism training so she could better communicate information about the human face of the Syrian conflict, and also offer advice to Syrian humanitarian relief workers on how to win the attention of Western reporters. During the program, she published a detailed, eyewitness account in the *Deseret News*, a Munk School partner. Yet, she adds, “I definitely don’t see myself doing journalism full-time. I learned it’s really hard to be a journalist, especially a freelancer.”

On the other hand, some other Munk fellows – Anna Nicolaou at the *Financial Times*, and Rachel Browne at *Maclean’s* – have landed in media organizations upon graduating, despite the program’s focus on freelancing. The reasons aren’t difficult to fathom. Editors such as Bob Mong are seeking ambitious journalists with deep subject expertise who also know how to pitch stories, generate ideas and take the initiative instead of waiting for assignments. As he says of Seema Yasmin, the prospect of hiring a reporter with this mix of skills “was very appealing to us.”

Journalist and author John Lorinc (BSc 1987 UC) writes about politics and urban issues for *The Globe and Mail*, *The Walrus* and *Spacing* magazine.

Computer science professor Geoffrey Hinton believes artificial intelligence will soon transform almost everything we do



# GETTING

A U of T computer scientist is helping to build  
a new generation of intelligent machines

# SMARTER

**GEOFFREY HINTON** has a news bulletin for you: You're not conscious.

OK, you're conscious as opposed to being *unconscious* – such as when you fall asleep at night, or when you get knocked out during a boxing match or when a doctor administers a general anesthetic before surgery. But you don't have some intangible mental quality that worms or daffodils – or toasters, for that matter – lack.

"Consciousness is a pre-scientific term," says Hinton, as we sit in the lounge down the hall from his office in the department of computer science. (Actually, Hinton remains standing, explaining that it's easier on his back; to show me something on his laptop, he kneels.) He draws an analogy to how we conceived of the notion of "life" a hundred years ago. Back then, scientists and philosophers imagined that living things were endowed with a "life force" – the French philosopher Henri Bergson called it *élan vital* – that distinguished

living from non-living matter. But once we got a grip on genetics and microbiology, and especially the structure and function of DNA, the notion simply faded away. Living matter, it turns out, is just like non-living matter, except for being organized in a particularly complex manner. Eventually, says Hinton, as we come to see brains as machines (albeit extraordinarily complex ones), we'll see consciousness in a similar way. Consciousness, perhaps, is simply what it feels like to be *using* a brain.

"Of course, a boxing referee will have his own definition [of consciousness] – but all of them are just a muddle," says Hinton. "When we get down to doing science, it's just a useless concept."

And with that philosophical hurdle out of the way, there's nothing to stop us from constructing truly intelligent machines, Hinton says. To be sure, with today's technology, no machine can perform as well, at so many different kinds



of cognitive tasks, as a real live person with a fully functional brain. But a machine that's *modelled* on the brain – a machine that can recognize patterns, and learn from its mistakes, just like people do – can think, too. And it won't be mere illusion. It's not just that they'll look or sound as though they're being smart; Hinton believes they'll actually *be* smart. The first signs of the coming sea change are already here, from advances in computer vision to speech recognition to the self-driving car – and Hinton is confident that the revolution in machine intelligence is only just beginning.

**B**orn in Bristol, England, Hinton was still in high school when he began to wonder about the parallels between computers and brains. (A point of trivia: Hinton is a great-great-grandson of George Boole, the 19<sup>th</sup>-century English mathematician whose work on logic paved the way for today's digital computers. To my mind, however, he has the facial features of Isaac Newton – at least, as one imagines Newton would have looked without the wig.) Hinton went on to earn a BA in experimental psychology from the University of Cambridge, and a PhD in artificial intelligence from the University of Edinburgh. After holding a number of teaching positions in the U.K. and the U.S., he joined the faculty at U of T in 1987, and is now the Raymond Reiter Distinguished Professor of Artificial Intelligence. In 2013 he also took a part-time position at Google, with the title of Distinguished Researcher, and Hinton, now 67, divides his time between Toronto and Google's headquarters in California.

The brain is still very much on Hinton's mind. His most peculiar and yet endearing habit is to run down the hallway, excitedly declaring that now, finally, he understands how the brain works. "He's got this infectious, contagious enthusiasm," says Richard Zemel, who did his PhD under Hinton, and now, as a faculty member, works in an office down the hall

from his former supervisor. He says he's lost count of how many times Hinton has run to his office and knocked on the door, declaring "I've solved it! I know what the brain is doing!" Of course, repetition would seem to take the steam out of such claims – but Hinton, with his own brand of dry humour, has that angle covered, too: Hinton, according to Zemel, will typically add: "I was wrong every other time, but *this time* I'm right!"

Not just anyone could get away with such shenanigans. It helps if you're brilliant. Or, to put it another way, some of the time, your ideas *have to be right*. "There aren't that many people in the world who could make these claims," says Ruslan Salakhutdinov, another former student of Hinton's, who, like Zemel, is now on faculty and has an office along that same hallway. "Geoff is very humble," Salakhutdinov says. "He generates a lot of good ideas – but you'd never hear him saying 'I developed this idea on my own,' even though he did... He doesn't take as much credit for his work as he deserves."

Hinton is recognized as a world leader in a particular branch of artificial intelligence (AI) known as "deep learning." In fact, he pretty much invented the field. Deep learning uses neural networks – computer programs that simulate virtual neurons, which can exchange signals with their neighbours by switching on or off (or "firing"). The strength of those connections, which determines how likely the virtual neurons are to fire, is variable, mimicking the varying strengths of the connections between neurons in the brain. The network can be trained by exposing it to massive data sets; the data can represent sounds, images or any other highly structured information. In response, the strength of certain connections increases, while others decrease. For example, two spots with lines above them could be a pair of eyes, but with nothing more to go on, that's a very uncertain conclusion. But if there's a dark, horizontal patch below it,

## A NEW TEST FOR MACHINE INTELLIGENCE

Determining whether computers can think like humans is not a straightforward task

How do we decide if a machine deserves to be called "intelligent"? British computer pioneer Alan Turing proposed an answer half a century ago. He suggested a kind of parlour game in which a computer tries to pass itself off as a human being by answering questions (typically through text, as its physical appearance would be a giveaway). Turing called it the "imitation game." Today, we call it the

Turing test. In 1950, Turing speculated that by 2000 "an average interrogator will not have more than a 70 per cent chance of making the right identification" – that is, computer programs would stymie the judges 30 per cent of the time – after five minutes of questioning. (A couple of years later he made a more conservative prediction, saying that it would be 100 years before a machine passed the test.)

Back in 2012, I was a judge in a "Turing test marathon" held at Bletchley Park, England, the site of Turing's code-breaking work during the Second World War. The winning program (called a "chatbot") was able to fool the judges 29 per cent of the time, just a smidgeon below Turing's 30 per cent threshold. But there's a catch. The winning bot didn't pretend to be an adult native English speaker; rather, it emulated "Eugene," a 13-year-old Ukrainian boy. Not surprisingly, both Eugene, and the

Turing test in general, have met with criticism.

And so Geoffrey Hinton, a U of T computer scientist and world leader in neural network technology, suggests a more sophisticated test: given a photograph, produce a sentence describing what it shows. A child can do it – and now machines are on the verge of doing it too, thanks to Hinton's work on neural networks. The strength of this "visual Turing test" is that it's much harder to fake one's way through it. A chatbot, after all, can alternate between parroting its conversation partner, and changing the subject ("That's cool that you're from Canada. Do you like hamburgers?") But you can't get from pixels to words unless you really see, and understand, what's in an image. "It's very hard to say a machine doesn't understand what's in the image, if it can *tell* you what's in the image," says Hinton.

– DAN FALK

“What you really want is to put something in your ear, and you talk in French, and I hear it in English”

which could be a mouth – then the whole thing could be a face. If there’s a nose-like path in between, and a hair-like area above, the identification becomes almost certain. (Of course, further cues are needed to know if it’s a human face, an animal face or C-3PO.)

The value of Hinton’s work is recognized far beyond the world of computers and algorithms. “Geoff Hinton is one of the most brilliant people in cognitive science,” says Daniel Dennett, who teaches at Tufts University in Massachusetts and is known for a string of popular books, including *Consciousness Explained*. “I think neural networks are definitely as close as we’ve come to a thinking thing.” He cautions that, as clever as neural networks are, they have yet to match the mind “of even a simple critter.” But neural networks “will almost certainly play a major role” in the future of AI and cognitive science.

Neural networks are not a new idea. In fact, the first papers on the subject go all the way back to the 1950s, when computers took up entire rooms. Hinton worked on neural networks early in his career, and almost managed to bring them into the mainstream in the 1980s, when deep learning first began to show some promise. But it didn’t quite “take.” Computers were still painfully slow, and lacked the power needed to churn through the vast swaths of data demanded by neural networks. By the 2000s, that had changed – and Hinton’s research was moving in promising new directions. He ushered in the modern era of neural network research with a 2006 paper in the journal *Neural Computation*, and another key paper in *Science* (co-authored with Salakhutdinov) a few months later. The key idea was to partition the neural network into layers, and to apply the learning algorithms to one layer at a time, approximating the brain’s own structure and function. Suddenly AI researchers had a powerful new technique at their disposal, and the field went into overdrive.

Some of the biggest breakthroughs involved machine vision. Beginning in 2010, an annual competition known as the Large Scale Visual Recognition Challenge has pitted the world’s best image-recognition programs against each

other. The challenge is two-fold. First, the software has to determine whether each image in a vast database of more than a million images contains any of 1,000 objects. Second, it has to draw a box around each object every time one turns up in the database. In 2012, Hinton and two of his students used a program they called SuperVision to win the competition, beating out five other teams of researchers. MIT’s *Technology Review* called it a “turning point for machine vision,” noting that such systems now rival human accuracy for the first time. (There are some intriguing differences between the way computer programs and humans identify objects. The *Review* article states that the best machine vision algorithms struggle with objects that are slender, such as a flower stem or a pen. On the other hand, the programs are very good at distinguishing similar-looking animals – different bird species, for example, or different breeds of dog – a task that’s challenging for many humans.)

The software that Hinton and his students developed can do more than classify images – it can produce text, even whole sentences, to describe each picture. In the computer science lounge, Hinton shows me an image of three different kinds of pizza slices, on a stove-top. The software generates the caption, “Two pizzas on top of a stove-top oven.” “Which isn’t right – but it’s in the ballpark,” Hinton says. Other images get correctly labeled as “a group of young people playing a game of frisbee” or “a herd of elephants walking across a dry grass field.” Standard AI, he says, “had no chance of doing this.” Older programs would have stumbled at each stage of the problem: not recognizing the image; not coming up with the right words to describe the image; not putting them together in a proper sentence. “They were just hopeless.” Now, it seems, computers can finally tell us what they’re seeing.

The practical uses for sophisticated image recognition seem almost endless, but one of Hinton’s projects is deceptively simple: getting a machine to read handwritten numbers. With great effort, he and his colleagues at Google have pulled it off. The software they’ve developed lets Google read the street addresses on people’s homes (vital for connecting the data from its “map” function to its “street view” function). “The techniques we developed for that are now the best way of reading numbers ‘in the wild,’” Hinton says. “And the neural nets are now just slightly better than people at reading those numbers.”

Other potential applications for machine vision include medical diagnostics, law enforcement, computer gaming, improved robots for manufacturing and enhanced vehicle safety. Self-driving cars are one of Google’s major current projects. But even when there’s a human behind the wheel, automated systems can check to make sure no pedestrian or cyclist is in front of the car – and even apply the brakes, automatically, if necessary.

On the medical front, another potentially life-saving application is in pharmaceutical design. Drug companies experiment with countless chemicals, involving molecules of

different shapes. Predicting whether a complicated molecule will bind to another molecule is maddeningly difficult for a human chemist, even when aided by computer-generated models – but it may soon be fairly easy for sophisticated neural networks, trained to recognize the right patterns. In 2012, Merck, the pharmaceutical giant, sponsored a competition to design software to find molecules that might lead to new drugs. A team of U of T graduate students, mentored by Hinton, won the top prize. Using data describing thousands of different molecular shapes, they determined which molecules were likely to be effective drug agents.

Between the machine vision prize and the Merck prize, 2012 was obviously a good year for Hinton. As it happens, it was also the year that he won a \$100,000 Killam Prize from the Canada Council for the Arts, for his work on machine learning. In 2010, he'd won the Herzberg Canada Gold Medal for Science and Engineering, which comes with a \$1 million research grant over a five-year period.

Pictures are made up of distinct patterns – and so too are sounds, which means that speech recognition is a prime target for neural networks. In fact, anyone using Google's Android phone already has access to a speech recognition system developed by Hinton and his students. Launched in 2012, the feature is called Google Now – roughly comparable to the Siri personal digital assistant that runs on iPhones – and can also be found on the Google Chrome web browser on personal computers. *Popular Science* named it the "Innovation of the Year" for 2012. Ask Google Now a question, and it combs the Internet for an answer, which it delivers in clear English sentences.

Recognizing speech is a good start; converting speech to text is also invaluable. And then there's text-based machine translation – the task of translating one written language into another. One way of doing that – the old way – is to scour the Internet for words and phrases that have already been translated, use those translations, and piece together the results (and so every time you input "please," the French output will be "s'il vous plaît"). "That's one way to do machine translation – but it doesn't really understand what you're saying," says Hinton. A more sophisticated approach, he says, is to feed lots of English and French sentences into a neural network. When you give it an English sentence for translation, the network predicts the likely first word in French. If it is told the true first word in French, it can then predict the likely next word in French, and so on. "After a lot of training, the predictions become very good," says Hinton. "And this works as well as the best translation systems now, on a medium-sized database. I think that's an amazing breakthrough."

An even bigger breakthrough would be to skip the textual mediator, and translate speech from one language directly into speech from another language. In fact, Microsoft unveiled a demonstration version of such a system last year; the

company has added it as a "preview" feature to its popular Skype communications platform. Hinton, however, says the Microsoft translator is still fairly rudimentary. "What you really want is to put something in your ear, and you talk in French, and I hear it in English." As soon as Hinton mentions this, I immediately think of Douglas Adams and his comedic science fiction classic, *The Hitchhiker's Guide to the Galaxy*. In the *Hitchhiker's Guide*, Adams describes a "small, yellow, leech-like" fish, which, when placed in the ear, functions as a universal translator: With the Babel fish in place, "you can instantly understand anything said to you in any form of language." Hinton is clearly a Douglas Adams fan, too. Yes, he says, a mechanical version of Adams' fictitious fish is exactly the technology that he's talking about. He adds, somewhat optimistically: "That will make a big difference; it will improve cultural understanding." (In the *Hitchhiker's Guide*, the Babel fish has the opposite effect, causing "more and bloodier wars than anything else in the history of creation.")

Hinton and the other experts I spoke with emphasized the benefits of machine intelligence, but there's long been a dark side surrounding such technology. Machines may improve our lives, but they can also take lives. This spring, a week-long conference was held at the United Nations in Geneva, where delegates considered the question of autonomous drones making life-and-death decisions in combat, and carrying out attacks without direct human involvement. (As usual, the science fiction writers were the first to explore this territory, with killer machines being a sci-fi staple from *The Terminator* to *The Matrix*.) Hinton is well aware that the largest investor in machine learning is the U.S. Department of Defense. He refuses to take money from the U.S. military, but understands that there is nothing to stop them – or anyone – from implementing his ideas.

But Hinton's tone is positive. Major societal changes are coming, thanks to machine learning, and those changes will do more good than harm. It's been a long wait. Hinton – and, in fact, all of the researchers that I spoke with – acknowledge AI's bumpy history; there have been many decades in which hype outstripped actual progress. But now, it seems, machine learning has come of age. "It's quite exciting seeing ideas I've been thinking about for 30 years – seeing them actually now succeeding in practice, and being used by billions of people," Hinton says. And then – an additional group of neurons has clearly fired – he corrects himself. "Hundreds of millions, anyway."

I'm mentally tallying machine learning's possible applications, from language translation to image recognition to designer drugs. Will machine learning, powered by neural networks, simply transform *everything*?

"Yes," Hinton says. "And quite soon."

Dan Falk is a science journalist based in Toronto. His most recent book is *The Science of Shakespeare*.



# All About Alumni

**“I’m an endurance athlete with epilepsy. We exist!”**

Triathlete Glenna Fraumeni conquers a double challenge  
p. 49



Vickery Bowles is taking your public library into the future

## Paperbacks Alongside 3D Printers

New Toronto city librarian Vickery Bowles wants everyone to read, write, create

**AS THE TORONTO PUBLIC LIBRARY’S NEW TOP LIBRARIAN**, Vickery Bowles has a vision for how the library – which she regards as an important part of our democratic society – can give anyone an opportunity to enhance their learning. “The public library is the people’s university,” says Bowles (BA 1980 Victoria, MLS 1982).

As she prepares the library’s new strategic plan, Bowles is intent on providing access for all. She’s including preschoolers in the children’s programs, for example, and she has joined the board of the Centre for Equitable Library Access to ensure that library doors are swung wide open for Canadians with disabilities such as low vision or dyslexia.

“What I’m interested in is making a difference in people’s lives, and that’s one of the privileges of leadership,” says Bowles, who became the city librarian in January.

One of her priorities is to bridge the digital divide. “Libraries aren’t just about books anymore,” she says. “Libraries now provide Wi-Fi and high-speed Internet, lend laptops and offer all sorts of programs to enhance technical skills.” Families living in poverty may not have access to the Internet or the chance to hone the digital skills needed to succeed in our knowledge-based world, she explains. And not having access to email and social media can silence the individuals who may have the most to say.

The library’s first priority, though, will remain the same: to foster literacy and a love of reading. “The heart and soul of the library is still books,” says the Jane Austen enthusiast.

“About half of all Torontonians are library-card holders. We are a city of readers, reading authors from around the world,” says Bowles. She should know. As the library’s former director of collections management and city-wide services, she has a keen understanding of what’s in Toronto’s ►



The Toronto Public Library and U of T prof George Elliott Clarke launched the Toronto poetry map this spring. See your neighbourhood in verse at [torontopoetry.ca](http://torontopoetry.ca)

## On the Job in the Cloud

### Marwan and Hadi Aladdin aim to train the world's workers



Marwan and Hadi Aladdin

#### BROTHERS MARWAN AND HADI ALADDIN

see a world full of students. Not just those in school but ‘learners’ more broadly: anyone who needs to gain a certification or update knowledge.

So in 2012, the two entrepreneurs founded CoursePeer: a virtual space in ‘the cloud’ where companies could develop, and employees take, training certifications in a variety of skills needed for their jobs.

The brothers, who are both graduates of the department of electrical and computer engineering (Marwan BAsC 2011, Hadi BAsC 2012), developed their startup through the U of T Early Stage Technology accelerator for software-based ventures. First,

they helped students earn formal recognition for employable skills, such as leadership abilities or problem-solving, then they designed virtual classrooms for businesses in such industries as insurance, retail, oil and gas. The Toronto-based company established offices in Canada, the United States, Hong Kong, Europe and the Middle East. Then, they turned their focus to franchising.

“Franchising is a mega industry and growing so fast,” says Hadi. “Know-how transfer is crucial in franchising and we saw an opportunity there.” The brothers’ new Franchise University will help franchisees train new staff around the world through access to shared conversations, collaborations and training modules.

As if that wasn’t enough, they’ve also started ArabCode.org – a partnership with governments and enterprises in the Middle East to teach coding to one million students aged eight and up.

Just like any keen learner, Hadi says the continual process of growth is what drives him. “You know it when you are on to something big with your startup,” he says. “It’s when you’re hitting the milestones you set, and you are enjoying going to your office every day to work with your team and network of partners.” – **BRIANNA GOLDBERG**

➤ 10-million-piece collection.

Bowles believes that public spaces are crucial to communities and will ensure that libraries add beauty to them. “We knit together private experiences and public spaces,” she says, gesturing to the gigantic window in her office at the Toronto Reference Library. “We reach people where they live.” The Toronto Public Library has one of the largest number of branches of any library system in the world. In May, it opened its 100<sup>th</sup> branch, at Scarborough Civic Centre.

“Libraries have become about more than consuming content, they’re now also about creating it,” she continues. “Self-publishing has become huge.” Not far from her office door is an “Espresso Book Machine” that, for a small fee, allows patrons to transform their manuscripts into paper-

backs. If your creativity can’t be captured between two book covers, try one of the library’s 3D printers.

Working on a collaborative project? Bowles would encourage you to step inside one of the soundproof study pods that allow library-goers to boisterously engage in the creative process in what was formerly hush-hush space.

In her plans for taking Toronto’s readers into the future, Bowles wants to build on the library’s partnership with U of T. Already, our graduate students and professors are in the branch libraries presenting sessions that pose intriguing questions such as: Is being too clean making us sick? Is there extraterrestrial life? What’s out there, anyway?

Bowles hopes Torontonians of all stripes will use their libraries to ask their own questions – and just maybe find some answers. – **SUSAN PEDWELL**

#### OVERHEARD



There are many spokes in a wheel, and each has to be strong in order for the wheel to turn. It’s a great metaphor for life. You need to have balance.



Andrew Peek (BA 2006 UTSC), co-founder of software design company Jet Cooper, idea-sharing platform Pilot, and film production company Next to North, defines success for U of T News.





One Canadian in five will experience a mental illness in their lifetime, says U of T's chancellor Michael Wilson, new chair of the Mental Health Commission of Canada



Meghan Moore

## Following Two Dreams

### A unique scholarship enabled Meghan Moore to combine her passions for music and science

**AN AWARD PROGRAM THAT PROVIDES** Canadian high school graduates with up to \$100,000 toward their undergraduate education has helped dozens of U of T students earn their degree and pursue their dreams since its inception more than a quarter-century ago. The Loran Scholarship, awarded annually to students demonstrating “character, service and leadership,” allowed Meghan Moore (BMus and BSc 2003 Trinity), for example, to combine two of her passions – music and cognitive science – and eventually land a job helping The Royal Conservatory sing an innovative and exciting new tune about music education.

Upon joining the conservatory as director in August 2013, Moore began working on the Music Enrichment Program, an approach that combines traditional aspects of theory, practice and assessments with complementary courses in areas such as composition, improvisation, percussion, ensemble play and choir.

“We’re trying to add to students’ musical experience with integrated programming, which helps build their competence and creativity,” Moore says.

Music has always been important to Moore, who has been singing in choirs almost her whole life, including for the last nine years in the Tafelmusik Chamber Choir. She says music has helped her strengthen her creativity, memory and attention span, and those benefits got her interested in music cognition – how music affects the brain.

When she applied to U of T, she received tremendous support for her studies through a Loran Scholarship, which is granted to 30 Canadian high school graduates each year. The students receive a stipend, mentorship, access to special workshops and free tuition at one of the organization’s 25 partner universities, such as U of T.

For Moore, the scholarship also helped her to expand her learning beyond what typically occurs in undergraduate education by providing funding for her to conduct music cognition research with academics in Canada and the U.S.

“The Loran Award encourages scholars to do things outside of their comfort zone, so that they may learn, build their confidence and take some risks,” says Franca Gucciardi, executive director and CEO of the Loran Scholars Foundation.

After graduating from U of T, Moore worked for the Hart House choir, completed an MBA at York University, then began working in a variety of arts-related roles in Toronto’s culture sector.

Last July, she became the conservatory’s vice-president of strategic initiatives. One of her primary projects has been to make the conservatory’s early childhood music curriculum available digitally, a task she continues to handle since taking time off recently for her newest project, her infant son.

“One of the best ways in which the Loran Scholarship has supported me both throughout my undergraduate career and beyond,” Moore says, “is by instilling in me the courage and fortitude to take risks and be bold with my decisions.”

– SHARON ASCHAIK

## Connecting through Film



Elysse Leonard

Whether it’s the impact of the actors, the storyline, the soundtrack or the images, movies open many pathways to understand our own feelings and connect with others. Started in 2007 at Toronto General Hospital, the Toronto International Film Festival’s Reel Comfort program helps make those connections available to clients in mental-health programs, who may feel particularly cut off from the world during their hospital stays. In 2014, it delivered more than 60 free events to 832 participants.

Program coordinator Elysse Leonard (BSc 2010 Innis, MA 2011) works with staff at each of four Toronto hospitals to choose films for regular events each month,

year-round. Film screenings feature a special guest – such as a screenwriter, director or actor – who contributes to a post-movie discussion. Hands-on workshops tackle topics from acting to stop-motion animation to special-effects makeup. Last year, Reel Comfort workshop participants created nine animated short films, three music videos and two screenplays. One of them shared this thumbs-up: “It gives us an opportunity to keep our minds active, and it’s fun.”

For Leonard, who majored in both psychology and cinema studies, coordinating Reel Comfort “has been very gratifying. It’s the perfect combination of my interests and what I learned in school.” – JO CALVERT





Toronto ranks 12<sup>th</sup> in the world in the Arcadis Sustainable Cities Index – it's the highest-ranking city in the Americas

THE TWO OF US

## Seoulmates

Exploring a new country linked video bloggers Simon and Martina Stawski to each other... and to the world



**MARTINA (BA 2007 ST. MICHAEL'S):** Simon and I met at U of T in a Romantic Poetry class. I had a boyfriend at the time but Simon managed to wiggle his way into my life via group projects. I tried to set him up with a friend of mine and as I listed off all the reasons why Simon was such a great catch it clicked in my head that I was head over heels in love with him. We got married eight lovely years ago – the day after we graduated from U of T – and we held our reception in Hart House at the Gallery Grill. We love working together on our blog, Eatyourkimchi.com, and we have a pretty good balance of

creative-meets-practical. I'm the crazy idea machine and Simon takes my ideas and tones them down to make them more manageable. Moving to South Korea to start our teaching careers was isolating, but Simon and I really enjoy hanging out together and we never feel lonely. If you marry your best friend, you're always happy to hang out with him.

**SIMON (BA 2007 WOODSWORTH):** We've now been in South Korea for seven years, and we keep on setting our roots deeper in this country than we had ever imagined. We spend our time actively seeking out the new and the memorable: getting hugged by the cheese lady at a supermarket; getting lost in the woods with the sun setting and wolves howling on Halloween; ordering what I thought was bacon but turned out to be pig rectum. A big part of our original inspiration for our videos was to document the newness, our shock and surprise at living in another country. More than just being able to work together, the idea of living in another country is very bonding. I think what's most important about our relationship isn't that we just love each other dutifully, but that we also really like each other as people. I swear that Martina is the coolest person that I've ever met. She's a spark, and I'm never bored with her.



### Designing a Sustainable City

Out of 82 entries from around the globe, the design of two Daniels Faculty graduates brought home the top prize in the SymbioticCities 2014 International Design Ideas Competition. Incorporating wind turbines, vertical urban farms, water-treatment and waste-recycling facilities, and an artificial reef (built with discarded shipping containers) to help control coastal waves, the submission of Juan Caviedes and Negin Akhlaghpour (both MUD 2014) proposed a new urban development for the city of Baranquilla. Located where the Magdalena River meets the Caribbean Sea, this is northern Colombia's largest port.

The competition offered Akhlaghpour (born in Iran) and Caviedes (a native of Colombia) "an open scenario" to regenerate any urban area of their choice, Caviedes says. "Coming from a developing country, you know the problems, and the effect of poverty." Their challenges included coming up with affordable strategies for sustainable clean water, food and energy – adaptable to a growing population and a changing climate and sea level.

During their research, they surveyed creative solutions from all over the world. "Competitions are so demanding," Caviedes says, "but you learn so much. It deepens your perspective of sustainability and its complexity." – **JO CALVERT**

Reclaimed seawater irrigates urban farms in Juan Caviedes and Negin Akhlaghpour's award-winning design



Hart House has hosted an annual "Indoor Triathlon" since 1994 – participants try to maximize their distance in each of a 15-minute swim, ride and run



Glenna Fraumeni

FIRST PERSON

## Personal Best

### A chronic condition doesn't need to stop you from pushing yourself athletically

**I'M AN ENDURANCE ATHLETE WITH EPILEPSY.** We exist! When I was diagnosed with epilepsy in 2007, I did my absolute best to keep participating in the sports I love. I have complex partial seizures and take medications to control them. My days require so much effort on many levels.

People are curious when they find out I'm training and competing. They ask, "Aren't you afraid of having a seizure while you're out there?" I'm aware, but not afraid, of the possibility that I could have a seizure when I'm pushing my body like this. In no part of our life can we completely eliminate risk. The best we can do is figure out how to minimize it, so, I have had to learn to ask for help. It's important to have people who know me well stationed throughout the course.

**In no part of our life can we completely eliminate risk. The best we can do is figure out how to minimize it**

They can recognize the difference between what I look like when I'm working hard and what I look like when I need assistance.

In October 2014, I was competing in the Toronto Waterfront Marathon. Around 30 kilometres into the 42-kilometre event, I had an aura and I knew

I was going to have a seizure. Thanks to excellent planning and my amazing family, I was able to safely have the seizure. I did not finish that race but I have learned from it, to give my family, friends and doctors the right to decide whether or not it is safe for me to compete. Sometimes we get so ambitious with our athletic goals and we ask so much of ourselves that we forget to slow down and give our bodies the kindness they deserve.

The main side effects of my seizure medications are fatigue and lethargy. Every time I am able to get myself out the door to train or compete is a podium achievement. It takes special attention for me to figure out if I am feeling normal medication-related fatigue or training-related fatigue. I have to skip the workout if it's the latter because it could increase my risk of a seizure. It is such a fine balance.

Last summer, I competed in my first half Ironman triathlon. It was only my third triathlon since being diagnosed with epilepsy. I wanted to be as safe as possible and make the event as fun as possible, so I got in touch with the race organizers to make them aware of my medical condition. They checked in with me throughout the course.

For the swim, I got advice on where to start, and I made sure to keep a kayak in sight at all times. I stayed on the inside of the swim course so that I could get out of the crowd of swimmers and float on my back if I felt at all as if I was going to have a seizure. All seemed to go well until, five kilometres into the bike course, I realized that I had forgotten my seizure medications and my energy gels in the transition zone. I considered turning around and going back, but I opted not to – a risk I should not have taken.

I made it safely through the bike course and took my medications in the transition zone between the bike and the run. The transition zone is a curious place. Transitioning in triathlon is often a sport of "How fast can I get in and out of here without forgetting anything?" I have found that the transition zone needs to be a time to slow down and listen to what my body needs, just like in the rest of life. I needed to sit, take my medications and ask myself "Am I OK?" I was foggy for the first kilometres of the run because of the seizure medications. "Am I OK?" I kept asking myself as the kilometre markers went by. The answer was "yes?" I placed fourth in my age group and was the 25<sup>th</sup> woman to finish!

I will never race hard enough that I will cross the finish line and collapse, but I will race hard enough to achieve my goals. Through writing about my experiences, I'm working to raise awareness. Together, my support network and I can achieve great things on behalf of athletes with epilepsy.

Glenna Fraumeni (BSc 2008 St. Michael's) is an endurance athlete and registered nurse who provides holistic care to people living with HIV/AIDS in Toronto. This article originally appeared in *The Huffington Post*.





The intense adrenalin rush that roller coasters offer can act as a “control/alt/delete for the cortex,” clearing out nagging troubled thoughts, says U of T psychiatry prof Greg Dubord

60 SECONDS WITH

## Joelle Javier

### Keeping thrill-seekers safe



**ROLLER COASTER ENTHUSIASTS**, take heart: according to the International Association of Amusement Parks and Attractions, your chance of being seriously injured on an amusement park ride is only about 1 in 24 million. For that you can thank people like **Joelle Javier** (BASc 2010), a safety associate with Ontario’s Technical Safety Standards Authority. Here, she reveals the ups and downs of her job to **Cynthia Macdonald**.

**As an engineer trained in materials science, what do you do for the Safety Authority?** I review design submissions when there’s a new amusement park ride, or an alteration to an existing one. I also cover elevators and ski lifts. Much of what

I do is on paper, but sometimes I go on inspections too.

**Beyond the 150-kilometres-per-hour drop on some rides, how concerned should I be about inattentive operators and faulty equipment?** Training is very important – we track documentation to ensure operators are trained on each separate ride they run. And better regulations are making rides safer: we’re now harmonizing international rules, and almost all of the provinces have their own safety authorities.

**Are travelling carnivals less safe than fixed parks?** Some people have that perception because a lot of a ride’s wear and tear happens during transportation. But in reality, operation and inspection standards are the same for both.

**Do you ever get to act as a guinea pig for the rides?** Yes – that’s what I love best! I recently tested the Slingshot at Canada’s Wonderland. It shoots you 90 metres into the air.

**So what’s your favourite ride?** I like the swinging and spinning ones, and those that take you as high as you can go. In the future, we’re going to see more hybrid-type rides such as “watercoasters,” a mix of waterslide and roller coaster. We’ll also see roller coasters using magnets instead of chains, so you won’t hear that creaking sound as you go up.

**Really? That’s the scariest part.** I know, I love it too!

**First we had shoulder restraints, and now they’re taking away our beloved creaks... could it be that rides are getting too safe?** Sometimes people feel that way, especially when they ride over and over. When that happens they’ll try to think of ways to make a ride more exciting. Like standing up: kids do that a lot on ferris wheels, or the Scrambler.

**Wow, I can’t believe the Scrambler’s still around. What other silly things do patrons do?** A big problem right now is selfie sticks. People always want to take pictures of themselves going on rides, which isn’t smart.

**I’ll say! You used to lose nickels and dimes on those rides. Who wants to lose a \$500 smartphone?** Exactly.

## Milestones



Sidney Crosby painted by Jeff Sprang

Artist **Jeff Sprang** (BA 1976 Victoria) has had two of his portraits acquired by the Hockey Hall of Fame – paintings of Team Canada captain Sidney Crosby and Canadiens Olympian Carey Price.

Six U of T alumni were named to the Order of Ontario in February: neurosurgeon and philanthropist **Michael Dan** (MD 1984), University of Ottawa professor **Sylvie Lamoureux** (MEd 1995, PhD 2007), former Chief Justice of the Ontario Court of Justice **Sidney B. Linden** (BA 1961 UC, LLB 1964), social justice advocate **Barbara MacQuarrie** (BEd 1989) and artist **Charles Pachter** (BA 1964 UC).

**Natalie Panek** (MASc 2009) was named to *Forbes*’ Top 30 Under 30 in Manufacturing and Industry list for creating a robot that repairs orbiting satellites and co-designing (and racing!) a solar-powered car.

**Faizan Ahmed** (BSc 2013 UTM) was named to *Corporate Knights*’s Top 30 Under 30 Sustainable Leaders list after being nominated by his classmates. Ahmed had led a project to coordinate Mississauga City Hall’s eco-efforts.

Seven OISE alumni were named to The Learning Partnership’s list of Canada’s Outstanding Principals: **Lara Chebaro** (BSc 1997 UTSC, MA 1999), **Tamara Grealis** (BEd 1990), **Kim Maybury** (BEd 1996), **Emma Nichols** (MEd 2005), **Flora Nordoff** (BEd 1976), **Randy Palermo** (BEd 1991) and **Alka Sahai** (BEd 1994).

**Markian (Mark) Moyes** (BSc 1999 New) won Best Book App for Children at the 2015 Digital Book Awards for his interactive novel *Loose Strands*.



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development

These campers catching a tow circa 1925 were among the first to make memories at Survey Camp



### MEMORIES OF GULL LAKE

## Summer 1925

Why learning to survey is an unforgettable experience for U of T engineers

As summer slips into fall before their third year of study, civil and mineral engineering students spend two weeks in the heart of cottage country to learn the art of land surveying. Survey Camp, a 175-acre property on the northern shore of Gull Lake in Haliburton, Ont., has been a fixture in field work education since 1919, when the University of Toronto purchased the land. “The country is broken and rolling and admirably suited for the various problems that arise in practical surveying,” states the 1930s camp manual.

Surveying is a core skill for these students, but “the main thing I learned at camp has more to do with life than with engineering: I learned that everybody has something valuable to offer,” says Marcia Lamont Scott (BASC 1947). “Survey Camp taught us a lot technically, but it also taught us so much about working together.”

“When you spend concentrated time sleeping, eating, learning and romancing with a group,” adds Gordon

McRostie (BASC 1944), “you develop a camaraderie that is uncommon among classes.”

While the fundamentals of surveying haven’t changed since the camp opened in 1920, the students have. Lamont Scott was the first woman civil engineering grad in Ontario; in 2014, engineering boasted 31 per cent female enrolment in the incoming class. Between now and 2020, Survey Camp aims to raise \$1 million to upgrade its 95-year-old buildings and add new women’s facilities.

Ekaterina Tzekova (BASC 2009, PhD 2015) got to know her fiancé, Stephen Perkins (BASC 2009), at Survey Camp; he proposed at the fire pit where their relationship kindled. While studying for her PhD, Tzekova returned to Gull Lake yearly as a teaching assistant to watch a new crop of campers make memories. “You wonder about the experiences of the students who came before you,” she says. “It’s neat how people of different generations have this place in common.” — **AMY STUPAVSKY**



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No purchase necessary. Contest open to Canadian residents who are the age of majority in their province or territory of residence as of the contest start date. Approximate value of each prize is \$1,000 Canadian. Chances of winning depend on the number of valid entries received by the contest deadline. Contest closes Thursday, December 3, 2015, at 11:59 p.m. ET. Only one entry per person accepted. Skill testing question required.



# Congratulations, New Graduates!

More than 13,000 U of T students converged on Convocation Hall this June, where they were officially welcomed into the university's alumni community. Joining this year's new grads as they celebrated this milestone were the 12 distinguished honorary graduands listed at right, who each delivered the convocation address for their ceremony.

#### Spring 2015 Honorary Degree Recipients

##### Arnold Aberman

A former dean of U of T's Faculty of Medicine who played a major role in advancing medical education in Ontario and Canada

##### Alfred Aho

*BASc 1963*  
A world-leading computer scientist who contributed extensively to UNIX and compiler design

##### Roberto Benigni

A highly accomplished filmmaker, actor and writer best known for his 1997 film *Life is Beautiful*

##### Nicoletta Braschi

An award-winning actor and producer

##### Jan Gehl

A visionary architect and urban design consultant whose innovative work appears in Europe, North America and Japan

##### Abigail (Abby) Hoffman

*BA 1968 UC, MA 1969*  
A four-time Olympian, two-time gold medallist at the Pan Am Games, and a champion for women's sports

##### Maria Klawe

A renowned computer scientist and mathematician, and an advocate for women in these fields

##### Bob McDonald

The host of CBC's *Quirks and Quarks*, and science correspondent on *The National*

##### Frank McKenna

Former premier of New Brunswick, Canadian ambassador to the United States, and deputy chair of TD Bank Group

##### Jacqueline Novogratz

Founder and CEO of the Acumen Fund, a non-profit investing in entrepreneurial approaches to tackling poverty

##### Chantal Petitclerc

A Canadian wheelchair racer who has won 21 medals – 14 of them gold – at five Paralympic Games, and holds five world records

##### Paul Volcker

An economist and past chair of the United States Federal Reserve from 1979 to 1987, and an advocate for smarter fiscal regulation and transparency