Mindful Science Why meditation works / **Out of Sight** A real-life cloaking device / **Game of Thrones** Chess's comeback
Being Social Twitter's Kirstine Stewart / **Urban Buzz** Beekeeping in Toronto / **Sing It Loud** Unconventional opera

UofT Magazine

SPRING 2014

Superbugs

How should we fight back against drug-resistant germs?

Show your pride.

The rewards card for savvy alumni.

The University of Toronto mbna rewards *MasterCard*® credit card

The more you use it the better it gets.
Earn mbna rewards points you can redeem for unlimited cash back, brand-name merchandise, worldwide travel, gift cards from top retailers and restaurants, even charitable donations.

- Earn **1 point for every $1** in eligible purchases‡
- Get **1,000 bonus points**†† after your first eligible purchase
- Receive **1,000 bonus points**‡‡ each year on your account anniversary
- **Every eligible purchase** benefits student and alumni programs at The University of Toronto

See how fast your points can add up.

Type of Purchases	Monthly Expenses	Monthly Points	First-Year Points
Gas	$200	200	2,400
Groceries	$525	525	6,300
Insurance and Utilities	$425	425	5,100
Dining Out	$175	175	2,100
Other	$350	350	4,200
Subtotal	**$1,675**	**1,675**	**20,100**
Bonus points††			**+1,000**
Potential first-year total (Redeemable for $210 cash back and more.)			**21,100**

For illustrative purposes only. Actual rewards earned will depend on individual purchases.

Learn more today.

Visit **www.creditrsvp.com** or call **1.877.428.6060**[a].
Use priority code **CNHY**.

Call us Monday – Friday 9 a.m. – 9 p.m.
Saturday 10 a.m. – 6 p.m. Eastern Time.

Explore redemption options at **www.mbna.ca/mbnarewards**

mbna rewards

‡ These are highlights of the mbna rewards program (the "**Program**") as it pertains to this credit card account. mbna rewards will be awarded on eligible purchase transactions charged to your mbna rewards MasterCard credit card account. Complete terms and conditions describing eligibility of the Program, accrual and redemption of mbna rewards, and other important conditions, limitations and restrictions will be sent after your account is opened. Please read the terms and conditions carefully upon receipt.

†† This is a one-time offer for new MBNA MasterCard credit card cardholders, or existing MBNA MasterCard credit card cardholders who qualify for an additional account. To qualify for this offer, cardholders must use their account for at least one purchase transaction. Please allow 8–10 weeks from the transaction date for the bonus points to be posted to your points account. Limit one-time 1,000 bonus point offer (no cash value) per new account. This promotion is offered by MBNA and may be amended or cancelled at any time without further notice.

‡‡ To qualify for bonus anniversary points, your account must be in good standing and you must have made at least one purchase transaction on your account within the prior calendar year. This bonus will be applied annually following the anniversary date of your account opening. This promotion is offered by MBNA and may be amended or cancelled at any time without further notice.

[a] By telephoning to apply for this credit card, you consent to the collection, use and processing of information about yourself by MBNA, its affiliates and any of their respective agents and service providers, and to the sharing or exchange of reports and information with credit reporting agencies, affiliates and service providers in relation to processing your application and, if approved, administering and servicing your account. You also acknowledge that the account, if approved, will not be used by any third party other than a third party specifically designated by you, and then only in accordance with MBNA policies and procedures then in effect.

Information is current as of February 2014, and is subject to change.

AD-10-13-0700

CAN ALL THAT JAZZ HELP FIGHT CANCER?

Taking education beyond the classroom in boundary-pushing, unexpected ways.

For more than 100 years, U of T medical students have been singing, dancing and raising money for cancer research through their annual variety show. Produced, directed and written entirely by students, Daffydil allows future doctors to hone the creativity it takes to become innovative, well-rounded physicians. By purchasing U of T affinity products, you're supporting events like Daffydil and helping students take their learning to surprising new places.

What exactly are affinity products? Value-added services such as the U of T *MasterCard*® credit card from MBNA. The revenue generated supports campus arts and culture, mentorship programs, volunteer opportunities, and other initiatives for students and alumni alike. More than 120,000 alumni and friends now take advantage of U of T affinity products, helping our students explore their boundless potential.

www.affinity.utoronto.ca

mbna

UNIVERSITY OF TORONTO
AFFINITY PARTNER

Spring 2014

Volume 41, No. 3

COVER: JON HAN; ABOVE: JACKLYN ATLAS

UofTMagazine

SPRING 2014 VOLUME 41 NO. 3

Editor and Manager
Scott Anderson

Acting Deputy Editor
Janet Rowe

Art Direction and Design
The Office of Gilbert Li

Editorial and Advertising Assistant
Nadia Van

Co-Publishers
Ania Lindenbergs, Senior Executive Director, Advancement Communications and Marketing

Barbara Dick, Assistant Vice-President, Alumni Relations

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

Advertising Inquiries
Nadia Van
T (416) 978-0838, F (416) 978-3958
nadia.van@utoronto.ca

All correspondence and undeliverable copies: *U of T Magazine*, 21 King's College Circle, Toronto, ON M5S 3J3

U of T Magazine, with a circulation of 320,000, is published quarterly by University Advancement.

Alumni receive the magazine free of charge. Donations accepted at magazine.utoronto.ca under "Support Us," or send a cheque payable to the University of Toronto at the above address.

Publications Mail sales agreement
No. 40065699

Non-profit postage paid Buffalo, NY
Permit No. 3415. U.S. Postmaster send address corrections to P.O. Box 29, Lewiston, NY 14092

Printed in Canada by TC Transcontinental Printing Inc. ISSN 1499-0040

Stay in touch
Do we have your correct name and address? If not, please call (416) 978-2139 or toll-free 1-800-463-6048 or email us at address.update@utoronto.ca

Visit us online: magazine.utoronto.ca
Twitter: @uoftmagazine

The University of Toronto respects your privacy. We do not rent, trade or sell our mailing lists. If you do not wish to receive the magazine, please contact us at (416) 978-2139 or 1-800-463-6048 or address.update@utoronto.ca

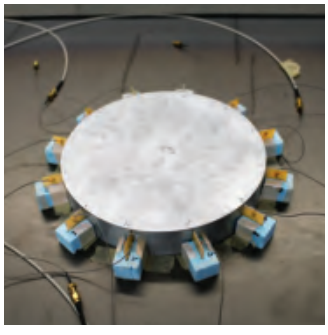
MIX
Paper from responsible sources
FSC® C011825
www.fsc.org

UNIVERSITY OF TORONTO

Departments

The worst thing is not to have a problem communicating, but to have a problem and not realize it

– Mark Rowswell (BA 1988 UC), a star of Chinese television, who is passionate about improving east-west dialogue, p. 17



22 U of T engineers create a real-life cloaking device

52 A grad helps raise a statue to a visionary inventor

15 U of T prepares to host the World Pride Human Rights Conference, which will provide a forum for LGBT activists from around the globe

Letters

Many Canadians remain in favour of a national "mosaic."...But this requires everyone, including immigrants, to...respect the views of others

FRANCOIS P. JEAN
MA 1964, OTTAWA

Charter Is Good News for Quebec
I felt dismayed after reading the interview with Prof. Melissa Williams on the proposed Charter of Quebec Values ("Whose Values?" Winter 2014). I was born in France and have observed, approvingly, as Quebec has tried to emulate the French system of secularism. The idea has a lot of support in Quebec but is strongly opposed in English Canada, which did not have a "révolution tranquille" and where religious rights sometimes take precedence over other rights.

Historical evidence suggests that a strong separation of church and state is beneficial and that, in most cases, the state's views should prevail over religious views. In many western countries, Christians have accepted divorce, contraception, abortion and now same-sex marriage – issues that seem at least as important as wearing a headscarf. The 30 per cent of Canadians who are either atheist, agnostic or secular Christian have a right not to be confronted by obvious religious symbols when dealing with their government.

A major issue is whether this Charter will reduce negative sentiments against minorities and allow them to fully enjoy Canada – or cause greater antagonism. I believe the Charter will have positive results. Many Canadians remain in favour of a national "mosaic" in which immigrants can keep their traditions. But this requires everyone, including immigrants, to make an effort to respect the views of others.

FRANCOIS P. JEAN
MA 1964, OTTAWA

Quebec's Demographic Challenge
While I believe the Charter of Quebec Values is doomed to fail, it is important to understand why it has become a hot-button issue in Quebec. It is not, as Prof. Williams suggests, part of a post-9/11, anti-Muslim backlash. Rather, it's because for decades Quebec has had a below-replacement birth rate. Francophones, because of their minority status within Canada, have always been conscious of preserving their culture. And they are well aware that Muslims are not adding to the Francophone population. However, the Charter of Quebec Values is akin to putting one's head in the sand: it will do nothing to address this underlying problem. Quebec will continue to be secular; the Francophone population will continue to shrink, and Muslims will continue to immigrate to Quebec.

PETER WADECK
ThM 2012, KINGSTON, ONTARIO

A Memorable Professor
The "In Memoriam" essay on J.N.P. Hume (Autumn 2013) brought back some pleasant memories. In 1952, I was a 17-year-old chemical engineering freshman. Prof. Hume's lecture was the first one of the day for my class, but nobody was late after he demonstrated a bravura memory feat. At the third lecture, and after only one laboratory session in which Prof. Hume could have met the 150 or so students, he greeted a latecomer by name and thanked him for arriving before the end of the class.

At my tender age, Prof. Hume seemed like an ancient. Now I realize that he was only 12 years older than I, and had earned his doctorate only two years earlier.

JAMES E. LUCE
BASc 1956, WARWICK, NEW YORK

The Key to Easy Research
I was interested to read the article on U of T's Personal Librarian Program ("At Your Service," Autumn 2013). As a former high school teacher, I spent hours instructing students on how to use research databases and why they should use them. It seemed most of my instruction fell on deaf ears. Imagine how I had to bite my tongue when my own daughter came home from university and announced, Eureka!, she had discovered the key to easy research: the abstracts and conclusions provided in database articles! I am sure many public librarians have also walked students through this process. What a wonderful idea to personalize the service!

CAROLYNN BETT
BA 1966, MA 1967, MLS 1973, TORONTO

Psychiatric Meds a Boon for Patients
G. V. Whelan's letter in the Winter 2014 issue ("Western Arrogance") made me wonder if the psychiatry bashers have become institutionalized at my alma mater. It is not the first such diatribe I've noticed. ›

Back in the early 1960s, our teachers in the Faculty of Medicine would have considered effective antidepressants miracles. Many people in Toronto's Queen Street mental institution would have been promptly discharged had safe antipsychotics been available.

Over my many years of private psychiatry practice in New York City, not a single patient of African birth declined to avail themselves of help from medication. And they responded to the medication they received no differently than anyone else.

HAROLD A. HAMER
MD 1963, NEW YORK CITY

Sale of Weapons Supports Conflict

In the interview with Prof. Aisha Ahmad in the Winter 2014 issue ("The Price of War"), she claims that foreign aid can fuel corruption and prolong conflict – an appalling statement because it may compel readers to harden their hearts to those in need in conflict zones.

Money is certainly a huge factor in any conflict, but not as Prof. Ahmad describes. The sale of arms is one of the biggest economic sectors in the world, with Western nations leading the way, even going so far as to finance the purchase of arms. The United States, France, England and Canada are important supporters of global conflict through the sale of arms, weapons materials and war-related research. Canada's support for war is further revealed in our diminishing contribution to the anti-landmine Ottawa Treaty, ratified in 1999, and our refusal to sign the Arms Trade Treaty, which has yet to come into effect.

A more relevant article for alumni would explore the extent to which the sale of arms contributes to Canadian GDP and how much war-related research is taking place at the University of Toronto.

MARTIN GAGNÉ
BASc 1984, TORONTO

Prof. Ahmad responds:

When I started my research into conflict 10 years ago, I tracked the illicit trade of weapons in and out of war zones. I spent time in the arms bazaars talking to smugglers in porous border regions. It soon became clear that the money to purchase arms came through multiple channels, and that the aid industry was a key source of revenue for militant groups. From Mogadishu to the Khyber Pass, I witnessed powerful militias unload aid convoys and then use these resources to finance arms purchases. I spoke with warlord-parliamentarians who admitted that they diverted donor dollars to their private pockets. Understanding this pernicious relationship between aid and war is the first step toward developing creative and sophisticated solutions to this problem. Doing good humanitarian work in difficult security environments is possible. But this work requires hard facts, not just soft hearts.

Job Ready

U of T is developing new programs to help students succeed after graduation

Should a university's primary role be to provide education or job training? Those in favour of the latter argue that universities aren't doing enough to prepare students for the "real world."

The question sets up a false distinction, though: Canadian universities have been doing both for more than two centuries. And in some cases, concerns about the "relevance" of university education are exaggerated or misguided. Recent studies – from Statistics Canada and from the Council of Ontario Universities – affirm the great value of a university degree in earnings potential and employment rates.

The debate reflects the accelerating pace of change across all industries, an increasingly globalized and competitive economy, and the lingering effects of the global recession. Governments tend to tie the value of public spending – especially on education – to its effect on economic growth and job creation. And students (and their families) are concerned, understandably, about whether their investments in a university education will pay off in a rewarding career.

U of T takes these concerns very seriously, not least because we are accountable for our use of the public funding we receive. In response, we have invested substantial resources in strengthening undergraduate education. The result is a flourishing culture of innovation and entrepreneurship, and curricula designed to ensure graduates have the core competencies that a university education is uniquely suited to impart: the abilities to think critically and creatively, to communicate clearly, to solve complex problems and to collaborate effectively. These competencies, in addition to the knowledge our students gain in their chosen disciplines, will help prepare them for a lifetime of success.

But we recognize that we can do more to help ensure that our students understand how the choices they make here can shape their long-term options. Throughout their time at U of T, and especially as they approach graduation, we want to encourage our students to think strategically about how they can leverage *all* of their university experiences.

For students enrolled in professional schools, often the path from class to career is clear, and U of T's professional programs have long excelled at helping students navigate it. That's less often the case for undergraduate students in the humanities and social sciences. U of T provides unparalleled opportunities for them to develop all the crucial skills I've mentioned – and in some ways their career options are much broader. But, paradoxically, the way forward after graduation is often less obvious to them.

Last year, U of T introduced the Co-Curricular Record – an official document that serves to list and verify a student's co-curricular activities. Designed to complement the traditional academic transcript, it helps explain to employers the skills and knowledge gained from these activities, which we recognize as a crucial part of a university education. It also helps students to see how they can use these activities to their advantage in the job market.

"Step Forward," a new program planned for the Faculty of Arts and Science, will ask students at all stages of their academic career to reflect actively on what they learn in their courses and co-curricular activities and on how they can apply this knowledge towards their aspirations in life.

Recently, the university overhauled the student information system (what many alumni know as ROSI). Among other things, this will make it easier for students and their advisers to see at a glance what courses have been completed. More to the point, advisers won't have to spend time tracking down students' academic records, freeing them to focus on the creative, high-level advice students are asking for in planning their future educational or career paths.

U of T reaffirms the value of a broad liberal arts education at the undergraduate level, and we are working to help our graduates extract the full benefit from that education. The initiatives mentioned here will provide greater support to our students in using their experience at U of T for a lifetime of fulfillment, while contributing to the success and well-being of our communities and our society.

Sincerely,
Meric Gertler

Calendar

MORE EVENTS!
Check out the latest campus happenings at **utoronto.ca.**

U of T alumni meet old friends and make new ones at Shaker at Spring Reunion, 2013

MAY 28 TO JUNE 1

Spring Reunion 2014

If you graduated in a year ending in 9 or 4, please visit the Spring Reunion website to learn about the events hosted in your honour by your college, faculty or department, as well as U of T-wide events. While honoured alumni are special guests, all U of T alumni are welcome. Special celebrations include Shaker for Young Alumni, a night of mixing and mingling for recent grads at Ripley's Aquarium of Canada, 288 Bremner Blvd., from 7 to 10 p.m. on May 29. More Spring Reunion events are listed on the next page.

Contact **416-978-5881** or **spring.reunion@utoronto.ca,** or visit **springreunion.utoronto.ca.**

Alumni

April 4
Hart House
14th Annual Engineering Science Alumni Dinner. With keynote speaker Avanindra Utukuri, founder of Nytric. $65 ($40 for alumni with grad degrees). Reception 6 p.m., dinner 7 p.m. 7 Hart House Circle. For info: Deborah Peart, 416-978-8634 or engsci@ecf.utoronto.ca.

April 9
North York
Skule Lunch and Learn. The Gemini project – a retrofit of an 1879 home that could reduce energy demand by 80 per cent. $30. 12–2:45 p.m. Toronto Plaza Hotel, 1677 Wilson Ave. For info: alumni.engineering.utoronto.ca/stay-connected/events/skule-lunch-learn-series.

April 9
London, England
Chancellor's Reception for Alumni and Friends. 6:30–8:30 p.m., Le Meridien, 21 Piccadilly. For info: Teo Salgado, 416-978-2368 or teo.salgado@utoronto.ca. Visit alumni.utoronto.ca/events/regional.

April 17
Mississauga
U of T in Your Neighbourhood. Barbara Murck presents "The Volcanoes of the Galápagos." 6:30–8:30 p.m. Port Credit Arena, 40 Stavebank Rd. Contact Teo Salgado, 416-978-2368 or teo.salgado@utoronto.ca. Visit alumni.utoronto.ca/events/gta.

April 27
Ottawa
Faculty of Medicine Community Event. Reception for alumni and friends at the annual Canadian Conference on Medical Education. Free. 6–8 p.m. Westin Ottawa Hotel, Ottawa. For details, contact morgan.tilley@utoronto.ca.

May 7
Boston
U of T Where You Are. Gary Latham presents "Building Peak Performance." 6:30–8:30 p.m. University Club of Boston, 426 Stuart St. Contact Teo Salgado, 416-978-2368 or teo.salgado@utoronto.ca, alumni.utoronto.ca/events/regional.

May 8
Washington, DC
U of T Where You Are.
Gary Latham presents "Building Peak Performance." 6–8 p.m. City Tavern Club, 3206 M St. NW. Contact Teo Salgado as above.

May 27
Montreal
Physiology Alumni Reception. Hosted by the Department of Physiology, at the 8th Annual Canadian Neuroscience Meeting in Montreal. Free to alumni and their guests. 7–8:30 p.m. Belvédère Room, Hilton Bonaventure Hotel, Montreal. Contact: 416-978-7142 or medicine.rsvp@utoronto.ca.

May 29
Victoria University
Burwash Centenary Reunion. Toast iconic Burwash Hall with fellow Vic alumni. $45. Reception and upper residence tours, from Goldring Student Centre, 150 Charles St. W., 5:30–6 p.m. Dinner and reminiscences, Burwash Dining Hall, 89 Charles St. W., 7 p.m. Limited residence rooms are on hold. To register: 416-585-4500 or my.alumni.utoronto.ca/bw100.

May 29
U of T Mississauga
Alumni Awards of Distinction. The UTM Alumni Association recognizes service, creativity, success and entrepreneurial spirit among our 44,000 distinguished alumni. Free. 6:30 p.m. Lislehurst, 3359 Mississauga Rd.

PHOTO: GUSTAVO TOLEDO PHOTOGRAPHY

Doris McCarthy's 1966 painting, "Rhythms of Georgian Bay" is on display in "Glam North" until April 26

For info: 905-569-4924, alumni.utm@utoronto.ca.

June 2
Hong Kong
Stanley Dragon Boat Race. The U of T/UBC team competes. To join the team, contact Michelle Poon at ask@utoronto.com.hk.

Spring Reunion

May 27
U of T Mississauga
Spring Graduation Reception. Celebrate with our Class of 2014. Free. 7–9 p.m. Instructional Centre Atrium, 3359 Mississauga Rd. For info: 905-569-4924, alumni.utm@utoronto.ca.

May 28
Gardiner Museum
LGBTQ Spring Soiree. LGBTQ alumni and friends are invited to a cocktail reception and sneak preview of the Gardiner Museum's exhibition, Camp Fires: The Queer Baroque of Léopold Foulem, Paul Mathieu and Richard Milette. Free. 6–9 p.m. 111 Queen's Pk. 1-888-738-8876, springreunion.utoronto.ca

May 30
Convocation Hall
Chancellor's Medal Ceremony honouring alumni marking their 55th, 60th, 65th, 70th, 75th and 80th anniversaries. 10–11:30 a.m. 31 King's College Circle.
50th Anniversary Ceremony honouring all 1964 grads. 4–6 p.m., 31 King's College Circle.

May 31
Convocation Hall / Front Campus
U of T Alumni Celebration. Sponsored by the U of T Alumni Association (UTAA). Program includes the presentation of the inaugural UTAA Award for Community Engagement, an address by entrepreneur and TV personality Robert Herjavec (BA 1984 New) and the UTAA AGM. All alumni welcome. Free. 11 a.m.–12:30 p.m. 31 King's College Circle. Followed by a BBQ lunch on front campus, 12:30–2:30 p.m. 1-888-738-8876, springreunion.utoronto.ca

May 31
U of T Mississauga
Spring Reunion. An afternoon of learning experiences beginning with a BBQ. $4 ($2.50 for children). 12:30 p.m. 3359 Mississauga Rd. For info: 905-569-4924, alumni.utm@utoronto.ca.

May 31
Hyatt Regency Toronto
Engineering Reception and Dinner. The classes of 3T9, 4T4, 4T9, 5T4, 5T9, 6T4, 6T9, 7T4, 7T9, 8T4 and 8T9 are invited to join the Faculty of Applied Science and Engineering. $100 before May 16, $120 after May 16. 6–11 p.m. 370 King St. W. For info: Megan Murphy, 416-978-4941 or meganm@ecf.utoronto.ca.

Exhibitions

To April 26
Doris McCarthy Gallery, UTSC
Glam North: Doris McCarthy and Her New Contemporaries. In honour of the gallery's 10th anniversary, this exhibition explores affinities between works by McCarthy and the next generation of artists. Free. 11 a.m.–4 p.m. Mon. to Thurs. (to 8 p.m. Wed.), 12–5 p.m. Sat. 1265 Military Trail. For info: 416-287-7007, utsc.utoronto.ca/dmg.

April 29 to June 28
University of Toronto Art Centre
Archiving Public Sex highlights photos, videos, posters and pulp novels from the collection of the Marc S. Bonham Centre for Sexual Diversity Studies. **Through the Body: Lens-based works by Contemporary Chinese Women Artists** is a primary exhibition of the Scotiabank CONTACT Photography Festival. Free. 12–5 p.m. Tues.–Fri. (to 8 p.m. Wed.), 12–4 p.m. Sat. 15 King's College Circle. For info: 416-946-8687, utac.info@utoronto.ca or utac.utoronto.ca.

May 23 to August 29
Thomas Fisher Rare Book Library
Vesalius 500: An exhibition of books commemorating the 500th anniversary of the birth of Andreas Vesalius, the "Father of Anatomy". Free. Mon. to Fri., 9 a.m.–5 p.m. 120 St. George St. For info: 416-978-5285 or fisher.library.utoronto.ca/events-exhibits/current-exhibition.

Lectures and Symposia

April 7
MacMillan Theatre
Cadario Lecture. The School of Public Policy and Governance presents best-selling author Robert D. Putnam. $20 ($10 U of T faculty, staff and alumni, free for U of T students). 5:30–7 p.m. 80 Queen's Pk. To register, visit cadarioputnam.eventbrite.ca. For info: public.policy@utoronto.ca.

April 8
Faculty Club
Senior College Annual Symposium. Presentations and discussion on "Global Hotspots: Implications for our Time and the Next Generation." Modest fee TBA. 9 a.m.–4 p.m. 41 Willcocks St. 416-978-7553, senior.college@utoronto.ca or faculty.utoronto.ca/arc/college

May 15 to 16
Sheraton Centre Toronto
Global Cities Summit – Getting on Track: Sustainable and Inclusive Prosperity for Cities. The John H. Daniels Faculty of Architecture, Landscape and Design hosts. Open to the public. 8:30 a.m.–5 p.m. 123 Queen St. W. Register at globalcitiessummit.com. For info, call 416-966-2368.

Music

April 6
MacMillan Theatre
Choirs in Concert: In High Voice. The Women's Chorus share the stage with Young Voices Toronto and the Children's Choir-in-Residence. $30 ($20 seniors, $10 students). 2:30 p.m. 80 Queen's Pk. For tickets, call Weston Family Box Office at the TELUS Centre: 416-408-0208.

Special Events

May 31
Four Seasons Hotel, Toronto
Norman Bethune Celebration Gala. An evening of culture and history in honour of Dr. Norman Bethune, a graduate of the Faculty of Medicine renowned for health-care innovation. 6–10 p.m. Aria Ballroom, 60 Yorkville Ave. Visit bethunegala.com for ticket prices and to register.

July 7 to August 15
St. George Campus
Register now for science and engineering programs for kids and teens. 9 a.m.–4 p.m., Mon.–Fri. For info: 416-946-0816, outreach@ecf.utoronto.ca.
July 7 to Aug. 1, DEEP Summer Academy for advanced high school students. 1 week for $465 up to 4 weeks for $1,710 (residence option available). Apply at: deepsummeracademy.com.
July 14 to 18, Girls' Jr. DEEP and ENGage for students in Grades 3 to 8. $285 for Girls'; $100 for ENGage. Register at uoft.me/outreach.
July 21 to Aug. 15, Jr. DEEP for all students in Grades 3 to 8. $285. Register at uoft.me/outreach.

Sports

June 5
Hart House
University of Toronto Sports Hall of Fame Induction. Join us as we celebrate the 2014 inductees! $30 ($15 for children 12 and under). 7 Hart House Circle. Reception, 6 p.m., Great Hall. Ceremony, 7:30 p.m., Hart House Theatre. For tickets: uofttix.ca; 416-978-8849. For info: rachel.keeling@utoronto.ca.

ARTWORK: DORIS MCCARTHY (PHOTO BY TONI HAFKENSCHEID)

How to plan your Spring Reunion in 5 easy steps.

If you graduated in a year ending in 9 or 4, this is your spring reunion and now's the time to plan it.

STEP 1.

Visit
springreunion.utoronto.ca
to sign up for events at your college, faculty or department.

The website is your one-stop source for all things Spring Reunion and it works like online shopping. Simply enter your grad year plus your affiliation, and a list of personalized possibilities will appear. Register, pay and print your itinerary for a jam-packed reunion weekend.

STEP 2.

Get a Stress-Free Degree: Attend fascinating lectures by noted U of T professors and instructors.

Friday, May 30

12:45 p.m.

- From Medici Madness to Vanderbilt Vanity: The Ultimate Opera Tour – Linda and Michael Hutcheon
- Great Houses: A Nation's History and Art – Susanne Jeffery

2 p.m.

- Gene-environment Interplay: Biological Embedding of Experience – Marla B. Sokolowski

3:15 p.m.

- Traffic Lights that Learn – Baher Abdulhai
- Let's Make Life Harder – Mike Evans
- So Sick or so Cool? Youth Internet Language – Sali Tagliamonte

Saturday, May 31

9:45 a.m.

- Without a Leg to Stand On: 3D Printing and Prosthetics – Matt Ratto
- The Doctor Will Tweet You Now – Karen Devon

2:45 p.m.

- Engineering Today – Speakers from the Faculty of Applied Science and Engineering

4 p.m.

- Consider the Icicle – Stephen Morris

Please note that lecture programming is subject to change and additional lectures may be added. For the most current Stress-Free Degree lecture information, click on "events" at springreunion.utoronto.ca

GO BACK TO SCHOOL FOR THE WEEKEND

Spring Reunion 2014

May 28–June 1

springreunion.utoronto.ca

STEP 3.

Don't forget about the U of T-wide signature events for alumni of every description.

Wednesday, May 28
LGBTQ Spring Soiree
at the Gardiner Museum

Thursday, May 29
SHAKER for Young Alumni
at Ripley's Aquarium of Canada

Friday, May 30

- Chancellor's Circle Medal Ceremonies for 55th to 80th Anniversaries
- 50th Anniversary Ceremony

Saturday, May 31
Campus Bus Tours

STEP 4.

Get to know your University of Toronto Alumni Association (UTAA).

U of T Alumni Celebration
Saturday, May 31
11 a.m.–12:30 p.m.
Convocation Hall
31 King's College Circle

FEATURING:

- Presentation of UTAA's Alumni Award for Community Engagement
- Keynote address by Robert Herjavec (BA 1984 New College)
- UTAA AGM (brief business meeting)

Alumni BBQ 12:30–2:30 p.m.
Tent, Front Campus

Join us for the FREE BBQ and meet University of Toronto President, Prof. Meric Gertler.

See ad on next page for more details.

STEP 5.

RSVP, find out more & check the website often for updates:

1-888-738-8876
or 416-978-5881
spring.reunion@utoronto.ca
springreunion.utoronto.ca

UNIVERSITY OF TORONTO

Join us for the U of T Alumni Celebration

Saturday, May 31, 2014

Hosted by the University of Toronto Alumni Association (UTAA)

alumni.utoronto.ca/utaa

Keynote Speaker:

Robert Herjavec

(BA 1984 New College)

Entrepreneur and TV Personality

- One of North America's most recognizable business leaders, personifying the classic "rags to riches" story of new Canadians.
- A serial entrepreneur who has built and sold several companies and winner of an Ernst & Young Entrepreneur of the Year Award.
- Widely known as a business and motivational expert whose advice has appeared in numerous publications.
- Founder of The Herjavec Group — one of Canada's fastest growing technology companies and recognized as the #1 Security Company in Canada.
- Known for his roles on Canada's popular TV show **Dragons' Den** and America's Emmy-nominated **Shark Tank**.
- Best-selling author of the aptly titled *Driven* and *The Will to Win* — both recognized as two of Canada's best-selling business books.

Find out more at **robertherjavec.com**

HERJAVEC

ALUMNI CELEBRATION

11 a.m. – 12:30 p.m.

Convocation Hall, 31 King's College Circle

Featuring:

- **Presentation of UTAA's Alumni Award for Community Engagement**
- **Keynote address by Robert Herjavec**
- **UTAA AGM (brief business meeting)**

ALUMNI BBQ

Immediately following the celebration in Convocation Hall

12:30 – 2:30 p.m. on the front campus

Registration is required.
Get more details and RSVP at:

alumni.utoronto.ca/utaa
1-888-738-8876

Celebration and BBQ are sponsored by your UTAA.
All alumni are welcome.

UNIVERSITY OF TORONTO ALUMNI ASSOCIATION

Life on Campus

"Gay rights are at a tipping point, but which way are they tipping?"
Sexual Diversity Studies prof Brenda Cossman
p. 15

From left: Michael Apkon, Sick Kids; Michelle DiEmanuele, Trillium Health Partners; Deb Matthews, minister of health and long-term care; U of T President Meric Gertler; Catherine Zahn, CAMH

Keeping Ontarians Healthy

New $60-million joint initiative will help people living with both mental and physical illnesses

U OF T'S PARTNERSHIP WITH THREE other leading medical and research institutions in Toronto will address a major gap in Canada's health-care system: the care of those suffering from mental and physical illness at the same time.

In January, U of T, the Centre for Addiction and Mental Health (CAMH), Sick Kids and Trillium Health Partners announced the creation of the Medical Psychiatry Alliance. The initiative is supported with a $20-million grant from the province and a landmark $20-million gift from an anonymous donor. Each of the four partners will raise additional funds to bring total capital for the project to $60 million.

More than 1.3 million Ontarians suffer from combined physical and mental illness. Studies of health systems around the world as well as first-hand experiences of health-care workers have shown that these patients are often ill-served – with potentially severe consequences. The challenge stems from the fact that our health-care system is designed to focus on *either* physical or mental illness, but not on both at the same time.

"Mental illness is often hidden within the symptoms of physical disorders, with treatment focusing on physical illness while the mental illness remains undiagnosed and untreated," says Deb Matthews, Ontario's minister of health and long-term care. "Intervening early and getting patients the treatment they need will help people living with these illnesses recover better and live healthy lives."

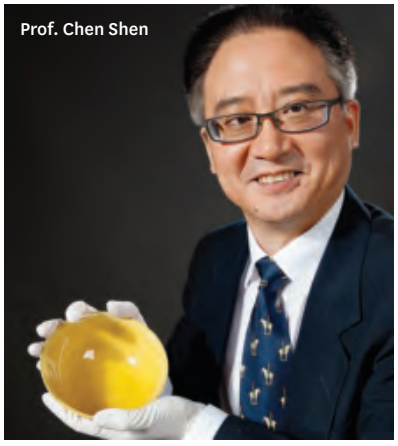
John (not his real name), age 14, is one such patient. He was an excellent student and athlete until he developed ›

PHOTO: JAMES POREMBA

General Wolfe surprised French forces at the Plains of Abraham by having his army scale 200-metre cliffs previously thought unclimbable

Inside the Palace

Prof. Chen Shen reveals how life was in China's Forbidden City



Prof. Chen Shen

CHEN SHEN, a professor of East Asian studies, is holding an object worth more than its weight in gold. The porcelain dish, currently on display at the Royal Ontario Museum, was designed by a 16th-century emperor, and is glazed in yellow to symbolize his imperial power. Because the colour was strictly reserved for royal families, a bowl like this is incredibly rare, says Shen, lead curator of the ROM's centennial exhibit, *The Forbidden City: Inside the Court of China's Emperors.*

The yellow bowl is just one of about 250 artefacts in the exhibit, which will help people visualize life behind the walls of the imperial palace in Beijing, home of the Chinese court in the Ming (1368–1644) and Qing (1644–1911) Dynasties. Shen and his co-curators travelled to Beijing several times to hand-pick textiles, paintings, ceramics, calligraphy, furniture, armour, books, toys and household items from the vaults of the Palace Museum, as the Forbidden City is now known. Some 80 artefacts have never been seen outside the city before. "We wanted to pick pieces that highlighted the power and privilege in the palace, which has its name because it was forbidden to the common people," says Shen.

Shen previously curated exhibitions at the ROM on ancient Sichuan art and China's Terracotta Army in 2002 and 2010 respectively. With this show, he wants to convey a sense of grandeur. A massive 3-D model of the Forbidden City will illustrate its scale: nearly 980 buildings and 8,700 rooms. "I'd like people to walk out and say 'Wow, this is not just a palace – this is a city,'" he says. "It is probably the closest you can get to experiencing Chinese culture and history without taking a step out of Toronto." – **NADIA VAN**

***The Forbidden City* is at the ROM until September 1. See a slideshow of more rare artefacts at magazine.utoronto.ca.**

EPHEMERA

Last November, U of T acquired the personal letters of Major-General James Wolfe, known for his victory at the Battle of Quebec in 1759. The $1.6-million acquisition, made possible by a private donor and the federal government, will give scholars fresh insight into the life of a pivotal figure in Canadian history. "Although many of the letters have already been published, they were heavily edited," says Anne Dondertman, associate librarian for special collections and director of the Fisher Library. "For the first time, we have the full contents, which give us a more complete picture of who Wolfe really was." – **NADIA VAN**

Read sample letters at magazine.utoronto.ca

severe chest pain, affecting his ability to eat and eventually preventing him from attending school. For four months, he underwent tests and hospitalization. He lost weight and suffered constant, unexplained chest pain. When no further medical tests could be done, John was sent to a psychiatrist.

When John described his pain he said "it feels like my heart is breaking." The psychiatrist quickly uncovered what medical tests had failed to reveal: John's father, to whom he'd been very close, had died suddenly one month before John's symptoms started. When John was unable to psychologically process the loss, his grief manifested physically. This revelation triggered a tremendous emotional release. John's symptoms finally abated, and he returned to school and full health.

For John, and many more patients like him, the lack of coordination between physical and mental health care can prolong an illness. But it can also lead to sharply elevated costs. This occurs because health-care providers, in the absence of a comprehensive diagnosis, may focus too much on the physical symptoms, resulting in unnecessary diagnostic testing and more frequent use of family doctors and emergency departments.

The Medical Psychiatry Alliance will develop a new approach to caring for patients with combined mental and physical illness, based upon research and new ways to educate health-care professionals. In these efforts, it builds upon the distinct strengths and patient populations of the four partners. Says Trevor Young, chair of U of T's department of psychiatry: "We are confident that this is one of the most clear and direct opportunities to improve health care in Ontario." – **BRUCE MITCHELL**

PHOTO: LEFT, BRIAN BOYLE/ROYAL ONTARIO MUSEUM; RIGHT, COURTESY OF THOMAS FISHER RARE BOOK LIBRARY, UNIVERSITY OF TORONTO

U of T teams have placed in the top five in the William Lowell Putnam Mathematical Competition – North America's most prestigious undergraduate math contest – 31 times since it began in 1938

Instructor Janine Newton works with students at the Summer Math Kangaroo Camp

Fighting Math Anxiety

U of T's Math Outreach instructors are changing hearts and minds about an often-feared subject

IF CALCULATING THE RESTAURANT TIP puts you in a sweat, you're not alone – and you're not so unreasonable, either. There's a logical reason why so many people develop "math anxiety," says Felix Recio, senior lecturer emeritus in U of T's department of mathematics. "Math is almost 100 per cent cumulative. Whatever you meet in Grade 1, you'll find in Grade 2. And whatever you miss in high school will be trouble at university."

Recio teaches the Preparing for University Math Program (PUMP) – non-credit courses that help students catch up their math abilities to university level. Recio and his assistants teach some basics, but they also explain how to think mathematically, to approach a complex problem with confidence and figure it out. PUMP courses are open to anyone, and include a high proportion of adults wanting to improve their math abilities, says Recio.

When the Organization for Economic Co-operation and Development assessed the math skills of 15-year-olds, Canada scored in the top 15 per cent. Yet the data showed a worrying slide in our scores from a decade ago. For Canada to be a numerate, internationally competitive society, an emphasis on math education is important. Further, says V. Kumar Murty, chair of the math department, "It has to be supplemented with an effort to overcome the stigma that math is only for an elite few."

PUMP helps more than 100 students each year, but the department hasn't stopped there. Its outreach initiatives also include Classroom Adventures, a program of summer and weekend workshops that offers high school math teachers (who, says Recio, can't pass confidence on to their students if they are suffering from anxiety themselves) cool content and help with pedagogical challenges. Zara Nalian (MT 2008) teaches math to gifted Grade 7 and 8 students at the Toronto District School Board and is an enthusiastic fan of the University of Toronto's offerings. "I got ideas to bring back to my class," she says, "cool things about mathematics that would fire up their imagination."

U of T also offers a variety of programs directly for kids, says Pamela Brittain, outreach and special projects coordinator for the department. Their math camps, competitions and mentorships involve hundreds of elementary and high school students from across Canada each year. Math underpins everything from the encryption that lets you bank online to the forces that shape a seashell. "It is beautiful, useful and important," she says. – **JANET ROWE**

Why I Give

Vera Tomkins

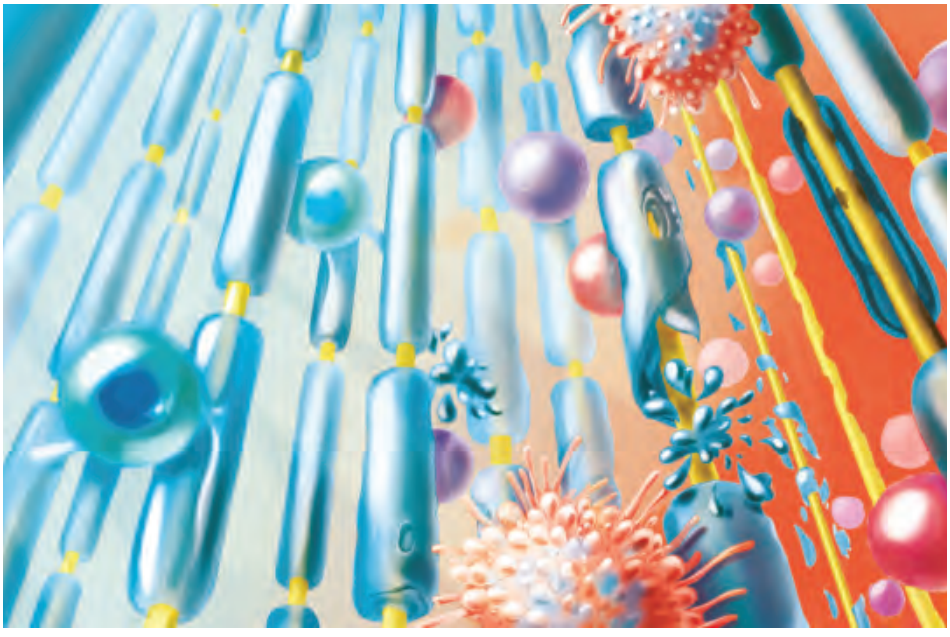
Vera and Lawrence Tomkins have pledged $50,000 to create a "Boundless Promise" Scholarship for dentistry students. Their daughter Lynn earned a degree in dentistry from U of T, and Vera says family connections to the university going back generations – and her own love of continuing education – inspired their commitment to the university.

"Our daughter is the third generation of our family to graduate from U of T. My husband Lawrence has two uncles who graduated as dentists, and he graduated from forestry. I didn't go to U of T as an undergrad, but I'm currently enrolled in Innis College in their later-life learning program, and I've attended that for the last 20 years. I just enjoy the courses and the atmosphere! They're very interesting and informative.

We wanted to support a scholarship, in particular, because we believe in encouraging young people and in helping them achieve their goals. U of T has helped generations of our family realize our dreams and we hope this gift will inspire others to do likewise."

PHOTO: TOP, COURTESY OF U OF T DEPT. OF MATHEMATICS; BOTTOM, COURTESY OF VERA TOMKINS

Renovations in 2008 funded by the Frank Gerstein Charitable Foundation and the Bertrand Gerstein Family Foundation restored a study area in the Gerstein Science Information Centre to its stunning 19th-century state



Visual Aide

When Cheryl Heeyeon Song was growing up in Korea, she wasn't sure what career path to follow. She had both a knack for art and an interest in the sciences: right-and-left-brain loves. "I wanted to translate science into art, to be a storyteller for a living," she says.

The Biomedical Communications graduate program in medical illustration at U of T Mississauga has helped Song combine her two passions. The program encourages students to master a range of techniques – drawing, interactive technologies, animation, simulation – to help communicate complex ideas. Song's master's thesis project, for example, is an information website for esophageal cancer patients, and her portfolio includes a colourful rendition of Multiple Sclerosis attacking the myelin sheaths on nerve cells (shown above).

Program director Professor Nicholas Woolridge says the degree is seeing a growing number of applications. Thanks to both UTM's graduate program – the only one in Canada – and a concentration of biotechnology firms, Toronto has become a major North American hub for medical illustration.

The field is rapidly expanding partly because technical images are no longer just for medical professionals. Song sees great opportunity in increasingly interactive educational materials, such as animated textbooks and specialized apps, for both students and patients alike. "When you give someone a picture, you can inspire them to learn more." – **SARAH TRELEAVEN**

SOUND BITES

Who is (or was) your most awesome U of T prof? Why?

Anne Urbancic at Vic provides guidance beyond the classroom. It's wonderful that somebody thinks of this as their life's work and not just a job.
Megan Cheney

I chose to major in biological anthropology mostly thanks to Shawn Lehman's passion for primatology and his jungle expedition anecdotes.
Dishan Wijesinghe (BSc 2008 UC)

Loryl MacDonald at the iSchool made copyright and privacy law fun and relevant to day-to-day work. She's approachable and eager to share her knowledge.
Sara Allain (MI 2012)

Clifford Orwin of poli-sci rekindled my love of reading and blew my mind in class. Almost single-handedly, he made my undergrad unforgettable.
Christian Julien

Join the conversation at twitter.com/uoftmagazine.

Poll | Which is your favourite library and why?

In a tight race for the title of the St. George campus's favourite library, the Gerstein Science Information Centre on King's College Circle reigns supreme. Students praised it for its good selection of books, quiet study spaces, and welcoming "open" atmosphere.

Robarts Library, appropriately known as Fort Book, came in a close second thanks to its massive catalogue and plentiful workstations. Although E.J. Pratt Library sits on the far edge of the campus, east of Queen's Park, students from near and far are drawn to its modern décor, large windows and cozy couches. "You also get a lovely view of Lester B. Pearson Garden," adds Yousra Hassan Gendil, a third-year Victoria College student.

Libraries get a lot of use at U of T, but students are still able to find peaceful hideouts among the stacks – Regis College Library, Caven Library (Knox College) and Noranda Earth Sciences Library were all described as "hidden gems." – **NADIA VAN**

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

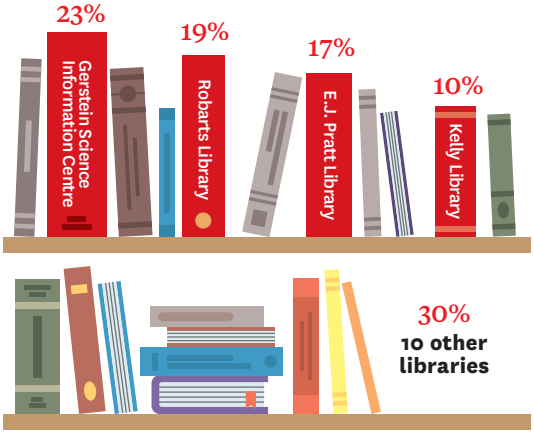


ILLUSTRATION: CHERYL HEEYEON SONG

The Netherlands was the first country to legalize same-sex marriage, in 2000. Now 20 out of nearly 200 countries permit same-sex couples to marry

Maurice Tomlinson protests Russian anti-gay laws in Toronto in February

Rights under Siege

U of T hosts the World Pride Human Rights Conference to give LGBT activists a voice

IN CANADA, SAME-SEX MARRIAGE has been legal for almost a decade, but in many parts of the world being gay is a crime. In Jamaica, men who have sex with men are sentenced to 10 years at hard labour. In northern Nigeria, same-sex relations are punishable by death.

To promote a dialogue on lesbian, gay, bisexual and transgender rights around the globe, U of T is hosting the World Pride Human Rights Conference from June 25 to 27. In conjunction with World Pride 2014, the conference is drawing together LGBT activists, educators, journalists, lawyers and artists from more than 60 countries.

"Our matrix for success will be how well we use the conference to platform LGBT rights," says Brenda Cossman (LLB 1986), a conference co-chair and the director of U of T's Bonham Centre for Sexual Diversity Studies.

Staging the international conference is a gargantuan task for the Centre, which has no full-time faculty. "By far, this is the biggest adventure the Bonham Centre has ever had," says Cossman, who doubles as a U of T law professor.

Many of the individuals slated to speak at the event are prominent trailblazers. At one microphone will be Jóhanna Sigurðardóttir, Iceland's first female prime minister and the world's first openly lesbian head of government. At another mike will be Frank Mugisha, who is risking his life to advocate for gay rights in Uganda. Also to speak is Monica Mbaru, a Kenyan judge urging police across all of Africa to take decisive action against those who rape and murder LGBT people.

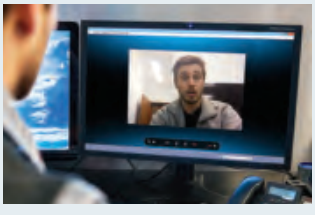
One of the many volunteers helping co-ordinate the conference is Maurice Tomlinson, a lawyer who will speak on his efforts to advocate for fair human rights legislation in his native Jamaica. Tomlinson is helping lead a charity for LGBT youth whose parents, on learning that their child is gay, kicked their child out. "As an activist, I think I have developed a thick skin, but at times I am speechless," says Tomlinson, offering a picture of homeless boys sleeping in the sewers of Kingston, Jamaica.

"What we're witnessing is like the Holocaust, and the response from the world has been pitiful," he continues. "In Nigeria, people are rounded up and hunted like animals. Before the Olympics, President Putin stated that Russia needs to 'cleanse' itself of homosexuality."

"Gay rights are at a tipping point," says Cossman, "but which way are they tipping?" – **SUSAN PEDWELL**

Screen Test

Video applications for MBA applicants a hit at the Rotman School



More than a year after introducing video interviews for MBA applicants, admissions staff at the Rotman School of Management say the videos have become more influential than they anticipated.

"We're not looking for a certain type of content, but for whether students are articulate and passionate," says Niki da Silva, director of recruitment and admissions for the full-time MBA program. "The videos tell you a tremendous amount about a person."

Rotman's software platform delivers two random, open-ended questions to each applicant. They have 60 seconds to consider their responses and a minute and a half to answer each query, a format that mimics the job interview process.

"It shows how you think on your feet," says da Silva.

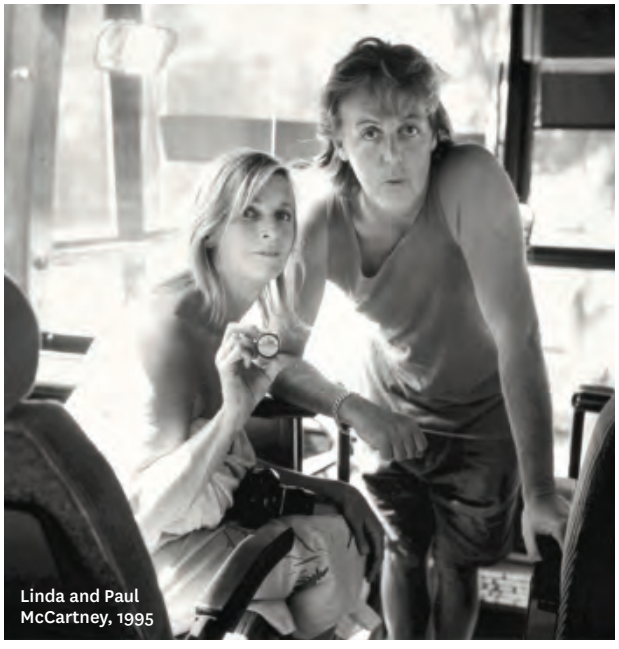
Following Rotman's lead, Yale University and Northwestern University have now introduced video interviews for their MBA programs.

"I expect other departments at U of T to adopt it," da Silva adds, noting that it undoubtedly helps weed out applicants who aren't truly interested. "If they weren't serious, they wouldn't want to learn the software and the process." – **ELAINE SMITH**

PHOTOS: JAMES POREMBA

James Franco starred in the 2010 experimental film *Howl*, about Allen Ginsberg's debut performance, in 1955, of his most famous poem – and the obscenity trial that ensued

Self-portrait in Vilnius, Lithuania, 1985



Linda and Paul McCartney, 1995

The Beat Goes On

U of T acquires the "ultimate insider" collection of Allen Ginsberg photos of key pop-culture figures from the 1950s–1990s

THE UNIVERSITY OF TORONTO is now home to the world's largest collection of photographs by the late beat poet Allen Ginsberg, thanks to a donation by the Larry & Cookie Rossy Family Foundation.

The almost 8,000 photographs housed in the Thomas Fisher Rare Book Library and more than 200 silver gelatin prints at the University of Toronto Art Centre include portraits of music icons Bob Dylan, Paul McCartney and Iggy Pop, artist William de Kooning and composer John Cage.

Comprising a nearly complete archive of Ginsberg's surviving photographs, the collection spans the years 1944 to 1997 (from when he was 18 until his death), and includes original snapshots and prints of various sizes. The silver gelatin prints are unique in that they are hand-captioned by Ginsberg. All of these images will be available to scholars and some will be on display.

Allen Ginsberg was an American poet and nonconformist whose influence extended far beyond the United States. Along with his friends Jack Kerouac, William S. Burroughs and Gregory Corso, Ginsberg was at the centre of a network of writers and artists dubbed the Beat Generation. In the 1950s and 1960s their work and their personal example would forever alter the cultural scene. The Beats also influenced postmodern and avant-garde Canadian poetry.

Although known primarily as a writer, Ginsberg was an avid photographer. The collection includes images of fellow writers Doris Lessing and Josef Skvorecky (who was a professor of English at U of T), photographer Robert Frank, author and activist Dr. Benjamin Spock and psychologist and drug guru Timothy Leary. Burroughs appears in more than 300 photographs. Another frequent subject is Ginsberg's lifelong partner, Peter Orlovsky.

The Ginsberg prints provide visual insight into New York's urban landscape from the 1950s to the 1990s. They also document Ginsberg's international travels to Canada, France, India, Mexico, Morocco, the U.S.S.R. and many other nations.

"This constitutes the ultimate insider group of photographs on the Beats," says Anne Dondertman, associate librarian for special collections and director at the Fisher Library. "It contains important research material for the study of the life, family, work, travels and friendships of Allen Ginsberg."

Many of the prints have been digitized and are available via the Fisher Library's Flickr site at go.utlib.ca/ginsberg and the University of Toronto Art Centre's (UTAC's) online portal, which can be accessed from the centre's homepage at utac.utoronto.ca. This fall, UTAC in collaboration with the Fisher Library will present an exhibition of the Ginsberg photographs. – **MARGARET WALL**

PHOTOS: ALLEN GINSBERG

Our Man in Beijing

Cultures meet at Sid Smith Hall

MARK ROWSWELL (BA 1988 UC), who's famous to hundreds of millions of television viewers in China for his 20-plus-year career there as a performer and TV host, recently gave a talk at Sidney Smith Hall, hosted by the Chinese Students and Scholars Association. "Dashan" (or "Big Mountain"), as he is known in his adopted home, spoke to the group – in Mandarin – about his personal journey from Ottawa to Toronto to Beijing and his insights into Chinese-Western relations.

Rowswell, who says he is a foreigner in China "but not an outsider," is passionate about improving the dialogue between east and west. "The worst thing," he says, "is not to have a problem communicating, but to have a problem and not realize it." After his speech, Rowswell greeted and took pictures with students and fans. "Everything he said came from his heart," says Kyle Xu, a first-year UTSC student. "He was funny, impactful and very inspiring."

– STAFF

Mark Rowswell (left) greets U of T students

PHOTO: JAMES POREMBA

Richard Simeon's 1968 dissertation, "Federal-Provincial Diplomacy," took a new theoretical approach to Canadian federalism. It was reissued in 2006 – a rare achievement for a doctoral thesis

IN MEMORIAM

Richard Simeon

A talent for building bridges made Simeon a sought-after advisor on federalism

THE POET IRVING LAYTON once defined a Canadian as someone who keeps asking: "what is a Canadian?" If so, the distinguished political science professor Richard Simeon was as Canadian as they come.

Simeon, who died of cancer last October at the age of 70, was a scholar of federalism who acted as a key adviser during this country's great era of constitution-building in the 1980s and early 1990s. His sensitivity to the need for reconciling competing claims of different groups made him, in the phrase of his colleagues, an expert "bridge-builder." Fair, inclusive, curious and tolerant: these were words often used to describe an academic whose expertise on negotiating consensus was regularly sought out abroad, as well as domestically.

Before joining U of T in 1991 as a professor of political science and law, Simeon taught at Queen's University for 23 years. During that time, he plunged into the heady federal-provincial debates that arose in the wake of the Parti Québécois's 1976 victory, ultimately counselling Ontario premiers William Davis, David Peterson and Bob Rae on constitutional matters. "He had an engagement with practice and with real problems, as well as this very impressive scholarly presence," says colleague David Cameron, now dean of the Faculty of Arts and Science.

The U.K.-born Simeon's public policy work was extensive, though he turned down a chance to serve on Pierre Trudeau's 1977 Task Force on Canadian Unity. A strong proponent of decentralized government, he opposed Trudeau's Ottawa-centric view of the country, feeling that a greater emphasis on consensus might have resulted in Quebec's inclusion in the 1982 constitutional accord. He was disappointed when subsequent conferences at Meech Lake and Charlottetown failed in similar fashion to achieve the kind of satisfactory compromise he advocated.

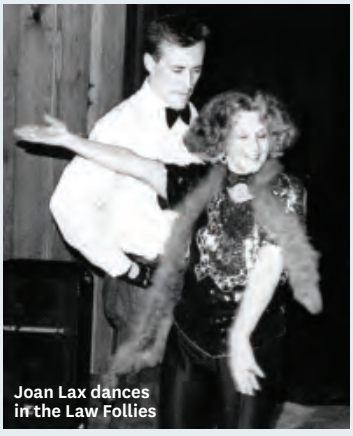
Nonetheless, he realized that this type of sparring was in the country's very nature. "He might say Canada is necessarily imperfect, and in some sense that fractious quality gives the country its unique character," says Cameron. "Imperfections are part of our texture in many ways…it's a condition of our existence that's going to be there far into the future."

Simeon took these lessons around the world, most notably to fledgling federations in Africa: he taught comparative federalism in Cape Town, South Africa, and discussed federalist ideas in Sudan, Ethiopia and Kenya. While war raged in Iraq, he also accompanied Cameron to Amman, Jordan, to train senior Iraqi officials in the development of decentralized government.

Some may feel that compromise implies weakness; but for Richard Simeon – a husband and father, as well as a teacher to generations of political analysts – it was everything. "He made jokes about himself," says Cameron. "His students would sometimes call him professor-on-the-one-hand and professor-on-the-other. So he was always searching for the middle ground, the ways in which people in conflict could be reconciled to living with one another. And learning how to flourish and benefit from the presence of the other in their lives." – **CYNTHIA MACDONALD**

IN MEMORIAM

Joan Lax



Joan Lax dances in the Law Follies

Justice Joan Lax died unexpectedly on November 4, 2013, at age 68, shocking colleagues who thought her unstoppable. Her career path was impressive – Bay Street litigator, assistant dean of U of T's Faculty of Law, Ontario Superior Court Justice – but equally so were the barriers she broke and the impression she made. "She was one of those incredible women who didn't look at the obstacles and turn away but forged ahead," says Mayo Moran, current dean of the faculty. "And she made a huge difference."

Lax faced down unvarnished Bay Street sexism in the 1970s to not only get hired (by Toronto firm WeirFoulds LLP) but to pioneer maternity leave policies in the Canadian legal profession. At U of T from 1986 to 1996, she was one of the law faculty's senior administrators and director of admissions; she wrote course materials and presided over the student Moot Court.

Though Lax loved the university, she left to become a judge where, in and out of court, she fought to make her profession more just and accessible. She helped found the African Canadian Legal Services Clinic and Community Legal Education Ontario and her even-handed judgments were frequently cited. The notice of her passing was one of the Faculty of Law's most-read news stories of 2013.

"She was a real leader," says Moran. "Incredibly smart, wonderfully warm, determined and courageous."

– **JANET ROWE**

PHOTO: LEFT, COURTESY OF THE SIMEON FAMILY; RIGHT: COURTESY OF THE LAX FAMILY

People

Milica Radisic, a professor of chemical engineering and applied chemistry, has won one of six $250,000 NSERC Steacie Fellowships. She and her team recently discovered a way to create beating heart cells from stem cells, which could lead to pioneering treatments for heart patients.

Prof. **David Cameron**, of political science, who was appointed interim dean of the Faculty of Arts and Science last May, has been confirmed as dean until 2016.

This July, former Bank of Canada deputy governor **Tiff Macklem** will become the next dean of the Rotman School of Management, replacing Roger Martin.

Stephen Toope, the president and vice-chancellor of UBC, has been named director of the Munk School of Global Affairs. An expert in international law, Toope replaces University Professor Janice Stein.

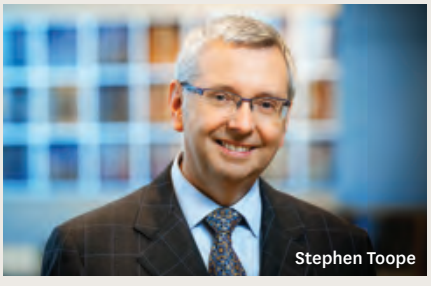
Several U of T professors have been named to the Order of Canada, one of the country's highest civilian honours. Named officers were **Michael Bliss**, of history, for his contribution to illuminating Canadian history; **David Jenkins**, of nutritional sciences, for helping Canadians make informed food choices; and **Keren Rice** of linguistics, for helping to preserve North America's Athapaskan languages. **Ian Tannock**, of medical science, was named a member of the order for improving chemotherapy treatments; Rotman professor emeritus **William R. Waters** became a member for his support of higher education, music and the arts.

Faculty of Music professor **Norbert Palej** was nominated for a Juno Award for classical album (vocal or choral). Also nominated: Prof. **Sienna Dahlen** for vocal jazz album; Prof. **Jeanne Lamon**'s Tafelmusik Baroque Orchestra and Prof. **Nadina Mackie Jackson** for classical album (large ensemble); and Prof. **William Carn**'s jazz ensemble Carn Davidson 9 and Prof. **John MacLeod**'s Rex Hotel Orchestra for traditional jazz album.

U of T community members won two of the five Polanyi Prizes for 2014. The $20,000 awards for young researchers were established in honour of Nobel laureate and University Professor John Polanyi. **David Francis Taylor** of English took the literature award for his research into 18th-century political cartoons and post-doctoral student **J. Patrick Clancy** of physics was honoured for his work on iridium-based quantum materials.

U of T has been named one of the GTA's top employers for 2014. The university also made the list of Canada's Best Diversity Employers for the seventh consecutive year.


Milica Radisic


Stephen Toope

PHOTOS: MILICA RADISIC, COURTESY OF NSERC; STEPHEN TOOPE, MARTIN DEE

ALUMNI **INSURANCE PLANS**

Knowing you're protected, especially when you have people who depend on you, can be very reassuring. Whatever the future brings, you and your family can count on these Alumni Insurance Plans:

Term Life Insurance • **Health & Dental Insurance** • **Major Accident Protection**
Income Protection Disability Insurance • **Critical Illness Insurance**

Visit **www.manulife.com/uoftmag** to learn more or
call toll-free **1-888-913-6333**

UNIVERSITY OF TORONTO AFFINITY PARTNER

Manulife Financial
For your future℠

Underwritten by
The Manufacturers Life Insurance Company (Manulife Financial).

Leading Edge

"My heart is in giving a voice to people who have a natural difficulty being understood"

Prof. Frank Rudzicz on a new computer tool he developed

p. 24

Herb Appeal

Scientists aim to isolate marijuana's pain-killing properties to create more effective medicines

MARIJUANA IS A GREAT PAINKILLER but its medical use has long been limited by its celebrated side effects, especially short-term memory loss and feelings of giddiness. Now a new study by scientists at U of T and other institutions suggests there may be ways to separate out the plant's effects and target its beneficial powers more tightly.

THC, the key ingredient in marijuana's signature "high," acts on a particular receptor in the brain. But new research has found that when people are exposed to cannabis, this receptor orders the production of a chemical that acts to limit or "dial down" the impact of the THC. In other words, the brain has its own built-in safety valve that acts to lessen the high. If a way could be found to intensify the effects of this safety valve, marijuana's high-inducing properties could be neutralized while leaving its analgesic powers intact.

Scientists don't yet know whether this chemical – called pregnenolone – acts as a simple on-off switch or as something more complicated, like a dimmer. Nor is it precisely clear how it works in people (the research was conducted on mice). But the discovery could lead to better medical applications of cannabis, says Ruth Ross, chair of U of T's pharmacology department and one of the authors of the study.

Scientists have long known about pregnenolone, but not realized its importance, notes Ross, who has been researching cannabis for 20 years. "Understanding what it does introduces a whole new area of drug discovery," she says. Additional research into the chemical's properties could lead to the development of new medicines for appetite suppression ›

PHOTO: CAVAN IMAGES, LLC/GETTY IMAGES

Star Trek introduced the concept of a cloaking device into pop culture almost 50 years ago – in the first episode to feature the Romulans

or stimulation, pain relief and even addiction management, since the same brain receptors that produce pregnenolone in response to THC are also involved in nicotine addiction. "It could be that understanding pregnenolone will help us to treat addictions generally," Ross says.

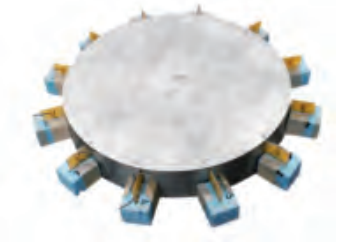
Some 41,000 Canadians are already registered users of medical marijuana and that number is expected to rise to more than 300,000 in the next decade. But at the moment, says Ross, "cannabis is a double-edged sword." It's very effective at managing the pain associated with conditions such as multiple sclerosis and certain kinds of cancer. But it's limited because of its effects on mood and memory. "The pleasant effect of making you high is not so pleasant if you have a long-term medical condition and you're trying to lead a normal life. People who are taking a medicine want something that can relieve their pain but allow them to function normally."

Understanding the role of pregnenolone might lead to the development of new strains of the marijuana plant, but Ross is more interested in developing more targeted forms of medication. Cannabis contains 60 to 100 compounds and while some or all of them may be necessary for the plant's medicinal effect, it's also possible that a single compound would work better – or at least with fewer side effects.

"The system of receptors in our brain that responds to marijuana wasn't developed for us solely to smoke cannabis," says Ross. It's involved in memory, mood, appetite and pain signalling, and it's important not to disrupt this system with the mixture of chemicals in the plant. Pregnenolone may provide the inspiration for subtler interventions. – **BRENT LEDGER**

A Real-Life Cloaking Device

Invisibility appears possible as researchers use an electromagnetic field to hide objects



INVISIBILITY IS NO LONGER THE STUFF of science fiction: two U of T researchers have demonstrated an effective invisibility cloak that can make objects disappear from radar.

Engineering professor George Eleftheriades and PhD student Michael Selvanayagam designed and tested a new approach to cloaking: surrounding an object with small antennas that collectively radiate an electromagnetic field. The field cancels out any radio waves scattering off the now-cloaked object.

"We've taken an electrical engineering approach," says Eleftheriades. "It's very practical."

Picture a mailbox. When light hits the mailbox and bounces back into your eyes, you see the mailbox. When radio waves hit the mailbox and bounce back to your radar detector, you detect the mailbox. Eleftheriades and Selvanayagam's system wraps the mailbox in a layer of tiny loop antennas that radiate a field away from the box, cancelling out any radio waves that would bounce back.

The system can be scaled up to cloak larger objects using more than one layer of antenna loops, and Eleftheriades says the loops could be made flat, like a blanket or skin.

Applications of the cloaking technology could extend beyond such obvious ideas as hiding military vehicles or conducting surveillance operations. For example, big structures that interrupt cellphone signals could be cloaked to allow signals to pass by freely.

The system can also alter the radar "signature" of an object, making it appear bigger, smaller or even shifting it in space. And a more advanced version of the technology might one day work with light waves, making objects invisible to the human eye as well. – **MARIT MITCHELL**

LINGO

Hot Tubbing

Canada's legal system, like many others, is adversarial. Each side brings forward evidence and a judge determines the truth, which often lies somewhere in the middle.

But the legal process itself can have an impact on which version of the "truth" the judge decides is correct: when a case drags on for months, judge and jury may forget earlier testimony, points out U of T law professor Simon Stern. This can happen especially with expert witnesses – those who provide the court with specialized knowledge and, unlike "fact" witnesses, are allowed to state opinions.

Australia gets around this problem by putting the expert witnesses in the same room at the same time and allowing experts from opposing sides to directly challenge each other – a practice playfully known as "hot tubbing." Stern says the technique works well in technical cases where the two experts have similar levels of expertise and are both testifying on the same issue. Judges like it because it allows them to evaluate both sides' claims quickly and effectively; lawyers don't, as they are less able to script their witnesses.

PHOTO: G.V. ELEFTHERIADES

In the early 1950s, by his own account, Canadian artist Jack Chambers showed up unannounced at the home of Pablo Picasso and found the gate locked. Undeterred, he scaled a wall and met the legendary artist

"401 Towards London No. 1," by Canadian artist Jack Chambers

THE BIG IDEA

Beyond the Group of Seven

Grad student Sara Angel has an ambitious idea to make Canadians more aware of our rich visual arts heritage

MOST CANADIANS CAN NAME at least a few stars of our national literature – major award-winners such as Alice Munro, Margaret Atwood and Michael Ondaatje. But what about Canada's visual artists? While every school child learns who Tom Thomson and the Group of Seven are, such pivotal figures as Michael Snow, Joyce Wieland and Jeff Wall remain largely undiscovered in their own country.

Sara Angel, a fourth-year doctoral student in art history and a Trudeau Scholar, identified this gap and has come up with an idea she hopes will make Canadians more aware of their own artistic heritage. Late last year, she launched the Art Canada Institute. Through its first initiative, the Canadian Online Art Book Project, the institute will publish dozens of monographs by noted scholars on both major Canadian artists such as Snow, Wieland and Wall and overlooked figures such as Kathleen Munn, an early 20th-century modernist painter. Each ebook will be written by an expert on the artist, will run to 17,000 words – about the length of three or four long magazine articles – and will include dozens of colour images.

The first ebook in the series, *Jack Chambers: Life and Work*, by Mark Cheetham, was published online in November and is available as a free download from the Art Canada Institute website (as all subsequent titles will be). The institute has a roster of 50 art historians and curators who act as consultants; Cheetham served as the founding commissioning editor of the Online Art Book Project.

As a grad student in art history, Angel knew that some minimal information was available about Canadian artists. What was missing was compelling, accessible and educational information for the general public. With the permission of the Trudeau Foundation, Angel used her scholarship as seed money for the institute. "The Art Canada Institute is meant to promote Canadian art history and education," Angel says. "Our natural readers are people who go to exhibitions at museums and those who simply have an interest in the subject. For those people at least, we want to make Canadian artists household names."

Angel is also speaking with colleagues at OISE and with secondary school administrators about making the titles in the Online Art Book Project available in high schools across Canada. Hilary Inwood, a lecturer in art education at OISE, says the digital books would be a useful addition to high-school resources because they are inexpensive and produced in a format that teens will appreciate. "Because of its use of digital media, the Art Canada Institute will fill an important gap," she says. "And teachers will be thrilled: students aren't likely to go out and buy a book by an important scholar on art history, as art books are prohibitively expensive. But they might well look at it if it's free and online."

Angel's plans don't end with the publishing project. The institute intends to develop Canadian art apps for smartphones and tablets, and enlist museum curators to create online exhibitions. Angel would also like to initiate an annual lecture series on Canadian art modelled after the Massey Lectures, with an accompanying print publication. She expects the series to begin in 2016. – **DANIEL BAIRD**

Read the first ebook in the Art Canada Institute series, *Jack Chambers: Life and Work*, at aci-iac.ca/jack-chambers.

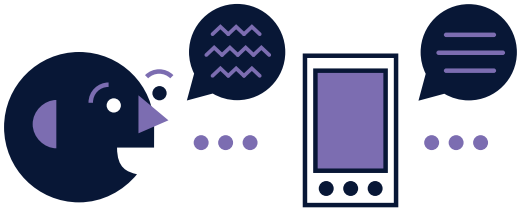
PHOTO: ART GALLERY OF ONTARIO, TORONTO, GIFT OF NORCEN ENERGY RESOURCES LIMITED, 1986 (86/47). JACK CHAMBERS ESTATE

Five of the 100 most commonly mispronounced words in English, according to the website Your Dictionary: Antarctic, clothes, espresso, February and respite

PROTOTYPE

Word Perfect

New software will help people with speech problems be more clearly understood



PEOPLE WHO HAVE CHALLENGES being understood when they speak due to stuttering or a neurological disease such as cerebral palsy – or even a heavy accent – will soon be able to use a new computer tool so they can be understood better in their own voice.

The software was developed by computer science professor Frank Rudzicz through his start-up company Thotra. It can run on a personal device such as a smartphone or computer, or it can operate in a cloud-based environment to facilitate telephone conversations. A user simply speaks into a microphone, and the software transforms their words, nearly instantaneously adding dropped sounds, enunciating vowels, and removing stutters and pauses, while maintaining everything else a person says.

"Some people have specialized keyboards or other devices to communicate, but they usually have a robotic voice that lacks inflection," says Rudzicz, who is also appointed to the Toronto Rehabilitation Institute. "We preserve all their idiosyncrasies and tone. If someone is sarcastic or exuberant, that emotional content is carried through."

For people with speaking challenges, Rudzicz's software is a major improvement over typical voice-recognition software. For example, modern speech recognition, such as that used in iPhone's Siri, can recognize only about 10 per cent of words spoken by someone with moderate-to-severe cerebral palsy. Rudzicz has previously built custom software that doubles this success rate, but he took an entirely new approach when developing Thotra, which provides nearly complete comprehension.

"We do a simpler version of speech recognition where we're only interested in finding out, say, if this sound is a vowel or not. It's easier to get accurate results. The transformation that removes stuttering, for example, is 99 per cent accurate."

Rudzicz, who is now seeking funding and partners to conduct larger clinical trials, has so far tested the software with a small number of people. Annalu Waller, a professor at the University of Dundee in Scotland who has cerebral palsy, says she's impressed with demonstrations of Rudzicz's software. "The ability for people to use their own voice with Frank's system instead of relying on a close friend or relative to interpret for them is amazing." She also sees the software, which can run on any personal computing device, as a big leap from communication aids that require users to type or to remember complex codes to retrieve stored words. "Using one's own voice is so much more intuitive and authentic," she says.

Rudzicz is also looking at cloud-based uses of the software that would facilitate real-time telephone conversations. He believes call centres in countries such as India, Mexico and the Philippines that serve North American clients might be interested in his invention. "Softening accents represents a huge market," Rudzicz says.

Still, Rudzicz says he is most excited about empowering people with cerebral palsy, ALS and other neurological disorders to free their voices. "My heart is in giving a voice to people who have a natural difficulty being understood," he says. – **PATCHEN BARSS**

Findings

Autism and Perception

If you're watching a movie and notice that the actors' speech doesn't match their lip movements, you know the audio and visual aren't synchronized.

This is what everyday life is like for some children with autism, according to a study by Ryan Stevenson, a post-doctoral researcher in psychology. "Individuals with autism have difficulties processing the timing of what they hear and what they see, often reporting two events as synchronous when they are quite far out of sync," he says.

Stevenson says successful social communication requires the ability to perceive incoming cues accurately. "If you have difficulties perceiving the world around you, it's intuitive that you may also have difficulties interacting with that world, and the other people in it," he says. He adds that these new insights may prove useful in designing treatments for children with autism. – **JESSICA LEWIS**

What Is a Planet?

A distant space object discovered by U of T astrophysicists is prompting new questions about what is and what is not a planet – questions that may challenge our understanding of how planets and stars form.

"We have very detailed measurements of this object," says Thayne Currie, a post-doctoral fellow in astronomy and astrophysics. "Still, we can't yet determine whether it is a planet or a failed star – what we call a 'brown dwarf.' It could be either."

The object is located near – and likely orbits – a star hundreds of light years from Earth. Its mass is below the limit most astronomers use to separate planets from larger brown dwarfs. However, it is located 30 times further away from its star than Jupiter is from our sun. The question, says Currie, is "whether an object so massive yet so far from its host star is a planet. If so, how did it form?" – **SEAN BETTAM**

ILLUSTRATION: CHELSEA MCFADDEN

In South Africa, Mandela is often called by his Xhosa clan name, Madiba. He won the Nobel Peace Prize in 1993, a year before becoming his country's first black president

Q&A

The Meaning of Mandela

A South African reflects on the life and legacy of a human rights champion

Nelson Mandela, one of the world's most famous human rights campaigners and political prisoners – as well as the first democratically elected president of South Africa – passed away on Dec. 5. Recently, U of T News writer **Brianna Goldberg** asked **Antoinette Handley**, a professor of political science, about Mandela's legacy.

What did Nelson Mandela mean to you, coming of age in South Africa? Mandela for me, as a student activist, was almost a mythical figure. People circulated pictures of him, but it was a very risky thing to do. These pictures were of a young Mandela because that was the last photo that anybody had of him. He'd been in jail for 20-odd years on a charge of conspiracy to overthrow the government, and nobody had any idea what he looked like anymore. While the student activist circles were allied to the African National Congress (ANC), we in fact knew very little about the organization and even less about the man.

What does he mean to you now, as a political scientist aware of the historical context of his actions? Mandela was enormously complex. But what made him such a powerful figure was that in at least two key moments in South African history he perceived what was needed to take the country forward. They're two very different moments, and I think they both speak to his incredible strength and understanding.

The first moment came in the early 1950s, when the ANC was a sleepy, middle-class movement. Mandela, a young firebrand, understood that the anti-apartheid struggle needed something to galvanize the energies of young black South Africans. In his leadership role in the ANC youth league, and in launching armed struggle against the government, he took the ANC in a much more radical direction. This turned it into a much more powerful mass movement. Before, it had been a very polite organization that would, for example, prosecute the Struggle by sending a petition to the Queen.

The second moment came in 1994. Democratic South Africa had come into being and Mandela made a series of remarkable gestures of reconciliation toward the white community, such as donning the jersey of the Springboks, South Africa's national rugby team. This mattered because rugby had long been seen as a whites-only sport, and Mandela's gesture symbolized his reaching out, not only to the white community, but particularly to conservative white South Africans, many of whom were terrified about what the new South Africa was going to mean for them. It was his way of saying that South Africa belongs to all who live in her, black and white. In each of these moments, I think he made exactly the right judgment.

Why has Mandela remained such an important figure globally? Apartheid represented a very graphic and hard-to-ignore depiction of inequality, since the inequality was racialized. What Mandela came to represent was a clear way for people to identify with the struggle between an oppressive, racist system and values that many of us hold dear. We like to be on the right side of history and, in South Africa, it looks like the right side of history won.

What will the post-Mandela political era bring to South Africa? I think we are going to continue to see attempts to either redefine the ANC or to form entirely new parties. And I think we should look closely at the interaction between the trade unions, the political parties and the broader economy. There are very large numbers of South Africans who continue to struggle to access even basic goods, mostly as a result of extraordinarily high levels of unemployment.

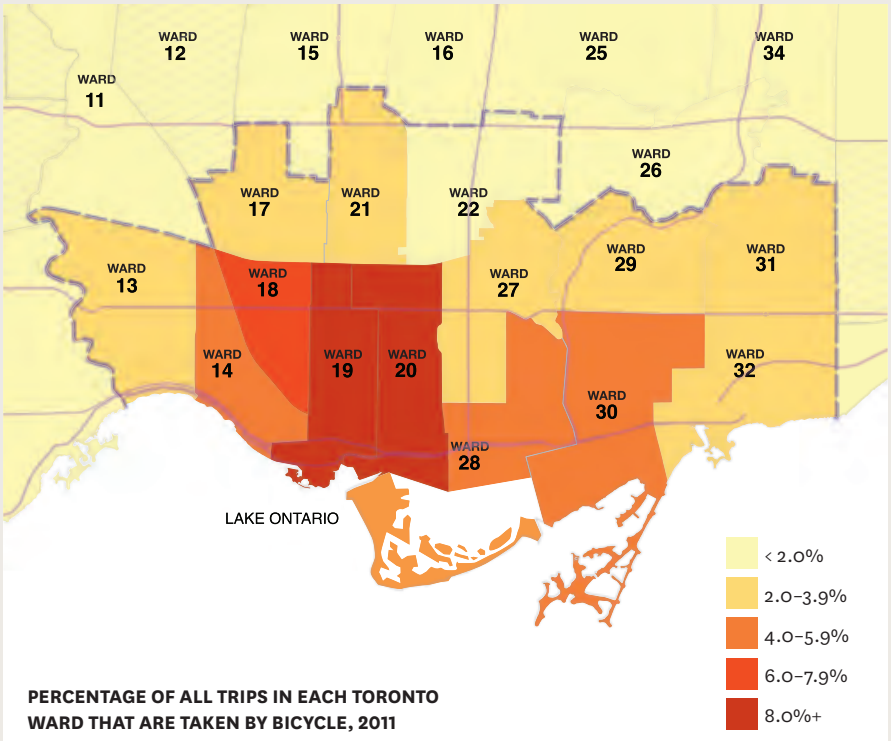
The political system eventually responded to Mandela's message about the inequalities of racism. The next crucial question will become, can the political system hear what unemployed and low-income South Africans are saying, be accountable and responsive to them and begin to deliver the services they need?

To read a longer version of this Q&A, visit magazine.utoronto.ca.

PHOTO: EDSTOCK2/iSTOCK

2013 was the fourth-hottest year since records began in 1880, according to the National Oceanic and Atmospheric Administration in the U.S. Nine of the 10 hottest years have occurred since 2000

Where People Pedal



PERCENTAGE OF ALL TRIPS IN EACH TORONTO WARD THAT ARE TAKEN BY BICYCLE, 2011

On a warm sunny morning in Toronto, so many cyclists zip along College Street that bystanders might mistakenly think they were in bike-crazy Amsterdam, where 60 per cent of downtown trips are made on two wheels.

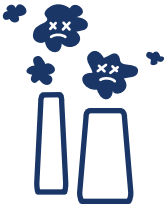
As this map shows, Toronto's central core – with its many bike lanes and slower traffic – is the most popular area in the city for cycling. Eight out of 10 bike trips occur in the city's 14 downtown wards.

But what makes some central wards more popular among cyclists than others is not always clear. U of T researcher Trudy Ledsham (BA 2011 Woodsworth, MA 2012) says urban design and the presence of desirable destinations within the ward are important factors, but people's values, childhood experience with cycling, social relations and recent life events can also strongly affect whether they will take up cycling.

Ledsham is a member of the Toronto Cycling Think & Do Tank – a research group hosted at U of T's School of the Environment. Another member, Emma Cohlmeyer (MA 2013), created a "cycling adoption toolkit" designed to accelerate participation in bike commuting. As their studies (and this map) show, building bike lanes is only half the battle. You have to change attitudes as well. – **TAMMY THORNE**

The World's Worst Greenhouse Gas

Widely used industrial chemical has 7,100 times the climate impact of carbon dioxide



U OF T SCIENTISTS HAVE DISCOVERED a novel chemical lurking in the atmosphere that appears to be a long-lived greenhouse gas. The chemical – known as PFTBA, or perfluorotributylamine – is the most radiatively efficient chemical ever found in the atmosphere, which means that its potential to affect climate is greater than any other chemical on record.

"Calculated over a 100-year time frame, a single molecule of PFTBA has the equivalent climate impact of 7,100 molecules of carbon dioxide," says Angela Hong, a PhD candidate in chemistry who was a member of the research team that made the discovery, along with Cora Young (BSc 2004 UC, PhD 2010) and Professor Scott Mabury.

Although its potential to accelerate global warming is very high, PFTBA currently exists in the atmosphere in very low concentrations – less than one part per trillion. (Carbon dioxide, which is used for comparison since it is one of the most common greenhouse gases, has been measured at more than 400 parts per *million*. This means there is about two million times as much carbon dioxide in the atmosphere as PFTBA.)

PFTBA has been in use since the mid-20th century in electrical equipment. It does not occur naturally, and has a very long lifetime – possibly hundreds of years. There are no known processes that would remove PFTBA from the lower atmosphere, but scientists believe that high-energy radiation destroys it in the upper atmosphere.

"PFTBA is extremely long-lived in the atmosphere and it has a very high radiative efficiency," says Hong. "The result of this is a very high global warming potential." – **KIM LUKE**

MAP: EMILY WATT (MSC 2010), TORONTO CYCLING THINK & DO TANK


"The McAllister scholarship lets me pursue my engineering degree and the skills I'll need as an entrepreneur."
Megan Mattes
BASc 2017
Thanks to the J.E. McAllister bequest, Megan Mattes is exploring her options in the TrackOne generalist year at Canada's top-ranked engineering faculty. By including a bequest to U of T in your will, you too can nurture the creative inquiry of future entrepreneurs like Megan.
To find out more, contact
michelle.osborne@utoronto.ca,
416-978-3846 or give.utoronto.ca
UNIVERSITY OF TORONTO
BOUNDLESSLEGACY

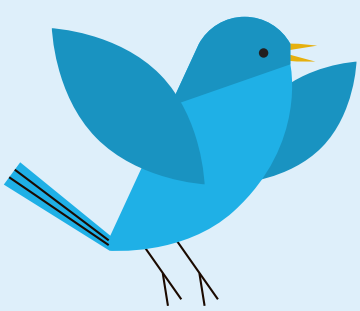
Kirstine Stewart, managing director,
Twitter Canada

By Ivor Tossell
Photography by Jacklyn Atlas

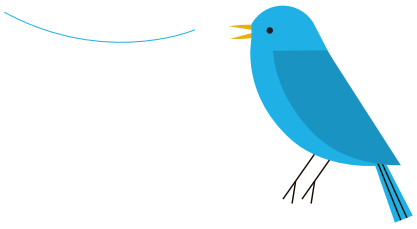
#daringcareermove

Can Kirstine Stewart, a former CBC executive, boost Twitter's fortunes?

1 RETWEET **2** FAVORITES



"When you work in TV, you're in a bit of a void. You don't necessarily know who's watching. I've always been driven by the question of why is someone watching, who is watching, what keeps them coming back"



ON MARCH 2, DURING THE OSCARS TELECAST, host Ellen DeGeneres pulled out her smartphone, corralled Meryl Streep, and chirped, "I'm going to take a picture of us, and then we'll see if we can break the record for the most retweets." A crowd of Hollywood A-listers including Brad Pitt, Kevin Spacey and Jennifer Lawrence piled in around Streep.

The picture was posted on Twitter from the ceremony. Within hours, the image had been shared – or retweeted – two million times, in many cases by people who were simultaneously watching the Academy Awards on TV and using their phones or computers to tweet about the show. The tweet easily broke the old record – held by Barack Obama for a photo he posted immediately after his re-election in 2012.

DeGeneres's "selfie" was good fun in a stodgy broadcast. But it also bore a message: Far from being competitors in a war of attrition, television and social networks are actually growing closer together, each harnessing qualities of the other to expand their reach and influence. It's an idea that might explain why, when Twitter opened its Canadian office one year ago, it didn't turn to the technology sector to hire a managing director. Instead, it recruited one of the most powerful figures in Canadian broadcasting: Kirstine Stewart (BA 1988 UTM), then the head of the CBC's English-language services. In the previous two years, Stewart had green-lit some of the highest-rated shows in the CBC's history. Everyone from Rick Mercer to Peter Mansbridge worked for her.

And then, all of a sudden, she was gone…to Twitter?

Before being approached to run Twitter's Canadian office, Stewart had been using the fledgling social network while overseeing the CBC's programming, partly as a (slightly reserved) contributor of her own thoughts, but mostly as a way of keeping her ear to the ground.

"When you work in TV, you're in a bit of a void," she says. "You don't know necessarily who's watching. You get a Nielsen report the next morning that tells you, with very generalized numbers, who aged 25 to 54 is watching your show. And I've always been driven by the question of why is someone watching, who is watching, what keeps them coming back?"

Stewart is at ease under camera lights but just as happy to fold herself up in a tiny side office at Twitter's Canadian headquarters, where we sit down to speak. Twitter Canada is still a small operation (though a growing one): its 20 staffers – for Stewart, a radical downsizing from the CBC's 5,000 or so – are tucked into a brick-and-beam office space on King Street West in downtown Toronto.

Founded in 2006 in San Francisco, Twitter allows users to share their thoughts in public, in bite-sized chunks of no more than 140 characters each. But, like a haiku, a lot can be packed into a simple form. Instead of just posting descriptions of their lunches, Twitter users started talking directly to each other, sharing links to interesting stories, and engaging in freewheeling conversations, debates and outright arguments. Unlike the cloistered confines of Facebook, where users mostly keep to their existing social circles, Twitter became a place for people to broadcast their thoughts to the world, and forge connections with folks they'd never met.

The service grew. Today, Twitter has 240 million active users worldwide (much smaller than Facebook, with 1.2 billion), yet it is an increasingly prominent force in the public sphere. Everyone uses it: from teenagers talking to their friends, to revolutionaries drumming up support, to the Pope addressing his church. Increasingly, it's even finding a role in affairs of state: when the Crimean crisis emerged in March, tweets from U.S. Secretary of State John Kerry were taken as policy statements.

Yet, despite its widespread adoption, Twitter is losing money – US$645 million in 2013. More troublesome for the company, the rate at which new users are signing up has slowed sharply. It needs to increase revenues, and that means turning itself into a platform that not only welcomes advertisers, but offers them a better deal than its competitors by promising that their ads will reach just the right people, at just the right moments.

And that's where Kirstine Stewart comes in. Much of Stewart's time these days is spent shuttling among television networks, media producers and big-league advertisers – evangelizing Twitter and engineering new ways for them to use the service. She was the first person to be hired at Twitter Canada, and her mission is to boost the advertising market for the company. It's no small task, but she's no stranger to pressure.

When Stewart took over as head of the CBC's English-language services in 2011, the *Globe and Mail* ran a story. She remembers the headline well enough:

As soon as she hears the first three words, "Will Kirstine Stewart…," Stewart laughs, shakes her head and finishes the sentence: "…Save the CBC?"

Questions such as this followed her throughout her tenure. Stewart spent a total of seven years at the broadcaster, the first five as the executive director of programming for CBC Television. "I remember the day *Little Mosque* debuted on the CBC. *The National* did a story on it: Can *Little Mosque on the Prairie* turn around the CBC's fortunes?" she says. "When it did 2.1-something million viewers that night, I asked Peter Mansbridge, are you going to do a report today saying, 'Yes it did'?"

For all that, it was not the career she was expecting to have.

"People who actually attend college media programs hate this story," she says, by way of introduction, "but this is what happened." Stewart was an English specialist at U of T Mississauga, which in those days was Erindale College. She arrived at U of T two years younger than most of her classmates, and proceeded to zip through her degree in three years. "I was young, I was eager," she says, and then, almost as an afterthought, "I should have learned to calm down."

Stewart spent her teenaged years in a country house outside Milton, Ontario. The Erindale campus was close by, so she spent her first year driving in from home. In her second and third years, she moved into a residence townhouse with a group of psychology students who would use her as a test subject; she remains close with one of them to this day. In class, she focused on critical theory, with a soft spot for Marshall McLuhan. Today, the eldest of her two daughters has picked U of T – the St. George campus – as her first choice to start her undergrad this fall.

(Many years after her own graduation, Stewart found herself across a table from a man who was talking about having attended a class at Erindale with a professor Stewart remembered from her own time there. The man was Zaib Shaikh, who would later star in *Little Mosque on the Prairie*. Hearing the professor's name, Stewart struck up a conversation with Shaikh; they eventually got married.)

Stewart's goal at UTM was to land a job in publishing. In fact, she did a co-op placement with a publishing house in her final year, with an eye to getting hired back when she finished her degree. But her graduation, in 1988, coincided with a downturn in the publishing industry, and her former employer told her no positions were available. So Stewart went through the job listings in the *Toronto Star*, where she noticed one for a "girl Friday" at a local television distribution and production company. ("It was literally an ad for a girl Friday. It was called 'girl Friday.'")

The position involved everything from fetching coffee to answering the phones – the most basic of administrative tasks – but it gave her a chance to work with all parts of the operation. Soon she was promoted to sales executive, and when the publishing house called to say that a position had finally opened up, she decided to stay where she was.

Who Is @kirstinestewart?

You can learn a lot about someone from their tweets. Kirstine Stewart, the managing director of Twitter Canada, followed the Sochi Olympics and the Super Bowl earlier this year. Judging by the number of times she retweets – and is retweeted by others – she interacts a lot with her followers. And she doesn't take a break on the weekends – Sunday is her biggest day for tweeting.

Kirstine Stewart
@kirstinestewart

Head of @TwitterCanada…impressed by what can happen within 140 characters (or less)

TWEETS	FOLLOWING	FOLLOWERS
27,875	1,000	25,363

Tweeting Stats

- Joined Twitter on January 24, 2011 as user #242,359,437, first tweeted on March 29, 2011
- Ranked 113th in Canada in number of Twitter followers, as of March 18, 2014
- Total number of tweets so far in 2014: 3,197; Tweets per day: 42.1
- Portion of Stewart's tweets that are retweeted by others: 28%; Portion that are "favourited" by others: 36%
- Average number of times one of Stewart's tweets is retweeted: 13.9
- Most-used hashtags in 2014: #wearewinter; #sochi2014; #sochi; #teamCanada; #sb48
- Twitter users Stewart has retweeted the most this year: @TwitterCanada; @CDNOlympicteam; @sladurantaye; @ZaibShaikh; @CBCOlympics
- Favourite day to tweet: Sunday. Least favourite: Tuesday
- Platform most tweeted from: Twitter for iPhone

source: Twitonomy, March 2014; Topsy

It was her first taste of television programming. The company, Paragon Entertainment, was in the business of selling Canadian series to buyers around the world – series such as the original *Degrassi* dramas, and the beloved children's cartoon, *The Raccoons*, which is just about the most Canadian thing ever set to celluloid. "I sold *The Raccoons* to Soviet television," she says. "It was the first western show they ever bought." (The Saudis, apparently, really wanted it, but she had to explain to them that the show featured a trio of talking pigs, which wasn't going to fly there.) In her seven years at Paragon, the former girl Friday worked her way up to become president of distribution.

For the next decade, Stewart worked for several broadcasters – she even did a stint in Denver running 23 international television stations owned by Hallmark. In 2003, she returned to Toronto to work for Alliance Atlantis.

It was from there that she made the jump to the CBC, becoming the director of programming for CBC Television in 2006. She arrived at a time of turmoil: faced with wrenching budget cuts, the broadcaster had just come through a traumatic job action that saw familiar CBC personalities take to the streets, as managers haplessly tried to cobble together substitute programming. "Kirstine Stewart came along immediately following that and faced two challenges, one of which was to make the CBC a less polarized place in which to work," says John Doyle, the *Globe and Mail*'s long-time television critic. "It was really a challenge to her leadership ability. I think she succeeded enormously in that."

The second big challenge was the CBC's programming direction. Here, Stewart mostly stayed the course laid down by her predecessor, focusing on "lifestyle" shows – to the chagrin of those who yearned for more high-culture fare, or a return to *The National/The Journal* glory days of Knowlton Nash and Barbara Frum.

Instead, Stewart championed a slate of crowd-pleasing shows such as *Battle of the Blades*, *Dragons' Den*, *Being Erica*, *Murdoch Mysteries* and *Little Mosque on the Prairie* – the kind of offerings that delivered viewers in droves and, three years later, remain the properties much of the public identifies with CBC Television.

"The nice thing about being able to bring on the kind of programming that we did was that shows that had been there for a long time – *Rick Mercer Report*, *The National* – also benefitted from the fact that more people were coming to the CBC," she says. "It was more relevant in their lives."

Twitter could use some of that same broad appeal that Stewart brought to the CBC. The social network is a favourite of media types, but it remains a niche service compared to Facebook. Twitter has long had a reputation among its devoted users for being addictive, but it's difficult for outsiders to engage with. It can be bewildering at first, and demands that users learn terms such as hashtags and retweets.

But those who use Twitter, use it a lot. (A study by Sysomos, a social media analytics company started by a U of T prof and a grad student, found that five per cent of Twitter users account for 75 per cent of all activity on the social network.) These power users like to tweet about what they're doing at any given moment, and this is especially true when they're watching TV. This phenomenon offers a unique opening for brands and advertisers. Twitter's software is constantly scanning the contents of hundreds of thousands of tweets being posted around the world every minute. By looking for keywords or phrases, Twitter's algorithms can get a pretty good sense of whether a user is watching a TV show. (Someone who mentions Marge and Homer in a tweet at 8 p.m. on Sunday night is probably watching *The Simpsons*, for instance.) This gives advertisers a unique opening: knowing what the Twitter user is looking at on their television screen right then, they can insert complementary advertising into the user's Twitter feed.

To pick a hypothetical example, if a Twitter user tweeted about an Olympic bobsledder while the competition was being aired, the service could make an informed guess that that user is watching the event. Twitter could insert ads from a company such as Oreo, which was running special Olympic-themed Twitter promotions. (Cookies made to look like gold medals, and so forth.)

Advertising on mobile devices and social networks is still in its infancy. But researchers say that one thing we do know is that ads on small screens – such as ads injected into a Twitter feed – can pack a punch. "There's a lot less screen, so people pay more attention to what's on the screen," says Avi Goldfarb, a professor of marketing at the Rotman School of Management. All the same, he says, it's a trial-and-error endeavour. "Twitter is very much on the frontier. Social media advertising is still relatively new. There's no textbook for what works, and what doesn't, like we have with TV."

It's an uphill struggle: a media market that was once concentrated around big, profitable TV networks has fragmented into thousands of smaller online outlets and specialty television stations, all competing for advertising dollars. Online advertising rates continue to drop.

But for Stewart, Twitter's future isn't one that pits old media against new, despite the scramble for dollars. It's part of a new media landscape where one medium complements the other. "The fragmentation puts a huge stress on the way you finance things, for sure, but I think it also creates opportunity for some interesting things to be done," she says – a world of tech-savvy brands, smart advertising, and Twitter feeds that bring the television-watching and Internet-chatting experience closer together than ever. "I think it's the most exciting time for media that there's ever been."

Ivor Tossell (BA 2002 Vic) writes about politics, business and technology.

By Marcia Kaye
Illustration by Jon Han

Superbugs

Drug-resistant infections are a man-made problem. Is it one we can solve?

BACK IN THE LATE 1980S, as Jan was beginning her nursing career in the intensive care unit (ICU) of a Toronto-area hospital, most patients who acquired a bacterial infection would receive antibiotics and – presto! – the infection would vanish. Today, Jan sees a very different picture. She now deals on a daily basis with stubborn, hard-to-treat and sometimes fatal infections that have become immune to, or have even resulted from, the very antibiotics that used to work so beautifully.

"In our 13-bed intensive care unit, we always have at least three or four patients fighting off superbugs," Jan says. She and her colleagues keep these patients in isolation, don new disposable gowns, gloves, masks and protective eyewear each time they enter the room, and wash their hands dozens of times a day. But the patients, who must undergo complex treatment and endure long hospital stays, have a higher risk of long-term disability, and some die. "Figuring out how to work the new reality is a huge issue," says Jan. She won't use her last name because her hospital doesn't want to publicize its problem with antimicrobial-resistant infections, even though growing evidence suggests that all hospitals are in the same boat. A 2013 survey of 176 acute-care hospitals across Canada found that one in 12 adult patients is either infected or colonized with the three most common superbugs (see "The Superbug Hitlist," p. 37). If they're infected, they're already sick with it. If they're colonized, they may become sick or pass it to others.

"There isn't anywhere you can look where resistance isn't an issue... resistance is everywhere."

The problem of antimicrobial resistance goes far beyond hospitals. It's an important, pervasive and global issue, says microbiologist Dr. Allison McGeer, director of infection control at Toronto's Mount Sinai Hospital and a professor of laboratory medicine and pathobiology at U of T. "There isn't anywhere you can look where resistance isn't an issue," says McGeer. "In hospitals, out in the community, foodborne illnesses, sexually transmitted infections, tuberculosis, malaria – resistance is everywhere."

Counting the Cost of Superbugs

Conservative estimates suggest that more than two million people in North America get sick every year with infections resistant to antimicrobial drugs, which include mostly antibiotics but also antiparasitics, antivirals and antifungals. About 25,000 die from these infections, and many more die from conditions complicated by such an infection. More than a quarter of Canadian cases of salmonella, caused from eating contaminated food, are resistant to one or more antibiotics. About one in five urinary tract infections is now resistant to the sulfa drugs that were once a reliable cure. While gonorrhea was once easily treated, now as many as 60 per cent of cases worldwide may be caused by multi-drug-resistant strains. Globally, there are 630,000 cases of multi-drug-resistant tuberculosis in 84 countries, including Canada.

Antimicrobial-resistant infections can still be treated, but when first-line drugs – the most narrowly targeted ones with the fewest side effects – don't work, doctors must turn to more broad-spectrum second-line drugs, which may be less effective, cost more and have worse side effects. If those fail, doctors try even harsher third-line drugs. The costs, both human and financial, are enormous; the U.S. Centers for Disease Control and Prevention estimates that antibiotic resistance costs that country's economy up to $55 billion a year due to increased health-care costs and lost productivity. It's one of the most important public health concerns of the 21st century, especially with health-care systems already heavily burdened with non-communicable illnesses such as heart disease, diabetes and cancer, says epidemiologist Dr. Keiji Fukuda of the World Health Organization (WHO). In August 2013 he warned, "If we begin to add on top of that a lot of untreatable or difficult-to-treat infections, we really are going to begin bringing some of these health systems to the brink."

In Canada, an estimated 250,000 patients each year develop difficult infections, costing our health-care system an extra $1 billion annually. And despite their treatment, several thousand of these patients will die. "With these superbugs, we've now reached an age where some patients' infections are resistant to all antibiotics," says Tony Mazzulli, interim microbiologist-in-chief at Toronto's University Health Network and Mount Sinai Hospital, and a U of T professor in laboratory medicine and pathobiology. "For those patients, we have no usable antibiotics left."

How Antibiotics Stopped Working

During much of the 20th century, antibiotics were considered wonder drugs that would rid the world of all infections. What happened? Why have many of them stopped working? There are several reasons, starting with the bacteria themselves. These creatures, which have been around for billions of years longer than humans, are perfect examples of evolution in action. They evolve quickly to survive any threat, including a drug designed to kill them. There are so many bacteria – billions – that new mutations arise often. For instance, if some bacteria develop membranes that drugs can't get through, those will survive drug treatment and proliferate. Others may produce potent enzymes that inactivate the antibiotic. Still others may acquire resistance genes from different bacteria or even different species such as viruses. It's not that you become resistant to an antibiotic; it's that the bacteria do. It's nature's inevitable defence strategy: survival of the fittest.

Humans have unwittingly sped up this natural selection process through our overuse of antibiotics. (Roughly speaking, the more we take antibiotics, the more quickly bacteria evolve.) Antibiotics are among the most commonly prescribed drugs worldwide. The latest figures from the 2013 report on the state of public health in Canada show that for every 1,000 Canadians, there are 670 prescriptions for oral antimicrobials filled every year. Yet the U.S. Centers for Disease Control and Prevention estimates that up to 50 per cent of all antibiotics prescribed are unnecessary (in many cases, we'd get better without them) or not optimally effective as prescribed.

And that's just in people. More than three-quarters of antimicrobials in Canada are given to food animals such as cattle, pigs, chickens and fish. Ninety per cent of the time the drugs are given to healthy animals to help prevent infection or promote growth. (For reasons not well understood, antibiotics help animals grow faster on less food and make them market-ready sooner.) But sometimes antibiotics for animals are the same ones used in people, and resistant bacteria can travel from animals to humans. The WHO says when healthy chickens receive tetracycline, within 36 hours their excrement contains resistant E. coli, a common cause of infection in people. A 2013 Mount Sinai study in Ontario and Alberta found that the risk of resistant E. coli was highest near properties housing livestock. Resistant bacteria are even turning up in bottled mineral water.

The European Union banned the use of antibiotics as growth promoters in animals in 2006, and the U.S. Food and Drug Administration began implementing a voluntary plan with the American agricultural industry in late 2013. But in Canada, not only do we lack any official guidelines or policies to manage antimicrobial use in animals, but we're one of the few industrialized countries where farmers can buy over-the-counter antibiotics simply to promote growth in animals, without a veterinarian's prescription. In 2013 the Ontario Medical Association called on federal and provincial governments to crack down on antibiotic overuse in farming, with no results yet.

At U of T, Ziana Ahmed, a graduate student pursuing a master's in economics, has proposed a novel approach to this problem: user fees.

In a paper she wrote with Aidan Hollis (MA 1990, PhD 1996), now a professor of economics at the University of Calgary, Ahmed argues that user fees have several advantages over an outright ban: they are easier to administer, they deter low-value uses of antibiotics, they generate revenues that can be used to boost development of new antibiotics and they can be applied on an international scale. Ahmed says the higher costs of antibiotics will encourage farmers to improve animal management methods and adopt substitutes for drugs, such as vaccinations. The paper, "Preserving Antibiotics, Rationally," was recently published in the *New England Journal of Medicine* and generated headlines throughout North America and Europe.

While overuse of antimicrobials is a danger, so is underdosing. Scientists have known for decades that using too little of an antibiotic can hasten resistance. As long ago as 1945, Alexander Fleming, who discovered penicillin, said in his Nobel lecture, "I would like to sound one note of warning… It is not difficult to make microbes resistant to penicillin in the laboratory by exposing them to concentrations not sufficient to kill them."

If you take too low a dose of an antibiotic or stop it too soon, you may kill off many of the bacteria that are causing the infection but leave stragglers that may be slightly resistant.

The Superbug Hitlist

Here are the three most common infection problems, and others considered urgent or serious threats, according to the U.S. Centers for Disease Control and Prevention (CDC).

C. difficile (Clostridium difficile). When antibiotics such as clindamycin wipe out bacteria that protect the colon, the patient is exposed to C. difficile, which inflames the colon and causes severe diarrhea. The CDC considers this an "urgent threat."

MRSA (methicillin-resistant Staphylococcus aureus). Can cause flesh-eating disease. Considered a "serious" threat by the CDC.

VRE (vancomycin-resistant Enterococci). Can cause sepsis, meningitis or pneumonia. Considered a "serious" threat.

Other Urgent Threats

CRE (carbapenem-resistant Enterobacteriaceae). Includes Klebsiella and E. coli. Can cause bloodstream infections, wound infections and pneumonia.

Neisseria gonorrhoeae. Sexually transmitted disease that can lead to chronic pain, infertility in men and women and life-threatening complications.

Other Serious Threats

ESBL (extended-spectrum beta lactamase). Can cause intestinal, urinary or respiratory symptoms.

Drug-resistant strains of bacteria that cause foodborne illnesses, such as shigella, campylobacter and salmonella

Drug-resistant tuberculosis is resistant to the two most powerful first-line treatments used to treat this infection, which typically attacks the lungs.

These can survive, multiply, increase their resistance with each new generation, eventually outnumber the non-resistant bacteria, and be passed to another person. So the same antibiotic may not work the next time you or a family member needs it. Patients need more information about this, but physicians need to be reminded as well. Says Mazzulli: "I give talks to groups of family physicians and community doctors all across Canada to educate them about the importance of this issue."

What are the Solutions?

Resistance is a serious situation, to be sure, but certainly not a hopeless one. "We're by no means at an antimicrobial apocalypse," says Nick Daneman, a clinician-scientist in infectious diseases and clinical epidemiology at Sunnybrook Health Sciences Centre in Toronto and a professor of medicine at U of T. "But it's kind of like global warming. It's not an immediate catastrophe, but it could become one if we don't do something soon."

As with the issue of climate change, there's no single solution to the problem of antimicrobial resistance. Researchers around the world, including several at U of T, are pursuing a variety of strategies. One of them involves antimicrobial stewardship programs. Now mandatory in all Ontario acute-care hospitals, these programs aim to optimize antibiotic use to maximize their effects and minimize their harm. They generally involve surveillance screening of all patients for infection, regardless of why they come to hospital, and monitoring all antibiotic use. At Sunnybrook, for example, only infectious disease specialists can approve certain broad-spectrum antibiotics.

"The neat part of antimicrobial stewardship programs is they improve quality [of care] and value," says Daneman. In Sunnybrook's first year of the program, in 2009, broad-spectrum antibiotic use in the ICU dropped 21 per cent. In the same year, rates of C. difficile, a common infection, fell 30 per cent, and the hospital saved $95,000. Daneman is now co-leading a research program comparing shorter- and longer-course antibiotic therapies, since emerging evidence suggests that shorter courses – but not too short – can safely treat certain mild to moderate bacterial infections without increasing resistance. Shorter treatment periods also reduce the side effects and the cost.

Another way researchers are tackling transmission of infection is by prioritizing prevention. "Probably the main route of transfer of infection is on the hands of health-care workers," says Mazzulli. Improving cleaning methods and increasing handwashing are essential, but they can cause their own problems.

"We wash our hands so much – sometimes four or five times during one interaction with one patient – that our hands dry out, they crack, they bleed, they're open to infection, and then we're told we can't work," says Jan, the ICU nurse. Sinks in hospital rooms can actually increase infections because bacteria like moisture. Alcohol-based hand sanitizers are effective (and, for complex reasons, don't contribute to microbial resistance, unlike other antibacterial cleansers), but they do dry out hands. Because of all the things a doctor, nurse or technician has to touch – doors, beds, switches, equipment, pens, wheelchairs, computer keyboards and patients – it's impossible to keep hands constantly clean. Industrial antibacterial cleansers and detergents, for cleaning rooms, don't significantly reduce infections and may even contribute to antimicrobial resistance, says the Public Health Agency of Canada.

Novel Approaches Hold Promise

The newest initiatives are focusing in other directions:

What Can Patients Do?

Realize that not all bugs need drugs. Antibiotics don't work on viruses such as the flu, colds or most sinus infections, coughs and bronchitis. Many doctors will recommend getting extra rest and letting the illness run its course.

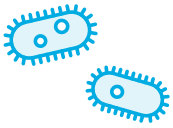
- Tell your doctor you'll take an antibiotic only if necessary. "Ask, 'Do I really need this?'" suggests microbiologist Dr. Allison McGeer.
- If doctors tell you an antibiotic won't help, don't seek out another doctor for a prescription.
- If prescribed an antibiotic, take it exactly as directed.
- When travelling to other countries, don't buy antibiotics over the counter without consulting a doctor.
- Prevent infections by getting immunized, staying home if contagious and washing hands frequently.

What Can Physicians Do?

Rethink the notion that antibiotics are always the "better safe than sorry" option. "That approach is deeply embedded in the psyche of physicians," McGeer says.

- Avoid misreading your patient. A patient who asks about antibiotics isn't necessarily asking for them.
- If you don't believe antibiotics will help your patient, take the extra minute to explain why.
- If prescribing an antibiotic, make sure it's the narrowest spectrum and for the shortest duration possible to cure the infection. Long-term use increases risks of C. difficile and side effects, as well as resistance.
- Encourage patients to get immunized and to practice careful hygiene.

"It's kind of like global warming. It's not an immediate catastrophe, but it could become one if we don't do something soon."



sanitizing mists, robots emitting bacteria-killing ultraviolet light, and even antimicrobial building materials such as copper. It's been known since ancient times that copper and its alloys kill bacteria, but building hospital furniture out of solid copper would be horrendously expensive.

A U of T team, however, has developed a cost-effective method of spray-painting molten copper and its alloys onto almost any surface, such as wood, plastic or metal. "The coating is toxic to bacteria, it doesn't degrade, and the beauty is it can come in different colours, to look like bronze, brass, copper or stainless steel," says Javad Mostaghimi, a professor of plasma engineering in the department of mechanical and industrial engineering and the holder of a Distinguished Professor award. He is also founding director of U of T's Centre for Advanced Coating Technologies.

Mostaghimi won a $100,000 grant from Grand Challenges Canada, funded by the federal government, to further this research. In February, with colleagues Maurice Ringuette, a professor in cell and systems biology, and centre director Larry Pershin, Mostaghimi was to begin to copper-coat ICU rooms in Mount Sinai Hospital and a hospital in Lima, Peru, covering bedrails, sinks, tables, cabinet handles, countertops and push plates on doors. The researchers will compare bacteria counts and infection rates with non-coated ICU rooms.

Faster, easier and cheaper diagnostic tests are also an urgent need, not just in hospital settings but in the community, especially in rural areas where people have no access to high-tech facilities. Shana Kelley, a professor of pharmacy and biomedical engineering, leads a team that has developed a portable diagnostic technology using tiny 3-D sensors patterned on the surface of an electronic chip. The sensors can detect and analyze molecules from a blood sample. Instead of traditional diagnostic methods, which involve waiting days for bacteria to grow, this method gives easy-to-interpret results in 20 minutes. "This can show almost instantly what kind of bacteria are present and with what resistance, so the patient can get exactly the right drug sooner," says Kelley, who won a Grand Challenges Canada grant to focus the technology on malaria in Tanzania and urinary and blood infections in Toronto. She predicts the unit will be commercially available within two years for less than $50.

Chip-based diagnostic testing is also under development for multi-drug-resistant tuberculosis, which is a huge problem in developing countries and, because of international travel, trade and immigration, a rapidly growing issue in North America. Edmond Young, a professor in mechanical and industrial engineering and also a Grand Challenges Canada grant recipient, has developed a technology combining microchips and microfluidics. With colleagues in Thailand and the U.S., he's designing a kit, using Lego-like plastic bases with snap-on lids, for quick assessment of mucus samples for multi-drug-resistant tuberculosis. "It's cheap, portable, easy to use and doesn't require any expensive machinery or extensive training," says Young, who hopes to begin testing the kits soon in hospitals and clinics in Thailand.

With resistance such a global challenge, why don't we just create new antibiotics? We could, but bringing a new drug to market can take more than 10 years and cost a billion dollars. Pharmaceutical companies, who must answer to shareholders, are more inclined to invest in developing a drug that people take daily – such as for high blood pressure, high cholesterol or arthritis – than an antibiotic that people take as rarely as possible. So scientists are looking at tweaking some of the old antibiotics. Peter Stogios, a research associate in chemical engineering and applied chemistry, is studying, among other things, aminoglycosides, a class of antibiotics that lost their effectiveness in the 1970s. Stogios is testing various chemical compounds, some of them donated by pharmaceutical companies, to try to restore the old drugs' effectiveness so they block the resistant enzymes that the bacteria have developed. "In the lab we can kill these resistant bacteria," says Stogios, adding that his research is still in the early stages.

It may take constant vigilance on all fronts, but the fight against antibiotic resistance is showing signs of success. Microbiologist McGeer says, "Five or six years ago, I thought we were probably going to have to accept methicillin-resistant Staphylococcus aureus (MRSA) as endemic in hospitals. I was dead wrong." She says in places that have aggressively tackled the problem, such as the U.K., MRSA rates have dropped significantly, and in Ontario they've begun to stabilize. "And that's absolutely brilliant."

Marcia Kaye (marciakaye.com) of Aurora, Ont., is an award-winning health writer.

Explore the World with the University of Toronto in 2014.

Join U of T alumni and friends as we continue our discovery of exciting destinations all around the world. Explore the trade routes of coastal Iberia on a deluxe 90 passenger vessel. Or join U of T alumnus Rick Phillips on a tour of the great classical music of Vienna and Prague. Visit Normandy for the 70th anniversary of D-day or take a cruise through the Panama Canal as it celebrates a century of service.

Come experience the world's unique cultures and histories.

TO REQUEST A BROCHURE:
Call 416-978-2367 or 1-800-463-6048
Email alumnitravel@utoronto.ca
Visit us online at www.alumnitravel.utoronto.ca
Or mail this coupon to:
University of Toronto Alumni Travel
21 King's College Circle, Toronto, ON M5S 3J3

Name: _____ Grad Year: _____

Address: _____ City: _____ Province: _____ Postal Code: _____

Tel: _____ Email: _____ Alumni ID number: 9000_____

10 digits, please see mailing label.

❑ *Please add my name to the travel mailing list to receive all future brochures.*
Or send me information for the trips I have checked off:

2014 ALUMNI TRAVEL

- ❑ Lands & Islands of Mystery
- ❑ Cradle of History
- ❑ Ancient Kingdoms of China
- ❑ Apulia
- ❑ Mediterranean Classics
- ❑ Celtic Lands
- ❑ Discover Switzerland
- ❑ Baltic Sea
- ❑ Southeast Alaska
- ❑ Sorrento
- ❑ Lifestyles Explorations in Spain
- ❑ Black Sea Serenade
- ❑ Village Life in Dordogne
- ❑ Normandy
- ❑ Trade Routes of Coastal Iberia
- ❑ Lifestyles Explorations in Italy
- ❑ Bali & Beyond
- ❑ Grand Danube Passage
- ❑ Treasures of East Africa
- ❑ The Real Galapagos
- ❑ Classical Music in Vienna & Prague
- ❑ Cruise the Panama Canal

2014 ALUMNI TRAVEL

Lands & Islands of Mystery
(Japan, Russia, USA)
May 1–15
From $5195 US + air

Cradle of History
(Turkey, Greece, Cyprus, Israel)
May 4–15
From $3499 US incl. air

Ancient Kingdoms of China
May 18–Jun 1
From $4195 US + air

Apulia
(Italy)
May 20–28
$2395 US + air

Mediterranean Classics
(Spain, France, Italy, Greece, Croatia)
May 31–Jun 11
From $3999 US incl. air

Celtic Lands
(Scotland, Wales, Ireland, France, England)
Jun 4–14
From $6080 US + air

Discover Switzerland
Jun 11–26
$4295 US + air

Baltic Sea
(Denmark, Poland, Estonia, Russia, Finland, Sweden)
Jun 20–29
From $6290 US + air

Southeast Alaska
(USA)
Jun 26–Jul 4
$5350 CAD + air

Sorrento
(Italy)
Sep 3–11
$2995 US + air

Lifestyles Explorations in Spain
Sep 20–Oct 14
From $3995 US + air

Black Sea Serenade
(Turkey, Bulgaria, Romania, Ukraine, Russia)
Sep 21–Oct 2
From $3999 US incl. air

Village Life in Dordogne
(France)
Sep 25–Oct 3
$3395 US + air

Normandy
(France)
Sep 30–Oct 8
$2895 US + air

Trade Routes of Coastal Iberia
(Portugal, Spain, Gibraltar, Balearic Islands)
Oct 3–11
From $5240 US + air

Lifestyles Explorations in Italy
Oct 3–25
From $4995 US + air

Bali & Beyond
(Indonesia)
Oct 4–18
$8500 CAD incl. air

Grand Danube Passage
(Bulgaria to Czech Republic)
Oct 4–19
From $4595 US + air

Treasures of East Africa
(Tanzania, Kenya)
Oct 6–20
$6895 US + air

The Real Galapagos
(Ecuador)
Nov 2–11
From $6895 US + air

Classical Music in Vienna & Prague
(Austria, Czech Republic)
Nov 13–23
$4695 CAD + air

Cruise the Panama Canal
(USA to Costa Rica)
Nov 19–30
From $3135 US + air

Prices are per person and based on double occupancy. Dates and prices are subject to change. Individual tour brochures are available approximately 6–9 months prior to departure.

UNIVERSITY OF TORONTO

By Cynthia Macdonald
Illustration by Magoz

THE SCIENCE OF mindfulness

Researchers are producing mountains of evidence that meditation can boost satisfaction, improve health and reduce burnout in fields ranging from business to social work to education

FOR SUCH A PEACEFUL PRACTICE, mindfulness is definitely all the rage. There are now books on mindful eating, parenting, investing and gardening – even an article you can download on mindful dishwashing. Mindfulness training is now *de rigueur* in many corporate environments, but it has also made its way into courts, classrooms, prisons and hospitals. You can now choose from hundreds of mindfulness apps for your smartphone, read a magazine (*Mindful*) or watch a film called, appropriately, *The Mindfulness Movie*.

Yet for all its trendiness, there is growing scientific evidence that mindfulness is a bandwagon well worth jumping on, for those in search of greater calm, focus and kindness. "There's more than an article a day on the subject in peer-reviewed journals," says psychiatrist Steven Selchen, a mindfulness expert and lecturer in U of T's Faculty of Medicine. "The research is vast now."

Various studies – many of them completed or underway at U of T itself – have shown that a regular practice of mindfulness meditation can result in increased immune response and brain activity, as well as general stress reduction.

What, exactly, is mindfulness? It's a meditation technique, but also a way of thinking. According to the American scientist Jon Kabat-Zinn, the practice's best-known advocate, mindfulness is "awareness, cultivated by paying attention in

"Meditation is hard! In the first two weeks, people struggle. But around the third and fourth, they begin to notice a difference in themselves."

a sustained and particular way – on purpose, in the present moment and non-judgmentally." Rather than ruminating on the past and worrying about future events that may never come to pass, mindful people pay strict attention to what is happening to them right now, both physically and mentally. In this way, they are better able to resist being engulfed by strong negative feelings.

Mindfulness meditation centres on breath, thoughts and physical sensation, but encourages practitioners merely to notice such things instead of actively trying to change them. And while it is rooted in Buddhist traditions that are some 2,500 years old, the practice no longer necessarily holds religious connotations.

Michele Chaban is director of the Applied Mindfulness Meditation certificate program at U of T's Factor-Inwentash Faculty of Social Work. She began meditating while suffering the effects of a spinal cord injury that left her unable to walk, sit or stand for any length of time for 10 years. For her, mindfulness "is a health and wellness model I've used in my practice for 30 years, and I've really seen people change with it. At its simplest level where I stand, it's about stress reduction. But others in the field are looking at error reduction, resiliency, health and wellness, pain management and effects on the cardiac and immune systems."

Chaban calls Toronto a "special hub" for mindfulness, for various reasons. The city is home to a large population of Buddhist immigrants (most notably, the Tibetan community centred in Parkdale). It is also a high-pressure corporate nerve centre, and home to numerous meditation advocates who – like her – studied with Kabat-Zinn in the 1980s and '90s. Further, mindfulness is a core element of many entrenched forms of psychotherapy: one of the most prominent of these, mindfulness-based cognitive therapy, was co-developed about a decade ago by Zindel Segal, a U of T professor of psychiatry.

Chaban started the certificate program in social work nine years ago, after a long period spent successfully using mindfulness in her work with terminally ill patients. Open to anyone who wants to incorporate mindfulness in their work (as both practitioner and teacher), the program consists of a series of weekend modules that can now barely accommodate demand. "Our program is inter-professional in nature," says Chaban. "We are open to working with all disciplines in the health sciences, business, education and chaplaincy. We teach people how to be with each other in order to enhance resiliency, communication, wellness, learning and to make the most out of their interactions with others."

Some companies have embraced mindfulness. Employees at the eBay headquarters in California can now duck into a pillow-strewn meditation room. Google has set up a labyrinth so its workers can engage in walking meditation. Even Rupert Murdoch has been tweeting about his dawning interest in meditation.

The scientific case for mindfulness training in the business world is twofold. First, there is solid evidence that it results in a happier workforce. A January study published in the *Journal of the American Medical Association Internal Medicine* found that mindfulness was as good as medication for alleviating some depression symptoms (it should be noted the depression was described as "not full-blown"). This follows research, now a decade old, that Segal's mindfulness-based therapy could reduce recurrent episodes of depression by 50 per cent.

But it's also been found that mindfulness makes one learn and work more efficiently. A 2011 study led by a team at the Massachusetts General Hospital found that an eight-week program of Mindfulness-Based Stress Reduction resulted in increased concentration of grey matter in brain regions associated with learning, memory and regulation of emotions. "Although the practice of meditation is associated with a sense of peacefulness and physical relaxation, practitioners have long claimed that meditation also provides cognitive and psychological benefits that persist throughout the day," Dr. Sara Lazar, the study's senior author, told the *Harvard Gazette*. "This study demonstrates that changes in brain structure may underlie some of these reported improvements."

With all this evidence of the benefits of mindfulness, it's no surprise that U of T's Rotman School of Management is now giving students the chance to use mindfulness in a business context. In October, the school offered the two-day Search Inside Yourself seminar, a mindfulness training program developed at Google; it was so wildly successful, they're offering it again this April. The program uses mindfulness techniques to amplify the "five key domains" of emotional intelligence: self-awareness, self-regulation, motivation, empathy and social skills. But mindfulness has actually been kicking around Rotman for a while – most particularly in the work of Mihnea Moldoveanu.

The associate dean of Rotman's full-time MBA program, Moldoveanu is also poet, philosopher, entrepreneur, engineer and education innovator. Indeed, Rotman distinguishes itself among business schools for its emphasis on teaching new ways of thinking. And for Moldoveanu, mindfulness, as it is used in the West, is more of a cognitive than an emotional practice.

He describes his own work on the subject (with American psychologist Ellen Langer) as Western rather than Eastern. An "Eastern" mindfulness workshop, he says, "might focus on automated breathing patterns, altering emotional states to induce a different state of awareness." By contrast, "Western" mindfulness entails a "focus on different ways of conceptualizing or representing a situation or problem," without necessarily engaging in meditation.

Moldoveanu believes society is highly prone to "mindless engagement," in business and elsewhere. "It's simply a process of imprinting. I say something, you remember what it was and you repeat it. But over a period of time a lot of people stop listening, for example, to what their spouse or partner says. They develop these routines so they can demonstrate that they've somehow listened. They've listened but they haven't heard – they're just playing out a script. In work relationships, the same thing happens."

In his work on thought innovation with management consultants McKinsey & Company, he's trying to change that. "We produced a tool for getting people to break out of the template they're in – to give them training in a different set of lenses." The business world has long been known for its emphasis on innovative problem-solving, of course; it gave us the cliché "thinking outside the box." In Moldoveanu's view, the need for this has a lot to do with what he calls "the tachycardia of business. Things happen very quickly, so people are constantly in a state of shock or surprise. They're always looking for new ways to enhance their adaptive capability." Moldoveanu believes the mindful business executive is consistently able to regard familiar situations in new ways, even after long exposure to them.

In the field of education, opportunities for routine, mindless learning are many. In Canada, mindfulness has now entered elementary school classrooms. A program called MindUP has gained traction in B.C., while Ontario's ministry of education is currently assessing proposals to implement similar programs. Mindfulness advocates say that classroom meditation may help not only with learner boredom, but with problems such as attention deficit disorder and bullying.

But before mindfulness gets to the students, OISE professor Jack Miller says it must start with the teacher: "if teachers haven't had any practice at all, I think it could be a mistake. You have to have some experiential understanding of it before you introduce it to children."

So it is that for more than 25 years, he's been instructing experienced teachers and his own student teachers to meditate over the course of a six-week training program. "The main thing they get out of it is that they're more present to the students. They're listening at a deeper level, and that's such a powerful way to build rapport in your classroom. If a student feels that you're not really there when they're talking, there's immediately a sense of disconnection, right?"

In 2006, a formal program to specifically address teacher burnout was developed and introduced at OISE. Called Mindfulness-Based Wellness Education, it has since been extensively studied, and shown to improve coping strategies, creativity and interpersonal skills.

Miller himself has been meditating since 1974. But how long do you have to meditate in order to derive benefit? "I ask for six weeks," he replies, "because usually people give up after the first week or two. Meditation is hard! In the first two weeks they struggle. But around the third or fourth, they settle in and begin to notice a difference in themselves." (Individual session lengths seem to vary, though within a regular practice 20 to 30 minutes seems to be about average.)

It could be said that the irritation that beginning meditators feel is a concentrated form of the irritation one feels in daily life anyway. The mind races, is bored and anxious. The body wants to flee. The to-do list seems to grow with each minute that passes as you sit on your pillow.

This is what Buddhists call the "monkey mind," the mind that skips unhappily from feeling to feeling, trying to outrun those that are least pleasant. In mindfulness meditation, however, you simply sit with those unpleasant feelings. You

How Mindfulness Helps

In recent years, hundreds of academic studies – some conducted at the University of Toronto – have vouched for the value of mindfulness meditation in improving everything from stress to binge eating to depression. Here are a few examples of the U of T studies:

Binge eating

A 2011 study led by U of T psychiatrist Christine Courbasson enrolled people with both binge eating disorder and substance abuse problems in a 16-week program of mindfulness-based cognitive therapy. Over the course of the program, participants were found to engage less often in binge eating and to demonstrate both an improved attitude toward eating and a reduced reliance on drugs and alcohol.

Depression

In 2013, a team of researchers, including U of T psychiatry professor Dr. Nora Cullen, found that a 10-week program of mindfulness-based cognitive therapy reduced symptoms of depression in people who had suffered a traumatic brain injury.

Stress

Cheryl Regehr, a professor at the Factor-Inwentash Faculty of Social Work and U of T's provost, led a review of the literature on stress to see what interventions work best for university students. The study, published in 2013, found that mindfulness-based interventions significantly reduce anxiety, depression and cortisol levels.

Brain benefits

A 2013 study by psychiatry prof Zindel Segal and U of T colleagues compared MRI data for people who had undergone an eight-week mindfulness training program with a control group. The mindfulness group not only showed a different pattern of brain activity while practising, but showed an increased ability to connect various parts of the brain, similar to the "rewiring" the brain does after an injury.

"People take better care of themselves after training in mindfulness. It helps them manage chronic conditions such as diabetes"

notice them. You name them. You disconnect them from their sources. And then, at length, you gain mastery over them.

Psychologist and U of T professor Ana Bodnar underlines that once a meditation practice takes hold, it is an extremely efficient support for therapy. "These practices are very empowering, because they're things that people can do themselves. It's something you can take home, you're not always dependent on somebody else." She stresses, though, that it is important for teachers to take the time to teach mindfulness practices well.

Bodnar is a highly experienced practitioner herself; in addition to her clinical practice and other teaching, she is one of four faculty members of New College's Buddhism, Psychology and Mental Health program.

Interaction with a qualified teacher is important, says psychiatrist Steven Selchen, who runs a U of T-sponsored mindfulness training program for health-care practitioners at Sunnybrook Health Sciences Centre.

"When people try to pick up meditation on their own – they get recordings on the Internet, or read a book – they may interpret mindfulness in ways that aren't helpful to them. Their mind wanders and they feel like they're failing, when really it's a normal human experience for the mind to wander. So they need to spend time interacting with a reliable teacher. It's very challenging to do on your own, and that's why I'd like to see more good opportunities for people to access this."

Selchen, who has a degree in mindfulness from the University of Oxford, says that mindfulness treatments have proven extremely effective in the reduction of psychological ailments such as stress, anxiety and depression. But meditation can also have a direct impact on physical illness. "A number of studies have shown improved immune function; when you think about the relationship between stress and immune function, it's not that shocking. But there's also evidence that people take better care of themselves after training in mindfulness. It helps them manage chronic conditions such as diabetes, which leads to better outcomes."

It stands to reason that anything this popular will have detractors – or at least produce skeptical questions. If the world is so highly charged and competitive, don't we need more aggression instead of less? Yet Selchen cites a recent Canadian study showing that more than 45 per cent of physicians report at least one symptom of advanced burnout, defined elsewhere as "an experience of physical, emotional and mental exhaustion, caused by long-term involvement in situations that are emotionally demanding."

Chaban says it needn't be so. "Historically, we've learned that aggression and determination are gasoline for the way that we work. The primitive brain activates itself and says, 'I've got to push, I've got to fight.'" But fight-or-flight reactions lead, over the course of long work hours, to reduced productivity, lawsuits and errors. "So we're having to rethink all kinds of things, to go from a worker bee to a hive mentality. People are asking, how much emotion do I need to do what I set out to do? There's no sabre-toothed tiger around, so maybe I can do it with less intensity and reactiveness."

Bodnar points out that meditation can soften anger and aggression – that practice can help you to deal better with such feelings. "You can develop the ability to make a decision about what you're going to do with that emotion. You can say, 'I'm not going to lose control,' and then be aware of the rise and fall of angry feelings as they move through you."

A recent study at UTSC bears this out. There, PhD psychology candidate Rimma Teper used electroencephalography to record the brain activity of participants as they completed a computer task that resulted in positive, negative or neutral feedback. Teper's research showed that participants who had a high level of mindfulness were far less responsive to immediate reward than an addict, such as a problem gambler, might be.

Meditators are "responding to their emotions adaptively," says Michael Inzlicht, Teper's supervisor and a UTSC psychology professor. "Sometimes listening to what those emotions have to offer, and sometimes overcoming those emotions when they lead them astray." Inzlicht thinks that acceptance of emotions is key. "We typically talk about two facets to mindfulness. One is awareness, attention: the ability to focus on present moments. The second one is acceptance: accepting your thoughts and not reacting to them. It turns out that this facet is doing most of the work."

Is mindfulness meditation here to stay? Surely some will try it on for size, then abandon it as they did their Crocs, Oprah diets and lambada CDs. But, backed by an increasing body of scientific support for their actions, others are now inviting it into their lives for good. Echoing a widely held thought, Ana Bodnar is confident that this is mindfulness's moment. "It's found its way into so many settings and therapies that aren't going to disappear. The practices are very successful, so they will live on." Like an outsized emotion in an overheated brain, mindfulness is now most definitely being noticed, accepted and used. According to many, the world is much better for it.

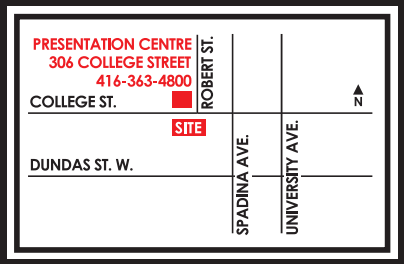
Cynthia Macdonald (BA 1986 St. Michael's) is a writer in Toronto.

THE college
CONDOMINIUM AT SPADINA

Location is everything

Live just steps to the **UNIVERSITY OF TORONTO,**
shops of **KENSINGTON MARKET,**
bars and restaurants on **COLLEGE STREET**
and the Spadina & College **STREETCARS**

VISIT OUR DESIGNER DECORATED MODEL SUITE



NOW PREVIEWING FROM THE $300's

PRESENTATION CENTRE HOURS:
MON-THURS: 12PM - 7PM
FRI: CLOSED
SAT & SUN: 11AM - 6PM

416-363-4800

Tribute communities
A Tradition of Excellence
For Over 30 Years

mytribute.ca Follow us on twitter @mytributehome

Winner of the Coveted 2010 Desjardins Business Excellence Award in Ontario

"Highest in Customer Satisfaction with New Home Builders in the Greater Toronto Area"

Disclaimer: Tribute Communities received the highest numerical score in the Greater Toronto Area (GTA) in the proprietary J.D. Power and Associates 2010 Canadian New Home Builder Customer Satisfaction Study℠. Study based on 1,864 responses from homeowners in the GTA, measuring 8 home builders and measures opinions of consumers who purchased a new home in January-December 2009. Proprietary study results are based on experiences and perceptions of consumers surveyed in April-June 2010. Your experiences may vary. Visit jdpower.com • Tribute Communities was honoured with the coveted 2010 Desjardins Business Excellence Award, marking the first time a homebuilder has been given the distinction. As co-winners with De Beers Diamond, this award acknowledges "Best Large Business" as recognized by the Ontario Chamber of Commerce. Prices, terms, and specifications are subject to change without notice. Renderings are artist's concept only. E.&O.E. This project is not affiliated with nor approved by the University of Toronto or Ryerson University.

Achieve more.

Terry Lampropoulos

Graduate, **Certificates in Business Analysis and Project Management**, holds a U of T Hon. B.Sc. degree and is a risk management analyst for a major Canadian bank.

"I can say with confidence that the School of Continuing Studies helped me gain a position that enabled me to have the career of my choice. It also allowed me to have a life while educating myself."

From Business to Arts, Creative Writing to Languages, we offer boundless opportunity to enhance your skills and enrich your life.

Courses are available in-class at U of T St. George, U of T Mississauga, and U of T Scarborough and online. For easy registration or a course catalogue, call **416-978-2400** or visit us at:

learn.utoronto.ca

UNIVERSITY OF TORONTO
SCHOOL OF CONTINUING STUDIES

All About Alumni

"He used his brilliance to advance society, not for personal wealth"
Alumnus Dorrian Porter on why he built a statue of inventor Nikola Tesla
p. 52

Maureen Batt (left) and Erin Bardua simply love opera

Singing It for Themselves

Erin Bardua and Maureen Batt founded an opera company that's not highbrow or high-cost, but simply fun

SINGERS ERIN BARDUA AND MAUREEN BATT (both MMus 2009) became fast friends at U of T and there developed a to-and-fro patter that continues to this day. The two sopranos toss sentences back and forth – like, say, an operatic duet.

"There were only a handful of us in the graduate program," recalls Bardua.

"And so we got to know each other, wandering between all the same classes," Batt continues.

"Like kindergartners," Bardua says.

Back to Batt: "We developed a hive mind."

In the nearly five years since graduating, the two have started their own opera company, producing (and generally appearing in) six concert-style operas at mid-sized Toronto halls. After a due amount of back-and-forth, they chose the name Essential Opera.

"We didn't think it would be very convincing to say, Erin and Maureen think you should come…" Batt says. "We needed a name for the poster."

"And once you name a company," Bardua continues, "it's like a puppy, it's yours."

Batt and Bardua think you can sometimes appreciate opera better with less frippery. They don't always wear period-appropriate costumes and have been known to perform with a lone piano. The focus is on the singing and the acting.

"A lot of people tell us," says Batt, "'This is my first opera. I had such a fun time, and I'll definitely be coming back.'" ➤

PHOTO: ANYA CHIBIS

Essential Opera performs at Heliconian Hall in Toronto, built as a church in 1875 and renowned for its acoustics

The Big Tasty

How Zella Palmer Cuadra's MA project became a cookbook

ZELLA PALMER CUADRA has had a soft spot for New Orleans and its cuisine since she was a child, enjoying gumbo at the Big Easy house of her grandfather (who was Creole). She also developed a taste for museum studies at U of T. These dual loves have now combined in her "documentary cookbook," *New Orleans con Sabor Latino: The History and Passion of Latino Cooking,* which features recipes as well as text. "The Latino community has made many contributions to the rich culinary traditions of New Orleans," she says.

The book began during a graduate internship at the city's Southern Food and Beverage Museum, midway through Palmer Cuadra's U of T degree (MMSt 2010). When she returned to Toronto, she discovered that her professor Cheryl Meszaros had passed away from cancer. She decided to honour Meszaros by finishing her New Orleans research: the cookbook is dedicated to the professor's memory. "She always used to say 'Follow your dreams,'" says Palmer Cuadra, who is now working on an independent cooking show that incorporates the culinary history of food. "And that's what I did with this book – I followed my dreams."

First, she had to muster enough funds to move to Louisiana, which she did by selling gumbo to her museum studies classmates. She didn't have a car, so she biked across the city, interviewing foodies such as famous restaurateur Chef Adolfo Garcia and retired fisherman and home cook Mike Martin. Every page of the book highlights how the Latino community has helped shape the unique identity of New Orleans since the early 1700s. For example, before sausage was introduced to gumbo, many Big Easy recipes used ham – a Spanish food staple. "I wanted to give a voice to Latino communities that aren't as recognized as Creoles or Cajuns in New Orleans," she says. "They are really part of that "gumbo" that brings the city together." – **NADIA VAN**

Try a tasty recipe from *New Orleans con Sabor Latino* at magazine.utoronto.ca.

OVERHEARD

> Adult writing can start in despair and end in hopelessness and I don't want to do that. The young adult age group generally knows that anything is possible. That energy gives me a real charge.

Teresa Toten (BA 1978 Trinity, MA 1979), in the *Ottawa Citizen* on Nov. 28, 2013. She'd just won a Governor General's Literary Award for *The Unlikely Hero of Room 13B*.

It doesn't hurt that their ticket prices are a fraction of those charged by more established companies. "There's this perception that opera's just an art form for the elite," Bardua says. "We wanted to get away from that."

They tend to select pieces centered on relationships that singers with strong acting skills can dramatize – works such as Handel's *Alcina,* which features two sorceress sisters defeated by a pair of intrepid human lovers. ("We'd do *Aida,*" Bardua quips, "but getting elephants might be tricky.")

This April, Bardua and Batt have commissioned three small operas from graduates of U of T's music program. *Regina* by Elisha Denburg (MMus 2009) focuses on Berlin's first female rabbi and the history student who uncovers her records; *Heather: Cindy + Mindy = BFFs 4EVR!!!* by Christopher Thornborrow (MMus 2008) speaks of teenaged girls who bully and are bullied; and *Etiquette* by Monica Pearce (MMus 2008, DMA 2013) makes music from aspects of manners columnist Emily Post's biography.

The interview with the pair has been a romp, but Bardua turns earnest at the end. "So many women struggle to find work in the arts, and there are so few places and roles for them. Operas are mainly about a dude – even if there's a woman's name in the title."

As ever, Batt finishes the thought: "So it's wonderful for us, to have composers writing such great work about the lives of girls and women." – **ALEC SCOTT**

PHOTO: LEFT, DESIGN BY UNIVERSITY PRESS OF MISSISSIPPI/PHOTO BY NATALIE ROOT. RIGHT, MATTHEW WILEY

In 2009, Bolivia became the first country to ban the use of animals in circuses

Jeffery Alderdice (left) with Governor General David Johnston

A Medal for Mettle

Police Sergeant Jeffery Alderdice wasn't sure how he'd react to the dangers of Afghanistan, but he more than passed his test of courage

"I DON'T SEE MYSELF AS A HERO," says Sgt. Jeffery Alderdice of the Toronto Police Service. But the Canadian Medal of Bravery awarded to him in December by the Governor General says otherwise.

Alderdice, a sociology and criminology graduate (BA 1990 UTSC) who currently oversees a group of officers patrolling the streets of Etobicoke, spent nine months in Afghanistan working for the Royal Canadian Mounted Police as part of a program to mentor Afghan police officers.

In Afghanistan, Alderdice stayed with an American army unit in Kandahar province (one of the most dangerous parts of the country) because the unit was near the Afghan Police Service headquarters, where high-ranking Afghan officers were stationed. Alderdice's job was to mentor these officers. With his background in detective work, he was experienced in handling violent crimes, so he was assigned to teach them crime-scene, counter-narcotics and counter-terrorism techniques, as well as community policing strategies.

On Feb. 12, 2011, Alderdice and an American army convoy were called to police headquarters in the city of Kandahar to help repel a surprise Taliban attack. An American officer from his unit, Captain Lonni Johnston, "was alone in a forward position, coordinating our response," says Alderdice. "The enemy figured out where he was and began concentrating their fire." Alderdice got permission to leave the convoy, reached Johnston and moved him to safety.

The battle raged on for five hours. Alderdice returned to base covered in blood after helping tend to wounded Afghan officers caught by an improvised explosive device that detonated outside their headquarters.

"In policing, 99 per cent of us are never tested to the brink," he says. "We wonder if we will respond appropriately. I now know that I personally will respond appropriately under the most severe of circumstances."

Receiving the Medal of Bravery at a Rideau Hall ceremony attended by the U.S. officer whose life he had saved was a bonus for Alderdice.

"If there was closure for all of my experiences, that was it," he says. "It was an incredibly proud day for me personally, and for my family and friends." – **ELAINE SMITH**

Spectacular

Claire Battershill

A legend in Claire Battershill's family history says her great-grandfather ran away to join the circus – and the title story of her forthcoming debut short-story collection, *Circus*, kicks that basic plot up a notch.

The piece, which won a CBC Literary Award in 2008, recounts the coming-of-age struggles of the granddaughter of a former circus performer – one who wrestled other men while dressed in a bear costume.

"*Circus* seemed like an appropriate name for the entire collection because each story is like an individual act within one big show," says Battershill (PhD 2012). "All the performances explore how spectacular events come into contact with the ordinary."

While *Circus* is due for release in April, Battershill has already garnered attention from the Canadian Authors Association, which last year named her co-winner of its Emerging Writer Award, and from PEN International, which shortlisted another piece from *Circus*, "The Collective Name for Ninjas," for the 2013 New Voices Award.

Battershill, who currently teaches creative writing at the University of Reading in the United Kingdom, is now in the early stages of experimenting with a new genre – the novel. "Genres are like hats," she says. "You won't know which one suits you until you've tried it." – **NADIA VAN**

To read an excerpt from *Circus*, visit magazine.utoronto.ca.

PHOTO: TOP, SGT. RONALD DUCHESNE, RIDEAU HALL. BOTTOM: EMMA GORST

In his autobiography, Nikola Tesla describes his mother as "an inventor of the first order" who was always creating household tools and made her own thread, cloth and clothes

THE TWO OF US

Spreading Smiles

Johanna Schaeffer and Harold Isaacs brighten many lives through their volunteer work

JOHANNA (BSC 1997 NEW): When I first met Harold during Frosh Week at New College in 1993, he was loud and outgoing, with long hair and a big beard, and he rode his motorcycle to school. I thought he looked like trouble. But it turned out that he was a really awesome guy!

We share a dental practice. We have different skill sets, so he'll take care of computer stuff, banking and inventory and I'll take care of the staffing and PR. I can't imagine doing it by myself. We don't work the same hours, so we're rarely face-to-face at the office but we have to try not to get lost in talking about work once we get home.

Harold is my very best friend. We have traveled to so many places together and experienced so much. Because of him, I learned to scuba dive. We have helped each other through all of what life has to give – from issues with family, to health concerns, school, friends and finances. We are there for each other, always trying to help one another reach our goals.

HAROLD (BSC 1996 WOODSWORTH): I think what strengthens us and really keeps us invigorated is that we complement each other. Some things that come so easy to her, like dealing with people, are more difficult for me. I'm always learning from her example.

Doing things to help others is a philosophy we share. In 2001, Johanna went to Tanzania with a non-profit that does outreach with an orphanage, a leprosy colony and street kids. I was able to join her at the end to do some outreach work on our own. It was a trip of terrific highs and lows, and we got a glimpse into the idea that even the smallest effort can make a difference. It really brought Johanna and I closer together. When we talk about going back to Africa, I see the light in her eyes just glow.

For about three years, we've provided financial support to school music programs. We help them buy sheet music or instruments, sponsor awards, or rent a bus to get to a concert. It's exhilarating for them to get that standing ovation for something they've worked hard on. And it's a nice feeling to work together with Johanna to create something good.

Monument to Nikola Tesla, in Palo Alto, California

A Bright Light

Dorrian Porter (LLB 1997, MBA 1997) was astonished to discover that Nikola Tesla wasn't better known in North America, considering that the visionary Serbian had made hundreds of pioneering contributions to science, including improving alternating current electricity. So Porter, a software entrepreneur in Palo Alto, California, decided to build a monument to the inventor in Silicon Valley. "Tesla thought beyond profits to make energy and information available around the world," Porter says. "The statue pays respect to a person who used his brilliance to advance society, not for personal wealth."

Porter secured a land donation from local developer Harold Hohbach and launched a Kickstarter campaign with a humorous animated video in which a 'toon Tesla pitched his inventions to modern-day venture capitalists. The video caught the attention of the media, generated 200,000 views, and was instrumental in raising over $127,000. Artist Terry Guyer's statue shows the inventor with the light bulb that he used to demonstrate wireless electricity in the 1890s. It also hosts a free Wi-Fi hot spot – so is the first statue in the world to help you surf the web.

At the unveiling ceremony, in December 2013, a time capsule was placed inside the base of the statue. It contained wishes for the next 30 years and predictions for the relationship between technology and humanity in 2043. Porter's favourite contribution came from an eight-year-old girl. "I wish in 30 years I am a scientist," she wrote.

– K. LAKOVIC

PHOTO: TOP, COURTESY JOHANNA SCHAEFFER AND HAROLD ISAACS; BOTTOM, NORBERT VON DER GROEBEN


Ian Lightstone

FIRST PERSON

Reverse Succession

When his son fell ill with cancer, Ian Lightstone stepped up to carry on Jeremy's business vision

A FAMILY BUSINESS USUALLY PASSES from parent to child. Our family was different: this is our story of a reverse succession.

Our son Jeremy was an Internet business entrepreneur. He had a product that the rapidly evolving online world needed: Project Sunblock, a tool that monitors online ad placement in real time to ensure that a company's ads don't land on websites that could damage the company's reputation (such as pornographic sites), or on pages that don't align with the company's message. A car company, for example, might not want its ad to pop up next to a story about a car accident; or a fast food company beside a story on childhood obesity. It was his "app for that."

Then, just as his business was taking off, cancer struck.

We were told at the hospital that they would monitor it. The doctors said, "It looks low-grade; we're not going to touch it; carry on."

We carried on. Eventually, Jeremy and I made the decision to change my role at his company, ArtsandTV, from investor to CFO. My knowledge of Internet-related tools was limited but Jeremy was teaching me. I was in my sixties, partially in retirement, and learning how to develop a business in a new industry. It felt like I was beginning my career 2.0.

Within a short time we celebrated Jeremy's wedding and soon after that, the birth of his child, our grandson. On the business side, we attracted more clients including AdBrite, an American ad exchange that employs Project Sunblock as a tool to verify websites before bidding on ad space. Jeremy's company gained a trial contract with Microsoft in their U.K. ad network. It was a deal that would ultimately send billions of impressions a month through Sunblock's servers. In short, not only did it seem as though things were going to be normal for us, but we were hitting commercial success.

Then in 2010, Jeremy suffered a major seizure. The cancer took over, knocking him out of the office, and throwing him into punishing chemotherapy treatments. He tried to keep up with office work from home, but the disease progressed with astonishing speed.

When his eyesight deteriorated, he had computer code printed in a large font. When he couldn't type, the caregivers who had moved into his house punched in the code for him.

By the 2010 Christmas holidays, he was in the hospital.

On January 29, 2011, our son passed away. He was 35.

Weeks later, Project Sunblock was scheduled to present at a Las Vegas conference attended by thousands of IBM partners and clients. I flew across the continent and spoke on Jeremy's behalf. Afterwards, attendees approached to ask questions, and I could only think that I wasn't the one who should be there.

It was challenging enough to vet technical questions on the product any day. Now my role as the face of the company was even more difficult. I felt the generation gap, the peculiar experience of working in a field dominated by 30-somethings, not 60-somethings. It's an odd feeling to take on the leadership of your son's company. To help with the process, I pulled together an advisory board of friends and experts – in law, online advertising, marketing – to give me guidance and advice. What my wife, Margaret (MEd 1979) and I want more than anything is for the company that our son spent so much energy building to succeed as a legacy for Jeremy's son, who is now four and a half.

Our family decided to take other actions to ensure Jeremy's short life would not be forgotten. We wanted to make his name live on through the thing that sparked his creativity: the Internet. We chose to head a campaign to dedicate the Internet café in the new Bridgepoint Hospital to Jeremy's memory. It will be a place where patients can communicate with their family and friends, and stay connected with current events and their lives outside the hospital. With support from friends and family we have raised 70 per cent of our $500,000 goal.

With my retirement on hold for a little while longer, I find peace in knowing Jeremy's dream is on its way to being fulfilled in business, at the hospital and in his own family.

Ian Lightstone (MBA 1968) is a graduate of the Rotman School of Management and Chair of ArtsandTV. For more information on the Internet café dedicated to Jeremy Lightstone, see bridgepointlivebetter.ca/foundation.

PHOTO: SEAN J. SPRAGUE

A swarm contains about 30,000 bees, says Gurushabd Khalsa, and can be as large as a basketball

60 SECONDS WITH

Gurushabd Khalsa

Buzzing about Bees

In 2009, **Gurushabd Khalsa** (BA 2011 UC) got a bee in her bonnet about urban beekeeping while completing a work-study placement for her international relations and environmental policy degree. With four other students, she established the University of Toronto Beekeeping Education Enthusiast Society (U of T B.E.E.S.). She's also the founder of Hogtown Honey in Toronto and of India's first urban beekeeping program. She shares the buzz with **Amy Stupavsky**.

You caught the bee bug? I guess I caught it quite badly. I think that if you're actually keeping bees, you're a bee fanatic. There's enough that goes wrong – and you get stung – so if you're not passionate about it and think it's the coolest thing ever, you'll probably stop.

What do you love about beekeeping? It gives me a way to connect with people on a subject I love, and to open their eyes to the links between them and their natural environment. Bees are magical like that. They open up conversations about the urban environment in a new, powerful way.

Magical? They're attuned to what's happening around them. If you approach a hive and you're anxious, angry or not mindful, the bees will react in a similar way. They're more likely to sting you. If you're calm and attentive, you can establish a beautiful relationship with them. They are also very mysterious. They act as a collective organism, one consciousness. It almost seems as if they don't have individuality, because everything they do is for the greater good of the entire colony.

Colony collapse disorder is a big issue. It sounds like something out of *The Twilight Zone*. There are a lot of things stressing bees out and weakening their immune systems, but in the last few years, the main factors have become a lot clearer. One of the biggest concerns is neonicotinoids, a kind of pesticide chemically similar to nicotine. In Ontario, they're used on corn and soy crops. They get into the air, and bees pick them up. One of the advantages of urban beekeeping is we are far away from agricultural land so the bees aren't exposed to neonicotinoids.

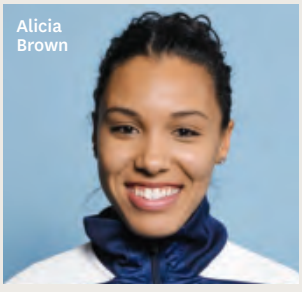
Why should people be concerned? It's really scary. We rely on bees to pollinate many of the foods that we eat. Food production would be drastically reduced without them, and our current monoculture agricultural system would collapse without honeybees.

What's the difference between conventional and local honey? Lots! Big brands can be a mishmash of honey from bee farms all over the world. You get a very generic taste. It's also pasteurized, which kills the nutrients. I don't heat up the honey I produce at all, and I don't use any antibiotics or chemicals. Plus, local honey reflects the flavours of the local flowers. In Toronto, neighbourhood honeys all taste different. In India, they'd harvest mango honey, lychee honey, saffron honey. The best thing I've ever tasted is mango honey straight from the hive.

You must hear a lot of bee jokes and puns. What's your favourite? They all meld together at this point. Signing emails "Bee well" is the one that's stuck.

Watch a slideshow of Gurushabd Khalsa helping swarming bees find a new home at magazine.utoronto.ca.

Milestones



Alicia Brown

New grad **Alicia Brown** (BA 2013 UTM) received a commendation from Governor General David Johnston as an Academic All-Canadian – in recognition of her A average and stellar Varsity track achievements.

Composer and violinist **Owen Pallett** (BMus 2002) earned an Academy Award nomination this year for co-writing the score for *Her*.

Chloe Walker (BA 2012 Innis) and **Aliyyah Ahad** (BA 2012 Innis) won 2014 Rhodes Scholarships. Ahad plans to study law with a focus on human rights, immigration and public policy, while Walker will research how educational technologies can contribute to ESL learning and development work in the Caribbean.

Alumni **Heather Moyse** (MSOT 2007) and **Jayna Hefford** (BPHE 2004) did U of T proud in February, representing Canada at the Sochi Winter Olympic Games. Both won golds: Moyse in two-woman bobsled (her second career Olympic gold) and Hefford with the women's hockey team (her fifth Olympic medal and fourth straight gold).

Ten U of T alumni were recently named to the Order of Canada. New Brunswick Lieutenant Governor **Margaret Norrie McCain** (BSc 1955) has been promoted to Companion of the Order. UBC opera prof **Nancy Hermiston** (BMus 1973, DipOpPerf 1976) and TVO broadcaster **Steve Paikin** (BA 1981 Victoria) were named Officers of the Order. Named Members: **Shirley Blumberg** (BArch 1976), **Paul G.S. Cantor** (LLB 1968), **Morton Doran** (MD 1964), **Roger Greenberg** (BCom 1977 UC), **Danielle Juteau** (MA 1967, PhD 1974), **Douglas Letson** (MA 1971) and **Sandra Rotman** (BA 1975 Woodsworth).

PHOTO: LEFT, GURUDAYAL KHALSA; RIGHT, COURTESY OF VARSITY BLUES ATHLETICS

Rotman School of Management
UNIVERSITY OF TORONTO

EARN YOUR MBA BEFORE OR AFTER WORK

Rediscover the U of T advantage. At Canada's #1 business school *(Financial Times)*, you have the choice to earn your MBA in the ***Morning*** by 8:59AM or in the ***Evening***.

"THE ROTMAN SCHOOL'S REPUTATION, ITS FACULTY AND ITS UNIQUE APPROACH TO PROBLEM SOLVING PUT IT AHEAD OF THE COMPETITION."

Maged Ibrahim, MBA
Senior Business Analyst
Strategy & Corporate Development
BHP Billiton Canada

→ **ROTMAN.UTORONTO.CA/ME-MBA**
→ **416.946.0521**

Rotman
Morning & Evening MBA

Grandmaster Paul Keres scored 25 wins, three draws and two losses in his 30-game simultaneous exhibition with the Hart House Chess Club in 1975

GAME OF KINGS AND QUEENS

May 7, 1975

U of T's chess club – Canada's oldest – is undergoing a 21st-century revival

When an economics professor founded the U of T chess club at University College in 1895, he and his fellow organizers restricted membership to faculty in arts, medicine, science and law, as well as male students. Other enthusiasts begged to join, so the club swung open its doors to all faculty, alumni and anyone wanting to engage in a battle of the minds. Soon, even the Anglican bishop William Reeve was an honorary club member and, despite no affiliation to U of T, played on the university chess team.

In 1919, the club moved to Hart House and before long was not only competing locally, but internationally. The U of T team scored six wins at the intercollegiate chess championships between 1965 and 1982. The members kept on top of their game by inviting international stars, such as Estonian grandmaster Paul Keres (shown above in a 30-game simultaneous exhibition at Hart House), to play and instruct the men in new moves.

Women had only limited access to Hart House until 1972, and women didn't compete in a club championship until 2000, says Sanja Vukosavljevic, the first female president in the club's 119-year history. "Chess is a male-dominated sport," she admits.

The fourth-year sociology and Slavic languages student and her team have added workshops for beginners, pizza parties and movie nights to the roster, and brought back a club tradition – the student versus faculty tournament. These initiatives have more than tripled the membership from last school year. There are now 76 players, 18 of whom are women. And the club continues to swing its doors wide open. All alumni are welcome! To find out more, visit harthouse.ca/chess-club. – **SUSAN PEDWELL**

PHOTO: VLAD (WALTER) DOBRICH

TD Insurance

You've paid your dues. Start paying less with TD Insurance.

You could WIN

$60,000 cash to build your dream kitchen!*

University graduates can save more.

At TD Insurance, we recognize all the time and effort you put into getting where you are. That's why, as an alumnus of the **University of Toronto**, you have access to our TD Insurance Meloche Monnex program which offers preferred group rates and various additional discounts. You'll also benefit from our highly personalized service and great protection that suits your needs. Get a quote today and see how much you could save.

Request a quote today
1-888-589-5656
melochemonnex.com/utoronto

HOME | AUTO | TRAVEL

The TD Insurance Meloche Monnex home and auto insurance program is underwritten by SECURITY NATIONAL INSURANCE COMPANY. The program is distributed by Meloche Monnex Insurance and Financial Services Inc. in Quebec and by Meloche Monnex Financial Services Inc. in the rest of Canada. For Quebec residents: We are located at 50 Place Crémazie, Montreal (Quebec) H2P 1B6.

Due to provincial legislation, our auto insurance program is not offered in British Columbia, Manitoba or Saskatchewan.

*No purchase is required. There is one (1) prize to be won. The winner may choose between an amount of $60,000 CAD to build a dream kitchen of his/her choosing or $60,000 CAD cash. The winner will be responsible for choosing a supplier and for coordinating all of the required work. The contest is organized by Security National Insurance Company and Primmum Insurance Company and is open to members, employees and other eligible persons who reside in Canada and belong to an employer, professional or alumni group which has entered into an agreement with the organizers and is entitled to receive group rates from the organizers. The contest ends on October 31, 2014. The draw will be held on November 21, 2014. A skill-testing question is required. Odds of winning depend on the number of eligible entries received. The complete contest rules are available at melochemonnex.com/contest.

UNIVERSITY OF TORONTO

PM40065699

VOLUME 41 NO. 3
MAGAZINE.UTORONTO.CA

Earn a Stress-Free Degree

At this year's Spring Reunion, you can attend lectures by noted U of T professors and instructors without needing to worry about homework or studying for an exam. You get all the learning with none of the stress! All talks are free and will take place on the St. George campus, but you do need to register:

Online: springreunion.utoronto.ca
Email: spring.reunion@utoronto.ca
Phone: 1-888-738-8876 or 416-978-5881

Please note that lecture programming is subject to change and additional lectures may be added. For the most current Spring Reunion Stress-Free Degree lecture information, please visit the events page at springreunion.utoronto.ca.

Friday, May 30

12:45 p.m.

From Medici Madness to Vanderbilt Vanity: The Ultimate Opera Tour
Prof. Linda Hutcheon and Dr. Michael Hutcheon

Great Houses: A Nation's History and Art
Susanne Jeffery

2 p.m.

Gene-Environment Interplay: Biological Embedding of Experience
Prof. Marla B. Sokolowski

3:15 p.m.

Traffic Lights That Learn
Prof. Baher Abdulhai

Let's Make Life Harder
Dr. Mike Evans

So Sick or So Cool? Youth Internet Language
Prof. Sali Tagliamonte

Saturday, May 31

9:45 a.m.

Without a Leg to Stand On: 3-D Printing and Prosthetics
Prof. Matt Ratto

The Doctor Will Tweet You Now
Dr. Karen Devon

2:45 p.m.

Engineering Today
Speakers from the Faculty of Applied Science and Engineering

4 p.m.

Consider the Icicle
Prof. Stephen Morris