

**A Golden Glow** Triumph at Pan Am! / **Safe Passage** Preventing rail disasters / **John and Yoko** Varsity Stadium, 1969  
**Medicine by Design** The power of stem cells / **Just the Facts** Keeping politicians honest / **Writing Contest Winners**

# UofT Magazine

AUTUMN 2015

**From Good to Great**  
18 ideas for building  
an even better Toronto





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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.



# Autumn 2015

Volume 43, No. 1

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## 30 Writing Contest Winners

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A young woman deals with loss in Amanda Lang's winning story, "Man and Mana"

## 38 From Good to Great

18 ideas for making Toronto even better

BY SCOTT ANDERSON, PATCHEN BARSS,  
JOHN LORINC AND JANET ROWE



## Editor and Manager

Scott Anderson

## Acting Deputy Editor

Janet Rowe

## Art Direction and Design

The Office of Gilbert Li

## Interim Editorial and Advertising Assistant

Jillian Bradshaw

## Co-Publishers

Barbara Dick, Assistant Vice-President,  
Alumni Relations

Erin Lemon, Executive Director, News & Media

## Editorial Office

T (416) 978-0838, F (416) 978-3958  
uoft.magazine@utoronto.ca

## Advertising Inquiries

T (416) 978-0838, F (416) 978-3958  
uoft.magazine@utoronto.ca

All correspondence and undeliverable copies:  
*U of T Magazine*, 21 King's College Circle,  
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## Departments

# I am living proof of the value of the research you are doing

– Jonathan Furneaux, who received a double lung transplant, performed using an innovative technique developed at U of T, p. 11



**50** Geography grad creates a whole new way to see UTM



**24** A student's innovative rail car design would greatly reduce chances of an explosion



**16** Who is True Blue, U of T's lovable mascot with the great dance moves?

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# Letters



## The action-packed curriculum combined with frequent examination fails to create the thinkers for the future. We need to give kids more free time.

**DAVID JENKINS**  
MD 1975, TORONTO

### A True Renaissance Man

While Cynthia Macdonald's tribute to John Evans ("John Evans Was a Champion of Innovative Medical Education," Summer 2015) captures the extraordinary contributions and accomplishments of this renowned Canadian, we should also note that Evans was one of the most accomplished athletes in our university's history.

As a football player with the Varsity Blues at a time when crowds of more than 25,000 regularly attended home games, Evans was a two-time all-star lineman (1950, 1951), played on two Yates Cup champion teams (1948, 1951) and was captain of the 1951 team. He was inducted as a charter member of the U of T Sports Hall of Fame in 1987. As president of the university, Evans was instrumental in promoting the amalgamation of the men's and women's athletic associations to create the Department of Athletics and Recreation in 1977.

John Evans is to be remembered as a true Renaissance man and an inspiration for students, faculty, administrators and athletes.

**RICK KOLLINS**  
BA 1964 UC, BED 1973, MED 1980, BUFFALO, NEW YORK

### Machines versus Organisms

In "Getting Smarter" (Summer 2015), computer scientist Geoffrey Hinton attempts to diminish the distinction

between organism and machine. He neglects to observe that machines can only self-organize from their topmost processing level, downward, and by principles that an organism or another machine has designed into them. In contrast, organisms self-organize from the biochemical level, upward, in successive, hierarchic, integrated and yet discontinuous (in a word, emergent) layers of adaptation to their total environment – and without need of any planning process. Even without flying a banner attesting to "consciousness" or reflexive cognition or whatever one wishes to call it, cognitive processing throughout Kingdom Animalia bears the seams and tool marks of both original and continued self-reorganization at many levels.

**KEN McCALLION**  
MA 1987, TORONTO

### Social Media #Fail

The juxtaposition of the article "Breaking News," about training journalists at the Munk School of Global Affairs (Summer 2015), and "Sound Bites" on p. 12 of the same issue, which indicates that students are getting much of their news from social media, illustrates the need to train all students in how to inform themselves about current events. We now have the ability to access media, presenting a variety of viewpoints, from across Canada and around

the world at little or no cost. Instead, many of us spend our time on Facebook or other social media discussing trivia or celebrity rumours.

**KENNETH MINTZ**  
PhD 1972, VICTORIA

### Pause and Think

Reimagining undergraduate education, as described in the Q&A with Susan McCahan, U of T's new vice-provost for innovations in undergraduate education ("Better Ways to Learn," Summer 2015), is a really important initiative. But we must also give students time to pause and think (or not, as they choose!) I believe the action-packed curriculum combined with frequent examination is a progressive disaster that fails absolutely to create the thinkers for the future. We need to give kids more free time. They may even discover gravity relaxing in their aunt's orchard and watching apples fall from the trees. They say Isaac Newton did!

**DAVID JENKINS**  
MD 1975, TORONTO

### Survey Camp's Legacy

Many lifetime friendships resulted when the civil engineering class of 1956 attended Survey Camp ("Memories of Gull Lake," Summer 2015). That class has organized a reunion every year, and attended second reunions to celebrate their 10<sup>th</sup>, 25<sup>th</sup> and 50<sup>th</sup> anniversaries. Since 1964, the 5T6 Civils have presented an annual scholarship, now worth \$3,000, to a student completing second year. Since 1964, the class has presented 51 scholarships worth \$63,500.

**ORLANDO MARTINI**  
BASc 1956, MAsc 1968, TORONTO



### No Substitute for Human Interaction

U of T's Team Attollo and the judges of the Hult Prize must have missed a key message of Better Speech and Hearing Month in May (sponsored by the American Speech, Language and Hearing Association): there is no substitute for human interaction when it comes to children's language development. Yes, input matters. What also matters is face-to-face interaction and turn-taking. If we want children to have a rich vocabulary, we need to give them rich experiences of the real world to talk about. Someone to talk to matters as well. A Talking Sticker could be a fun supplement to language learning. But could it truly close the word gap and empower the underprivileged? The idealism is lovely, but the simplistic magical thinking needs some talking about.

**SUSAN GOWANS**  
MEd 1993, TORONTO

### Team Attollo responds:

Based on our research and observations in India during field testing, mothers from less privileged families are often busy with multiple jobs and don't have as much time to spend with their children. Additionally, they often struggle with literacy and cannot read to their children. Our device is no replacement for a mother's (or father's) face-to-face interaction, but rather can be used to fill the gap when the parent is not around and assist the parent in reading to their child.

### Safety for Seniors

I'd like to congratulate Prof. Alex Mihailidis on his brilliant work and his commitment to help the elderly lead a better and safer life. ("A Robot's Helping Hand," Summer 2015).

**EVELYN STEFOV**  
MEng 1980, THORNHILL, ONTARIO

### Corrections

"Using Their Words" (Summer 2015) incorrectly identified the members of Team Attollo. Pictured were: Lak Chinta (PhD 2009, MBA 2015), Aisha Bukhari (BAsc 2008, MBA 2015) and Peter Cinat (BAsc 2002, MBA 2014) – Jamie Austin (PhD 2012, MBA 2015) was not in the picture. The same article stated that 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. In fact, the gap is closer to 10 million words. *U of T Magazine* regrets the errors.

### 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.

# NEEDED: THREE OUTSTANDING ALUMNI VOLUNTEERS

## CALL FOR APPLICATIONS

Are you an alumnus/a looking for a way to make a significant contribution to the University of Toronto? If so, consider applying for one of three alumni seats on the Governing Council, the senior body that oversees the University's academic, business and student affairs.

**Collectively and individually, governors are stewards of the University.**

We are seeking candidates who can:

- Support and advance the mission of the University
- Provide relevant input into the University's vision
- Assume the responsibility to advise on, oversee and/or approve specific matters within the framework of delegated authority
- Actively participate in the University and/or in community groups

Previous experience on governance bodies an asset.

See <http://uoft.me/alumgovnominfo> for additional information.

**Application forms will be available from this website from 12:00 noon on Thursday, November 19, 2015 until the deadline at 5:00 pm on Thursday, December 17, 2015.**



UNIVERSITY OF  
TORONTO



## The Toronto Biomedical Cluster With U of T as its academic anchor, the region has emerged as a global hub of biomedical innovation



In July, the University of Toronto received the first award in the federal government's new Canada First Research Excellence Fund – a historic \$114 million, to strengthen our position, in collaboration with our partner hospitals, as a global leader in regenerative medicine (see p. 11).

Many are surprised to learn that the Toronto region is home to the third-largest biomedical cluster in North America, after San Francisco and Boston. It is striking not only because of its size, but also its diversity. We enjoy world-class strength in everything from immunology and vaccines to cancer care, children's medicine, cardiac science and brain research. The region also hosts a large and dynamic group of firms in biomedical technologies, devices and apps.

Underpinning this cluster are several key foundational assets. U of T is the primary research and teaching hub, home to the country's largest faculty of medicine, as well as a full range of health science faculties: Nursing, Dentistry, Pharmacy, Public Health, Social Work and more. Add to this the Institute for Biomaterials and Biomedical Engineering, and the Donnelly Centre for Cellular and Biomolecular Research, two remarkable interdisciplinary research and teaching centres that draw on our convergent strengths in medicine, engineering, dentistry, cell biology, computer science, chemistry, physics and related fields.

Together, these faculties, along with our Mississauga Academy of Medicine, anchor a phenomenal Toronto Academic Health Sciences Network that includes our nine fully affiliated, partner hospitals – each with a stellar global reputation – as well as other community affiliate hospitals in the region. Accelerators, incubators and innovation hubs – including our own Banting and Best Centre for Innovation and Entrepreneurship, the Centre for the Commercialization of Antibodies and Biologics, the Centre for Commercialization of Regenerative Medicine, and the MaRS Discovery District – provide space, support services, capital and a nurturing environment for startups. And MaRS Innovation links more than a dozen local universities, hospitals and research institutes in a single commercialization ecosystem.

How does one measure the significance of this cluster? One obvious way is through the scale and impact of its

research. In all the health and life sciences, only Harvard University publishes more research than U of T and its affiliated hospitals – and when it comes to impact, publications from the University of Toronto are cited more frequently than research from all other universities except Harvard and Johns Hopkins.

Another way to appraise research quality and performance is by looking at who our researchers partner with, and how frequently. A recent editorial in *Nature* argued that collaboration among researchers on a global scale is becoming essential in fostering scientific progress: "Excellence seeks excellence, so elite national universities are also leading international collaborators." In our case, our most frequent global collaborators include the likes of Harvard, Oxford, University College London and Johns Hopkins.

Why does this matter? Quite obviously, our prosperity depends on our ability to access and use knowledge; not just the knowledge we produce locally, but also knowledge that is produced in other leading centres of research and innovation around the world. Our collective prosperity hinges upon collaboration. The University of Toronto and its affiliated hospitals are vital portals to global knowledge networks, bringing important benefits to Toronto and Canada.

Finally, there are signs that investors around the world are betting on the science and startups emerging from U of T. Firms such as Xagenic (founded by Prof. Shana Kelley of Pharmacy), ChipCare (from the lab of Prof. Stewart Aitchison, Electrical & Computer Engineering), and Northern Biologics (co-founded by the Donnelly Centre's Prof. Dev Sidhu and other U of T colleagues) have recently attracted significant venture capital from San Francisco, San Diego, Dallas and other global centres. With developments like these, the foundations for our future prosperity are increasingly clear.

*Sincerely,*  
Meric Gertler

Adapted from an address to the Empire Club of Canada, given on May 22, 2015.

# Calendar

## MORE EVENTS!

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



Treasures await at the University College book sale

OCTOBER 16 TO 26

## College Book Sales

Every fall, U of T's colleges offer thousands of donated books to the public in their traditional – and iconic – book sales. Alumni and friends volunteer at the stalls, where you'll find everything from children's books and popular novels to non-fiction and the odd rare gem. The proceeds fund the college libraries. Free admission except opening day.

**University College: Oct. 16 to 20.** \$3 admission opening day. East and West Halls, 15 King's College Circle. [www.uc.utoronto.ca/booksale](http://www.uc.utoronto.ca/booksale)

**Trinity College: Oct. 22 to 26.** \$5 admission opening day. Seeley Hall, 6 Hoskin Ave. [www.trinity.utoronto.ca/booksale](http://www.trinity.utoronto.ca/booksale)

## Alumni

**October 8  
Victoria, B.C.**  
**Older Faster Stronger.** Margaret Webb (BA 1985 UC) shares her life-transforming story on her "super-fit" year of working to get faster and stronger after 50 than she was as a varsity athlete. Free. 6:30–8:30 p.m. Strathcona Hotel, 919 Douglas St. To register: [alumni.utoronto.ca/events/regional](mailto:alumni.utoronto.ca/events/regional)

**October 14 to December 9  
Toronto Plaza Hotel**  
**Skule™ Lunch & Learn Speaker Series.** **Oct. 14:** Anthony Parente and Scott Durdle: Large Diameter Pipes in the Urban and Political Jungle. **Nov. 11:** Robert Galway: Early Aviation History in Canada. **Dec. 9:** Levente Diosady: The Role of Food Engineering in International Development. \$30. 12–2:45 p.m. 1677 Wilson Ave. 416-946-7827, [kristin.philpot@ecf.utoronto.ca](mailto:kristin.philpot@ecf.utoronto.ca)

**October 17  
New York**  
**Terry Fox Run for Cancer Research.** Help a great cause: run or walk five kilometres with your fellow alumni and friends. Minimum \$25 fundraising commitment. 9:30–11 a.m. Central Park, New York (exact meeting place to be determined closer to the event). For info: [karen.papazian@utoronto.ca](mailto:karen.papazian@utoronto.ca). To register: [alumni.utoronto.ca/events/regional](mailto:alumni.utoronto.ca/events/regional)

## October 23 to 24 Rotman School

**Reunite@Rotman.** Join the Dean, alumni, faculty, staff, students and friends at events and sessions throughout the weekend. 105 St. George St. To register: 416-946-5427 or [rotman.utoronto.ca/reunite](http://rotman.utoronto.ca/reunite)

## October 27 Toronto

**UTSC PWR Play.** A young alumni networking event. 6:30–8:30 p.m. Location: TBD. For info and ticket prices, contact Regan Tigno, [rtigno@utsc.utoronto.ca](mailto:rtigno@utsc.utoronto.ca)

## November 17 Calgary

**President's Reception.** President Meric Gertler hosts alumni and friends. Free. 5 p.m. Calgary Petroleum Club, 319 5<sup>th</sup> Ave. SW. 416-946-5523, [dua.events@utoronto.ca](mailto:dua.events@utoronto.ca)

## November 18 Vancouver

**Scotch Tasting.** Joanne Duma (EdD 1992) invites alumni and friends to a tasting hosted by Legacy Liquor Store. \$30. 7 p.m. 1633 Manitoba St., Vancouver.

## November 19 U of T Scarborough

**UTSC Alumni Connections.** An evening of speed networking with UTSC alumni and students. Free, but registration is mandatory and spots are limited. 6:30–8:30 p.m. 1095 Military Trail, Instructional Centre, Atrium. To register: Regan Tigno, [rtigno@utsc.utoronto.ca](mailto:rtigno@utsc.utoronto.ca)

## November 28 Hong Kong

**U of T Hong Kong Foundation 20<sup>th</sup> Anniversary Celebration Gala.** Honouring and celebrating the foundation's achievements made with donors, alumni, volunteers and scholars. Ticket prices from \$198 CAD. 7 p.m. Island Shangri-La, Supreme Court Rd., Central. For info: +852 2375-8258, [prudence.ng@utoronto.ca](mailto:prudence.ng@utoronto.ca)



Explore *The Flesh of the World*, an exhibition about the body, sport and performance, at the Doris McCarthy Gallery to October 10



## November 29

### Hong Kong

#### Asia-Pacific Graduation Ceremony.

U of T celebrates 2014 and 2015 graduates with ties to the Asia-Pacific region. \$50 CAD (guests are free but space is limited.) 11 a.m. Ritz-Carlton Hong Kong, International Commerce Centre, 1 Austin Rd. W., Kowloon. To register: +852 2375-8258, prudence.ng@utoronto.ca

## Exhibitions

### To November 29

#### U of T Mississauga

#### The pen moves across the earth: it no longer knows what will happen, and the hand that holds it has disappeared.

Exploring the elemental forces and geopolitical processes impacting us in the 21<sup>st</sup> century. Free. Mon. to Fri., 12–5 p.m. (to 9 p.m. Wed.). Sat. to Sun. 12–3 p.m. 3359 Mississauga Rd. at Blackwood Gallery and elgallery

### To December 22

#### Thomas Fisher Rare Book Library Maximum Imaginiveness:

an exhibition on modern Czech book design (1900 to 1950), from the library's collections. Free. Mon. to Fri., 9 a.m.–5 p.m. (to 8 p.m. Thurs.) 120 St. George St.

### October 3

#### St. George Campus

#### Scotiabank Nuit Blanche.

Hart House, OISE, University College and the ROM host installations for the art festival. Free. Sunset to sunrise. 7 Hart House Circle, 252 Bloor St. W., 15 King's College Circle, 100 Queen's Pk.

### October 8

#### Doris McCarthy Gallery

#### The Flesh of the World Closing

Reception. Inspired by the 2015 Pan Am and Parapan Am Games, this exhibition challenges dominant culture's understanding of the body through work by Canadian and international artists. Free. Free bus from Hart House, 4:30 p.m. Reception,

5–8:30 p.m. Curator's talk, 7 p.m. 1265 Military Trail. 416-287-7007, jbraham@utsc.utoronto.ca

### October 21

#### Doris McCarthy Gallery

#### Complex Social Change, Opening

Reception. Growing out of the debates regarding the recent Occupy movement and Idle No More, Complex Social Change is an interdisciplinary research program developed at the University of Lethbridge. This exhibition brings it to Ontario. Free. 5–8:30 p.m. 1265 Military Trail. 416-287-7007

### October 22 to December 19

#### Justina M. Barnicke Gallery

#### BMO 1<sup>st</sup> Art! Exhibition.

BMO Financial Group proudly celebrates the best of Canada's recent visual arts graduates, from coast to coast. Free. Tues. to Sat., 12–5 p.m. (to 8 p.m. Wed.). 7 Hart House Circle.

### October 28 to December 18

#### University of Toronto Art Centre

#### Rocks, Stones, and Dust.

A contemporary art exhibition devoted to rocks and their relations: their own existence and their role in human culture. Free. Tues. to Sat., 12–5 p.m. (Wed. to 8 p.m.). Opening reception Wed. Oct. 28, 6–8 p.m. 15 King's College Circle.

### November 14

#### U of T Scarborough

#### 50 years of Athletics and Recreation

at UTSC. A photography exhibit showcasing the entire 50 years of Athletics and Recreation at UTSC, paired with a wine tasting and cocktail reception. \$10. 7–9 p.m. 1095 Military Trail, Instructional Centre, Atrium. For info: Abidah Shirazi, ashirazi@utsc.utoronto.ca

## Lectures and Symposia

### To November 25

#### Faculty Club

#### Senior College Weekly Program.

Presentations and discussion, every Wednesday. 10 a.m.–noon.

41 Willcocks St. 416-978-7553, senior.college@utoronto.ca.

To register: faculty.utoronto.ca/arc/college

### October 7

#### Toronto

#### The University Lecture Series.

Leading scholars, thinkers and experts tackle an eclectic range of topics in history, art, politics, religion, health and public affairs in this 10-lecture series. \$162. 12:30–1:30 p.m. To register: learn.utoronto.ca/uls

### October 14 to November 30

#### Carlton Cinema

#### Canadian Perspectives Lectures.

The Senior Alumni Association offers two series of seven lectures. Free. Mondays, 1–3 p.m., Oct. 19 to Nov. 30. Wednesdays, 10 a.m.–noon, Oct. 14 to Nov. 25. 20 Carlton St. 416-978-0544, senior.alumni@utoronto.ca, uoft.me/saacp

### October 26 and November 23

#### Faculty Club

#### University Women's Club Speaker

Series. Join the Toronto UWC for monthly speakers and discussion, lunch or dinner. Oct. 26, 5:30 p.m. Nov. 23, noon. 41 Willcocks St. For meal prices and info, call 416-946-7052 or email faculty.club@utoronto.ca

### November 3

#### Daniels Faculty

#### Daniels Faculty bulthaup Lecture:

A. J. Diamond. Renowned architect and Officer of the Order of Canada, A. J. Diamond of Diamond Schmitt Architects, Toronto, will present a bulthaup lecture at the Daniels Faculty. Free. 6:30–8 p.m. Room 103, 230 College St. daniels.utoronto.ca

### November 10

#### Daniels Faculty

#### Daniels Faculty Lecture: Andrés

Jaque. Andrés Jaque, founder of Madrid/New York-based architectural practice Office for Political Innovation, will present this year's Kohn Shnier Architects Lecture.

Free. 6:30–8 p.m. Room 103, 230 College St. daniels.utoronto.ca

## Music

### October 8

#### MacMillan Theatre

#### University of Toronto Symphony

Orchestra. Performing Schubert's Rosamunde: Overture, D. 644, Colgrass's The Schubert Birds, Strauss's Four Lieder, Op. 27 and Dvorak's Symphony No. 7, Op. 70 in D minor. \$30 (\$20 seniors, \$10 students). 7:30 p.m. 80 Queen's Pk. Box Office: 416-408-0208

### October 18

#### Trinity College Chapel

#### The Muse's Garden – Dame Emma Kirkby Lute Song Recital.

Graduate voice students from the Historical Performance Area join Dame Emma and lutenist Jakob Linberg for a recital that *The Times* called an "unforgettable experience." \$40 (\$25 seniors, \$10 students). 7:30 p.m. 6 Hoskin Ave. Box Office: 416-408-0208

### November 4

#### Walter Hall

#### New Orford String Quartet.

The quartet performs Beethoven's Op. 59 and Op. 30 with the Grosse Fugue finale. \$40 (\$25 seniors, \$10 students). 7:30 p.m. 80 Queen's Pk. Box Office: 416-408-0208

### November 5 to 8

#### MacMillan Theatre

#### The Medium and The Telephone.

U of T Opera will premiere a double billing of Gian Carlo Menotti's two short operas. A new production directed by Anna Theodosakis and conducted by Sandra Horst. 7:30 p.m. (2:30 p.m. Nov 8). \$40 (\$25 seniors, \$10 students). 80 Queen's Pk. Box Office: 416-408-0208

### November 21

#### MacMillan Theatre

#### University of Toronto Symphony

Orchestra. Beethoven's Symphony No. 8, Op. 93 in F Major, Strauss's

Remember the fallen at Soldiers' Tower: carillon music, service and reception on November 11



Blue Danube Waltz and Gershwin's American in Paris. \$30 (\$20 seniors, \$10 students). 7:30 p.m. 80 Queen's Pk. Box Office: 416-408-0208

#### December 7 Walter Hall

**Collaborations.** Canadian percussion virtuoso Beverley Johnston performs pieces by Christos Hatzis, award-winning composer and a professor of compositions. \$40 (\$25 seniors, \$10 students). 80 Queen's Pk. Box Office: 416-408-0208

#### Special Events

##### October 4

**U of T Mississauga, St. George CIBC Run for The Cure.** U of T celebrates six years hosting the iconic breast cancer fundraiser at two of our campuses. \$40 registration fee; waived if you commit to raising \$150. 9 a.m. - noon. 3359 Mississauga Rd., King's College Circle. [uoft.me/runforthecure](http://uoft.me/runforthecure), [cibcrunforthecure.com](http://cibcrunforthecure.com).

##### October 7

#### Hart House

**MindFest - Annual Festival.** An all-day mental health and wellness fair, marking mental health month. Mindfest features exhibit booths, mental health community organization representatives, workshops, guest speakers, stand-up comedy, yoga and other interactive activities. Free. 9 a.m. - 4 p.m., "Mindfest Walk" at 4:45 p.m. 7 Hart House Circle. For info: [psychiatry.utoronto.ca/mindfest](mailto:psychiatry.utoronto.ca/mindfest)

#### October 17 to December 5 St. George Campus

**Fall Math Programs.** Open to students in Grades 3 to 9 and covering a wide range of topics in math, from enrichment to getting ready for high school. \$299 for eight weeks (bursaries available) Every Sat., 10 a.m. - 2 p.m. To register: [mathplus.math.toronto.edu/home/smc](http://mathplus.math.toronto.edu/home/smc), [outreach@math.toronto.edu](mailto:outreach@math.toronto.edu)

##### October 17

#### Rotman School

**Rotman Open House.** Information sessions on Rotman degree programs, sample classes led by globally renowned faculty and discussions with alumni, career advisors and current students. Free. 12-5 p.m. 105 St. George St.

##### October 31

#### Hart House

**Hart House of Horrors Halloween Party.** Hart House is throwing open its 100-year-old doors for the creepiest night of the year. Price TBD. 8:30 p.m. - 1 a.m. 7 Hart House Circle. For tickets: [harthouse.ca](http://harthouse.ca)

##### November 11

#### Soldiers' Tower

**Service of Remembrance** at the Soldiers' Tower war memorial, with carillon prelude and postlude. Free. 10:20 a.m. - 11 a.m. Free reception to follow in the Great Hall at Hart House. 7 Hart House Circle. 416-978-3485, [soldiers.tower@utoronto.ca](mailto:soldiers.tower@utoronto.ca)

##### November 19

#### U of T Mississauga

**Countdown to Success featuring Craig Kielburger.** The co-founder of Free The Children and Me to We shares what for-profit companies can learn from high-performing non-profits. Free. 5:30-8 p.m. 3359 Mississauga Rd, Innovation Complex. [imiuoft.ca/countdown-to-success](http://imiuoft.ca/countdown-to-success)

##### November 19

#### Hart House

**4th Annual UC Alumni of Influence Awards.** Awards gala in celebration of distinguished University College graduates. \$125. 6 p.m. Great Hall, 7 Hart House Circle. For tickets and info: 416-978-7416 or [uc.utoronto.ca/aoi](http://uc.utoronto.ca/aoi)

##### November 19

#### U of T Mississauga

**Mariela Castro on Cuba's Rapid Progress in Transgender Rights.** The director of the Cuban National

Center for Sex Education explores the country's advances in transgender rights. This public event helps launch local recognition of the Transgender Day of Remembrance on Nov. 20. Free, but registration required. 7:30 p.m. 3359 Mississauga Rd, Instructional Centre. To register: [utm.utoronto.ca/mcastro](http://utm.utoronto.ca/mcastro)

#### Sports

##### October 8

#### Varsity Centre

#### Varsity Blues football vs. Western.

Kick off Thanksgiving with a football game under the lights! \$10 (children under 8 free, seniors \$5). 7 p.m. 299 Bloor St. W. For tickets: [varsityblues.ca/tickets](http://varsityblues.ca/tickets)

##### October 9

#### Varsity Arena

#### Varsity Blues Men's Hockey.

Home opener against Université du Québec à Trois-Rivières. \$10 (children under 8 free, seniors \$5). 7:30 p.m. 299 Bloor St. W. For tickets: [varsityblues.ca/tickets](http://varsityblues.ca/tickets)

##### October 16

#### Varsity Arena

#### Varsity Blues Women's Hockey.

Home Opener versus Queen's. \$10 (children under 8 free, seniors \$5). 7:30 p.m. 299 Bloor St. W. For tickets: [varsityblues.ca/tickets](http://varsityblues.ca/tickets)

##### October 30 to November 1

#### Back Campus Fields

#### OUA Field Hockey Championship.

Cheer on your Varsity Blues as they vie for back-to-back provincial titles! For tickets, prices and times: [varsityblues.ca/tickets](http://varsityblues.ca/tickets)

##### November 27

#### Goldring Centre

#### Varsity Blues Basketball - BIA

**Cup.** The Blues take on Ryerson. \$10 (children under 8 free, seniors \$5). 7:30 p.m. 100 Devonshire Pl. For tickets: [varsityblues.ca/tickets](http://varsityblues.ca/tickets)

#### Theatre

##### November 4 to 21

#### Hart House Theatre

**Hamlet.** Perhaps the world's most iconic tragedy, William Shakespeare's drama includes courtly intrigue, murder, revenge, family betrayal and forbidden seduction. Not to mention some of the most memorable and sublime poetry in the English language. \$28 (\$17 seniors, \$15 students, \$12 for students Weds.). Wed. to Sat., 8 p.m. (Week 3, Sat. at 2 p.m.) Postshow chats Thurs. Nov. 5 and Sat. Nov. 7. Preshow artist chat Sat. Nov. 21, 1 p.m. 7 Hart House Circle. For tickets: 416-978-8849, [www.uofttix.ca](http://www.uofttix.ca)





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# THANK YOU!

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**THANKS TO YOUR  
GENEROUS SUPPORT,**  
*U of T Magazine* is able  
to keep alumni and  
friends around the world

connected with today's University of Toronto. By helping us to defray our print and mailing costs, you support U of T's mission to discover, educate and inform.

In recent issues, we've featured stories about alumnus and Toronto mayor John Tory, explored the university's groundbreaking research into artificial intelligence, profiled amazing student and alumni athletes and shared stories of U of T's daring and innovative entrepreneurs.

Inside each issue, you'll find coverage of the university's latest research findings, events on campus, notable alumni and the big ideas that make U of T such a fascinating place.

In the past three years, the Canadian Council for the Advancement of Education and the U.S.-based Council for Support and Advancement of Education have recognized *U of T Magazine* for excellence in writing and design with 14 awards, including "best magazine."

We could not have achieved this without your help. Thank you for reading U of T Magazine, and thank you for your continued support.

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If you would like to join other alumni in contributing to *U of T Magazine*, please visit [magazine.utoronto.ca](http://magazine.utoronto.ca) and click on "Support Us."



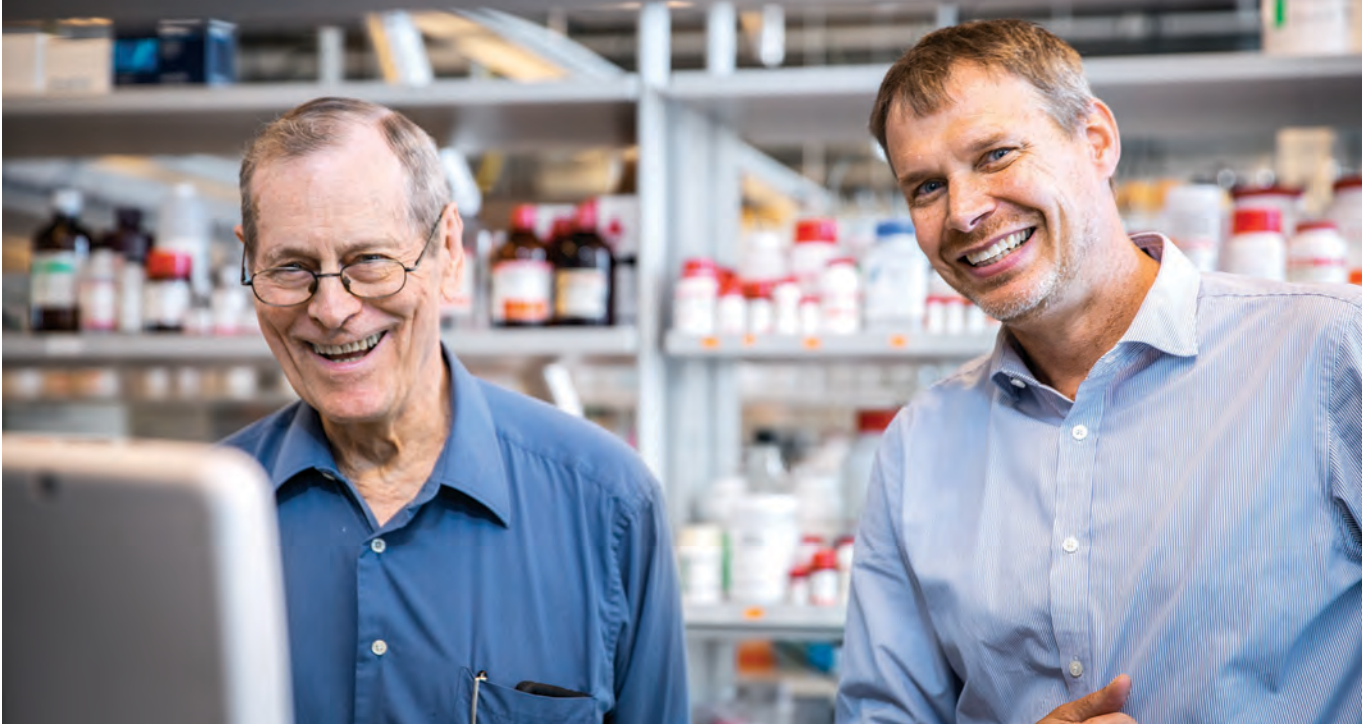
# Life on Campus

**“I want people to see the fantastic work being done”**

Why engineering prof Molly Shoichet launched social media campaign Research2Reality

p. 19

James Till (left) and Peter Zandstra celebrate the announcement of U of T's Medicine by Design initiative in Zandstra's laboratory



## Regenerating the Body

U of T scientists will help usher in a new era of designing and creating cells, tissues and organs, thanks to historic \$114-million federal grant

**IMAGINE IF SCIENTISTS COULD** regrow your damaged liver or build you a new heart. These are the kinds of technologies that researchers at the University of Toronto and its partner hospitals are pursuing, thanks to a \$114-million grant from the federal government. The new initiative, Medicine by Design, will help cement the university's position as one of the world's leading centres for stem cell research and the design and manufacture of cells, tissues and organs that can be used to treat degenerative disease.

“This program will allow us to take regenerative medicine to the next level,” says Peter Zandstra, a professor in U of T's Institute for Biomaterials and Biomedical Engineering. “We'll be able to design cells, tissues and organs from the ground up, hopefully with benefit to patients and benefit to the Canadian economy. Stem cells offer avenues to treat – and perhaps cure – devastating and costly conditions such as cardiovascular disease, diabetes, blindness, lung disease, neurodegenerative disorders and diseases of the blood and musculoskeletal system.”

Jonathan Furneaux, who flew in from St. John's, Newfoundland, for the announcement of the grant in late July, is thrilled by the news. Furneaux, 46, says he is a “living example” of regenerative organ research. Diagnosed with lung disease five years ago, he ended up on oxygen 24 hours a day, “using all of my energy just to breathe.” He underwent a double lung transplant at Toronto General Hospital and 12 days later “I walked out of the hospital, no oxygen, no wheelchair.” ➤



In 2012, Alex Harold earned a Queen Elizabeth II Diamond Jubilee Medal for his volunteer work

## Forward Momentum

### Student Alex Harold is a champion fundraiser for muscular dystrophy



**ALEX HAROLD MAY NEED A WHEELCHAIR,** but he has more forward momentum than many who do not.

The 22-year-old has Duchenne muscular dystrophy, a progressive muscle-weakening disease. It's an incurable condition that the third-year UTSC student says now makes it difficult for him to do even simple tasks such as scratching his head.

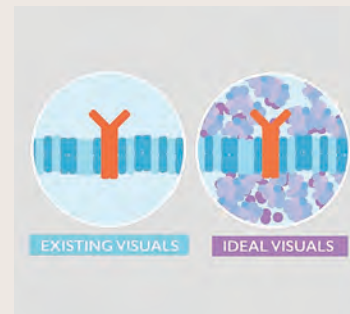
But that hasn't stopped Harold. Each year, he, family and friends participate in a walk in Durham Region to raise money for Muscular Dystrophy Canada. And since 2008, they have generated \$130,000 – more than any other Durham team.

“Being part of the walk reminds me that I'm not going through this alone,” he says. “Supporting research and seeing how new treatments are being developed is also encouraging.”

Harold is just as driven to achieve his other main goal: earning his accounting degree. Over his last four years at UTSC, he's completed half his courses with support from the campus's accessibility office. While his illness makes him careful about forecasting his future, he's aiming to complete the program by 2018.

“When I first came onto campus for a tour, it felt like home, and it's been that way ever since,” Harold says. “What keeps me getting up to go to school every morning is that I love learning new things, keeping my brain active and having something to focus on.” – **SHARON ASCHAIK**

#### EPIHEMERA



#### STORIES OF DISCOVERY

In the age of the sound bite, summing up complex research concisely is becoming a key academic skill. Earlier this year, five U of T grad students were shortlisted for the SSHRC Story-tellers awards, after creating three-minute videos to showcase their work. Naveen Devasagayam just completed his master's degree in biomedical communications at U of T Mississauga. He made the top five for his video, which draws on his animation talent to argue that students become better innovators and problem-solvers when they learn about complicated biological processes using complex, not simple, visual aids. – **JANET ROWE**

➤ The donor lungs Furneaux received were treated by surgeons working under Dr. Shaf Keshavjee, using the “ex vivo” (outside the body) method of repairing lungs. This method has led to a 28 per cent increase in lung transplants at Toronto General. “I am living proof of the value of the research you are doing,” Furneaux said. “I can live again, dance with my wife, but most of all I can breathe again.”

The university believes Medicine by Design will enable Canada to become a major international supplier of regenerative medicine technologies – a market that is predicted to grow to \$50 billion by 2019. The initiative is expected to generate new startup companies and to attract established international companies to Canada, eager to take advantage of U of T's expertise.

The initiative will group its programs under three banners: Cells by Design (to create cells to be used in experiments to identify new, better and safer medications), Tissues by Design

(to create complex tissues for use in the same way as cells, and for replacing lost or damaged tissue in humans) and Organs by Design (to create and repair organs outside the body with the goal of successfully transplanting them into human patients). These three activities will be supported by platforms in genomic engineering, immune engineering and microfabrication, and will include a program to manufacture stem cells on demand. More than 50 researchers and clinicians are involved, as well as hundreds of graduate students and postdoctoral fellows.

Medicine by Design builds on a rich legacy of U of T contributions to regenerative medicine, beginning with the demonstration of the existence of stem cells by biophysicist James Till and hematologist Ernest McCulloch in 1960. As U of T president Meric Gertler noted at the event announcing the grant, “Their breakthrough has led to an entirely new field of biomedical research.” – **ALAN CHRISTIE AND TERRY LAVENDER**





According to the Dancer Transition Resource Centre, the average dance career is just 14 years long



From left to right: James Leja, Patrick Lavoie and Christopher Stalzer

## Grand Changement

### Three National Ballet dancers go from the barre to the books

“As a ballet dancer, you know your career has to come to an end,” says Patrick Lavoie, whose portrayal of Romeo in *Romeo and Juliet* and Prince Charming in *Cinderella* earned him standing ovations.

In his new role as a life sciences student, Lavoie, 37, will draw from his dance background. “I’m bringing the strong work ethic of a ballet dancer,” he says. Lavoie was attracted to U of T because of its stellar reputation and myriad student clubs. “I’m thinking of joining the beekeeping group,” he says.

Christopher Stalzer, 31, is eager to play squash at Hart House. But he admits he’s nervous about the transition to university student. “I’ve had sleepless nights worrying about how difficult the courses might be,” says Stalzer, who is pursuing an economics degree – and hopes to take some commerce and computer science courses.

Over the last few years, James Leja, 31, has joined Stalzer and Lavoie in taking online courses to brush up on their academics. Inspired by a course in which he programmed a computer game, Leja is studying computer science.

What the three men miss most about The National Ballet are their fellow dancers, whom they regard as family. Lavoie and Stalzer, though, will remain connected to the company through their wives, who are dancers with The National. – **SUSAN PEDWELL**

**AT THE HEIGHT OF THEIR CAREERS,** three danseurs have retired from The National Ballet of Canada to enrol at U of T and join the thousands of mature students who study at the university.

#### NAMECHECK

### Waakebiness-Bryce Institute for Indigenous Health

Michael Dan at the institute’s naming ceremony



At the Spring Equinox, the Dalla Lana School of Public Health echoed to the sound of drumming as a spiritual naming ceremony was held to inaugurate the Waakebiness-Bryce Institute for Indigenous Health.

The name of the new institute symbolizes respect and solidarity between indigenous and non-indigenous Canadians and reflects the organization’s goal to improve health outcomes for aboriginal communities.

Bryce refers to U of T alum Dr. Peter Henderson Bryce (BA 1876, MA 1877, MB 1880, MD 1886). As a government employee, he wrote a devastating report in 1907 on the tuberculosis epidemic in Western Canadian residential schools. When the report was ignored and Bryce shuffled to other positions, he left and published it himself in 1922: *The Story of a National Crime* called out the government for failing to save the lives of thousands of aboriginal children.

Waakebiness is an Anishinaabemowin name, given to institute benefactor Michael Dan by Calvin Ottertail of the Lac La Croix First Nation. It means “Radiant Thunderbird from the South” and honours Dan’s efforts, as founder of Gemini Power Corp., to help First Nations develop sustainable, community-owned hydro projects.

– **JANET ROWE**

P.O.V.

## Finding Calm in Anxious Times

The Munk School's new director seeks ways to answer some of humanity's most nerve-wracking questions

**STEPHEN TOOPE** arrived at U of T last January to lead the Munk School of Global Affairs. Here he talks about his vision for the school, how it might solve global anxieties and the importance of Peter and Melanie Munk's visionary gifts, which created the school and support its continued growth.

**What attracted you to the Munk School?** My predecessor Janice Stein and her team did an amazing job transforming what had been an impressive but relatively modest centre of international studies into a school that has fantastic undergraduate and graduate programs, has carved out areas of global excellence in research and engages actively with the wider community – not just here in Toronto but across Canada and outside our borders. I really liked that mix. At the same time, it's relatively new so there's always more to do.

**Where do you think the Munk School can have the biggest impact?** One area is innovation policy – how to foster business and social innovation – in economies like ours, but also in low-income countries.

A second area where there is tremendous strength here is cybersecurity. What's unique about the Munk School is that it's not just thinking about how governments get hacked. Prof. Ron Deibert and his team investigate how repressive governments use technologies to prevent human rights activists, environmental activists and indigenous peoples from exercising their rights.

We have highly regarded regional studies groups too. The interesting question for me is how we connect these to global



Stephen Toope

concerns, such as the environment. How can the Munk School work collaboratively across U of T to address fundamental questions such as migration and refugees?

**Peter and Melanie Munk made a gift to U of T to establish the Munk Centre, and again in 2010 to create the Munk School.**

**How important is their philanthropy?** Absolutely crucial. Lots of people over many years had the vision to create a school of global affairs at U of T, but doing so required major philanthropic support. The Munks are passionately interested in the school and they are wonderful donors. They love hearing about our successes.

**What do you see as the Munk School's role in addressing the world's most pressing challenges over the next 25 years?**

There's a great deal of anxiety in our societies around economics, inequality, terrorism and climate change. At the same time, technology and an unparalleled access to knowledge offer us more opportunities than we've ever had. How we use these opportunities to address the anxiety is perhaps the fundamental question for a school of global affairs.

**How do you see the Munk School evolving within the university?**

Over the next few years, I hope the school can serve even more to bring people together to do interdisciplinary work and connect them with a wider set of communities.

### Munk School of Global Affairs Milestones



**Oct. 1997**

Peter and Melanie Munk give \$6.4 million to help establish the Munk Centre for International Studies

**Aug. 2000**

Official opening of the Munk Centre for International Studies at Trinity College

**Sept. 2000**

The Asian Institute is founded at the Munk Centre

**May 2006**

Peter Munk provides a \$5-million endowment to support teaching and research

**Sept. 2009**

The Trudeau Centre for Peace and Conflict Studies brings its undergraduate program and research to the Munk Centre

**April 2010**

Peter and Melanie Munk provide a historic \$35 million to support the new Munk School of Global Affairs

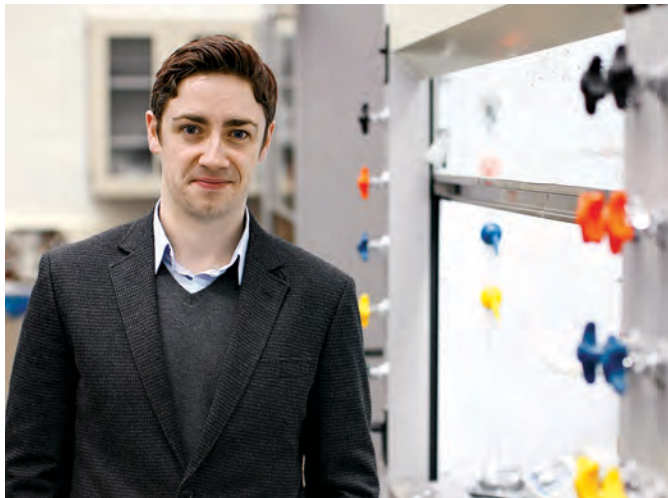




In 2013, Patrick Gunning was named one of U of T's Inventors of the Year for inventing a drug-like molecule that can find and inhibit a protein involved in many human cancers

## New Centre to Fight Cancer

A U of T Mississauga team is tackling some of the most fatal forms of the disease



**PATRICK GUNNING RATTLES OFF** the names of lab equipment like some people might itemize tools in their garage, except it's unlikely that any among us own Surface Plasmon Resonance systems. This is just one of the high-tech instruments that the U of T Mississauga chemistry and physical sciences professor will purchase to outfit a new Centre for Cancer Stem Cell Therapeutics, based at UTM.

This past spring, Gunning was awarded \$5.9 million for equipment and expanded lab space from the Canada Foundation for Innovation, the Ontario Research Fund and UTM. At the centre, Gunning will lead a team of researchers who are developing drugs to treat some of the deadliest cancers, such as leukemia (blood cancer) and glioblastoma (brain cancer), which are thought to originate from cancer stem cells.

And the Surface Plasmon Resonance system? "Through this instrument," says Gunning, "we can identify molecules that are going to bind to specific proteins within cells – with a view to eventually developing drugs from these molecules that kill cancer cells but not healthy cells – and we can do it more rapidly, at least 10 times faster. Where we were able to test just two molecules in a day, now we will be able to screen 20."

Along with chemistry-related equipment, the centre will purchase microscopes, computers and nuclear magnetic resonance spectrometers. Working under the same roof will be experts in medicinal chemistry, computational and molecular biology, stem-cell biology and clinical oncology, who will take a multipronged approach to the cancer puzzle.

By pooling the resources of all these researchers, the centre will have access to an unprecedented number of primary brain tumor samples to be used to test drug efficacy in the lab, without human subjects. They also plan to identify potential new drugs through data analysis, and to examine how proteins interact with the drugs with the aim of tailoring treatments according to the particular type of cancer. Overall, Gunning and his associates hope to develop drug therapies for at least four different conditions including two types of leukemia (acute myeloid leukemia and chronic myeloid leukemia) and brain cancer.

Additionally the centre's researchers actively plan to court investors and launch spin-off companies. They also aim to establish partnerships with other academic institutions, hospitals and foundations.

Gunning's bustling lab already employs nearly 30 people. With the launch of the centre he plans to add at least another 10 positions, including technicians, postdocs and four graduate students as well as some undergraduates.

"The personnel working in my lab help with design, chemistry, biophysical evaluation and cell biology to identify compounds that are suitable for preclinical trials," says Gunning. "They are going to be involved in every aspect of the drug discovery panoply."

– CARLA DEMARCO



**June 2012**

The first students graduate from the Master of Global Affairs program



**Sept. 2012**

Official opening of the Munk School of Global Affairs' renovated and restored heritage building at 315 Bloor Street West

**May 2013**

Global Dialogue on the Future of Iran creates a "digital public square" that skirts Iran's censors to allow online discussion

**Sept. 2013**

Launch of Munk One, a program in which first-year students learn in a small seminar setting



**Feb. 2014**

Munk School's Citizen Lab is first Canadian group to receive a \$1-million MacArthur Award for Creative and Effective Institutions

**Fall 2015**

The Munk School marks the fifth anniversary of Peter and Melanie Munk's \$35-million gift with a series of events



Being active lowers stress, improves concentration and can help you sleep better, says U of T's MoveU Crew – a service available on all three campuses to support students who want to get moving



**Dance Like Everyone's Watching**

At football games, at frosh orientation, and even among robed graduates at Convocation Hall, you'll often spot a bright blue beaver wearing Varsity gear. Meet True Blue: the official mascot of the University of Toronto and Varsity Blues. The lovable critter with great dance moves attends plenty of campus events, but he also appears at community functions such as the CIBC Run for the Cure, Pride Week and Toronto Maple Leafs games.

Two work-study students alternate wearing the suit. They undergo an audition process to test their theatrical and dance skills – and their inner class clown. The identities of these students remain a well-guarded secret.

True Blue recently received a makeover, featuring a slimmer and more modern design that is easier to see out of. His new look debuted at the Varsity Blues football home opener on August 30.

– JILL CLARK

**SOUND BITES**

Who is your favourite author, and why?

**Margery Kempe; I identify with her habit of crying in public places (but seriously: game-changing autobiography writing).**

@askastudentUofT

**Oscar Wilde, probably. The rich elegance in his writing makes you feel like you're on a balcony in Paris, sipping wine and being a fancy socialite.**

@AlasPoorAlana

**Bill Bryson takes an ordinary topic and researches it until it becomes extraordinary – and clearly has a lot of fun doing it.**

@tylereirving

**Charlotte Brontë because she taught me how to love but also how to be respected.**

@JanilleNG

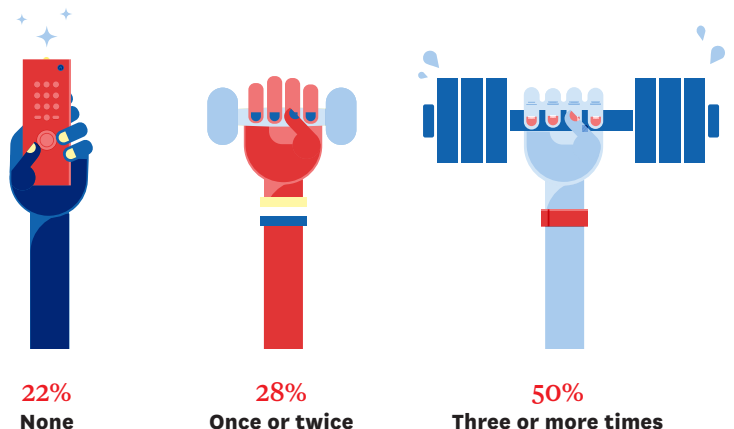
Join the conversation at [twitter.com/uoftmagazine](https://twitter.com/uoftmagazine).

**Poll | How many times a week do you exercise?**

When it comes to getting moving, U of T students are divided. Half get less exercise than the Public Health Agency of Canada recommends, which is 150 minutes of moderate to vigorous physical activity every week – that's five 30-minute or three 45-minute sessions. Second-year UTSC student Asiya Bashir blames studies: "I only work out once a week because of my schedule," she admits.

Active students felt they received more than fitness from exercise. "It helps me relieve stress sometimes," says Akela Marshall, a second-year student at the Rotman School. Most U of T athletic facilities, such as Hart House, the Goldring Centre and the Toronto Pan Am Sports Centre, offer free drop-in classes. - WITH FILES FROM SOMMYAH AWAN

This highly unscientific poll of 100 U of T students was conducted on the St. George and Scarborough campuses in July.







Inspired by *In Flanders Fields*, poppy pins have been sold throughout many Commonwealth countries, France and the U.S. to commemorate fallen soldiers and aid veterans and civilians harmed in war

## We Lived

### One hundred years on, poppies still blow in Flanders Fields

**A FULL CENTURY AFTER** John McCrae (BA 1894 UC, MB 1898, MD 1910) wrote *In Flanders Fields*, his simple words remain fresh and stirring for new generations who visit Soldiers' Tower on the St. George campus. Outdoors, visitors can trace McCrae's name inscribed on a memorial wall among a long list of his contemporaries sacrificed to conflict. Inside, they can study a portrait of the poet and see McCrae's poppies, crosses and larks pieced into a soaring stained glass window in the Memorial Room.

To commemorate the on-the-battlefield composition of the poem at Ypres 100 years ago, Soldiers' Tower hosted a carillon recital and commemoration in May of this year, and the event "was filled to capacity," says Kathy Parks, the Tower administrator. November's annual Remembrance Day ceremony always draws more than 1,000 people, she adds, demonstrating that the day "continues to hold meaning for young and old." Each year, the service features a reading of McCrae's poem, which inspired the poignant and enduring symbol of the poppy. "Millions of people around the globe know of the poppy," Parks says, "even if they don't know about the poem."

The top student in his medical class at U of T, as well as a researcher, poet, soldier and surgeon, McCrae was inducted into The Canadian Medical Hall of Fame this year. - **JO CALVERT**



John McCrae



EVERY GIFT ADDS UP...



## Boundless Campaign Celebrates Record Year

Almost a quarter billion raised to support students, faculty, programs and infrastructure

has now raised \$1.83 billion toward its \$2-billion goal.

Donations over the past year are supporting innovative programs and cutting-edge research across each of U of T's three campuses. An unprecedented \$130-million donation announced last November from the Rogers family through the Rogers Foundation established the Ted Rogers Centre for Heart Research. Shared between U of T, the Hospital for Sick Children and University Health Network, the gift set a new record for Canadian philanthropy. Among other recent gifts celebrated in the past year were three generous contributions totalling \$20 million for initiatives that benefit indigenous peoples.

At this year's Spring Reunion, which saw record-breaking attendance, U of T President Meric Gertler highlighted the importance of alumni support, and academic and volunteer leadership, to the campaign's and university's success. "The Boundless campaign is continuing well ahead of pace, thanks to tremendous support from 90,000 unique donors among U of T's alumni, friends and community who share a belief in the importance of supporting post-secondary education, our programs, faculty and students," said President Gertler. "This achievement has also been made possible by the hundreds of volunteers across our three campuses, who work closely with our scholars and staff to advance our most important academic priorities."

David Palmer, vice-president of Advancement, noted that the Boundless campaign is fostering record levels of engagement across the board, including both giving and alumni programs. "Giving is fundamentally about change. That so many of our alumni and friends have chosen to prioritize U of T in their giving is a huge vote of confidence in the power of higher education to create the world we all imagine for ourselves, our children and our communities." - STAFF

THE UNIVERSITY OF TORONTO'S historic Boundless campaign has reached yet another milestone, breaking fundraising records for the university and higher education in Canada. In the most recent fiscal year, which ended April 30, campaign donations totalled \$248 million. Together with new contributions received since then, the campaign

## Blue is Golden (and Silver, and Bronze)



Kate Sauks, right

U of T students and alumni enjoyed an unforgettable summer of sports, with 15 medals to their credit in the Toronto 2015 Pan Am and Parapan Am Games. With 22 U of T athletes competing, there were plenty of opportunities to cheer for Varsity as well as Canada!

**Kate Sauks**, pictured above (at right) with teammate Liz Fenje, was first to the podium, with a gold medal in rowing. Sauks's (BPHE 2007, PhD 2014) win was followed by former student **Michelle Li**'s gold in singles badminton and **Rosie MacLennan**'s (BPHE 2011) golden trampoline routine.

**Belinda Trussell** (BCom 1994 UTM) won silver in the equestrian dressage team competition. **Sarah Wells** (BPHE 2012) took silver in the 400-metre hurdles event and paracyclist **Shelley Gautier** (BScPT 1995) sped to silver in the mixed time trial.

Our athletes snagged an astonishing nine bronze medals. **Zack Chetrat** (BA 2014 New) set a Canadian record in 200-metre butterfly to win his bronze. First-year student **Anqi Luo** won bronze in team table tennis, while students **Alex Thicke** and **Amanda Woodcroft** took bronze with the field hockey team. PhD candidate **Sasha Gollish** (BA 2003 UC, MEng 2010) won bronze in the 1,500 metres (with one shoe falling off!) and **Lucinda Nowell** won two bronze medals in group rhythmic gymnastics. **Wells** nabbed her second medal, a bronze, with the 4x400-metre relay team and **Li** also won bronze in women's badminton doubles.

For interviews with **Sauks** and **Gautier**, see [magazine.utoronto.ca](http://magazine.utoronto.ca).

## THE BOUNDLESS CAMPAIGN SO FAR...



**\$519 million**

in donations for critical infrastructure projects



**\$845 million**

in donations for innovative programs and cutting-edge research



**\$287 million**

in donations for student aid and experience



**\$179 million**

in donations for faculty support



## Science Goes Social

### Research2Reality, a new social media campaign, digests science for the public



Molly Shoichet

“ALL LIFE ON EARTH DEPENDS ON WATER,” begins the video. In less than a minute, we’ve learned how Canadian scientists are making sure we preserve this important resource, by, for example, tracking how climate change could affect rainfall. One of the scientists captured in the clip, posted on

Research2Reality.com, or R2R, is U of T physicist Dick Peltier, who creates mathematical models depicting how climate has evolved over 750 million years and how it will change in the future. His work is at the core of what engineering prof Molly Shoichet, co-founder of R2R, believes is the “tremendous value” of university research to global society.

But the challenge, she adds, is in conveying the results. “People are being bombarded with so much information; I think many just haven’t been able to see the value in what our scientists are doing. But Research2Reality presents great research in bite-size pieces, with compelling videos, giving Canadians the opportunity to better understand how our ‘research rockstars’ are shaping our present and future.”

R2R is a social media initiative that, beyond the website, includes Facebook, Twitter and YouTube channels. Shoichet and her team have shot videos of 70 Canadian scientists, including 20 from U of T. Five other Canadian universities are partners, along with the provincial government and Discovery Science, which airs public service TV spots.

“I want people to see the fantastic work being done,” says Shoichet. She adds: “Our funding for scientific research comes largely from the people of Canada through their taxes. So, I’ve always felt an obligation to reach out and engage them in what we are doing.” - PAUL FRAUMENI

An advertisement featuring a woman in a white lab coat working in a laboratory. The background is a blurred lab setting with various pieces of equipment. Several callout boxes with lines pointing to different areas of the lab list benefits of donations: "EXCEPTIONAL FACILITIES", "TOP-RANKED FACULTY", "STATE-OF-THE-ART EQUIPMENT", "GROUNDBREAKING RESEARCH", and "SCHOLARSHIPS FOR DESERVING STUDENTS". The text "EVERY GIFT ADDS UP." is prominently displayed on the left. At the bottom right, it says "Please give today at donate.utoronto.ca" and "BOUNDLESS". The University of Toronto logo is in the bottom left corner.

EVERY GIFT ADDS UP.

EXCEPTIONAL FACILITIES

TOP-RANKED FACULTY

STATE-OF-THE-ART EQUIPMENT

GROUNDBREAKING RESEARCH

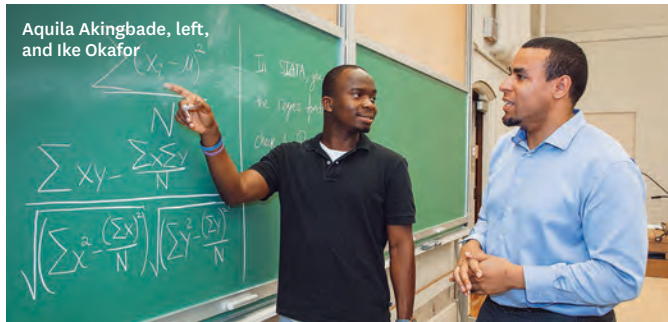
SCHOLARSHIPS FOR DESERVING STUDENTS

Combined with other donations, your gift to the Annual Fund means unlimited opportunities for the entire University of Toronto community.

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**BOUNDLESS**

UNIVERSITY OF TORONTO



Aquila Akingbade, left, and Ike Okafor

## A Boost for Med School Diversity

A new course aims to get more black undergraduates on track for medical school by connecting them with Rhodes Scholar mentors

WHEN AVODELE ODUTAYO was a first-year health sciences undergraduate, he figured he'd spend his summers working at a shop or restaurant. Then, his mentor – an upper-year student assigned through a scholarship program – suggested he apply for a hospital-based research job. Odutayo credits that tip for much of his later success.

“That first research job led to seven years of summer research positions at Sunnybrook,” says the 2013 Rhodes Scholar, who is taking a leave from his U of T residency in internal medicine to pursue a PhD in clinical medicine at the University of Oxford.

Odutayo, who was one of the few black students in his medical class at U of T, is trying to increase the number of black students who enrol in medical school. Black individuals make up less than one per cent of Canadian medical-school students, despite accounting for almost four per cent of the Canadian population aged 15 to 24.

To bring about change, Odutayo approached Ike Okafor, senior officer, service learning and diversity outreach at the Faculty of Medicine. Odutayo suggested developing a non-credit biostatistics course for black undergraduates who want to apply to medical school. Not only would it provide practical research skills, it would also open up networking opportunities. In July, Odutayo and two other Rhodes Scholars – Connor Emdin and Peter Gill – taught the first three-week session to a class of five.

Projects like these are invaluable for students underrepresented in medicine, says Okafor. The course is part of a greater initiative he's leading, called Community of Support. In collaboration with Undergraduate Medical Education's enrolment services, the U of T Black Medical Students Association and the Black Physicians' Association of Ontario, Okafor provides students with access to mentors, job-shadowing, volunteer and research opportunities, medical-school admission information and guidance.

Bringing more diversity into medical schools has been shown to enrich the learning environment and to increase access to care for patients from marginalized communities. And with the Community of Support serving almost 100 students across the province in just six months, there's a big demand for this type of program.

Aquila Akingbade, like Odutayo, immigrated to Canada when he was 12. Currently a third-year undergraduate student, Akingbade plans to enter medical school and eventually become a neurosurgeon.

“It's a bit intimidating because I feel like I have to compete against all these people who have so many connections,” he says. “No one in my family is a medical doctor or is in the medical field.” He's motivated by the role models he met in the new biostatistics initiative.

“You have people who have similar experiences and can empathize with you,” he says. “And such successful people – Rhodes Scholars! You're inspired, because you think ‘If these guys can do it, I can do it as well.’” – CAROLYN MORRIS

## People



Janet Rossant

Many members of the university community were named to the Order of Canada in July. Prof. **Janet Rossant**, who is a research pioneer in stem cells and embryos, was named a companion of the order, the highest level.

The following were named officers of the order: **Sandra Black** (BSc 1969 Victoria, MD 1978) of medicine and the Institute of Biomaterials and Biomedical Engineering, **Stephen Cook** of computer science and mathematics, **Daniel J. Drucker** (MD 1980) of medicine, **Mary Gospodarowicz** of radiation oncology (MD 1971), **James Thomas Rutka**, director

of The Arthur and Sonia Labatt Brain Tumour Research Centre, and **Stephen Toope**, director of the Munk School of Global Affairs.

Named members of the order: **Aubie Angel** of the Institute of Medical Science, Faculty of Music teacher and violinist **Jacques Israelievitch**, **Jay Keystone** (BSc 1965 UC, MD 1969) of medicine, Faculty of Music teacher and harpist **Judy Loman**, **Vivian Morris Rakoff** of psychiatry, **John Carman Ricker** (BA 1947 Victoria, MA 1949) of OISE, **Marla Shapiro** (MHSc 1983) of family and community medicine and **Don Tapscott** of the Rotman School.





UNIVERSITY OF  
TORONTO

## FROM INDUSTRIAL ENGINEERING TO THE ARCHES OF BAY STREET.

**Legacy giving makes it possible.** An engineering student with an affinity for business, Marko Damnjanovic (BASc 2017) won the 2015 Engineering 5T3 Award, which supports high-achieving students who have demonstrated a strong commitment to their community. The award means Marko can make the most of his dream internship in the banking sector and still find time to volunteer and help other students pursue their ambitions. You can have the same impact by leaving a bequest to U of T and supporting the next generation of students like Marko.

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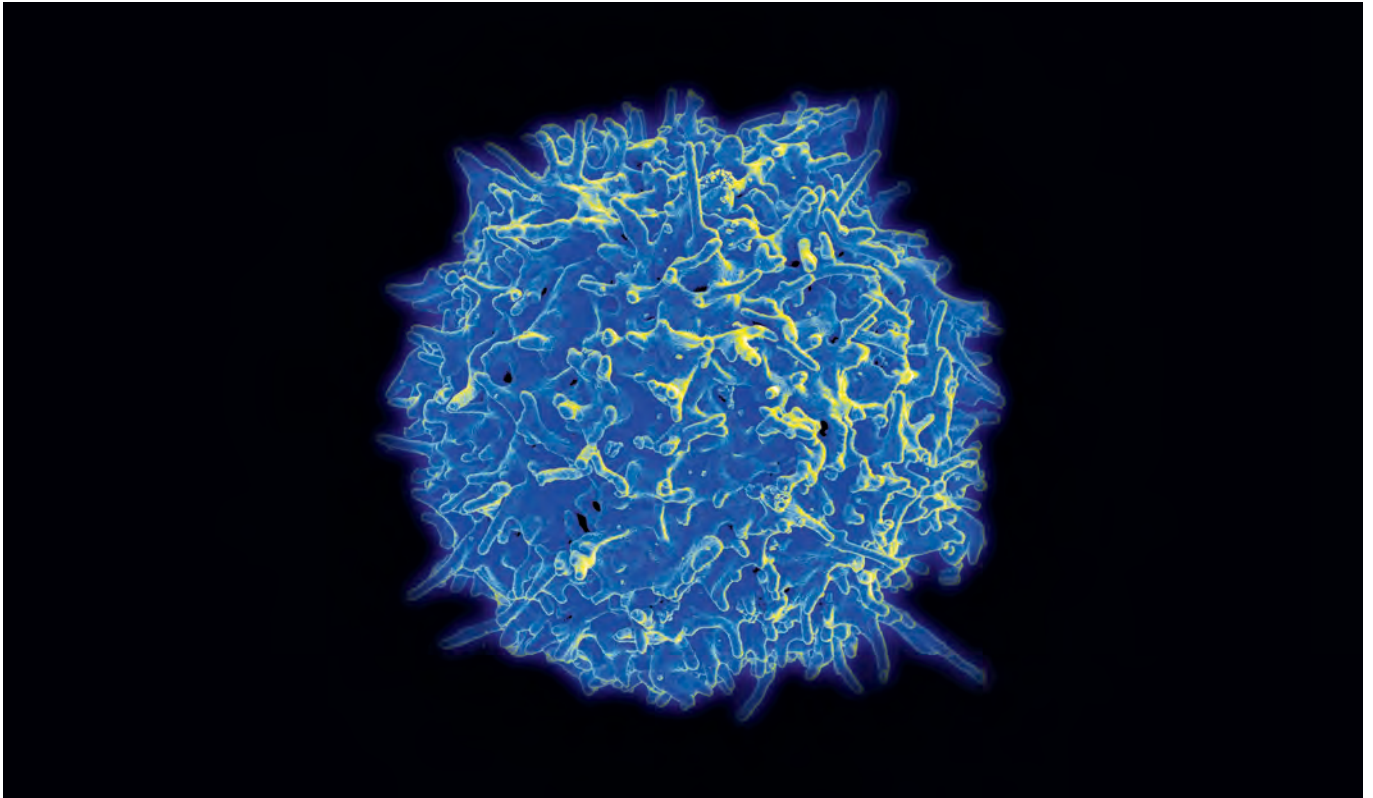


# Leading Edge

**“In many cases, it doesn’t matter whether what a politician says is true”**

Philosophy and policy prof Joseph Heath on the challenge of restoring reason to political debate

p. 23



## The Hidden Lives of Cells

Novel protein “map” developed at U of T could yield better treatments for many diseases

**THE EXACT LOCATIONS OF PROTEINS IN A CELL** have been recorded in unprecedented detail as part of a “protein map” developed by U of T scientists. The new map allows researchers to understand in greater detail what happens in a cell when disease strikes. Because more and more drugs work by blocking or stimulating individual proteins, the map will also help scientists determine better treatments.

Proteins, which are products of genes, are responsible for all the workings of a cell. When the cell receives a signal, such as to “grow,” “divide,” or “stop dividing,” proteins move around within the cell.

But scientists previously knew very little about how these protein movements occur. “It’s really important to understand how that happens if we’re going to be able to understand why cells are healthy and why they’re sometimes diseased,” says researcher Brenda Andrews, who led the study with Jason Moffatt and Charles Boone, all professors at the Donnelly Centre for Cellular and Biomolecular Research.

The new map, which charts the movements and abundance of roughly 3,000 proteins in a yeast cell, is the result of a massive, decade-long study. The researchers collected data for a mind-boggling 20 million cells and worked closely with robotic engineers, who built machines to manipulate the cells and create images of them. The team also worked with software writers, who designed artificial intelligence-based algorithms to process the vast amount of data.

“The reason we need to do it on a large scale is because there simply are so many proteins,” says Andrews.

Yeast cells work in very similar ways to human cells but ►



Dangerous goods were involved in 118 of the 1,011 rail accidents in Canada in 2012. Two of them resulted in cargo being released into the environment

➤ have fewer proteins – around a quarter the number that exist in more complex human cells. This relative simplicity has allowed researchers such as Andrews and Boone to use yeast to gain many fundamental insights into how both yeast and human cells work.

Their team tagged proteins with a fluorescent marker so they could locate them within different parts of a cell. Then they charted protein movement and abundance in normal cells, and looked at what happens when cells carry a mutation, which could lead to a genetic disease, for example, or when cells are exposed to different drugs.

“We’ve developed methods that allow scientists to examine all of the proteins in a cell and how they change in response to any kind of perturbation,” says Andrews.

Next, the researchers will use this powerful tool to investigate how proteins move in human cells, such as cancer cells, to learn more about how the disease starts, but also to search for new treatments.

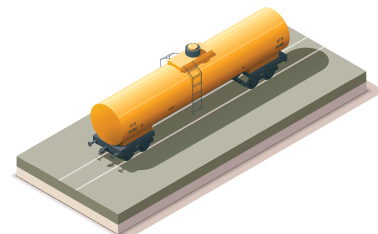
By comparing the locations and movements of proteins in healthy cells with the location and movements of proteins in diseased cells, scientists hope to learn what’s different and, ultimately, determine how to prevent the change from occurring.

A detailed database of protein locations was made available in June through *G3: Genes / Genomes / Genetics*, the official journal of the Genetics Society of America, so that any scientist can look up the location and movement of proteins they’re interested in.

– JOVANA DRINJAKOVIC

## Safe Passage

### A student’s innovative rail car design would greatly reduce chances of an explosion



**A THIRD-YEAR ELECTRICAL ENGINEERING STUDENT** has designed a safer kind of rail car that, if implemented, could prevent deadly train explosions such as the one that rocked Lac-Mégantic, Quebec, in 2013.

The innovative concept earned Iman Chalabi first place in the Minerva Canada James Ham Safe Design Awards earlier this year, and a \$3,500 prize.

Chalabi designed his “smart tank” rail car to safely transport any type of flammable fuel, including crude oil. When sensors detect a collision or uncontrolled rolling, small tanks inside the fuel car release water and surfactants that combine with the fuel to create a liquid that is significantly less flammable and less likely to explode. If the tank car is punctured in the collision, the fuel that leaks out will also be less likely to ignite.

What’s more, Chalabi added a small tank of an organic compound that increases the viscosity of crude oil, turning it into a gel that is slower to leak into the surrounding environment and easier for responders to contain. Because flammable liquids can produce flammable gases, he also included a gas pressure sensor and a valve to relieve pressure inside the tank.

Prof. Nazir Kherani, of electrical and computer engineering and materials science and engineering, helped Chalabi choose the best materials for his plan – a specialized mixture of sorbitant esters and water for the surfactant, and norbornene to increase viscosity.

All of Chalabi’s components are possible to retrofit inside the tank car models currently used for shipping flammable liquids by rail. His project also included a cost analysis demonstrating its economic viability. Chalabi, who is now working in the U.S., says he is interested in presenting his award-winning design to railway companies. – MARIT MITCHELL

#### LINGO

### Hyper-palatable



When Frito Lay – the maker of potato chips and other crispy snacks – bets that “you can’t eat just one,” they’ve stacked the odds in their favour. Like many food companies, Frito Lay employs food scientists who deliberately engineer their products to be more irresistible than healthy foods such as fruits and vegetables. By adding sugar, salt and fat, they make Cheetos and Tostitos “hyperpalatable.”

Venket Rao, a professor emeritus of nutritional sciences, explains that the presence of sugar, salt and fat on our taste buds triggers our brain to release endorphins, which generate feelings of euphoria. Hyperpalatable foods do this so effectively, they override the signal our body uses to tell us we’re full. We often keep eating these foods, even if we’re not hungry – a phenomenon known as conditioned hypereating.

“This has health implications,” says Rao, “obesity being the main one.”

So what can we do to lower the health risks posed by these super-delicious snacks? Rao says food companies and government regulators bear some responsibility, but “educating the consumer is very important.” Learning the effect these foods have on us, he says, may help us resist them before we “eat just one.” – STAFF





Some scholars have criticized the concept of a right to health on the grounds that it is difficult to define and does not consider an individual's responsibility for their own health



THE BIG IDEA

## Is Health a Human Right?

Recent cases in international law suggest the idea is gaining momentum

**AMONG THE 94 RECOMMENDATIONS** made by Canada's Truth and Reconciliation Commission in June, one urged governments to "recognize and implement the health-care rights of Aboriginal people, as identified in international law."

The commission's reference to a right to health care in international law intrigued Prof. Lisa Forman, a professor at the Dalla Lana School of Public Health.

That's because although several major international conventions say there's a human right to health care, such statements, until recently, were widely considered empty promises – so much lip service to high aspiration.

This is beginning to change, though. Around the world, increasingly, plaintiffs are suing governments to force them to provide particular health services, citing this alleged right – and, often enough, they're winning.

The shift has been decades in the making. One of the United Nations' founding conventions, the 1948 *Universal Declaration of Human Rights*, states there's a right to medical care, as does the 1966 *International Covenant on Economic,*

*Social and Cultural Rights* – the latter pushes member nations to help citizens reach the "highest attainable standard of physical and mental health."

"That sounds like an impossible ideal," says Forman, whose research focuses on health care under international law. But it's becoming possible. She outlines how these vague, aspirational provisions have lately given rise to enforceable rights. The 1948 declaration is mainly used by international lawyers as a source of general principles – relevant but not, on their own, determinative of a country's legal obligations. On the other hand, the 1966 covenant is, in theory, binding on its 164 members, Canada among them, because it has treaty status.

The U.S., though, has not ratified it, which helps explain why the covenant hasn't received wider recognition. "In the Cold War," Forman explains, "the West focused more on civil liberties as the core rights, the Eastern bloc on the so-called socio-economic rights." Civil liberties include free speech and freedom from unjust imprisonment; among the socio-economic rights are shelter, sustenance and health care.

Some of the post-Cold War action on health care has come in Forman's native South Africa, in part because the country's post-apartheid constitution promotes socio-economic rights. "Ratification of these conventions can be practically meaningless," Forman says. "The treaty provisions have to be given force domestically."

This happened in 2002, when a South African court required the government to provide a drug to expectant mothers that limited the transmission of HIV to their fetuses. "The international conventions, the domestic constitution and domestic health legislation all informed the court's reasoning." Courts in jurisdictions as diverse as Colombia, Brazil and India have also given legal teeth to the right to medical care.

Forman believes that the idea of a right to health has persuasive value to societies and their governments. In a 2011 case covered by *The New York Times*, a Ugandan court ruled that a maternal mortality suit was a "political question" outside its jurisdiction. However, in a 2015 case in Uganda, she notes, a court "found a maternal death to violate human rights and awarded damages to the family."

Canada's *Charter of Rights and Freedoms*, unlike South Africa's constitution, does not explicitly protect socio-economic rights, but periodically plaintiffs have claimed, with mixed success, that the charter's security-of-the-person and equality protections apply in the health-care context. The Canadian story, it seems, is still unfolding. – **ALEC SCOTT**

*The Right to Health at the Public-Private Divide* (2014), co-edited by Colleen Flood, a professor at U of T's Faculty of Law, includes an essay by Lisa Forman.

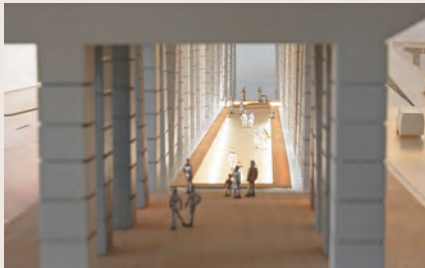


In 2009, art professors Lisa Steele and Kim Tomczak used strings of LED lights to illuminate a 30-metre section of the Gardiner Expressway near Fort York

### Theatre in the Round



Promenade Stage



Proscenium Stage



Traverse Stage

## Street Theatre

**A design for the Gardiner Expressway illustrates how students are reimagining Toronto**

In recent years, a cottage industry has sprung up to invent uses for the space underneath Toronto's much-maligned Gardiner Expressway: Underpass Park now attracts skateboarders and graffiti artists to an eastern section, while the Fort York Visitor Centre has brightened a stretch in the west.

Sonja Tjanic, a recent graduate of the Daniels Faculty, has her own novel idea for enlivening the Gardiner's underside. For her master's thesis, Tjanic imagined four kinds of theatrical spaces at different spots along the expressway. She designed each to be usable for performances or art installations, such as during Scotiabank Nuit Blanche, and to be open to the public at other times.

The project is about creating a new use for a derelict space, says Laura Miller, a Daniels professor who was Tjanic's adviser, and making a landscape more inviting – using lighting, seating and other elements to create a place where people will linger instead of rushing through or avoiding altogether.

Miller likes giving her students real-world urban design problems. Last year, as part of the T.O. Superstudio course she teaches at the Daniels Faculty, students were asked to reimagine the Allen Expressway. One came up with a bold proposal to build an athlete's village and flood part of the site to use as a rowing venue for an anticipated 2028 Olympic bid. Another focused on food and transit, designing the area as a hub for both. In previous years, Miller has asked her students to consider the Dufferin Mall. She intentionally chooses sites that, she says, give students the opportunity to "make a better city."

T.O. Superstudio is open to graduate students in architecture, landscape design and urban design. This cross-disciplinary openness exposes students "to the diverse demands of their profession," says Miller. The students' designs also might inspire city planners to expand their own ideas about what Toronto could be. – **SCOTT ANDERSON**



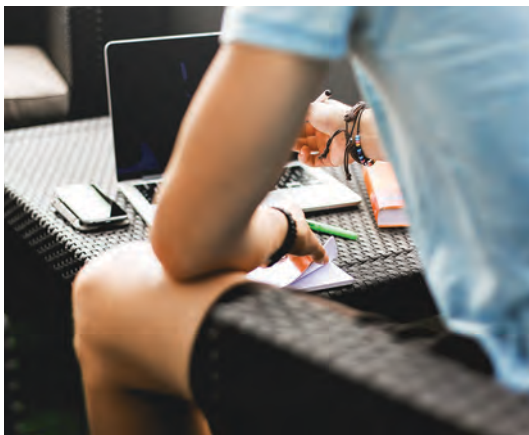


The average Canadian pays \$315 a year in credit card interest

STARTUP

## Loan Ranger

### Online peer-to-peer lending company hopes to change how Canadians obtain loans



**ONE DAY LAST YEAR**, Scott Laitinen (BA 1986 UTSC) was looking at a mountain of credit card debt – nearly \$80 billion worth. Fortunately, the debt wasn't his. But the opportunity it presented was.

In other countries, a type of online service called “marketplace lending” has been providing peer-to-peer loans at interest rates below the major cards – enabling people to pay off their credit card debt using a lower-interest marketplace loan. When he realized that the huge Canadian debt represented an opportunity to introduce the concept to this country, Laitinen left the traditional banking world and signed on as Chief Risk Officer at a startup called Borrowell.

Marketplace lending does not go through a traditional intermediary such as a bank. Companies such as

Borrowell run credit checks and verify income data online; borrowers apply for and receive funds via the Internet. Interest rates and borrowing limits are based on credit ratings, with loans ranging from \$1,000 to a maximum of \$35,000. Interest rates are consistently lower than credit cards – from six to 18 per cent for most borrowers.

And the process is faster. “Even with online banks, you have to go in and sign papers to get a loan,” says Laitinen. “With Borrowell, you get a decision within 60 seconds on whether your loan is approved, and you have the money in your account within two days.”

The company sees a big market in credit card debt consolidation – people with good credit scores, but who are making their minimum payments, living paycheque to paycheque.

The potential of that market allowed Borrowell to catch the attention of the several investment fund companies and private investors who provide the company's capital. Borrowell began lending in March. Despite lower interest rates and quicker service, Laitinen says the company is still working to overcome borrowers' skepticism.

“We've seen early on some of the perception that online lending is like payday lending,” he says. (So-called “payday loans” usually come with interest rates higher than 20 per cent and serve clients who need cash quickly.) He says Canadians trust their banks. “We're targeting people who are savvy online. If we capture even one or two per cent of that \$80 billion, it makes this business valuable.”

Credit card debt consolidation offers a large potential market for Borrowell, but the company can also serve other loan markets such as home renovation, travel, weddings and even small businesses.

Laitinen, who specialized in management at UTSC and has been working in financial services for 30 years, says the draw of Borrowell wasn't just potentially lucrative – it also seemed like a social good. “You see headlines about Canadian debt. The great thing with a marketplace loan is it actually can help people get out of debt,” he says.

– PATCHEN BARSS

## Findings

### All About the Bass



Bass are becoming more common than trout in Ontario's lakes, according to U of T researchers, who say rising temperatures caused by climate change are causing the fish to move to now-warmer waters, putting local species at risk.

Several species of bass, which prefer warm water, have expanded their range northward over the past 30 years as temperatures have increased. Karen Alofs, a post-doctoral researcher, and Prof. Donald Jackson, both of the department of ecology and evolutionary biology, looked at historical and recent data for 30 different fish species, including bass, in more than 1,500 lakes throughout Ontario. In most cases, they found bass wiped out smaller, more vulnerable fish species in less than 30 years, partly by taking a share of the food available and partly by predation.

The researchers hope their work will help resource managers track species that are moving north due to climate change and adapt conservation efforts accordingly. – SEAN BETTAM

### Let's Get Physical



Listening to music while you exercise can increase the length of your workout by up to 70 per cent, according to new U of T research. The study, by Dr. David Alter, a professor of medicine, and Prof. Lee Bartel, founder and acting director of U of T's Music and Health Research Collaboratory, found that cardiac patients who listened to music that was synchronized with the tempo of their workout exercised an average of 105 minutes a week longer than patients who did not listen to music.

A group of patients whose music had been sonically enhanced with extra rhythmic beats exercised an additional 261 minutes weekly, corresponding to a 70 per cent increase in weekly exercise. – MICHAEL KENNEDY



A U.S. poll in July found that 57 per cent of Republican primary voters had a favourable view of Donald Trump, up from 16 per cent in May, just before he made inflammatory comments about Mexicans

# Q&A

## Crazy Talk

### Can we restore sanity and reason to politics?

If you've noticed that politicians will say almost anything to get elected and rarely pay at the ballot box for misleading voters, you're not alone. **Joseph Heath**, a professor of philosophy and public policy, wrote a book on the subject: *Enlightenment 2.0: Restoring Sanity to Our Politics, Our Economy and Our Lives*. He spoke recently with **Scott Anderson**.

**Not long ago, politicians who got caught lying suffered negative consequences. You point out that untruths often help them now. What's changed?** Over the past five decades, communications strategists have learned that, in many cases, it doesn't matter whether what a politician says is true. The question is whether what they say resonates with voters. Academics and media pundits often still respond to this kind of political communication the old-fashioned way, which is to jump up and down and say, "But that's not true!" Often, though, what the politician has said is *designed* to annoy you. And every time you write a column or a blog post saying, "So-and-so just claimed *x* but it's not true," you're unintentionally repeating and reinforcing their actual message.

We need to raise the level of sophistication of how we respond to these political strategies, and to flag the fact that it's a general problem for democracy when you have a political debate in which no one is even *trying* to say anything true.

**Among conservative politicians, there seems to be a widespread mistrust of experts – often disparagingly called "elites." Why?** A trend that's clearer in Canada than in the United States is the rise of "common-sense conservatism." And what is common sense? It's the things you know to be true without having to listen to an argument. Rob Ford's common sense was that when you drive around Toronto, streetcars are in the way. Therefore streetcars are the source of Toronto's traffic congestion. To explain why streetcars are not the source of the problem is complicated. I think the mistrust of experts – who have made many mistakes, by the way – poses an interesting challenge to intellectuals because it forces us to raise our game. We can't just say,



"I'm a university professor and I disagree with this," because you immediately alienate people. It's as if you're saying, "I think I'm smarter than you."

**You note in your book that a lack of civility contributes to declining rationality in politics. How?** Civility is a basic set of rules under which people deal with each other. If people are yelling or interrupting each other, they are being less rational because it takes time to present an argument. You have to lay it out step by step. Interruption undermines this process. Television has changed enormously in terms of how much people interrupt each other. Bill O'Reilly of Fox News gives people about 10 seconds before interrupting them. If you can't say what you want to say in 10 seconds, forget it.

**How do we reverse this trend?** To restore reason we have to look to the environment in which these debates and discussions are being conducted. A mayoral debate in which everyone is yelling at each other or a newscast in which people are constantly interrupted are not environments in which you can present complex policy positions.

**What specifically could we change to enhance our collective rationality?** There are some big things and some small things. In the last Ontario election, the Conservative party said, "We're going to create a million jobs." That number was plucked out of a hat. But even parties that don't pluck their numbers out of a hat make their own assumptions about what's going to happen in the economy. In the Netherlands, the Bureau for Economic Policy Analysis creates a baseline scenario for the economy's performance, which all political parties must use in their platforms. This impartial body also analyzes each party's platform for its impact on the Dutch economy. That's a huge enhancement in how political debate is conducted on economic questions.

A longer version of this Q&A appears at [magazine.utoronto.ca](http://magazine.utoronto.ca)





By 1900, spiritualism – the belief that the dead can communicate with the living – had an estimated eight million followers in the U.S. and Europe, mostly from the middle and upper classes

## The Medium and Her Message



A little more than a century ago, western society became fascinated by the possibility that spirits of the dead could communicate with the living. Young women calling themselves mediums promised to summon ghosts of lost relatives via séances, during which spirits would demonstrate their presence by shaking a table or ringing a bell. Many people became convinced that the mediums' powers were real.

Meredith Reddy (PhD 2015) thinks of those mediums as artists, or performers. Her doctoral research in art history looked at old photographs, such as the one at left, to investigate how mediums were able to baffle even the scientists who tried to document the séances. She speculates that the women used a variety of tricks, including secret assistants. The mediums also required séances to be conducted in total darkness, which made it difficult for cameras to record what was occurring. "The scientists would use flashlights, but it was a game of cat and mouse," says Reddy.

– SCOTT ANDERSON

**AT LEFT:** Marthe Béraud was a prominent psychic medium in the early 20<sup>th</sup> century who performed under the names Eva C. and Eva Carrière. This photograph was taken in 1912 by German parapsychology researcher Albert von Schrenck-Notzing.

## Engineering a Human Liver

### Liver tissue created in a U of T lab could help reduce the time and cost of drug development

A U of T research team is creating a 3D model of the human liver that could help determine whether new drug molecules are safe for humans, and thus speed up the process by which new drugs get approved.

Professors Craig Simmons and Michael Sefton and other team members from the Institute of Biomaterials and Biomedical Engineering have developed a way to grow small amounts of three-dimensional liver tissue in the lab. The team is now incorporating these miniature bits of tissue into a device that simulates the flow of blood through the liver. In this way, they could simultaneously test dozens of chemical compounds to determine what their effect on the liver might be.

The system will allow researchers to screen out drugs with potential negative effects, or ones that are ineffective, at a very early stage of the drug development process. As a result, says Simmons, the liver model will reduce the time and cost of drug development, and its reliance on animal testing.

Up until now, drug developers have relied on lab tests and preclinical trials to determine how a potential drug molecule might react when processed by the liver or other organs in the human body. One form of testing is to try the drug on lab-grown cells, but an individual lab-grown cell can behave very differently to one in its natural environment, where it is surrounded by blood vessels and other tissue.

Simmons says the U of T team will continue to develop and refine its 3D liver model so it can be used by pharmaceutical companies, biotech firms and biology researchers. "By the end of this project, we expect to deliver a new best-in-class liver model," he says.

The project received \$300,000 from Ontario Centres of Excellence and pharmaceutical consortium CQDM.

– LIZ DO







The winners of the 2015 *U of T Magazine* writing contest are Amanda Lang (BA 2012 Victoria, BEd 2014) in the short story category for “Man and Mana,” Michael Todd (MA 1979) in the poetry category for his untitled poem, and Alexandra Atiya, a master’s student at the Centre for Medieval Studies, in the flash fiction category for “Boxer’s Bargain.”

SHORT STORY WINNER

# Man and Mana

by Amanda Lang

**HE LOOKED AT IT FOR TWO-THIRDS OF A SECOND**, poked it with a latex-covered index finger. I would have barely had time for a chord change on the guitar.

“It’s not a tumour.”

But it had to be. I’d had symptoms for months. That hard knob tucked where my right thigh met my hip. The feathery ache that settled at night as if it were nesting in the twigs of muscle there. Bridget didn’t notice it but sometimes she rushed through things with me; promised she’d linger there next time when she didn’t have a head-sick patient to visit. That’s how I knew she was good even though she made me feel cold; she visited sick people at twilight or dawn, those off-hours times with the pearly light. I loved her for that.

“I should have an MRI,” I told the doctor. “Sarcomas show on those.”

He tossed me an impartial look. “We’ve been over this. Weeks ago. And two months before that. Since last summer. You need to stop reading things on the Internet. Lauren, it’s your damn hip bone.” The doctor snapped off his rubber gloves with grammatical finality, an exclamation mark procured from an authoritative flick of his wrists. He handed me the printouts I’d found about hungry mutinous cells, the black sludge in lymph nodes, that peculiar fruit salad system of sizing lumps. It was better to have a grape in your thigh than a plum. Mine was the size of a strawberry. I felt for it every day; I could feel it through my jeans when I had my hand in my pocket.

“You’re 23 years old and you’re healthy, all right?” The doctor shuffled to the door. I felt another little chunk of the world slip away. “You think too much. You should get a boyfriend, distract yourself from WebMD.”

**I WALKED HOME** from the doctor’s office. I could have taken the TTC, but I felt keyed up, like I had something that I needed to tell someone. I knew that if I saw an old person struggle with grocery bags full of bagels and frozen fish I was going to lose my shit completely. I’d never known my grandparents

and they seemed like a separate species to me. My body would never be compliant enough to reach old age. My friend Ally’s grandmother was four times as old as Ally had been, and she still went home to Honolulu for two weeks every January, even though she’d been mute for years. It never stopped Ally from loving her with all her heart. We’d go to Ally’s place for rehearsal because her mother always made us pie with real fruit inside, and before we could even step in the door Ally would shove her way past us to greet her grandmother, who drank tea from a pink cup on the back porch when the weather was good.

“Oh, *Tutu Darlene*,” Ally would say, “My acro costume is so beautiful, it has the yellow hibiscus and I think of you every time I wear it! One day you’ll see me in *Cirque du Soleil*, and I’ll have the flower on me.”

Ally’s mother said that Darlene was senile, which could be expected when you were old and had done your living on an island baking in the hot sun, so they didn’t want to upset her. They told her that Ally went to the island for a long visit.

I never asked what they did with Ally’s costumes. They gave me her books. Tasha got a blue bottle of perfume and Ally’s younger brother Kai got the wooden horse that stood on Ally’s windowsill since we were in grade school. How asinine Kai looked holding that tiny thing in his big pianist’s hands at every rehearsal thereafter, singing away to it. It all seemed so final, as if everything was boxed up and shipped out and we could be ready to move on. And it seemed as if all of them, even Kai who’d loved her most, really had.

I called Dr. Shor on my cell, called her office directly. I’d been seeing her for years, even before the world shook itself like a wet dog and sent me spinning. What began as a once-a-week session after my parents divorced had morphed into a different sort of relationship. Tasha thought it was exciting, but Ally had hated it, told me that Dr. Shor was using me because I was the kind of girl always looking for a hug. God, how I hated Ally for that. How I hated myself now for ever hating her.

“What do you believe?”

For all that murky night clogged in the curtains, I didn't know.  
The roundness of women's hips, maybe. I believed in balance.  
In missing pieces.

“It's me. I need to talk to you,” I told Dr. Shor, and I had my hand deep in my pocket. “I'm worried about this bump... I'm remembering too much again.”

She said, “Okay, honey, I can see you tonight. My place. Eight o'clock?”

The hours spun through the day like silk. We were just hitting the summit of July, and I felt like the elegiac evening light could be shaken out of the drapes like dust. Bridget Shor and I sat side by side on the leather couch that faced her bookshelves, all her volumes of Donne on the top shelf, and the heavy tomes of medical books just below. I loved the hierarchy of her literature, even if she was prone to rationalizing certain dark thoughts as misfiring neurons rather than spiritual ennui.

She emptied the last of the red wine into my glass. “I haven't much time tonight, perhaps an hour.”

I felt nervous, the same echo of fear I'd felt at 16, feeling the air on my thighs and her voice yawning in-between, telling me that there was always a little pain. And there was, but there was also a glorious moment when everything in the world felt whole and round and perfect. I'd been chasing that feeling ever since, as if there was some secret to wholeness hidden in those circles of our bodies. “Can I have that empty bottle?”

“Just be sure not to break it, honey.”

“Yeah, that's exactly – that's it. Dr. Shor – Bridget? What was that phrase you said last week?”

“*Tikkun olam*. Repairing the world. It's just old religion, Lauren. You're smarter than that. I don't need it and you certainly don't need it.”

“Kai's doing good because of what his mother told him at the wake last year, the Hawaiian thing, *Mana*, right? It's like all things have a spirit –”

She cut me off with a kiss, her hand knotted up in my hair. “I've told you, you don't need to feel this way. She had a headache. You helped your friend, baby.”

She gently guided me between her legs. It turned out like always and we ran out of time before she could touch me back, but even still, the night seemed billowy, as though I could finally breathe. Bridget knew the names for the things I was feeling. Her thighs were soft and dense, ungodly dunes.

**A COUPLE OF AFTERNOONS LATER**, I went to Tasha's place before rehearsal. Tasha was rattling around in the recycling bin. She didn't see me until she'd pulled out a jam jar, wiped the purple remnants from the rim with her shirtsleeve, and held the thing up to inspect the glass.

“I brought you something better.” I pulled the wine bottle from my bag.

She jumped on the spot. “Brilliant!”

I followed Tasha to her bedroom. Kai was already there, sprawled out on Tasha's bed with a baggie of carrot sticks and his ukulele. We watched Tasha rearrange the assortment of glass bottles and jars on her windowsill.

“Ready to rehearse?” Kai asked through a mouthful of carrot. “Recovered from Matt-Two-Ts-Not-One's party last night?”

I hated it sometimes, the whole damned ritual of drinking too many shots at somebody's place or a bar or a park. Once or twice I'd gone and rubbed against some girl just to feel the spheres of our bodies together, but it never really made things better for good. I only vaguely recalled the end of the night when Tasha said she found God in the bottle of tequila and wouldn't let anyone drink from it and when Mat-One-T-Not-Two tried to take a picture with his phone, she tucked God under her arm like a football and bolted through the kitchen door saying that he was going to hell.

At parties since Ally died, sometimes I'd gulp some God and think the same things I always thought: Did they bury her in her thong? Did they keep her toenails painted green? It wasn't like it was a car accident; like she'd done something stupid and we could kind of blame her for it. She'd just wanted to lie down for a minute. I gave her Aspirin, asked her how she was feeling.

“Just peachy!” She'd done a handstand to prove it. I'd believed her.

**WE SETTLED IN KAI'S CAR** with the carrots and our instruments. We still used his place for rehearsal. I hated sneaking past Darlene, whose eyes were wet with anticipation, like she was just waiting for Ally to talk to her about her yellow hibiscus. It made me feel unsteady, as if her gaze provoked a deep shivering sigh from the earth.



“Hey guys,” Ally’s mother greeted us. “No pie today, eh? I can’t find the fruit.”

We set up, and we were quiet while Kai did his ritual of holding the wooden horse in his palms and singing his Ally-song to it, then placing it on a cushion on the floor.

“Okay guys,” he said finally, “she’s listening. Don’t fuck it up.”

**THAT NIGHT**, my leg was throbbing. I’d drawn around the lump with a black marker and tried to measure it. I bet I had until December with the right regimen of chemo. An apricot-sized lump was still better than an orange. I could cut it out myself, just trace around the black line, scoop out all the bad, but I was alone in my apartment and too afraid of the pain.

I called Dr. Shor. Remembered the nights I’d fallen into sleep, the phone tucked in the crook of my shoulder, while she perused her poetry, lingered lyrical on the line, “*Thou art slave to fate, chance, kings and desperate men...*”

“I can’t sleep. The lump, I told you about it, don’t you remember?”

“Come over.”

I picked up the prettiest bottle of wine I could find. At her place, a pot of something simmered on the stove.

“I’ll set the heat to low, that’ll give us 20 minutes.”

I had something that I needed to tell. “I thought maybe we could drink –”

“We’ll have it after,” Dr. Shor said. I followed her, past Donne and all the editions of the *DSM*, into her bedroom. She turned down the sheets, flannel even though it was warm outside the curtains, a womb of rich bloody night.

“Can we talk first?” I asked. Her hands were white-hot on the zipper of my jeans, and then my underwear and then my hips. I shifted my weight to shake her loose. “I just feel so shitty, I feel like everything I am is too arbitrary. It was easier when it first happened, you know? Everyone was supposed to be sad.”

“Survivor’s guilt,” Dr. Shor said. She didn’t notice the black marker around the swelling. She reached for my hand. “But baby, why *not* her? Why you?”

“Do you believe in souls?”

I saw her shoulders bunch up, so I rephrased it in a way that betrayed all those volumes on the top row of her bookshelf. “Is it a psychological necessity to believe?”

“There’s something more than cells dividing,” she said. “But no, not a soul, there’s no possibility.”

I was worried by the finality with which she addressed something she saw as trivial. I turned my head, murmured to the blue smudge of mascara on the edge of the pillow, “My friend Tasha is a writer. She says she’s got excess soul, enough for everyone. She culls the lost spirits from the air and they help her write – in-spirit-ation. She keeps these

empty bottles she finds, that’s where the souls live. In bottles of sake and olive oil and the blue Midnight Poison on her windowsill. She’s got a jar of cold cream waiting for Ally. Like a clown.”

Dr. Shor swung her legs to the side of the bed. “I just heard the timer go off. If it’s such an issue for you, what do you believe?”

For all that murky night clogged in the curtains, I didn’t know. The roundness of women’s hips, maybe. I believed in balance. In missing pieces. Bridget Shor just gazed at me from the end of the bed.

“You know what? I have rehearsal tomorrow.” I struggled back into my jeans and put my hand in my pocket. “Keep the wine. But I want that fucking bottle back.”

**WE PRACTISED THE NEXT EVENING** at Ally’s place. Our set ran long and Kai kept apologizing to the little wooden Ally-horse. I went for a walk in the garden to catch my breath. The light in the sky was nipple-coloured, wide and raw. Darlene was sitting on the veranda with her sweet gauzy gaze and the air crinkled with the scent of lilac. I knew what I had to do.

“Darlene, there’s something I need to tell you.”

The crickets rubbed their thighs together, and I felt braver than I’d felt in a long, long time. “Ally died. She didn’t go to Hawaii. Well, maybe she did, since we don’t know where anyone goes, afterwards. But she died. Last summer. It’s called an aneurysm and she’d had it in her body her whole life. She had a headache and we didn’t know. It could have happened to anyone.”

Darlene nodded and sipped tea out of her pink cup and then procured from the billowy depths of her cardigan a perfect round peach, which she pressed into my palm. When I sat there stunned, she pressed her fingers to mine so that I had to grip the thing, that small breast of a fruit. That was it, that was all she did. She sipped cold tea out of her pink cup, and nodded long and slow. In some other place, maybe Hawaii or heaven or both, the sun was rising and the crickets there, their thighs were rubbed soft and silent for the day.

**I PUT IT ON MY WINDOWSILL**, that round peach. It was a lot bigger than the bump in my thigh and I thought that now I had something that I could measure things by. I thought that there might be something more for me, the way we sometimes feel the things we cannot see. And sometimes they hurt, and sometimes, they just sit in calm circles inside of you, and outside, and all around while the earth shakes itself and then keeps spinning.

Amanda Lang (BA 2012 Victoria, BEEd 2014) is a teacher who works with youth from a low-income neighbourhood in Scarborough. A lifelong enthusiast of writing in all its forms, she is interested in the ways that fiction can provide fundamental insights into life, love and loss.



FLASH FICTION WINNER

## Boxer's Bargain

by Alexandra Atiya

**IN BUENOS AIRES** in 1951 my grandparents made a deal: My grandfather would watch ballet if my grandmother would endure boxing. And so my grandfather led her to the edge of the ring, and my grandmother changed: she enjoyed the bloody screams, the bright lights. Confined violence spread through the crowd.

And so my grandfather too, proudly, made his concession, and did so for years: he watched Julio Bocca take long swan steps across the stage in blue tights.

But later my grandmother and I sat in the beauty parlour and she told me that she had always loved boxing: an old beau had taken her – such a thrill! To see blood fall on the shirtless men. But she had to pretend to sacrifice something in order to get company at the ballet. She was getting a manicure, getting her hair dyed, and she said to me: Men's weakness is always their vanity.

Alexandra Atiya is a writer, reporter and poet. She will receive her MA from the Centre for Medieval Studies at the University of Toronto in November. She is currently working on a novel and collaborating on a graphic novel. Follow her on Twitter @lexiatiya.

POETRY WINNER

## Untitled

by Michael Todd

Michael Todd (MA 1979) is the editor of *York University Magazine*. He lives north of the Big Smoke in King Township where, rumour has it, there are more horses than people. He counts among his influences Robert Creeley, Ezra Pound, Gary Snyder and Seamus Heaney.

nothing to declare  
father's ashes  
in the carry-on bag





POETRY RUNNER-UP

# Somnolent Table

by Sandra Kasturi

The earthquake has shivered  
all the furniture out of place  
except for one small console table  
that has stubbornly clung  
to the half-wall of the staircase,  
its four legs refusing to move.  
Or perhaps it's merely asleep,  
the way we all were that night,  
unprepared for the tremor,  
for the indifferent shrug of tectonic plates,  
the cracking of the window panes,  
the midnight howling  
of Mrs. Mancini's schnauzer next door,  
its tight, fierce body straining to bite.  
Our one sleepy table, with its fake  
hurricane lamp and dusty snapshots  
has become a new shrine,  
the wood altar for small sacrifices –  
my husband's wedding ring  
my daughter's cracked cell phone.  
No tabloid miracles here,  
just small, removable pieces, finally still.

Sandra Kasturi (BA 2000 Woodsworth) is the author of two poetry collections: *The Animal Bridegroom* (2007) and *Come Late to the Love of Birds* (2012). When not working at the company she co-founded, ChiZine Publishing, Kasturi is working on another poetry collection and a novel.

## The Judges

### Short Story Contest

**Heather Birrell** (BEEd 2006) is the author of two story collections, *Mad Hope* (2012) and *I know you are but what am I?* (2004). Winner of the Writers Trust/McClelland & Stewart Journey Prize for short fiction and the Edna Staebler Award for Creative Non-Fiction, she lives with her husband and two daughters in Toronto.

**Kelli Deeth's** first story collection, *The Girl Without Anyone* (2001) was chosen as one of the *Globe and Mail's* Best Books. Her second collection, *The Other Side of Youth* (2013), was shortlisted for a ReLit Award. She holds an MFA in creative writing from the University of British Columbia.

**Spencer Gordon** (MA 2010) is the author of *Cosmo* (2012), a collection of fiction that *Quill & Quire* called "Canada's Most Underrated Book." He is also a co-founding editor of *The Puritan*. He lives in Toronto.

**Alissa York's** internationally acclaimed novels include *Mercy* (2003), *Effigy* (2007), which was shortlisted for the Scotiabank Giller Prize, and *Fauna* (2010). She is also the author of the short fiction collection *Any Given Power* (1999), stories from which have won the Writers Trust/McClelland & Stewart Journey Prize and the RBC Bronwen Wallace Award. York has lived all over Canada and now makes her home in Toronto. Her new novel, *The Naturalist*, is due out in 2016.

### Flash Fiction Contest

Flash fiction entries had to include the words "fall," "blue" and "bright."

**Cary Fagan** (BA 1980 UC, MA 1991) is the award-winning author of six novels and three short story collections as well as many books for children. He teaches creative writing at U of T's School of Continuing Studies.

**Helen Walsh** (BA 1990 UC) is the president of the Literary Review of Canada Charitable Organization and the founder of *Spur*, a festival of ideas that takes place in five Canadian cities.

### Poetry Contest

**George Elliott Clarke** is the E.J. Pratt Professor of Canadian Literature at U of T. He is a past winner of the Governor General's Award for Poetry (2001) and the National Magazine Foundation Gold Medal for Poetry (2002), and was a Trudeau Foundation Fellow (2005–08). He is an officer of the Order of Canada and Toronto's Poet Laureate.

**Robert McGill** is a professor in U of T's English department, where he teaches Creative Writing and Canadian Literature. He is the author of two novels, *The Mysteries* (2004) and *Once We Had a Country* (2013) and of a non-fiction book, *The Treacherous Imagination: Intimacy, Ethics, and Autobiographical Fiction* (2013).

**Lindsay Zier-Vogel** (BA 2005 Victoria, MA 2007) is a Toronto-based writer and arts educator whose work has been published in *Taddle Creek*, *Grain* and *Descant*. She is also the creator of The Love Lettering Project, a community-based art project that has been bringing love poems to strangers since 2004. She is currently working on a novel.

FLASH FICTION RUNNER-UP

# Mary

by Marina Martin

**MARY HAD A FALL**, so she called me, “Help, I need you!” Later, as I sat on the edge of her bed fingering the coarseness of a blue wool cover, she confided, “A bear came into my room last night.”

“How did he get in?”

“Through the keyhole.”

“What happened then?”

“He stayed the night snorting and huffing; his breath reeked all over me. I was so scared.”

“Well, if he comes back, just shout, ‘GO AWAY!’”

On the following visit, I asked whether the bear had returned. “Yes,” she said, “he came in through the keyhole. I ordered him to go away, and he squeezed back out.”

“What happened then?”

“Seven sheep stepped in through the keyhole, one after the other.”

“What did you do?”

She replied brightly, “I like sheep. I let them stay, and they kept me warm in my bed all night.”

Marina Martin (formerly Idema), who graduated in 1968 with a diploma in Physical and Occupational Therapy, is the author of a book of poetry: *Breathing Water* (2012). She is currently working on a book of non-fiction stories.

FLASH FICTION FINALIST

# Pest Control

by Nicholas Ruddock

**TURN ON THE KITCHEN LIGHTS IN DARKNESS**, midwinter, there’s a scuttle, a hustle, a clickety-shine, a scattering-bright, roaches out of control and there’s nothing we can do, the landlord’s indifferent, he’s a numbered company and tell the truth we’re at loose ends ourselves, barely talking, so grab the broom, take a swing and brown-skittering they’re gone to the toaster, the drain, under the aluminum strip someone presciently painted blue, swing again and there go the books you love, falling from the radiator: Federico Garcia Lorca! yours first! – sorry – your metronomic name, your sad ending, shot on a hillside for poetry, for sex, they’re digging for your body now in Spain while here we are, Huron Street, two of us just not getting it right, apartment 305, third floor, roaches climbing the walls, and warfarin, DDT, fly strips, even pheromones, none of these seem to work, for us, for long.

Nicholas Ruddock (MD 1969) lives in Guelph, Ontario. His novel *The Parabolist* (2010), set at U of T, was shortlisted for the Toronto Book Award. He has won numerous prizes for fiction and poetry in Canada, England and Ireland. His new novel, *Night Ambulance*, will be published in 2016.

## Runners-Up and Readers’ Choice Awards



**Carmelinda Scian** (BA 1994 Woodsworth, MA 2005) placed second in the short story contest for “A Pilgrimage to Atalaia.” She holds a certificate in creative writing from U of T’s School of Continuing Studies. In 2013, Scian won in the short story category of *The Malahat Review’s* Open Season Awards; earlier this year she won the *Toronto Star* Short Story Contest.

In online voting, readers selected the short story “The Boy on the Streetcar,” by **Tanaz Bhatena** (BCom 2007 UTM) as their favourite. Bhatena’s writing has appeared in the literary journals *Blackbird*, *Witness* and *Room*. She recently completed a novel with funding from the Ontario Arts Council.

Online voters also selected “Somnolent Table,” by Sandra Kasturi, as their favourite poem, and “Mary,” by Marina Martin, as their favourite flash fiction entry.

Read all the award-winning entries at [magazine.utoronto.ca](http://magazine.utoronto.ca)





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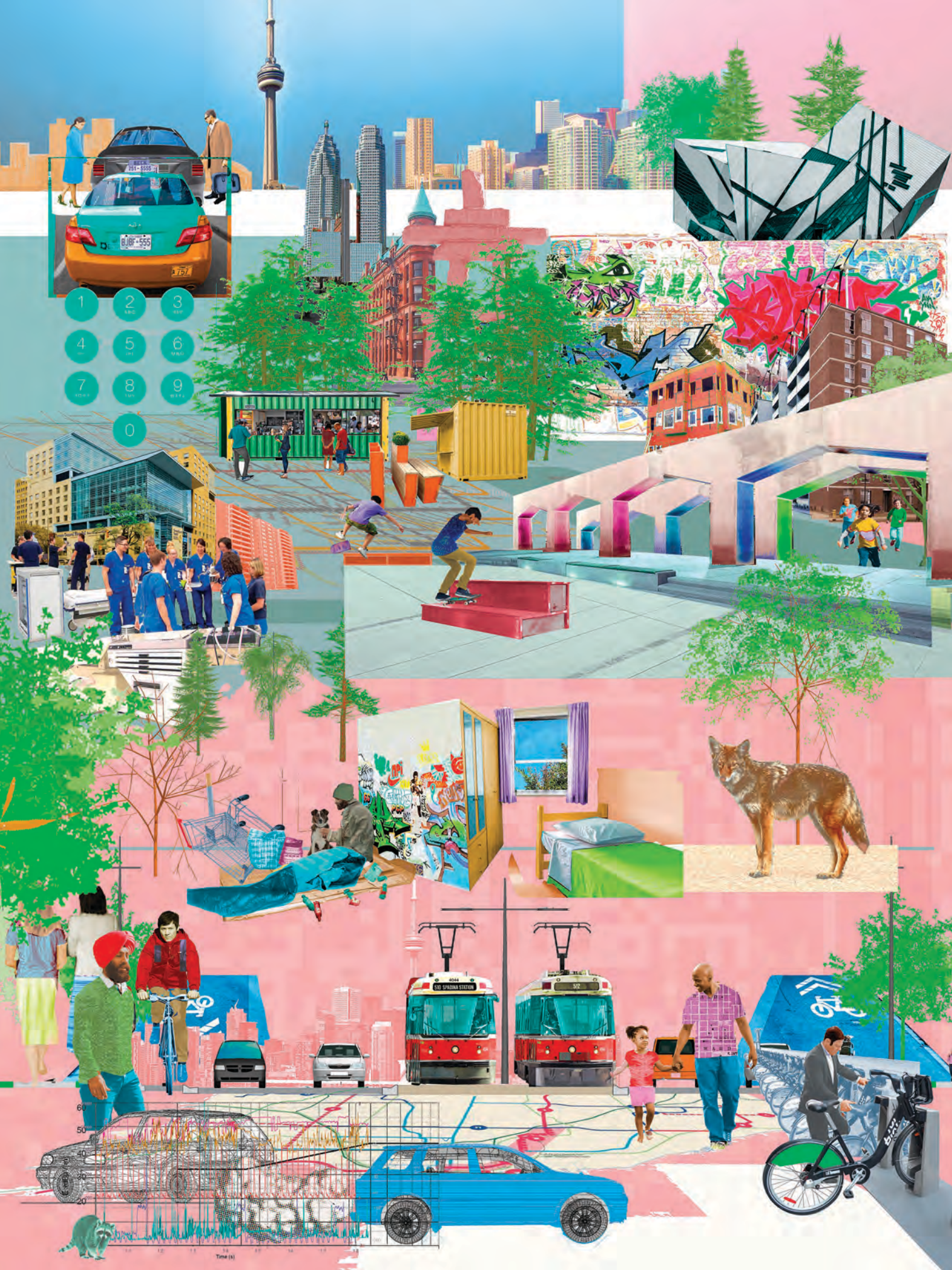
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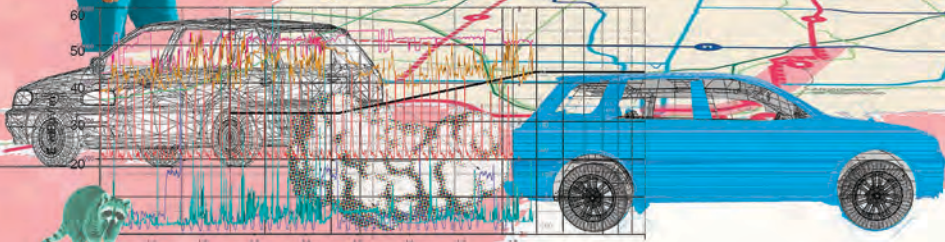
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**18 ideas for building an  
even better Toronto**

**U OF T HAS AN OUTSIZE PRESENCE** right across the Toronto region. With almost 100,000 students, faculty and staff on three campuses, it contributes more than \$15 billion each year to the economy.

But these numbers tell only a small part of the story.

In many ways, the university is a giant lab – a place where countless ideas for improving urban life are generated, tested and then put into action.

In these pages, you'll read how students and professors are searching for ways to make Toronto even better – by promoting cycling in the suburbs, helping newcomers succeed, replenishing our urban forest, giving homeless people a home. The results, though not always immediately obvious, are all around us – in safer streets, in healthier citizens, in fresher air and greener neighbourhoods. You just need to know where to look.

1

## Make our streets more pedestrian-friendly.

Walking is more pleasant – and a lot more common – in Toronto’s downtown neighbourhoods than it is in the suburbs. As geographer and planner Paul Hess points out, the blocks downtown are smaller, so people have lots of route choices, and there tends to be a greater variety of destinations. And yet many suburbanites walk in their neighbourhoods, despite the inferior conditions. Is it because they don’t have other ways to get around? And if so, what could the city do to improve walking conditions?

Hess is conducting research to find out. His team has been speaking with bus users along Finch West and Sheppard East, asking them how far they walk to reach transit and what they think of the experience. The results will be fed to the city and to regional transit authority Metrolinx to consider as they plan transit upgrades in Scarborough and North York. – SA



2

## Boost suburban cycling to downtown levels.

The downtown core currently accounts for 80 per cent of bike trips in the Toronto area, but Trudy Ledsham, project manager for U of T’s Cycling Think & Do Tank at the School of the Environment, sees potential to boost the popularity of cycling in the suburbs.

Earlier this year, her group teamed up with the Toronto Centre for Active Transportation and the Region of Peel to lead Pedalwise, a community bicycle program in Brampton, Ontario, that pairs new cyclists with mentors, lends them bicycles for the summer and provides safe cycling workshops, demonstrations of how to use bike racks on buses, route-planning assistance and group rides organized by volunteers. The program is designed to provide members of the community with basic cycling skills and to boost their confidence on a bike, while promoting healthy living and cycling as a fun activity.

Bike lanes and other improvements to cycling safety are crucial to get people out of their cars and onto bikes, but Ledsham says another important factor is psychological: getting people to change ingrained habits; hence the group’s focus on altering behaviour. “Research shows that people are interested in cycling for transportation,” says Ledsham. “But sometimes you have to show them they can do it.” – STAFF



3

## Find a way for Uber and taxis to co-exist.

In Toronto, the battle between traditional taxi companies and ride-sharing services such as Uber is often portrayed as a failure of the old to accommodate the new. The taxi industry refused to modernize. City regulations were written for a world without smartphones. The tech-driven Uber operates in a legal grey area, negotiating privacy and safety issues on the fly. But a defining issue in this battle might actually be much more straightforward.

“The big policy question for Toronto City Council is whether it is in the public interest to limit the number of cabs in Toronto,” says Sunil Johal, policy director at U of T’s Mowat Centre. “Once that question is determined, other issues around insurance and driver training are relatively straightforward.”

He says the city should adopt a similar approach for taxis as it has for restaurants – place no limits on the number of operators, regulate minimum standards and then let the market sort out supply and demand.

“Uber offers a more technologically adept service in terms of electronic payment, rating your driver and being able to track how close the car is before it comes to pick you up,” he says. “But a big part of their disruption has certainly been calling into question what the right supply of cabs in a city should be – and whether having people who only drive between five and 10 hours a week is a good bridging measure to meet demand for taxis when it’s highest.” – PB



4

## Provide ways for kids with disabilities and able-bodied children to play sports together.

The Pan Am and Parapan Am Games showed Torontonians what athletes of all abilities can accomplish. And yet they also remind us that the sports world is divided: disabled athletes do not compete against – or play on the same team as – their able-bodied peers.

This is unlikely to change at the elite level anytime soon, but two U of T professors are piloting a novel program that gives kids with and without disabilities the chance to play sports and improve their fitness together.

Prof. Kelly Arbour-Nicitopoulos, of the Faculty of Kinesiology and Physical Education, and Prof. Virginia Wright, of

the department of physical therapy, say their program, Igniting Fitness Possibilities, is designed to help youth develop active lifestyles and increase their confidence and self-esteem. “It brings together kids of all abilities so that they can learn from one another and build on each other’s strengths,” says Arbour-Nicitopoulos.

While taking part in Igniting Fitness Possibilities, youth from Grades 4 to 12 work with a personal coach for 20 weeks to develop sport-specific skills and set goals for their physical activity. In partnership with community facilities, Arbour-Nicitopoulos and Wright, who is also a scientist at the Bloorview Research Institute (at Holland Bloorview Kids Rehabilitation Hospital), will be conducting two sessions this fall involving about 30 kids – at the Athletic Centre on the St. George Campus and at the Abilities Centre in Whitby, Ontario. – SA

5

## Boost the diversity of the region’s political candidates.

In a region where about 40 per cent of people belong to visible minorities, elections often serve as a reminder that the politicians who represent Greater Toronto don’t reflect the diversity of the city’s inhabitants. During the 2011 federal election, only one-fifth of the candidates who ran for the three major parties in the region’s 47 ridings were visible minorities.

Erin Tolley, a political science professor at U of T Mississauga, says this lack of diversity can be traced to the riding-level nomination process. Parties tend to select visible minority candidates to run in ridings with high concentrations of visible minority voters. Since the number of those ridings is limited – even in Toronto – the number of visible minority candidates is effectively capped. Tolley’s analysis suggests a possible solution: when riding association executives themselves are more diverse, they are more likely to recruit candidates from underrepresented groups. – JL



## Rose Harrison, a participant in Dr. Hwang’s study



6

## Help the homeless by giving them a place to live.

At any given time, homelessness affects an estimated 5,000 people in Toronto. Many suffer from mental illness and chronic physical conditions, and are frequently hospitalized. Substance abuse problems are common and many die prematurely.

Dr. Stephen Hwang, a U of T professor of medicine and public health, is the co-author of a recent study that provided almost 700 homeless people in four Canadian cities with subsidized apartments and then tracked their health – and whether they were able to remain in their home – over a two-year period.

Traditionally, homeless individuals in Canada have been required to undertake treatment or rehabilitation (if needed), before being provided transitional housing. Only after that can they gain access to permanent housing.

But Hwang’s study found that giving homeless people immediate access to a subsidized apartment, with mental health support, was far more effective in rapidly ending homelessness than the traditional approach, and had significantly greater success in keeping people housed.

“Having a home is the first step to recovery,” says Hwang. “Our next challenge is to help people who were previously homeless to move forward and achieve recovery. If we put our minds to this, we can build a healthier city where no one is left behind.” – SA

7

## Share business students' knowledge and expertise with non-profits.

Healthy cities depend on non-profit organizations to provide support for social and cultural services. These organizations are also sources of employment, economic growth and philanthropic activity. But non-profits, especially smaller ones, can face challenges finding board directors with management expertise. Enter the Rotman School of Management's OnBoard Fellows program. Launched last year, the initiative pairs 10 second-year MBA students with non-profits – ranging from large hospitals to a small digital literacy group – and puts them to work on projects of strategic significance.

At the Centre for Addiction and Mental Health, for example, the student fellow, working with a board mentor and faculty advisor, helped develop a recruitment strategy designed to diversify the centre's board of directors.

Some non-profits were initially hesitant to participate in the program but all 10 have indicated an interest in joining again, and five new non-profits will be added this fall. The MBA students who are involved receive an academic credit for the fellowship.

"They can listen, they can learn and offer something tangible to the organization," says Neel Joshi, Rotman's director of student life and international experience, who notes that the program was inspired by similar initiatives at American business schools and Toronto's Maytree Foundation. "They get leadership skills in a real, live setting, but also give back." - JL

## "We've managed to develop a really interesting model of a community-university relationship"

Prof. Susannah Bunce, UTSC

8

## Make newcomer professionals feel more welcome in their workplace.

Canada admits many immigrants with professional degrees – and about one in four settle in Toronto. Most find work within a couple of years of arriving. But according to surveys conducted by Soo Min Toh, a professor of organizational behaviour and human resources management at U of T Mississauga's Institute of Management & Innovation, some of these individuals feel undermined by their co-workers because they're not Canadian – and such experiences seem to negatively affect their careers. "Canadian-born employees are sometimes communicating to the newcomers that they won't be one of us," says Toh, noting that respondents reported encountering a "glass wall" in their career progression.

She says organizations that hire newcomer professionals should provide all their employees, not just newcomers, with training in cultural sensitivity and communication techniques. Firms should also look at helping recent immigrants build new professional networks with mentoring programs. Getting senior leaders to support this idea is important, Toh adds. "You have to have people in the organization lead the way. Then you can build a culture that is positive and inclusive, and recognizes the value of difference." - JL

9

## UTSC Cities Studies students



## Enlist students to conduct research for community-building projects.

In 2010, the director of the East Scarborough Storefront, a community hub serving one of Toronto's low-income neighbourhoods, approached UTSC professor Susannah Bunce with an idea: could her students in the city studies program help conduct research for local groups aiming to develop projects involving housing, green space or youth services?

With funding from the Galin Foundation, UTSC and the Storefront hired a local co-ordinator, launched free courses taught by UTSC faculty members and set up children's summer sports programs, with coaching support from UTSC students.

Other students now conduct "community-specific research" – meant to help local groups win grants or approval for recreation programs and small business ventures, and to give the students research experience with real-world issues. "We've managed to develop a really interesting model of a community-university relationship based on organic growth," says Bunce. "And it could be replicated elsewhere." - JL



Chandrakant Shah



10

**Help aboriginal patients through a program to build doctors' understanding and empathy.**

Dr. Chandrakant Shah, a professor emeritus in the Dalla Lana School of Public Health, works as the staff physician at Anishnawbe Health Toronto, a clinic serving the city's aboriginal community. He has witnessed first-hand how systemic discrimination affects aboriginal patients.

Shah tells the story of a woman who arrived at his clinic: she had few physical complaints but seemed unhappy. It was only after seeing Shah for two years and developing trust in him that she confided that she had been taken from her home when she was six and placed in a residential school. She had been physically and sexually abused, and had never told anyone – not even her family. Afterward, through talking about it, she was able to begin healing.

When doctors can feel as if they've "walked in a patient's shoes," they develop greater empathy, says Shah, and this leads to improved health outcomes. For doctors who see aboriginal patients, that means understanding the crushing impact of post-colonial policies, such as the residential school system, as well as the impact of systemic discrimination.

Shah has trained a team of 35 aboriginal volunteer instructors to deliver free talks about indigenous people's health issues – including aboriginal concepts of health and healing – to the 57,000 students enrolled in health-sciences programs at Ontario's colleges and universities. Shah hopes the program will eventually lead to better – and fairer – health care for the tens of thousands of aboriginal people who call Toronto home. "I want students to have empathy for their patients, no matter who they are," he says. – **STAFF**

11

**Use hospital patient data to improve diagnoses and treatments and to lower health-care costs.**

Dr. Trevor Young, the dean of U of T's Faculty of Medicine, wants to harness the wealth of patient data collected by the university's nine fully affiliated hospitals to improve the health-care system. He foresees a new centre for medical computation at U of T that would bring together physicians and computer scientists to solve major health problems, while also lowering medical costs. How? Powerful algorithms could scour the data for patterns that could be used to predict patient outcomes – determining heart attack risk, for example, based on genes or lifestyle factors that go way beyond alcohol or red meat consumption.

Another example: A web-based portal could give patients constant access to their health record, help them interpret their lab results and provide personalized recommendations about healthy living. – **STAFF**



12

**Offer free financial advice to low-income hospital patients.**

Everyone knows that a balanced diet and regular exercise contribute to good health, and that smoking and excessive use of alcohol or drugs can lead to disease. But there's another crucial – and often overlooked – factor that affects a person's health: income. Dr. Andrew Pinto, a professor of medicine, says studies show that income is one of the most important social determinants of health, along with education.

Last year, Pinto, who is also a physician and scientist at St. Michael's Hospital in downtown Toronto, became involved in a pilot project, possibly the first of its kind in North America, to help low-income patients improve their financial situation. Patients selected for the program are referred to a specialist within the hospital's family health team who provides tailored advice designed to boost patients' incomes and reduce their expenses. The assistance can be as simple as showing the person how to do their taxes or formulating a monthly budget. Or it can be more complex, such as identifying skills-training or grant programs the patient could apply to. "Addressing this key factor – income – could lead to better health through improved diet, more stable housing and a reduction in stress," says Pinto. – **SA**



13

### Resurrect the Bureau for Municipal Research.

A century ago, a handful of Toronto businessmen set up an advocacy group that published reports and studies with ideas for improving local government. The Bureau of Municipal Research operated from 1914 to 1983. “I thought it was a pretty neat organization,” says Gabriel Eidelman, a professor in the School of Public Policy and Governance, who has begun cataloguing and scanning the bureau’s voluminous documents, many of which focus on topics that are still on the city’s agenda: housing, transit, effective regional governance. “We seem to often forget that we’ve had these debates in the past,” he says. Eidelman is considering creating a public website to archive the documents, but says the project is still in its infancy.

Still, he believes there’s a role in contemporary Toronto for an organization that would offer clear and easily understood policy research geared to ordinary citizens, as opposed to the issue-specific advocacy produced by special interest groups such as the Board of Trade. He cites studies from the Bureau of Municipal Research on the impact of a proposed gas tax (1925), low voter turnout in municipal elections (1976) and an overview of the city’s transit problems (1977). These reports, Eidelman says, “could easily have been written today” and could be of use to citizens wanting to inform themselves about how the city arrived at where it is now. - JL

14

### Discover the conditions that foster the creation and growth of successful tech startups.

According to a Martin Prosperity Institute study due out later this year, venture capital investments tend to cluster in certain neighbourhoods, even within cities that are generally seen as good places to start a company.

The study, by institute director Richard Florida and researcher Karen King, mapped venture capital funding for tech-oriented startups in several global cities, including Toronto. They found that the area close to U of T, encompassing the Annex, Yorkville and midtown neighbourhoods attracted more venture capital – \$81 million in 2013 – than any other part of the city. It “shows how great research universities such as U of T have become magnets for technology and talent, spurring startups and catalyzing new businesses and industries,” says Florida. - JL

15

### Transform underused public land such as river valleys and laneways into places for community use.

Cities are full of abandoned or neglected spaces, but these spots are not wastelands to architect Calvin Brook, a fellow at U of T’s Global Cities Institute and a principal at the architectural firm Brook McIlroy. When he looks at laneways, abandoned industrial sites and the underside of elevated expressways such as the Gardiner, he sees great potential for vibrant public spaces.

Waterfront Toronto took up this idea in recent years by building a children’s park and skateboarding facility under the Don Valley Parkway’s ramps at Eastern Avenue. Further west, the new Fort York Visitor Centre, built under the highest point of the Gardiner Expressway, provides a more formal type of reuse.

“The two abandoned bridges across the lower Don River would make an incredible project if whoever is in charge of them gave them over to community entrepreneurs to transform,” says Brook, who points to a Design Trust project in New York that catalogued orphaned spaces under elevated highways and then published their locations. In Toronto, he envisions something similar taking place: “These neglected spaces should be made available for creative design and reuse proposals that would open them up for public use. I think you would get incredible interest.” - JL



Underpass Park





16

**Preserve Toronto’s trees long into the future.**

Toronto’s trees aren’t just beautiful – they clean the air, cool the city, provide a habitat for urban wildlife and even intercept rainfall to reduce strain on the city’s sewer system. But a healthy urban canopy doesn’t happen on its own – someone needs to plant new trees, save existing ones and protect against pests and disease. It’s a lot of work for overwhelmed and budget-constrained municipal departments – and that’s where Sandy Smith’s students step in.

Smith, a professor of forestry, links students in the Master of Forest Conservation program with community groups across Toronto to keep their neighbourhood green. Each student team creates an urban forest management plan, which includes: community objectives, an inventory of existing tree cover in the neighbourhood, a resource of key websites and references, and one- five- and 20-year plans. The community then has an urban greening strategy to move forward with the city.

David Grant, who works with Cabbagetown ReLEAF, a community group that participated in fall 2014, says the idea is a winner. “Our plan is already in action,” he says. “When you have a bunch of great people getting together to share knowledge, it’s totally empowering. Three of the students have stayed on with Cabbagetown ReLEAF and we continue to evolve and grow.”

That students often remain with the community group is an indicator of the program’s success, says Smith. For both students and communities, she adds, the course “is giving knowledge and knowledge is power. That’s what universities do.” - JR



**Improve both indoor air quality and energy efficiency at Toronto Community Housing.**

“The average Canadian spends about 90 per cent of their time inside buildings,” says Jeff Siegel, a civil engineering professor. “But over the past few decades of improving energy efficiency in buildings, a lot of the things we’ve been doing have actually been making indoor air quality much worse.” Since the air we breathe can affect health in many ways, with air particles linked to heart disease, stroke and cancer, Siegel is understandably interested in doing something about Toronto’s indoor air.

So, as the Toronto Atmospheric Fund and Toronto Community Housing work on energy retrofits for seven high-rise buildings, Siegel is researching exactly what the indoor air quality is like in these apartments. His findings will inform the actual repairs to be made in 2016.

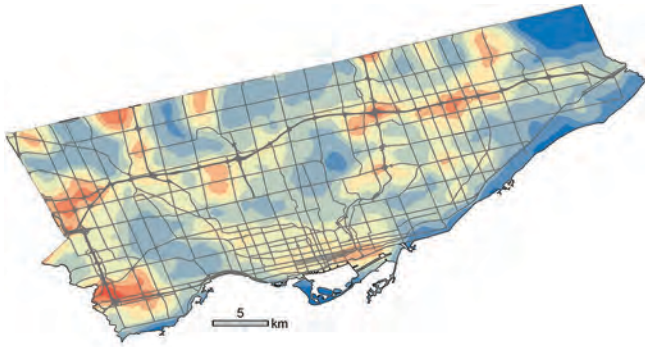
The research team loaded up 75 units across the buildings with different equipment. In some, a six-inch box on the wall measures carbon dioxide, temperature and relative humidity every 15 minutes. Others will enable Siegel to do chemical analyses on dust. They also have instruments in place to track formaldehyde, radon and ozone levels. All this data will be measured both pre- and post-retrofit.

“We shouldn’t see energy efficiency and indoor air quality as opposed to each other,” says Siegel. - JR

**ABOVE:** Air filters from different apartments in the same Toronto Community Housing building. Upper left is “almost certainly” from a smoker’s unit, says Prof. Jeff Siegel. Lower right never left its case. The one next to it is from a unit where the resident is rarely home.

**“We shouldn’t see energy efficiency and indoor air quality as opposed to each other”**

**Prof. Jeff Siegel, civil engineering**



18

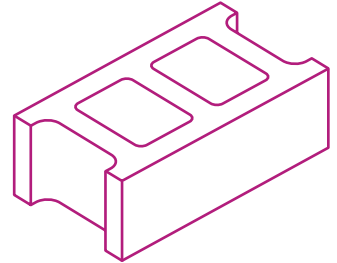
### Measure vehicle emissions across the city and help Torontonians reduce their exposure to pollutants.

This map shows hotspots of vehicle pollution across Toronto – data that Greg Evans, a chemical engineering professor, collected in partnership with Environment Canada. Students and scientists walked the city, making measurements on hand-held devices that were extrapolated to create the map.

Compared with blue areas, the orange spots have up to four times the concentrations of ultrafine particles, a good indicator of vehicle pollution. Traffic-related air pollution, which has been linked to asthma, heart disease and cancer, may affect half of homes in Toronto – even those off major roads in the city’s famous leafy neighbourhoods.

“We’re starting to understand that we need to measure on a more micro scale, especially around major roadways and within urban centres,” says Evans. – JR

Read more ways U of T professors and students are engaged in city-building. Visit [magazine.utoronto.ca](http://magazine.utoronto.ca)



- Law students are working with the Centre for Equality Rights in Accommodation to provide legal information to tenants who are experiencing housing-based discrimination
- The Global Cities Institute is gathering standardized data from cities around the world, enabling Toronto to compare its performance to its international peers on everything from waste management to crime
- A UTM prof’s research finds that street artists often turn marginal, dingy spaces into happy and colourful people-friendly places
- UTSC research advocates investing in light rail transit in Scarborough
- A prof from the School of the Environment suggests road, bridge and culvert designs to support biodiversity and wildlife habitats

## A World-Leading “Cities” University

UofT’s new urban advisers will forge stronger links between university and city and expand opportunities for students



Shauna Brail



John Brodhead

The University of Toronto, home to some of the world’s leading experts on city-building, has appointed two experts in urban affairs – Prof. Shauna Brail and Mowat Centre fellow John Brodhead – to advise President Meric Gertler.

“We need to build stronger linkages to the communities around us,” says Gertler, “while enhancing the connections among urban scholars across our three campuses.”

Brail, a professor of urban studies at Innis College, will be the presidential adviser on urban engagement. She will work with faculty and students on city-related projects, expanding opportunities for collaboration across faculties and departments and connecting researchers with the broader community.

“I’m very excited by the role,” says Brail, noting that the university is making a difference in policy development in the Toronto region

in a variety of ways – in housing, transportation and public health, among other issues. “There are so many people with great ideas,” she says.

As special adviser to the president on urban issues, Brodhead – who remains in his position as executive director of Evergreen CityWorks – will help the university build better ties with city agencies, urban advocacy groups and civic leaders.

While dozens of researchers and professors across the three campuses are already working on urban issues, these appointments reinforce U of T’s commitment to being an integral partner with its host cities and the surrounding region, says Gertler, who has emphasized that city-building is a top priority of the university.

“I think this is great news for the city and the region,” says Brodhead. – STAFF







**BUKE AYRA**  
Biology Student  
Varsity Fencer  
Lifeguard

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# All About Alumni

**“Museums are the souls of civil societies”**

Museum studies grad George Jacob heads up a new dinosaur museum at an iconic Alberta location

P. 55

Dana Wagner and Tyler Sommers (not pictured) co-founded a full-time venture to fact check what our federal politicians are saying



## Standing for Truth

### Alumna Dana Wagner aims to keep politicians honest during the federal election campaign

**IT'S BEEN 10 YEARS SINCE** comedian Stephen Colbert first riffed on “truthiness” on his satirical television show *The Colbert Report*. The overwhelmingly popular witticism underscores a complex and often confusing phenomenon: in politics, “truth” often “comes from the gut” and not from facts. The truthiness trend, and the way ideology and spin have become seamlessly embedded in all political communications, troubles many political observers. But two U of T grads are doing something about it.

Dana Wagner (MGA 2012) and Tyler Sommers (BA 2010 Trinity) co-founded the non-partisan FactsCan.ca with friend Jacob Schroeder. Their mission is simple: to create a site that will help Canadian voters decipher complex political claims

and separate facts from falsehoods during the current federal election campaign.

“Most Canadians don’t have the time to dig through complex policy documents before they cast their ballot,” says Sommers, who works full time in Ottawa with Aboriginal Affairs and Northern Development Canada. “Because there is little disincentive for politicians to lie and spin, some will continue to do it.”

That realization has led to a rise in fact-checking organizations: Duke University recently found 64 active fact-checking websites spread across six continents. FactsCan.ca, however, is the first dedicated organization of its kind in Canada.

“There is something inherently appealing about fact checking and the finding of inaccuracies,” says Wagner, a journalism graduate who now works as a policy researcher at Ryerson University. “There is this beauty in distilling complex information to a very distinct point. It’s surprising just how much is cherry-picked or totally taken out of context.”

Modelled largely on the U.S.-based site PolitiFact.com, FactsCan.ca examines statements made by politicians on everything from defence to immigration to health. The team ►



Shelley Gautier has won 10 gold medals in paracycling at the world championships

## Tree Hugger

Geography grad creates a whole new way to see the UTM grounds



Nimesha Basnayaka

**IF YOU GO INTO THE WOODS TODAY,** you'll probably notice some shiny new tags on trees around the U of T Mississauga campus. Scan their QR codes with an app on your smartphone, and you'll be taken to a web page packed with info about the tree, including a photo, identifying characteristics and more.

Known as a "tree caching" trail, the tags are the work of Nimesha Basnayaka (BSc 2015 UTM), a graduate of the environmental science and geography program. Basnayaka created the self-guided campus tree tour as an intern with Climate's Sake, an environmental education charity based in Mississauga – and now the new grad's employer.

Working with the UTM grounds

division, she identified and catalogued 54 significant tree specimens, with 24 trees making the final list. Follow the trail and you'll find red and white oaks, several varieties of maple and a northern catalpa located near Deerfield Hall. It was also important to include trees that are significant to the campus's history. "We included a white oak that's over a hundred years old," she says.

Basnayaka pinpointed each tree with GPS coordinates and attached waterproof tags to each one using short nails. "They're just meant to hold onto the bark, and are easy to remove, if necessary," she says. "They don't cause permanent damage."

Basnayaka loves the intersection of nature and technology. "We don't always take time to notice what's around us," she says. "The tree caching tags can help draw attention to that, and help us appreciate the natural world." - **BLAKE ELIGH**

## OVERHEARD



I want to ensure that disabled people aren't forgotten after the Parapan Ams. Getting them out into the community and getting them active is very important.



World champion paracyclist (and Parapan Am medallist) Shelley Gautier (BScPT 1995), who has launched the Shelley Gautier Foundation to promote parasport.



tries to include claims that are "significant, interesting and/or new to the public," says Wagner.

Each claim is thoroughly researched and written up in a quasi-legal style that includes links and sources. Requests for clarification are sent to politicians to ensure pinpoint accuracy. Team members collaborate on giving each claim a score: "true," "false," "misleading," "farcical," or (once, when data about the Canadian Security Intelligence Service wasn't available) "withholding judgment."

For example, Conservative MP Pierre Poilievre earned a "farcical" for claiming a Liberal plan would take away every benefit the current government has delivered for families. In fact, the three programs introduced by the Conservatives would be kept or replaced with similar programs, meaning "at least three benefits" would not be cut, says FactsCan.ca. "Poilievre's claim runs contrary to all available information."

As a non-partisan group, FactsCan.ca analyzes politicians

of all ideological stripes, and is careful to ensure balanced coverage of the Conservatives, Greens, Liberals and NDP. "Our currency is being bias-free," says Wagner. "It's the only way people are going to take seriously what we are reporting."

It's been tough, Wagner admits, trying to go from a standing start to full speed in less than a year before the 2015 campaign. The group formed in December 2014, and, in February, crowdfunded \$8,300 to pay incorporation fees and build the website. But the staff of 15 are still unpaid for their work. Wagner admits that a different business model will be necessary to help them stay afloat in the future. For now, truth is the pressing task.

"Voting isn't just about casting a ballot," says Sommers. "It is about having your say in the future of your country. Most voters aren't getting the kind of information they need to make an educated choice without all the spin."

- **BRENT JOLLY**





Mercedes Richards

## Cosmic Twins

### Mercedes Richards unpacks an astronomical mystery

**AS A CHILD, MERCEDES RICHARDS** (PhD 1986) used to marvel at the delicate beauty of stars in the night sky over her hometown of Kingston, Jamaica. As an astronomer, she's now well acquainted with the deceptively violent character of nature's most beautiful ornaments.

Currently a professor of astronomy and astrophysics at Pennsylvania State University, Richards specializes in the study of binary stars, stellar pairs that orbit around each other. One star in each close binary pair strips gas from its companion; the resultant pressure buildup can trigger an explosive outburst.

At U of T in the 1980s, Richards first investigated how such gas flow could be measured. Since then, she's created a model for doing so using tomography (similar technology to that used in CT scans), and, more recently, "my collaborators and I have been able to create 3D images of these gas flows

directly from observations," she writes in an email. Many stars have twins, and Richards' work enables scientists to understand more about their nature and ultimate fate.

In 2006, Richards took part in an explosive cosmic act herself: she was one of several hundred international astronomers who voted to redefine planets – resulting in a demotion for Pluto, now a dwarf planet. "The new definition," she says, "states that a planet should be round in shape, it should travel along a direct path around the Sun, and its surroundings should not be cluttered with other objects." Pluto sits within a region called the Kuiper Belt that contains thousands of objects – hence its diminished status.

This past summer was an exciting one for astronomers. First, the \$100-million Breakthrough Listen search for extra-terrestrial life was announced. Calling the initiative a "wonderful idea," Richards goes on to say: "it would be naïve to think our civilization is the only one in the universe, especially since we have already confirmed the discovery of nearly 2,000 planets beyond our solar system." Many of these, she says, orbit stars just like our sun.

Richards is also excited that – after nine and a half years – the New Horizons space probe finally got close enough to Pluto to photograph its craters, mountain ranges and moons. "New Horizons provides the same sense of adventure that the Voyager 1 and Voyager 2 missions realized about 30 years ago for my generation," she says.

"An important aspect of my work is to convey a sense of excitement about the wonders of the universe," Richards says. And it's easier than ever before to get excited. Software such as Google Sky, Stellarium and Starry Night lets kids see stars online. You can even identify celestial objects just by pointing your smartphone skyward. "The youngest generation has very easy access to observation of the sky," she says. "They never have to leave home to enjoy the heavens."

– CYNTHIA MACDONALD

## Roadmap for Life



After spending four years reading Canadian memoirs in order to compile an anthology, novelist Camilla Gibb (BA 1991 UC) decided to write one of her own.

Her fifth and newest book, *This Is Happy*, reflects on past moments of intense grief and joy, alienation and belonging. Having immigrated to Canada as a small child, Gibb missed the way family history had linked her to her environment in England. "I understood, somehow, that something between here and there had been broken," she writes.

After her daughter was born, Gibb realized she could provide her child with that missing sense of continuity and connection – through stories of her own life. "Because I didn't grow up in a house of stories, there

wasn't much of a roadmap for life," says Gibb. "I risk, perhaps, oversharing because we all need roadmaps – particularly our children."

As she finished writing the memoir, Gibb found herself recalling happier moments that had hidden among tragic memories. "It showed me how we construct a narrative based on which details we choose to reveal," she says. "It is the selective nature of memory at work, where our need to put things together in a way that makes sense requires some creativity." She hopes that readers will reflect on, and reconcile, their own lived experiences with self-compassion. For Gibb, telling her story has been just that – going back in order to move forward. – NADIA SIU VAN



Visit a sculpture by Adrienne Alison at U of T - a bust of Bishop Strachan in the Trinity College quad

THE TWO OF US

## From Homework to Teamwork

For Anil Persaud and Cynthia Jairam-Persaud, meeting as first-years meant growing up together



Cynthia and Anil as newlyweds in 2003

**ANIL (BA 1999 UTSC, BEd 2002):** We met for the first time when Cynthia asked a mutual friend at U of T Scarborough to introduce us. But I didn't seem to take much notice of Cynthia. I had been engrossed in a book, which she says I was just pretending to read. But then we kept bumping into each other, almost every day for the next week. Once we started talking, we just meshed. It's hard to put into words, but it was very natural. We're both Guyanese, and we hung out at West Indian Students' Connection events, played cards and dominos, studied together and hit it off. We always had fun together. We started talking about marriage after graduation. We were

both adamant that we didn't want children, but we now have three so it's funny how that turned out. We're very complementary. She's a hands-on doer, and I'm more of a big-picture procrastinator. I think, over the years, we've figured out how to keep everything in perspective, which has helped us to move along our own paths and grow together.

**CYNTHIA (BComm 1999 UTSC):** We were together for seven years before we got married, so I think we already had a really clear understanding of each other. I think it helped that we were in the same stage of life – our needs and wants matched up. We've also always been good at giving each other space. We've always had our own separate group of friends, instead of just merging everyone together. We've got our own independence and distinct identities. That can be harder now, managing a family with three children, but Anil and I have similar views. We're able to balance each other's strengths and weaknesses. I'm great with organization but he's great with finances. He's very kind and generous and has a great ethical core. He has very strong opinions, yet he doesn't try to sway you. But he's always challenged me to think about things more deeply. He's always there to support me, but he also really makes me think about what I'm doing and why.



Alumna Adrienne Alison's sculpture on Parliament Hill depicts those who helped defend Canada during the War of 1812

### Forging a Nation

*Triumph Through Diversity*, commemorating the War of 1812, was unveiled on Parliament Hill last November. Ever since, sculptor Adrienne Alison is happy to report, visitors have been clambering up its central plinth and two adjacent granite boats to take a closer look. "I wanted viewers to interact with the sculpture," says Alison, who earned a BSc in Art as Applied to Medicine from U of T in 1981.

Full of movement and slightly larger than life, her seven bronze figures form a circle illustrating the stages of battle – from first sighting the enemy through to victory. A self-described history buff, Alison consulted experts to ensure the accuracy of the clothing and sourced authentic weaponry, then enlisted live models to pose for about 40 hours each – including a Six Nations Mohawk man who travelled to Toronto several times from Brantford, Ontario.

Alison's U of T studies, and years creating facial prosthetics at the Sunnybrook Health Sciences Centre, inform all of her work. But this piece of public art also required the organizational ability of a general. True to the spirit of the war it commemorates, *Triumph Through Diversity* "was a complex project that involved roughly 100 people," she says. "Something this scale comes along once in a lifetime."

– JO CALVERT





Nav K. Singh

### FIRST PERSON

## Against Their Will

### Being forced into marriage is an all-too-real nightmare for some Canadians

**IMAGINE A FIRST-YEAR LAW STUDENT** waking from a recurring nightmare, heart racing, body drenched in sweat. What could be so terrifying? Being forced to marry against her wishes. Her control over her life stolen from her by her family and community. Her future decisions dependent on her husband's and in-law's permissions. Her studies and her dreams for a career interrupted, if not ended permanently.

This may seem difficult to believe, but forced marriage is a reality in Canada, even though many Canadians are unaware of it. As a lawyer practising family law in the Greater Toronto Area and working with many diverse communities, I see the resulting impact on those affected. Yet, I am hopeful that Canada's new legislation against this type of abuse – passed in June – will be a powerful force for change.

A forced marriage occurs when one or both parties do not give full and free consent to be married to each other at that time. The compulsion may come from immediate or extended families and ethnic or religious communities, both here in Canada and internationally. Some women are taken abroad to visit family and forced into marriage there; some are coerced here at home. It happens to men too. Those forced may be Canadian-born or more recent arrivals.

**In an arranged marriage, both individuals are fully agreeing. The exact opposite is true for at least one party in a forced marriage**

Forced marriage is sometimes confused with arranged marriage, even by those who have been forced. The key distinction is that in an arranged marriage, while there may be the same involvement of family and community, both individuals are fully agreeing with all that is taking place and are looking forward to their lives together. The exact opposite is true for at least one party in a forced marriage whose consent may be assumed, given by others or coerced through extreme emotional pressure, threats and even physical violence.

Patriarchal cultural traditions and communal definitions of honour and shame complicate and hide the very real human rights violations inherent in a forced marriage. The individual loses agency over their life and is at greater risk of sexual assault and other forms of physical violence, of emotional abuse and financial control. These dangers are compounded because forced marriages are very hard to leave. Separation and divorce are still considered unacceptable in many communities and can lead to ostracism. I always find it difficult to help a woman who is experiencing family violence to understand that she can separate and leave the marriage to protect herself and her children from further abuse. She may have lacked choice then, but she can say no now.

These human rights violations need to be prevented, and this is where Canada's new legislation will be most helpful. Social service agencies have not been effective in working with the ethnic communities they are meant to serve because they lack the deep connections and understanding required for meaningful action. They are mistrusted and believed to have their own vested interests, such as securing funding or furthering a political ideology. They too often align with the very powerful and vocal within communities and end up functioning as cultural apologists.

Legislation helps to effect change in two key ways. It provides options for potential victims, such as peace bonds to place restrictions on potential abusers, and gives the police the power to intervene when approached for assistance. And clear laws with easily understood consequences will effect change through word-of-mouth. Criminal law serves an educational function; it delineates acceptable behaviour within society, especially when there are misperceptions regarding legality. This is why many countries, including the United Kingdom and Australia, have already enacted similar laws.

I am hopeful that this legislation and resulting awareness will empower the vulnerable and aid those who seek to assist them. Protecting the silent and powerless is fundamental to the very concept of the universality of human rights. For the powerless and the resilient, they too have dreams.

Nav K. Singh (JD 2000) is a lawyer building bridges between diverse and mainstream Canadian cultures to prevent family violence through community engagement, policy work and her professional practice.



Raigan Burns and Mare Sheppard

## Ninja Power!

### Alumni nab deal with Playstation for video game N++

A PROJECT THAT BEGAN AS AN EXPERIMENT when they were University of Toronto undergrads more than a decade ago has landed Mare Sheppard and Raigan Burns a worldwide distribution deal with Sony's Playstation.

Sheppard and Burns (both BA 2003 Vic) are the creators of *N++*, a video game in which ninja players must avoid deadly traps and enemies, including an evil ninja twin, as they race to find an exit from each increasingly difficult screen.

According to Burns, the first version of the game, *N*, released as freeware in 2004, was inspired by the same kind of graphically simple games they enjoyed themselves. "We took bits of

different games that we liked and combined that with our own ideas about physics and movement."

They posted their creation at freeware sites and shared it with friends. "We didn't know if it would be a success until we got feedback from other people," says Sheppard. "It started snowballing from there."

Burns describes the new version of the game (the third, following *N+*, released in 2008) as less of a sequel than a more perfect rendering of the original. "This one is our final vision – what we were always shooting for but never able to accomplish until now." Adds Sheppard: "You make a lot of mistakes and learn a lot over 11 years."

*N++* preserves the original game's minimal graphic look (some levels are inspired by the brutalist architecture of Robarts Library, according to Sheppard) but adds music and a rich colour palette.

There are also intriguing new enemies and thousands of new levels of play – 2,360 in total.

Unlike many game developers, Burns and Sheppard didn't take courses in the subject while at U of T; back then, the university didn't offer any. To work on *N*, they had to find time outside of class. Both are pleased that U of T now offers courses on game development, including one jointly with OCAD University.

"We would have loved to do that course," says Sheppard. "It's awesome! Now there are all these resources and ways for people to learn and get started."

With success under their belt, they are often approached by new developers for tips on breaking into the industry. Just go ahead and make a game, advises Burns: "Try to recreate *Tetris*, because that will give you a taste." Oh, and "be prepared for a lot of work."

"Keep trying till you find something that really speaks to you," adds Sheppard. "We were making a game that we loved and really wanted to play. We didn't know it would be a success. But we were happy with it." Adds Burns: "The main thing is to have fun and experiment." – SCOTT ANDERSON

## Champion for Rights



Renu Mandhane

Renu Mandhane (JD 2001) has been named Ontario's Human Rights Commissioner. As she takes up her post this fall, she will play a central role in shaping human rights in the province; the Ontario Human Rights Commission develops public policy, conducts public inquiries, and promotes a culture of human rights.

Mandhane has served as director of the Faculty of Law's International Human Rights Program since 2009. Law students in the award-winning experiential learning program have helped process refugee claims in Nepal, documented the human-rights impact of

a pipeline project in Ghana and reported on the 2009 trial of Aung San Suu Kyi in Myanmar, formerly Burma.

"My work at the international level has impressed upon me how important it is to act locally to ensure sustainable social change," Mandhane said in a statement. "I am humbled to be provided with an opportunity to take up that challenge."

Mandhane is "a passionate advocate for freedom of speech and the rights of women," said Attorney General Madeleine Meilleur. She "will help solidify Ontario's leadership on human rights." – LUCIANNA CICCOCIOPPO





Massey College founder Vincent Massey was among the very first Canadians named to the Order of Canada, on July 6, 1967

60 SECONDS WITH

## George Jacob

### At Canada's own Jurassic Park



the massive tail fossil of a duck-billed hadrosaur, measuring about two metres, in the area near here. To prepare it for exhibiting, 11 blocks of rock weighing 20 tonnes were hauled to the Royal Tyrrell Museum in Drumheller, Alberta. The tail, on loan, will be displayed at our museum.

**And what about tourists – is it true that they too can dig for bones at Pipestone Creek?** Under Alberta law, only a qualified paleontologist, such as Philip J. Currie, can apply for a dig permit. So if you want to participate in a dig here, you must do so under his supervision. But we offer bonebed tours. You can also fly in a helicopter over Pipestone Creek, with a tablet computer that zeroes in and explains what you're seeing.

**Tell me about Philip J. Currie (BSc 1972 UC), for whom the museum is named. Everyone says he's the model – or a model, anyway – for the scientist who brings dinosaurs back to life in Jurassic Park.** He is a world-famous expert, a Canada Research Chair at the University of Alberta, who has dedicated his life to the discovery and research of paleontological heritage in Canada and well beyond. When he and his wife, palynologist Eva Koppelhus, come each summer, a lot of people want to go to the dig site with them.

**Some people who do that are quite famous. Your museum's theatre is named after Dan Aykroyd and his family, who are big supporters.** Yes, and they've visited the dig site. Robert F. Kennedy Jr.'s kids have come, and other celebrities. There's a continuing fascination that everyone has with these behemoths that once roamed this part of Alberta until two catastrophic floods wiped them out.

**Since receiving a degree in museum studies at U of T, you've devoted your life to founding museums around the world. In the computer age, why are museums still important?** Museums are the souls of civil societies. There is no substitute for seeing, touching and engaging with something that is real. But Canadians don't invest nearly enough in museums. Around the world, there are museums on fashion, winemaking, animation, insects – even chocolate! There are so many fascinating topics that museums can focus on that could be game-changers, if Canada tapped into the talent that it has here.

**DINOSAURS MAY BE EXTINCT**, but our collective obsession with them is very much alive. Amateur paleontologists will flock to Northern Alberta's Pipestone Creek this fall, location of the world's densest bed of horned dinosaur bones. The occasion: the opening of the new Philip J. Currie Dinosaur Museum – a laboratory, dig site, and state-of-the-art exhibition space. **Cynthia Macdonald** excavates the facts with **George Jacob** (MMSt 1996), the museum's founding president and CEO.

**It seems Alberta is as famous for dinosaurs as it is for oil. In fact, I've heard several reports of pipeline workers digging up bones while on the job!** Indeed. In 2013, workers from Tourmaline Oil uncovered

## Milestones



Johann Olav Koss

Eighteen U of T alumni were named to the Order of Canada on Canada Day.

Appointed a companion of the order: former politician, and advocate for indigenous peoples, **Bob Rae** (BA 1969 UC, LLB 1977).

New officers of the order: Judge **Allen Linden** (BA 1956 UC) and clean energy innovator **Linda F. Nazar** (PhD 1987).

New members: philanthropist and volunteer **Sandra Irving** (MA 1996), publisher **Douglas Knight** (BA 1977 New), kidney disease expert **Adeera Levin** (BSc 1981 Innis), Judge **John Wilson Morden** (BA 1956 Trinity, LLB 1959), novelist **Morley Torgov** (BA 1950 UC), primary health care advocate **Carolyn Ruth Wilson** (MD 1976), breast cancer researcher **Martin Yaffe** (PhD 1978) and founder of Women Against MS **Phyllis Yaffe** (MLS 1976).

In addition, *Right To Play* founder **Johann Olav Koss** (MBA 2004), who is a Norwegian citizen, was named an honorary member of the order. For the six alumni named to the order who are also U of T faculty, see page 20.

**Robert Herjavec's** (BA 1984 New) reality TV show *Shark Tank* earned an Emmy nomination, while **Mychael Danna** (BMus 1986, BEd 1987) scored two, for compositions for *Tyrant*. The winners were to be announced Sept. 20, after this issue went to press.

Underwater archeologist **Ryan Harris** (BA 1995 Trinity) received an inaugural Polar Medal for contributions to Canada's North, thanks to his role in discovering the lost Franklin expedition ship HMS Erebus.

John Lennon and Yoko Ono launch the Plastic Ono Band at Varsity Stadium in 1969



### TORONTO ROCK 'N' ROLL REVIVAL Sept. 13, 1969

Fab new acts groove with '50s legends

In its 104-year history, Varsity Stadium has hosted its share of iconic Toronto sporting moments, but the place has also played a vital role in the city's vibrant music scene. It was here, in September 1969, just days before John Lennon told the Beatles that he was leaving them, that Lennon and Yoko Ono first performed live as the Plastic Ono Band, with Eric Clapton on guitar and Ono handling vocals.

Lennon, in his trademark white suit, premiered "Cold Turkey," which many believe chronicles his anguishing withdrawal from heroin. The song was so new, Lennon couldn't remember the lyrics. He read the words off a piece of paper that Ono held up next to his guitar.

The 12-hour rock concert included 1950s rock 'n' roll

stars Fats Domino and Bo Diddley (and Chuck Berry did his signature duck walk across the stage), as well as new sensations, such as Alice Cooper, Chicago and the Doors. But it was Lennon who sold out the 22,000-seat football stadium. When he and Ono sang "Give Peace a Chance," they swayed in front of a field of twinkling lights. The tradition of waving lit lighters and matches at concerts may have originated that evening at Varsity.

In later years, Varsity crowds welcomed Pierre Trudeau, Mother Teresa and Kiss. The stadium was rebuilt in 2007 and this summer, hosted archery for the Pan Am and Parapan Am Games. But ever since its inception in 1911, when the leaves change colour the field belongs to the Varsity Blues. — **SUSAN PEDWELL**



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The University of Toronto community is vibrant and active in the Greater Toronto Area, across Canada – and internationally.

Last year, U of T welcomed 50,000 alumni to hundreds of events around the world.

We invite you to join us at these occasions to meet the university's leaders, hear talks by our most intriguing thinkers and connect with fellow graduates and friends of Canada's top-ranked university.

Take the opportunity to explore your unique connection to the University of Toronto, and tap into a global network of more than half a million alumni.

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