

Off to Oxford U of T's Rhodes Scholars / **Party in the Lab?** The science of vice / **Up Your Game** A coach on your wrist
U of T's World Wide Web Uniting the best minds / **Bright Idea** Revolutionary lighting / **Call of the Jitterbug** Let's swing!

UofT Magazine

SPRING 2015



Man on the Move
New Toronto mayor
John Tory aims to get
the city back on track

GETTING
TORONTO
MOVING

CAN HAMLET BUILD A BETTER BRIDGE?



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U of T researchers are working with scholars from 10 other countries to build the world's largest radio telescope. See p. 34

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Our scholars are collaborating in every region of the globe to answer questions that challenge us all

BY SCOTT ANDERSON, ANJALI BAICHWAL, DAN FALK, BRENT LEDGER, CLAIRE MORRIS AND ALICE TAYLOR

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New Toronto mayor John Tory aims to get the city back on track

BY JOHN LORINC

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Departments

Using transit will be seen as enriching rather than as a sacrifice one has to make.

– Richard Sommer, dean of the John Daniels Faculty of Architecture, Landscape and Design, on what public transit in the Greater Toronto Area *could* be a decade from now, p. 23



45 Shawn Ahmed reinvents charity for the digital age



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Letters



Coyotes aren't overpopulated; people are. Over the course of 10,000 years we've taken over this planet and brought it to its knees

PAUL BALI
PhD 2003, TORONTO

Rankings Overload

Do you realize how many times the Winter 2015 issue referenced U of T's international rankings?

There was Meric Gertler's column, which said the university needs more public money if it is to retain its "top-20 global standing." There was the comment in the Ian Hacking article: "If you were to try to list the top 10 philosophers working today, Ian would be right in the thick of it." And there was the infographic, "U of T: Canada's Best University," which said the school "has consistently placed in the top 25 internationally."

Ours is indeed a thrilling institution but why this obsession with stature? It makes the university (and its magazine) look insecure – as if it doesn't quite believe it's worthy and has continually to prove it. But more than that, this quantitative approach is unimaginative. It's the thinnest way of thinking about a university. U of T is a hub of creativity, freshness and playfulness yet the lens of numerical rank is the very opposite. We need to discuss U of T in a manner that's as original as the place itself.

GIDEON FORMAN
BA 1987 VICTORIA, TORONTO

In the Pink

I am fascinated by the photo on the cover of your Winter 2015 issue, and

especially by the Escher-like stairway. I am sure there was nothing like this around the campus in my time at U of T in the 1950s. I should like to see it the next time I visit Toronto, and therefore should be most grateful if you would let me know in which building to look for it.

MAURICE H. BRUSH
BA 1956 UC, MA 1957, TORONTO

Ed note: That eye-catching pink stairway is located in the Rotman School of Management's new building, at 105 St. George St.

Respect for Animals

Canada Goose CEO Dani Reiss says his company uses coyote fur in its jackets because the animals are "overpopulated" ("The Reluctant CEO," Winter 2015).

Coyotes aren't overpopulated; people are. Over the course of 10,000 years, we've taken over this planet and brought it to its knees. Mr. Reiss's company is a clean-up crew, nothing more, eking last profits from the scattered remains of non-human land life.

Respect for opinion ends where another being's skin begins.

PAUL BALI
PHD 2003, TORONTO

Dani Reiss responds: This is the kind of discourse that made me love my years at U of T. We are fortunate to live in a

great country where debate like this can happen freely. My response isn't an attempt to change anyone's beliefs, but to clarify what we believe, because I think it's fair, balanced and respectful. Some people think killing animals for any reason is wrong. I respect that opinion, but I don't share it. I would not allow Canada Goose to use fur in our products if I couldn't look myself in the mirror every morning and believe we were doing the right thing, for the right reasons. According to the Fur Council of Canada, coyote populations are indeed highly abundant. The practices governing hunting coyotes in Canada are strictly monitored and enforced, and are based on international regulations. Finally, coyote fur is one of the only types of fur that works against freezing winds. When you make jackets for people who live and work in the coldest places on earth (including many of our great Canadian cities), functionality is not something we will ever compromise on.

Fracking "Hysteria" Unwarranted

The public debate over hydraulic fracturing is marred, like so many other debates over natural resource extraction, transportation and use, by focus on various concerns and feelings, with little regard for scientific facts and true expert opinion. Many statements in "On Shaky Ground" (Winter 2015) are simplistic, out of date and out of context.

In particular, the "concerns" about water usage and contamination are largely uninformed opinions not backed by facts. Expert work, led by Maurice Dusseault at the University of Waterloo, shows that the fracking process itself presents little danger to potable

aquifers. Faulty or degraded wellbore containment systems (or “casings”) in *all* wells, not just those that are fracked, present the greatest dangers – and must be systematically addressed.

We need to rise above name-calling and the generally uninformed hysteria that characterizes mainstream media discussions.

BRAD HAYES
BSc 1978 UTM, CALGARY

Fracking Concerns Understated

“On Shaky Ground” badly understates the concerns about fracking. It fails to mention, for example, the growing evidence that fracking triggers earthquake activity. It fails to talk about the massive leakage of methane gas – a powerful greenhouse gas – from fracking operations into the atmosphere. It mentions fracking’s effects

on the sage grouse, but not any of the other species of flora and fauna, because the fact is that no proper environmental assessments have been done on the biological impacts of fracking. Ultimately, fracking is simply another way of extracting fossil carbon from the earth and releasing it into the atmosphere, driving global climate change, while postponing the necessary rapid transition to fully renewable energy sources.

JEFF WHITE
LLB 1981, TORONTO

Levelling the Playing Field

Please allow me to suggest another perspective on Bruce Kidd’s call for PanAm/ParapanAm Games volunteers (“Dive Right In,” Autumn 2014). Considering the Games’ excessive executive pay and bonuses, along with continuing

cost overruns being billed to taxpayers, I wonder why anyone would willingly work for free when those at the top are being paid handsomely for their work? Either everyone should be paid fairly, or else maybe the Games executives can lead by example by taking a 100 per cent pay cut and becoming volunteers themselves. Of course it’ll never happen, so maybe potential volunteers should boycott the Games and give their time to a more worthy charity where everyone is a volunteer and nobody lives off the public trough.

WILL STEEVES MANCINI
BA 1991 UC, TORONTO

Write to us!

U of T Magazine welcomes letters to the editor at uoft.magazine@utoronto.ca. All letters may be edited for clarity, civility and length.



ALEJANDRO DUQUE

Molecular Genetics & Microbiology Student
Varsity Lacrosse Player
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Lee Canada-Hong Kong Library

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a match made in heaven.”

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A Global Talent Destination

U of T's ability to attract international graduate students is important to our – and Ontario's – long-term success



Over the past decade, faculty, staff and students at the University of Toronto have developed a remarkable culture of entrepreneurship. In fact, since 2007, U of T has been at the heart of one of the fastest-growing entrepreneurial clusters on the continent. And since 2010, no single university in North America has created more startup companies than U of T and its partner hospitals.

One of the exciting aspects of this phenomenon is the increasing prominence of our students in bringing cutting-edge research to the marketplace. Among this remarkable group, international graduate students are making substantial contributions – a fact that deserves greater attention, especially as we celebrate the university's ability to attract top talent and its role in driving the Toronto region's culture of innovation. Here are two examples.

Nilesh Bansal (originally from India) and Professor Nick Koudas founded Sysomos, the social media analytics company, based on Bansal's research as a master's student in computer science. The company's software processes vast amounts of social-media data in seconds, enabling users to analyze and customize marketing campaigns with unprecedented speed and effectiveness. With offices in Toronto, San Francisco, San Jose and London, Sysomos recently announced plans to expand its team and introduce a number of new products.

Zhibin Wang (originally from China) co-founded OTI Lumionics with fellow engineering PhD students Michael Helander and Jacky Qiu. The company, developed with the help of the Rotman School's Creative Destruction Lab, manufactures the world's most efficient organic light-emitting diodes (OLEDs). OLEDs are becoming the industry standard in the production of advanced electronic screens. By manufacturing them on plastic, OTI Lumionics offers a less expensive and more durable product. Last year, the company launched *aerelight*, the world's first consumer-ready OLED lamp (see p. 24). In February this year, they received a substantial investment from Sustainable Development Technology Canada, to reduce production time dramatically. Today, OTI Lumionics employs 15 staff – many of them U of T alumni.

These are just two examples of how our brilliant international graduate students are contributing to the innovative

capacity of the Greater Toronto Area. Of course, this role will come as no surprise, particularly here in the world's most multicultural urban region. For generations, the combination of immigration and higher education has been crucial in enabling the city to reinvent itself continually over time. In today's world, this combination is a huge advantage for Toronto, and for Ontario and Canada, providing the backbone of an educated, diverse and highly creative workforce.

Welcoming students from around the world is a win-win. International graduate students – and indeed faculty, staff and students at every level from abroad – enrich and internationalize the university experience for our entire academic community. These students also open doors and forge connections whether they stay and become Canadian citizens or return home as Canadian ambassadors.

U of T's computer science department, for example, is ranked among the top 10 in the world and its graduates are keenly sought after by leading businesses at home and abroad. Among its international students, approximately 50 per cent choose to remain in Canada and make their careers here after graduation, many of them as entrepreneurs. But those who return to their countries of origin also make a great impact for the better, while heightening the reputation of U of T – and the Toronto region – as a global talent destination.

For the fall 2014 term, U of T received 3,565 applications to its PhD programs from students outside the country – over half of them in subjects such as sciences, engineering and mathematics. Unfortunately, we had the financial capacity to accept only 219 of them. This is a very significant missed opportunity for Canada, when we are forced to turn away so many immensely talented applicants.

With greater support for international graduate students from our partners in government and the private sector, together we could take a big step forward in our ability to draw the best and brightest from around the world – a development that would bode well for our economic and social prosperity, now and for generations to come.

Sincerely,
Meric Gertler

Calendar

MORE EVENTS!

Check out the latest campus happenings at utoronto.ca.



MAY 27 TO 31

Spring Reunion 2015

If you graduated in a year ending in a 5 or a 0, please visit the Spring Reunion website to learn more about the events hosted in your honour by your college, faculty or department, as well as U of T-wide celebrations. While honoured alumni are special guests, all U of T alumni are welcome. Special events include the U of T Alumni Celebration at Convocation Hall and front campus barbecue, from 11 a.m. to 12:30 p.m. on May 30. More Spring Reunion happenings are listed at right.

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

Alumni

April 23
Seoul, South Korea
Alumni and Friends Reception. Free. Time and location TBA at alumni.utoronto.ca/seoul2015. For info: 416-978-1669, deirdre.gomes@utoronto.ca

April 23
San Diego
Surgery Alumni Reception. The department of surgery is hosting a reception for all surgery alumni

that coincides with the American Surgical Association conference. Free. 6–8 p.m. Marriott Marquis, Mission Hills Room. To register: morgan.tilley@utoronto.ca

April 27
UTSC Instructional Centre
Leader2Leader Conference. Successful UTSC alumni, faculty, entrepreneurs and industry professionals lead a full day of leadership and networking. 8:30 a.m.–5 p.m. \$30 (to April 20 and \$50 after April 20). To register: utsclleader2leader.com

April 28
Tel Aviv, Israel
Alumni and Friends Reception. Free. Time and location TBA at alumni.utoronto.ca/israel2015. For info: 416-978-1669, deirdre.gomes@utoronto.ca

May 13
Medical Sciences Building
Physiology Macallum Lecture & Alumni Reception. Talk by Dr. Mitchell Lazar, Division of Endocrinology, Diabetes, and Metabolism at the University of

Pennsylvania. A reception for the department of physiology will follow. Free. 4–5 p.m. MacLeod Auditorium, 1 King's College Circle. To register: medicine.rsvp@utoronto.ca

May 19
New York
Chancellor's Reception. Free. Time and location TBA at alumni.utoronto.ca/nyc2015. For info: 416-978-1669, deirdre.gomes@utoronto.ca

May 20
Washington, DC
Chancellor's Reception. Free. Time and location TBA at alumni.utoronto.ca/dc2015. For info: 416-978-1669, deirdre.gomes@utoronto.ca

Spring Reunion

May 27
Drake One Fifty
LGBTQ Spring Soiree. LGBTQ alumni are invited to a cocktail reception in the heart of Toronto's financial district. Free. 6–9 p.m. 150 York St. 1-888-738-8876, springreunion.utoronto.ca

May 28
Casa Loma
SHAKER for Young Alumni. Join your fellow young alumni for a night of mixing and mingling at Toronto's very own historic castle. \$10. 7–10 p.m. 1 Austin Terrace. 1-888-738-8876, springreunion.utoronto.ca

May 29
Convocation Hall
Chancellor's Circle Medal Ceremony. Honouring alumni marking their 55th, 60th, 65th, 70th, 75th and 80th anniversaries. 10–11:30 a.m. 31 King's College Circle. 1-888-738-8876, springreunion.utoronto.ca

May 29
Convocation Hall
50th Anniversary Ceremony. Honouring all 1965 grads. 4–6 p.m.

Bring your dog to the University College quadrangle and meet fellow UC alumni at the off-leash dog park, June 21 at 2 p.m.



31 King's College Circle. 1-888-738-8876, springreunion.utoronto.ca

May 29

University College Quadrangle Barbecue Social. Reconnect with your UC classmates over a casual lunch. 12:30 p.m. 15 King's College Circle. 416-978-2968

May 29

University College Winter Kept Us Warm. Film screening and Q & A celebrating the 50th anniversary of David Secter's groundbreaking film. 1:30 p.m. 15 King's College Circle, Room 179. 416-978-2968. (See page 52.)

May 30

University College Historical Walking Tour of UC. Departing from the main entrance to UC. Free. 3 p.m. 15 King's College Circle. Please note that UC is not fully accessible; for details: 416-978-2968

May 30

Convocation Hall/Front Campus U of T Alumni Celebration. Sponsored by the U of T Alumni Association (UTAA) and including the presentation of the UTAA Alumni Award for Community Engagement. Free. 11 a.m.–12:30 p.m. 31 King's College Circle. BBQ lunch on front campus. For info: 1-888-738-8876, springreunion.utoronto.ca

May 30

Faculty Club Biomedical Communications 70th Anniversary Alumni Reunion & Gala. All BMC alumni, faculty, students and friends are invited for an evening of celebration, an art salon and auction. \$70. 7 p.m.–midnight. 41 Willcocks St. For info: bmc.med.utoronto.ca/bmc/alumni/70th-anniversary

May 30 to 31

UTSC Instructional Centre UTSC Spring Reunion. Enjoy the Classes Without Quizzes lecture series, the Principal's Cookout

and a campus tour. There are fun activities for the kids, too. Free. Sat. 9 a.m.–12:30 p.m., Sun. 12–3 p.m. For info: utscspringreunion.com

Exhibitions

Until April 30

Academic Retiree Centre Art Show by W. Alberti. Stunning photographs of China and Pakistan along the Silk Road. Free. 10 a.m.–3 p.m. 256 McCaul St. #412. 416-978-7553, senior.college@utoronto.ca

Until May 1

Thomas Fisher Rare Book Library As It Is Written. Biblical manuscripts and rare books in Hebrew from the 10th century to the present. Free. Mon.–Fri. 9 a.m.–5 p.m. (Thurs. to 8 p.m.). 120 St. George St. 416-978-5285

Until June 6

Justina M. Barnicke Gallery Image Coming Soon #1. Curated by Liora Belford. Free. Tues.–Fri. 12–5 p.m. (Wed. to 8 p.m.), Sat. 12–5 p.m. 7 Hart House Circle. 416-978-5488

May 23 to August 31

Thomas Fisher Rare Book Library Early Aviation in Toronto. With an emphasis on the university and the City of Toronto. Free. Mon.–Fri. 9 a.m.–5 p.m. (Thurs. to 8 p.m.). 120 St. George St. 416-978-5285

Lectures and Symposia

March 30 to April 29

Carlton Cinema/Tanz Neuroscience Building SAA Canadian Perspectives Lecture Series. Mon. 1–3 p.m., or Wed. 10 a.m.–noon. First two lectures (Mar. 30, Apr. 1) at Carlton Cinema (2 Carlton St.); all others at Tanz (6 Queen's Park Cres.). \$60 per series/\$15 per lecture. For info: 416-978-0544, alumni.utoronto.ca/alumni-groups/senior-alumni

April 8 to May 13

Innis Town Hall The Academy for Lifelong Learning Spring Talks. Six lectures on a variety of topics. Free for academy members (or \$50 per series/\$10 per lecture). Wed. 10 a.m.–noon 2 Sussex Ave. For info: allto.ca

April 9

Faculty Club Senior College Annual Symposium. Presentations and discussion on "The Future: The Next Challenge." \$45. 9 a.m.–4 p.m. 41 Willcocks St. 416-978-7553, senior.college@utoronto.ca

April 14

Swansea Community Centre U of T in Your Neighbourhood. Professor Michael Brudno explores how future health care will be more personalized to the patient. Free. 6 p.m. 15 Waller Ave. alumni.utoronto.ca/events/gta

Music

April 28

Walter Hall Felix Galimir Chamber Music Award Concert. This year's prize-winning student ensemble. By donation (to benefit the Felix Galimir Chamber Music Award Fund). 7 p.m. 80 Queen's Pk. For info: music.utoronto.ca

Special Events

April 23

Hart House Bonham Centre Awards Gala. Celebrating LGBTQ athletes Greg Louganis, Marnie McBean and Mark Tewksbury. Cost and time TBA. 7 Hart House Circle. For info and tickets: 416-978-7416, uc.utoronto.ca/bcag2015

April 28

U of T Mississauga Grade 10/11 Night. A fun opportunity for students and parents to

interact with current UTM students and learn about university life. Free. 6:30–8:30 p.m. To register: utm.utoronto.ca/prospective-students/recruitment-events

May 3

Soldier's Tower Remembering John McCrae. Special carillon recital to honour the 100th anniversary of "In Flanders Fields." Hart House reception to follow (RSVP). 7 Hart House Circle. 416-978-3485, soldiers.tower@utoronto.ca

May 29

Innis Town Hall Book Launch: The Carbon Bubble. A Q & A with author and economist Jeffrey Rubin (BA 1977 Innis), moderated by CBC's Michael Hlinka. Free. 6 p.m. 2 Sussex Ave. Register at alumni.innis.utoronto.ca

June 21

University College Quadrangle The Dog Days of Summer. Bring your dog and meet fellow UC alumni at the off-leash dog park. 2 p.m. 15 King's College Circle. For info: 416-978-2968

Sports

May 28

Goldring Centre U of T Sports Hall of Fame Induction Ceremony. Featuring the 2015 inductees and launching the digital Hall of Fame display. \$30 (\$15 for children). 6–9 p.m. 100 Devonshire Place. Tickets: springreunion.utoronto.ca

Theatre

June 6 to 7

St. George Campus Pociul Ludique Societas Turns 50 in 2015 – A Festival of Early Theatre. With early-theatre scholars and troupes presenting plays from various countries. For info and passes: plspls.ca



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the World*



UNIVERSITY OF
TORONTO

Life on Campus

“People at U of T have amazing stories. Sometimes you just have to ask”

Jemel Ganal, creator of the Humans of the University of Toronto photo blog

p. 15



Moustafa Abdalla and Caroline Leps

Today, Oxford. Tomorrow, the World

University of Toronto students Caroline Leps and Moustafa Abdalla win Rhodes Scholarships

UNIVERSITY OF TORONTO UNDERGRADS Moustafa Abdalla and Caroline Leps are heading to Oxford University next year for postgraduate studies – as two of Canada’s 11 students named 2015 Rhodes Scholars.

“It hasn’t settled in yet. It’s really exciting. I can only imagine the kinds of opportunities I will have,” says Leps.

The Rhodes Scholarship program is the oldest – and one of the world’s most prestigious – postgraduate award programs. It supports exceptional, all-round students at Oxford. According to the Rhodes web site, scholars are selected for their “outstanding intellect, character, leadership and commitment to service.” Rhodes Scholars have gone on to become Pulitzer Prize winners, heads of state and Nobel Laureates. Among the well-known Canadian Rhodes Scholars are Bob Rae, David Naylor, Marc Kielburger and Rex Murphy. Just 83 students from around the world will be awarded Rhodes Scholarships this year.

Abdalla, a student at Victoria College, is studying biochemistry and physiology. He also works as a youth director at Flemingdon Park Parents Association, a community advocacy group in North York, and tutors chemistry at Vic. ►



Ellen DeGeneres's tweet of her selfie (with a few famous folks) at the 2014 Academy Awards was retweeted more than 3.3 million times

Saying “Oui” to Inclusivity

Social justice champ
Emilie Nicolas



ONE SATURDAY AFTERNOON in September 2013, thousands of people marched through the streets of Montreal to protest racism – and Emilie Nicolas was among those leading the charge. The Montrealer had helped organize the action in response to the then-ruling Parti Québécois’ proposed Charter of Values, which would have, among other things, banned public sector employees from wearing religious symbols – a move viewed by many Quebecers as discriminating against minorities.

Nicolas, who is a PhD candidate in the department of anthropology, worried how the charter might affect her female Muslim friends who wear head coverings for religious reasons. After the protest, she joined with other concerned Quebecers to form Québec Inclusif, a non-profit, non-partisan group promoting an inclusive society. The group’s advocacy made media headlines and helped sway public debate about the controversial bill, which eventually died in Quebec’s spring 2014 election.

“It used to be taboo to talk about racism in Quebec, but I think the movement helped change

that,” says Nicolas, who received a Governor General’s Award for her women’s rights work in Quebec.

Currently a junior fellow at U of T’s Massey College, Nicolas is completing an Action Canada fellowship, which focuses on Canadian public policy and leadership development. She also still volunteers for Québec Inclusif. She sees her future involving a mix of research and activism with a bent toward social justice.

“There is a strong tradition in anthropology of doing work that is impactful to the people you research...that is something that appeals to me,” she says. – **SHARON ASCHAIK**

EPHEMERA



A+ in Selfies

“Anthropologists learn by doing field-work,” says Maggie Cummings, a lecturer at UTSC. So when she’s teaching the cultural politics of visual representation, what better assignment than to ask students to take – and analyze – a selfie? “A lot of professors think of cellphones as the enemy,” says Cummings (above, with her students), “but I wanted to actually use the phone as a tool and look at it as a cultural artifact.”

Her students loved the assignment. “They had fun; they created fantastic photos and said really interesting things in their papers,” says Cummings. After a class discussion about narcissism and selfies, one male student took a picture with a female friend in the background, trying on lipstick in a mirror. “He wrote a great paper,” says Cummings, “questioning the norms of the objectification of women that we take for granted.”

– **JANET ROWE**

➤ He plans to study computational biology and computational medicine at Oxford, and hopes to one day contribute to the advancement of medicine through the ethical use of artificial intelligence. “At the moment, I am interested in the application of machine learning in the context of ‘big data,’” says Abdalla, “to develop models and predictions that could, for example, identify disease-causing genes, or genes that cause bad drug reactions, or more generally, for developing personalized or precision medicine.”

Leps, a Trinity College student, is studying global health and international relations. The co-president of the International Relations Society and of Trinity College’s Women’s Athletic Association, Leps is co-captain of Trinity’s basketball team, and plays violin in the Hart House Orchestra. She also volunteers at a children’s hospital and a camp for kids with cancer.

At Oxford, she will be pursuing a master’s degree in global health science, with aspirations to become a pediatrician working in global children’s health in low- and middle-income settings.

“I believe in global children’s health – it’s a field we should invest in. Ensuring children have a healthy childhood means they can contribute to our community as adults,” she says.

“On behalf of the U of T community, I congratulate Moustafa Abdalla and Caroline Leps on being selected Rhodes Scholars,” says President Meric Gertler. “I would also like to thank them for their example. Each has an outstanding record of multifaceted excellence, and both are determined to use their talent and learning to benefit individuals and communities, here and around the world. In this they demonstrate brilliantly the highest ideals of the University of Toronto.” – **LIZ DO**



More than a quarter of homeless people in Toronto have been refused health care due to the lack of health card, according to a 2007 report by the Wellesley Institute



A U of T medical student examines a patient at the IMAGINE clinic

“It’s a unique, underserved patient population, so it’s a great opportunity to be able to help,” says Claire Hooper, a third-year pharmacy student volunteering at IMAGINE.

Students volunteer at the clinic for three consecutive Saturdays, followed by a guided group reflection day. They work in teams of five students drawn from each health discipline, supervised by five preceptors – licensed health-care practitioners, who are also volunteers.

The students take the patient’s history, perform a physical exam, interpret information, write clinical notes and develop a treatment plan. Christopher Wang, now in his second year of medicine, likens the experience to doing a puzzle. “We gather all the pieces and then with the expertise of everybody we try to figure out what this patient is here for and what we can do

Team Health

City residents without a health card get care from U of T undergrads

IMAGINE A CLINIC PROVIDING FREE HEALTH CARE to Toronto’s most vulnerable residents: people with no fixed address, health insurance or ID. Too utopian?

Not for a group of University of Toronto students.

In 2007, U of T students from a variety of health profession programs came together to form the Interprofessional Medical and Allied Groups for Improving Neighbourhood Environment (IMAGINE). And by 2010, with support from faculty and community partners, the IMAGINE Clinic was open and offering medical, nursing, pharmacy and social work services. In 2012, physiotherapy was integrated, and the student volunteers became able to earn Interprofessional Education credits for their service.

to help.”

More than 200 clients were assessed and treated at IMAGINE last year. Many patients come in for physiotherapy, because it’s generally not covered by health plans, but students also see people with common ailments, infections or mental health issues and they treat them all. The clinic is open every Saturday from 10 a.m. to 2 p.m., except on long weekends and holidays.

One patient, visiting for a follow-up about her back pain, is happy with the service she is getting. “I like when they show me some exercises or give me a handout so I can practice at home,” she says. “They really want to keep me on track.”

“The students are getting intensive exposure to the social determinants of health,” says Norma C. Carter, a general practitioner who has been volunteering at IMAGINE as a physician preceptor since 2011. “And they also learn not to be afraid of caring for a challenging population.” Hooper agrees: “It makes you a better health practitioner.” – **JELENA DAMJANOVIC**

NAMECHECK

W.A.T.C.H.



Words. Action. Thought. Character. Heart. (W.A.T.C.H.) is a community-service club with a U of T chapter that helps children and youth in Toronto’s low-income communities build a brighter future through education, sports and creative arts. During his time as an undergrad (completing a human biology BSc at UC), the group’s founder and chairman Dr. Neilank K. Jha worked every day, developing programs that now include scholarships, tutoring, after-school care, a soup kitchen, blood donor clinics and an annual family holiday party at Hart House.

Jha, who is a neurosurgeon, was inspired by the five years he spent, from ages 12 to 17, living and working in an ashram in India. He originally named the club Working Around the Clock Helping – an apt name for his tireless effort. Since the club’s founding in 1997 more than 10,000 volunteers have helped out – and more are always welcome. “It is important to remember that while Canada is a developed country, there are still individuals here who need assistance,” says the club’s current president, Parasavi Patel, a fifth-year biology student at University College. – **SAMINA SULTANA**



Years after he helped popularize the lindy hop, dancer Frankie Manning won a Tony Award for his swing-inspired choreography for the musical *Black and Blue*



U of T's Got That Swing

On any given Wednesday, as many as 50 people will lindy hop and jitterbug the night away at the weekly meet-up of UT-Swing, the University of Toronto's swing dance club. Active since 2007, the group brings together neophytes and budding Fred Astaires and Lena Hornes from the university and wider community to promote swing, a partnered dance popular in the 1920s through the 1950s.

"People show up week after week, no matter what tests or essays they have," says UT-Swing president Hannah Bild-Enkin, a fourth-year psychology student at University College. "The reason they get hooked is the community. Swing dancers

are a quirky, passionate bunch!"

In January, UT-Swing celebrated its eighth week-end-spanning social dance with workshops and classes, and a ball on Saturday. Outfitted in vintage garb, about 300 dancers gathered at Toronto's Dovercourt House to two-step their spectator shoes and swish their pin curls to tunes from a live 15-piece jazz band.

"I've had people come up to me to say, 'This is the club I've been looking for,'" says Bild-Enkin. "UT-Swing is a great way to find community on campus that translates to an off-campus community. It's fun, social, physical, and it can be a hobby for the rest of your life." - **AMY STUPAVSKY**

SOUND BITES

How can city council improve Toronto and how could U of T help?

U of T could do their own study on how to improve the TTC, and publish it.

Stephanie John, @Stephycool

Enhance collaboration among different departments for more holistic and efficient urban planning.

Samantha Anne, @samantheanne

Deamalgamate. It seems that a lot of the city government's dysfunction stems from geography.

Emmett, @Emmett

U of T could provide research results to the city to support evidence-based policy-making.

Megan, @BamfordM

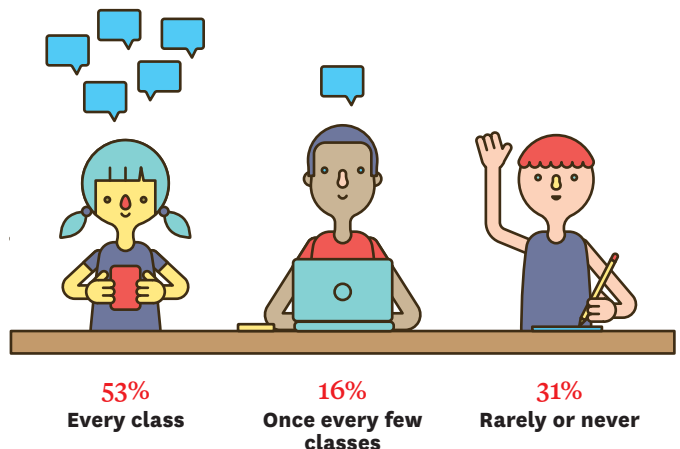
Join the conversation at twitter.com/uoftmagazine.

Poll | How often do you check social media while in lectures?

Look around any university class and you'll observe a sea of students plugged into their smartphones. How distracted are U of T students? More than half check social media at least once in each class. Some even admit to being addicted to the constant stream of status updates. "I'm usually texting my friends who are 20 hours away in Brunei," says Cynthia Wang, a second year psychology student. "I can't stay away from it because I miss them."

Other students don't see this as a good use of their time, especially during lectures. "This is a once-in-a-lifetime opportunity to go to a university of such high calibre," says MA candidate Sasha Reid. "To waste even a minute, browsing something that can wait, you miss a part of life and living." - **JESSICA LAY**

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





P.O.V.

Amjad Tarsin

Chaplains offer a unique and crucial service to students, says Amjad Tarsin, U of T's inaugural – and very busy! – Muslim chaplain



You use the term chaplain to refer to yourself – is there an equivalent word in Islam? There's a word, *Ustadh*, that means teacher, but there isn't really an exact equivalent. The Muslim community in North America is still figuring out a lot of this terminology. This position is exciting; it's new territory.

What's the nature of the job?

University is a great time of self-discovery and independence, but for a lot of people it can also be a bit of a shock. So to have resources there for students as they're going through challenges is really critical. There's a lot of conversation about mental health, which is extremely important. But from an Islamic perspective, we believe that human beings are made out of a body, a mind and a soul, and they're not mutually exclusive. So when it comes to an individual's holistic

well-being, there's a spiritual element that needs to be fulfilled. This is an important role of the chaplain that other services for students might not be able to provide.

Current events sometimes reveal an anti-Muslim bias in the media. How do you help students deal with this? The *Qur'an* teaches us, 'Good and evil cannot be equal. Repel evil with that which is better.' (*Qur'an* 41:34). So we have to be people who reflect goodness even in the face of ignorance and bigotry. Although these times are difficult for young Muslims carving out their own identity and purpose in life, I remind them to have faith, hope for positive change and understanding, and to focus on being positive contributors to society.

How large is your congregation? On Friday, I'm usually at the Multi-Faith Centre, and then there are two prayer services at Hart House. For each congregation, we have about two to three hundred people. Keeps me busy!

What resources does the Muslim chaplaincy offer? We offer classes and group discussions. Every week I'll deliver a Friday sermon and lead the Friday prayers for students. Probably one of the most critical services we offer is one-on-one confidential counselling sessions. My focus would be coming from a point of Islamic spirituality, but our counselling is open to anyone who would like to talk, not exclusively Muslim students.

And what's ahead for the future? The idea, God willing, is to have services at all three campuses. I'm at U of T Mississauga one day a week, but our goal down the line is to have a part-time chaplain at both UTM and UTSC. There's a lot of room for growth, but we have to be careful not to spread ourselves too thin. It's worth doing right.

Why I Give



Robert Gillespie

Robert Gillespie, former chairman and CEO of General Electric Canada, has given \$50,000 to U of T Mississauga to support a new program called Promoting Academic Skills for Success (PASS). The PASS program, offered through the Robert Gillespie Academic Skills Centre (named to recognize Gillespie's past support), is designed to detect and then assist students at risk of academic probation, and to help students who are on academic probation improve their study skills.

Robert: "I had a rather ragged academic background. I attended an engineering co-op program at Heriot-Watt University in Edinburgh, Scotland, so I was working as an apprentice and going to night school and sometimes day school. I found it tough sledding, partly because of a lack of mentoring, but also because I was isolated from other students. Studying mathematics on my own was not an easy process, and it wasn't much fun.

"Fast forward 50 years. I've lived in Mississauga for most of my life. I found out that U of T Mississauga was looking to establish an academic skills centre that would give students the opportunity to work closely with faculty – and with other students – to bootstrap themselves into a better position, but that it needed funding. That was 10 years ago. I decided to work with them, and it's been a great success.

"Each time I visit, which is about twice a year, I'm impressed with how committed the students are to improving their situation. But I also appreciate that the faculty apply what they learn from the students to improve the teaching process."



The Order of Canada has been awarded to 6,431 Canadians since its founding in 1967 (including every Prime Minister since, except Stephen Harper)

Degrassi Creator Gives Back

Linda Schuyler's \$1 million gift to U of T celebrates cinema



CELEBRATED TELEVISION PRODUCER

Linda Schuyler (BA 1974 Innis), whose shows are widely acclaimed for their sensitive and realistic portrayal of teenage life, has made a major gift to the institution that first sparked her interest in the TV industry.

The co-creator of the award-winning Degrassi franchise, which includes five dramatic series, Schuyler has donated \$1 million to the University of Toronto's Boundless campaign. The funds have been allocated in a way that benefits three areas, all meaningful in Schuyler's life.

The Innis College Cinema Studies

program, which helped launch her career, received the majority of Schuyler's gift – \$550,000. This went toward renovating Innis Town Hall, a prime screening space that not only serves students, but also plays host to large community events, such as public lectures and debates. The money helped upgrade the projection booth, which previously used only analog technology to screen 16- and 35-millimetre films. The new Linda Schuyler Projection Booth includes modern digital equipment for screening a broader range of both vintage and contemporary films.

"A premier theatre is a gift to everyone at the university. Students, faculty and film enthusiasts – all appreciate the importance of quality of space, sound and image when studying a dynamic subject like cinema. It's a wonderful place to learn, teach and also be entertained," says Janet Paterson, principal of Innis College.

The gift also reflects Schuyler's commitment to respecting individual differences, particularly sexual orientation – a subject often addressed in the pioneering youth culture programming she produced over the last 35 years.

The Mark S. Bonham Centre for Sexual Diversity Studies at University College has received \$225,000. A total of \$175,000 will create a Global Education Fund to support the introduction of new courses focusing on sexual diversity in an international context. As well, an endowment of \$50,000 will establish the Linda Schuyler Student Award, to provide the centre's first international research opportunities. Recipients will be able to use the funds to attend conferences or conduct fieldwork abroad.

"Improving understanding and acceptance of individual differences makes it possible to raise a generation of much more compassionate people," says Schuyler, an Order of Canada and Order of Ontario member, and recipient of an Academy Achievement Award from the Gemini Awards.

Finally, Schuyler has directed \$225,000 to the Media Commons, the University of Toronto Libraries' repository of archival and contemporary audio-visual research resources. The gift will establish the Linda Schuyler Digitization Fund for Preservation and Access, which will help the Commons digitize its analog holdings and preserve its original digital material.

"Linda is a trailblazer in the TV industry, not only in Canada, but worldwide," says Janet Paterson. "Her success as a female producer in a male-dominated industry is truly inspiring. It is a source of great pride for our community." – SHARON ASCHAIK

People



Shafique Keshavjee

University Health Network surgeon-in-chief **Shafique Keshavjee** (MD 1985, MSc 1990) was named an officer of the Order of Canada for his innovations in lung transplant techniques. Also named officers, the second-highest level within the order, were department of medicine profs **Wendy Levinson** and **Norman Marcon**, **Mark Lautens** of chemistry and **Nancy Reid** of statistics. Named members: **Brenda Gallie** of medical biophysics and molecular genetics, **Laurence Klotz** (MD 1977) of surgery, **Charles Pascal** of OISE and **Catherine Zahn** (MD 1978, MHSc 1995) of medicine.

The Order of Ontario honoured profs **Patrick Gullane** (otolaryngology), **Gary Levy** (medicine, and director of the Living Donor Liver Program), **Hans Messner** (medicine) and **David Williams** (surgery).

OISE professor **George Dei** has been named a Carnegie African Diaspora Fellow. This summer, he'll head to Ghana to work on a project to Africanize school science curriculums.

Professor and public health expert **Vivek Goel** has been appointed Vice-President, Research and Innovation until 2020. Provost **Cheryl Regehr** has been reappointed until 2020 and Prof. **Bruce Kidd** has been confirmed as principal of UTSC, until 2018. And Prof. **Deep Saini** will continue as vice-president and principal of U of T Mississauga until 2020.

Philosophy prof **Margaret Catherine Morrison** has won the Carl Friedrich Siemens Research Award, a lifetime achievement prize awarded by the Humboldt Foundation at the Universität München.

Mathematics prof **James Arthur** has won a top mathematics award, the Wolf Prize in Science, for his landmark work developing the trace formula for reductive groups.

Uniting the Humans of U of T

A popular photo blog celebrates members of the campus community



Elizabeth Shaha, a “human of the University of Toronto”

THE UNIVERSITY OF TORONTO CAMPUS community includes more than 100,000 students, faculty and staff, each with their own, unique story. Yet in the rush from class to class, and between campus and home, we sometimes miss connecting with the people around us – and that’s unfortunate, says Jemel Ganal, a third-year student in book and media studies.

Last year, Ganal found a way to help people at U of T share their stories with each other, launching a photo blog called “Humans of the University of Toronto.” Modeled after a similar venture in New York, Ganal takes photos of individual students, staff and faculty and posts them on Facebook, Twitter and Instagram with a caption about the person.

“People at U of T have amazing stories, sometimes you just have to ask,” says Ganal. One of her most popular shots captures an elderly couple, now in their late 80s, who met at U of T 68 years ago. “They’ve been together ever since,” she says. “It was the cutest thing.”

Although it started as – and remains – a hobby, the project has helped boost Ganal’s own career as a freelance photographer. The Office of Student Life hired her to photograph staff members to celebrate their contributions to students’ success. “We have so many staff who are unsung heroes – people who have an important role in students’ lives,” says provost Cheryl Regehr.

The Humans of University of Toronto Facebook page has more than 9,000 followers, but Ganal is hoping to spread the project even further, sharing photos and stories of people who study and work at all three campuses. “This is all about celebrating the people of U of T,” she says. – **ZANE SCHWARTZ**





IN MEMORIAM

Joseph Rotman

A leading Canadian businessman and philanthropist, he was one of U of T's greatest champions

JOSEPH ROTMAN ONCE SAID, "Science empowers us; the humanities teach us to use that power wisely."

Rotman, who was one of Canada's leading innovators and philanthropists, died in Toronto on January 27, just weeks after his 80th birthday. He leaves a great legacy in a wide array of fields, including business, health care, the arts and higher education.

"Joe Rotman was a visionary and passionate champion of higher education and research"

"The University of Toronto, and indeed all of Canada, has lost one of its greatest champions," said University of Toronto president Meric Gertler. "Joseph Rotman believed that each of us has a responsibility to help build civil society. He had great faith in young Canadians, in their eagerness

and ability to lead the way in that cause. And he was supremely confident in Canada's ability to compete and to contribute on the global stage."

Rotman obtained his Masters of Commerce from U of T in 1960 after receiving his BA in philosophy at the University of Western Ontario in 1957. He studied business and economics at Columbia University and started his business career in 1962.

Tiff Macklem, dean of the Rotman School of Management, said Rotman "was a visionary who inspired confidence in a generation of Canadians to see themselves not just as business people and entrepreneurs, but as global leaders. He wanted Canada to be an international player, and he wanted the Rotman School of Management to lead the way. And I believe he succeeded."

Rotman and his family had deep roots within the university community, and a long history of volunteerism and involvement with the University of Toronto.

In 1993, he and his wife Sandra made a gift of \$3 million through the Rotman Family Foundation toward the construction of a new state-of-the-art facility at the University of Toronto's business school. Since that time, the Rotmans have given a total of more than \$42 million to the institution. The Rotman School of Management, which is named in his honour, has become one of the most innovative business schools in the world.

Roger Martin, former dean of the business school, said Rotman "had clear objectives for the school. He believed we needed to take a holistic view of business education. We call it integrative thinking. His enlightened perspective helped vault our school forward, in a world where you need to be at the top of your game when competing in a globalized economy."

Rotman received many awards for his volunteerism, including a Lifetime Achievement Award from Life Sciences Ontario in 2012. He advocated for life sciences research excellence and the biotech industry, serving in several leadership roles at leading health care institutions. Rotman was also passionate about the arts, serving as the chair of the Canada Council for the Arts. In recognition of his commitment to higher education, Rotman received honorary degrees from U of T (1994) and Western (2009). Most recently, he was an honorary chair of U of T's Boundless campaign and was appointed chancellor of Western University in July 2012.

David Palmer, vice-president advancement for U of T, said, "Joe Rotman was a visionary and passionate champion of higher education and research. He served this country and his alma mater admirably – his leadership inspired innovative solutions and positive change on some of the most pressing social challenges of our time." – **STAFF**

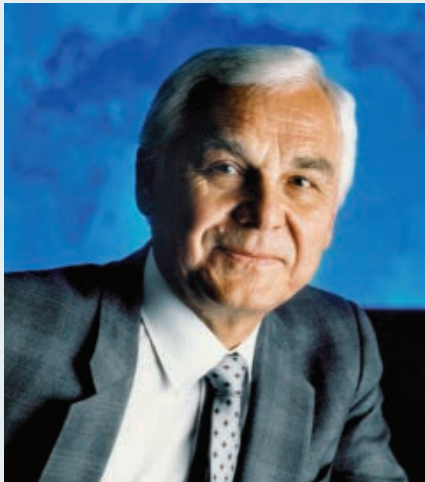


The first woman to go underground at Inco's Sudbury mine was the late Queen Elizabeth the Queen Mother, in 1939. She visited U of T on the same trip

IN MEMORIAM

Walter Curlook

Former Inco CEO was mining's green pioneer



Nickel is a metal that's both strong and remarkably versatile. These two qualities also describe Walter Curlook: an engineer, executive, community leader and teacher whose extraordinary career was forged not just in and around the nickel mines of his native Sudbury, but in work that took him around the world.

Curlook (BASC 1950, MASC 1951, PhD 1953), who died October 3 at the age of 85, rose meteorically through the ranks at Inco Ltd: from research metallurgist to top executive at a time when the company stood atop the world in nickel production. Curlook himself invented more than a dozen process patents: even at the highest administrative level, he remained an engineer at heart.

"He was an executive, but he also got right down in the labs and contributed directly to technical development," says Prof. Doug Perovic of materials science and engineering. "He insisted on staying close and keeping his ear to the ground; he just worked so hard."

He also pioneered environmental responsibility in the mining industry. "Under his leadership, Inco was always progressive in the environmental area," says colleague

Mansoor Barati. A \$600 million sulphur dioxide abatement program, completed in 1993, was described as the largest environmental project ever completed by the industry.

The vast array of initiatives Curlook supported is testament to a lifelong love of education. He convened a board of supporters to save the materials science department from disappearing in the 1990s and, after retiring from Inco, launched a teaching career at U of T, bringing invaluable real-world expertise to students. "He was interested in our students being well-rounded beyond the specific things that we teach – particularly in the financial side of how companies operate," says Perovic.

Curlook left a lasting legacy for the department in 2013 – a gift that founded two laboratories in the Wallberg Building.

"Pit bull" is the affectionate term that comes to Perovic's mind now, when he thinks of Curlook. "He was the most loving, big-hearted person you could meet," he says, "but his passion, spirit and energy were boundless, and that could be intimidating. He always wanted to do better – and he expected that of others as well." – CYNTHIA MACDONALD

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BOUNDLESSIMPACT

UNIVERSITY OF TORONTO

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Hang (Joey) Zhou
PhD Candidate

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BOUNDLESSLEGACY

Leading Edge

“These writers have some really weird ideas about how nature works”

English prof Liza Blake on how science was represented in early fiction

p. 20



Tiny Strokes May Cause Dementia

U of T medical imaging study suggests lifestyle changes and medications could reduce brain's white matter loss

A U OF T RESEARCH TEAM MAY HAVE IDENTIFIED a previously unknown – yet potentially major – cause of dementia in older adults.

Alzheimer's disease is the most common form of dementia in Canada. But more than half of people over age 65 have leukoaraiosis, a gradual and permanent degeneration of the nerve fibres, or white matter, in the brain. At an early stage it isn't considered problematic. But as leukoaraiosis progresses, it's associated with cognitive decline and eventually dementia.

(The presence of leukoaraiosis also worsens the symptoms of existing Alzheimer's.)

It was once assumed that this degeneration was a normal part of the aging process, as arteries in the brain narrowed over time and restricted the blood flow. Dr. Daniel Mandell, a professor in U of T's department of medical imaging, suspected there might be another cause.

Led by Mandell, researchers at the University Health Network's Krembil Neuroscience Centre recruited five individuals with white-matter damage in their brains and followed them with weekly MRI scans for 16 weeks. In three of the individuals, the team saw very small areas of white matter that swelled temporarily, indicating that tiny "silent" strokes occurred – silent, because they caused no symptoms. Within a week or two, all MRI evidence of the strokes was gone. But new white-matter disease developed in those same brain regions, suggesting that the strokes had precipitated it. ➤



Among the technological advances described in *The Blazing World* are submarines that can transport armies and a “fire stone” that combusts when brought into contact with water.

➤ No events were observed in the other two individuals – though this doesn’t mean that their white-matter disease isn’t caused by strokes. “It’s conceivable there were smaller ones we’re not able to see,” says Mandell. It’s also possible those patients didn’t happen to have strokes during this 16-week period.

Although strokes this size in the white matter normally go undetected and untreated, they *can* potentially be prevented. “The diagnosis is not such a challenge,” says Mandell. “The challenge is what causes it, and whether we can do anything about it.” High blood pressure has already been established as the strongest modifiable risk factor for leukoaraiosis. There’s also some evidence that smoking and diabetes may have an impact. It suggests this form of dementia could be prevented or slowed down with medications and lifestyle changes. “There aren’t a lot of treatable causes of cognitive decline,” Mandell notes. “It’s exciting.”

His work demonstrates a new way to experiment with prevention strategies, including the use of blood pressure medications. “With this biomarker of tiny strokes over 16 weeks, we can test novel therapies and follow people just for a month or two, and see if there’s a difference on the tiny strokes they’re having.”

A separate meta-analysis by a U of T PhD candidate in psychology last year found that leukoaraiosis affects more brain functions than most experts realize. Since these changes occur slowly and in many areas, they can go unnoticed at first or be chalked up to old age. “Sometimes it’s difficult to measure mild, early cognitive decline,” says Mandell. It’s another vote for the importance of prevention.

Mandell hopes to repeat the study with a larger sample size. – LISA BENDALL

Before Science, There Was...Literature?

Not so long ago, theories about the natural world were often put forth in poems and plays



NOWADAYS, WE LEAVE SCIENCE TO THE SCIENTISTS: rigorously trained professionals who test hypotheses via experiments and observation.

But as U of T Mississauga English professor Liza Blake will tell you, we’ve only been doing that for about 400 years. Before that, “science” as we know it didn’t exist – and some of the most prominent thinkers in physics, biology and astronomy were actually writers of literary fiction.

As the scientific revolution took shape in the late 1500s, poets and playwrights concerned themselves with questions about the natural world. Were atoms inert building blocks or living things? Would space travel ever be possible?

“What’s really exciting for me about studying this period is that these writers have some really weird ideas about how nature works,” says Blake, who teaches a course called Science and Fiction in the English Renaissance and is writing a book on the subject. Among the writers she teaches is Margaret Cavendish, whose *The Blazing World*, published in 1666, features a woman kidnapped into a society of part-human creatures.

In Cavendish’s time, natural philosophers – generally considered the progenitors of modern scientists – were also concerned with how questions about nature should be investigated; the iconoclastic writer criticized the modes of thinking at London’s Royal Society. “She wanted to be a member,” says Blake, “and they wouldn’t let her partly because she was a woman.”

In contrast to early modern literature, Blake says modern science fiction “accepts science as a discipline: Isaac Asimov was up-to-date on scientific texts, but didn’t think he was advancing science with his books.” And even though fiction can still inspire science (the word “cyberspace” came from a William Gibson story), in our day it’s usually the other way around. “It would be hard to have the same scene today – back then people didn’t have any idea what nature fundamentally was,” says Blake. “A lab was one way to figure it out; a poem was another.” – CYNTHIA MACDONALD

LINGO

Homophily



Studies suggest that democracy functions best when voters have access to good information from diverse sources. A well-informed electorate is more likely to take an active interest in politics and hold politicians accountable.

However, this ideal is undermined by “homophily” – the tendency for people to associate

with those who share opinions similar to their own.

A recent study co-authored by economics professor Yosh Halberstam has documented how homophily influences political communications on Twitter. The authors analyzed more than 500,000 posts among 2.2 million politically active Twitter users

during the 2012 American elections, and found that both conservatives and liberals were exposed to a disproportionate amount of like-minded information, creating a kind of echo chamber. Moreover, like-minded tweets reached each group more quickly than tweets holding an opposing position.

– PETER BOISSEAU



THE BIG IDEA

The Dark Corners of Our DNA

A “deep-learning” algorithm shines a light on mutations in once-obscure areas of the genome

THE SO-CALLED “STREETLIGHT EFFECT” has often fettered scientists who study complex hereditary diseases. The term refers to an old joke about a drunk searching for his lost keys under a streetlight. A cop asks, “Are you sure this is where you lost them?” The drunk says, “No, I lost them in the park, but the light is better here.”

For researchers who study the genetic roots of human diseases, most of the light has shone down on the two per cent of the human genome that includes protein-coding DNA sequences. “That’s fine. Lots of diseases are caused by mutations there, but those mutations are low-hanging fruit,” says Brendan Frey, a U of T computer engineer who studies genetic networks. “They’re easy to find because the mutation changes one amino acid to another one, and that very much changes the protein.”

The trouble is, many disease-related mutations also happen in non-coding regions of the genome – the parts that do not directly make proteins but that still regulate how genes behave. Scientists have long been aware of how valuable it would be to analyze the other 98 per cent but there has not been a practical way to do it.

Now Frey has developed a “deep-learning” machine algorithm that effectively shines a light on the entire genome, identifying patterns of mutation across coding and non-coding DNA alike. The algorithm can also predict how likely each variant is to contribute to a given disease. “Our system can predict whether or not a mutation will cause a change in RNA splicing that could lead to a disease phenotype,” he says.

RNA splicing is one of the major steps in turning genetic blueprints into living organisms. Splicing determines which bits of DNA code get included in the messenger-RNA strings that build proteins. Different configurations yield different proteins. Misregulated splicing contributes to an estimated 15 to 60 per cent of human genetic diseases.

Frey, who holds the Canada Research Chair in Information Processing and Machine Learning, trained his algorithm using millions of data

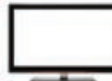
points. The algorithm was then able to extrapolate how likely it was that any of tens of thousands of mutations could cause a splicing error associated with a particular disease.

The research team tested the method by showing it could detect genes related to spinal muscular atrophy as well as nonpolyposis colorectal cancer. Frey says the team’s “most ambitious case” was its study of autism spectrum disorder; about 100 genes are known to be associated with it. In fact, many researchers think it is likely that autism comprises many disorders, each resulting from unique mutations but all resulting in common symptoms.

Working with U of T autism researcher Stephen Scherer, Frey compared mutations in autism patients’ genomes with those of controls. Nothing unusual popped up. But when Frey and Scherer tested the genomes against the mutations flagged by Frey’s algorithm, they “saw patterns emerge.” According to Frey, “Kids with autism are more likely to have these ‘high-scoring’ mutations that change the meaning of the genome, and that are thought to be involved with brain functions and developmental functions.”

Not only did the algorithm’s analysis fit with existing knowledge about autism genetics, it also identified 17 new disease-causing gene candidates. With each of the three diseases addressed in the study, the algorithm both made predictions that were consistent with existing data and also pointed toward additional regions of the genome where researchers might search next. – **PATCHEN BARSS**

This is a shorter version of an article that appeared on scientificamerican.com in December 2014.



In February, Onyx Motion was featured on CBC's new show *Next Gen Den*, a *Dragon's Den* for younger entrepreneurs

STARTUP

A Digital Coach

Wearable software created by U of T grads aims to help hobby athletes up their game



the company's chief technology officer, built the software as part of The Next 36 entrepreneurial leadership program. Worn while shooting hoops or playing golf, the app offers athletes tips on how to improve technique based on a real-time analysis of the user's performance.

Wu likens the state of wearable technology to the earliest cell phones. Activity trackers, such as Fitbit, a wristband gadget, generate measurements and stats, such as steps taken. But "there has to be more meaning and context," Wu says.

With Onyx Motion, she and Kesarwani sought to develop an app that would take the wearer's motion data and combine this information with similar data collected from professional athletes and other users of the app. By digitally comparing the motions that went into delivering a shot or swing to those of other athletes of similar size, and then having users indicate a missed attempt with a shake of the wrist, Onyx Motion produces ratings and suggestions – for example, using a steeper angle or faster throw.

In beta tests, Wu says, 200 basketball players using the app boosted their successful free-throw percentage by an average of 60 per cent. When Wu tried the app with her own game, it identified ball speed as the shortcoming. "What I learned is that my biggest problem is not my precision" (measured by the angle of her throw), Wu says. "It's that I lack strength." Indeed, after she began a weight-training program for her arms and back, her successful free-throw percentage jumped from 30 to 60.

Elite athletes receive one-on-one training and benefit from sophisticated technologies designed to deconstruct their movements, but average people have no access to this kind of coaching. Until now. Wu sees applications outside sports, too, such as coaching people with injuries to do physiotherapy exercises properly.

Mostly, she believes the value in the technology lies in its artificial intelligence, which allows Onyx Motion to determine whether its advice is helpful. "We look at whether our tip is actually making you improve," she says. "If it doesn't work, or makes you worse, then the watch learns and adapts. That's the human element that Fitbit hasn't been able to replicate." - JOHN LORINC

GROWING UP IN WATERLOO, ONTARIO,

Marissa Wu (BAsc 2013) loved to play basketball with her father. "I wanted to be Michael Jordan," laughs the 22-year-old co-founder and CEO of Onyx Motion. The problem was that she wasn't very good at sports. "I never understood why."

Wu wondered if athletic prowess wasn't just about innate skill. As she completed her degree, she decided to apply data analytics to the art of executing a layup. "I wanted to tackle the problem of knowing what you're doing wrong."

The result is a "digital coach" Android app designed to be loaded onto wearable tech devices, including the soon-to-be-released Apple Watch. Wu and co-founder Vivek Kesarwani (BAsc 2014), who is also

Findings

Ancient Lizard



A lucky fossil find by a young boy on a Prince Edward Island beach 20 years ago has revealed an important link in the early evolution of reptiles, according to research from U of T Mississauga.

A new study co-authored by biology professor Robert Reisz says the fossil is of a previously unknown reptile that lived near the end of the Carboniferous era about 305 million years ago, when much of this part of the world was covered in swampy forests.

The fossil, named *Erpetonyx arsenaultorum* in honour of its discoverers, has no living relatives, Reisz says, adding that the 25-cm-long lizard would have looked very similar to a modern-day desert iguana. It had clawed feet, small peg-like teeth and probably ate insects. - BLAKE ELIGH

Invasive Ants and Plants



An invasive ant species that has become increasingly abundant in eastern North America not only delivers a nasty sting, it's helping to spread an invasive plant species.

"Ecologists talk about 'invasional meltdown,' because ecosystems could be very, very rapidly taken over by invasive species if invaders help each other out," says U of T evolutionary biologist Megan Frederickson, co-author of a recent study. "Our results suggest that invasional meltdown could be happening here in Ontario."

In the field, researchers created artificial ecological communities inside 42 children's swimming pools. They filled each pool with soil and planted four species of wildflowers – three native and one invasive. Afterward, they collected colonies of the European fire ant and a native woodland ant and added one to each pool. Over time, the pools with the invasive ant were overrun by the invasive plant, but native plants were able to thrive in the pools with the native ant. - KIM LUKE



More than half of people in Tokyo and New York commute to work using public transit. In Toronto, only about one-third do.

Q&A

Travel Upgrade

For many Torontonians, the daily commute is a spirit-crusher. What if it could enrich your life instead?

In the run-up to last year's municipal election, Toronto voters identified transportation gridlock as the city's most pressing issue. Recently, **Richard Sommer**, dean of the John Daniels Faculty of Architecture, Landscape and Design, spoke with U of T News writer **Brianna Goldberg** about how to change the experience for commuters in Toronto.

You've said that transit in Toronto should be about much more than moving people from A to B. What do you mean? In recent years, the transit discussion here has been too centred on a debate between light rail and subways. We fail to ask questions about the overall network experience we are trying to build, who we're building it for, and what the bigger picture looks like. It's distracted us from asking how the way in which our citizens move through the entire city – not just downtown – influences their quality of life.

How do we encourage people to consider alternatives to the car? It has to be in people's self-interest to get out of their own cars. They need to realize that their life could be improved by cutting their commuting times, or that better transit design and coordination can result in a more pleasant, less stressful way of moving through the city. Torontonians take trips ranging from 20 minutes to two hours. If you map a person's itinerary, and think about everything from the spaces they travel through to the signage they see to how they use tickets and passes, you can make a big impact on the quality of their commute. It would be great if everyone could ride their bike or walk to work, but it's a big city and it is often the case that the least economically advantaged people have to travel farther and more often to make a living. So we have to be mindful of what their life is like. The challenge is to ensure that people can move through the city in ways that don't deaden their spirit.

The book *Huburbs*, which the Daniels Faculty recently co-published with Metrolinx, has some fresh ideas about how to make suburban transit hubs more appealing. Please explain.



Huburbs looks at the inconvenient-to-access and often-ugly transit hubs in the outer GTA. It uses complex documentation, analysis and visually sophisticated models to explore how these hubs could be lively and enriching, instead of barren platforms surrounded by parking lots and vacant space. Our ideas include adding value to these places with new supplemental programs, such as urban farming, retail or educational facilities so they are not just about transit. Can the architecture of these spaces transform seasonally to be more environmentally sound? Can an activity be woven into the space between a GO station and light rail station that leverages local assets in ways that could engage people who move through these hubs, and also attract other investments?

What do you make of the urban-suburban divide, as is often mentioned in the transit debate? Toronto is an urban territory, but it has developed unevenly. I don't think it's helpful to say that one place is a suburb, and another is a city. It really has to do with the level of maturation of the geography in question. It's all urbanization, and some of the most interesting and diverse areas, culturally, are in what some think of as a suburb. To some extent, Toronto's downtown is taking care of itself. What we're looking at, especially at the boundaries or edges where growth can occur, are strategies for transforming the *whole* city.

What should a Torontonian's transit experience look like 10 or 15 years from now? Our ambition has to be to make the experience of using multiple modes of transit better than driving a conventional car. While using transit in the future, one will be able to read, shop, exercise and socialize. Using transit will be seen as something that is enriching rather than as a sacrifice one has to make.

This Q&A was adapted from two U of T News podcasts about urban issues.



The Nanoleaf, an LED light bulb created by U of T grads, uses just 12 watts to generate light equivalent to a traditional 100-watt bulb

Bright Idea



Three years ago, a lab breakthrough at U of T in OLED technology promised to create thinner, more flexible and energy-efficient computer displays. Now, the same team has successfully generated its first consumer product: the world's only OLED (organic light-emitting diode) lamp. The *aerelight*, left, uses just seven watts at its maximum brightness – or about one-eighth the power of a typical lamp. Its “bulb” is actually a panel less than two millimetres thick that casts a soft, diffuse glow. Michael G. Helander (BASC 2007, PhD 2012), who co-founded OTI Lumionics, the company that makes the *aerelight*, says the sleek-looking device has touch controls built into its anodized aluminum frame and is the first of several consumer products the company has planned that will marry OLED technology with contemporary design.

Looking to the future, Helander sees the *aerelight* as the beginning of a much larger operation that will find new uses for OLEDs and change how they're manufactured. The company is scouting locations in Ontario and Quebec for an advanced production plant that will bring together talent in engineering, technology and design. Roll-up computer screens and light-emitting wallpaper may not be far off.

– SCOTT ANDERSON

A New Kind of Galaxy

Telescope created at U of T and Yale has led to the discovery of never-before-seen celestial structures

AN INNOVATIVE TELESCOPE created at U of T's Dunlap Institute for Astronomy and Astrophysics and Yale University has led to the discovery of a previously unknown type of galaxy, and is challenging established theories about how galaxies grow and evolve.

The Dragonfly Telephoto Array, co-designed by U of T astronomer Roberto Abraham and Yale's Pieter van Dokkum, stitches together multiple high-quality off-the-shelf telephoto lenses to create a revolutionary type of telescope.

Dragonfly is particularly well suited to spotting diffuse objects in the night sky. “We've already discovered a whole new class of galaxies that are as big as the Milky Way, but about a thousandth of the mass,” Abraham says.

Enormous galaxies with low mass should be “pretty fragile,” says Abraham, but Dragonfly has found them in clusters

where astronomers might have expected them to be pulled apart or absorbed by more massive galaxies.

The key to the scope's success involves an advanced glass coating on the lenses that keeps light from scattering as it passes through them. Light scattering would create “ghost images” that interfere with observations of diffuse objects.

Each lens is attached to its own digital camera. The astronomers use software to “stack” multiple, nearly identical images to reveal never-before-seen celestial structures.

Dragonfly currently comprises 10 lenses, but the designers aspire to increase this to 40 by the end of 2015, at which point Dragonfly will have a combined aperture slightly bigger than the largest refracting telescope in the world. The inventors say Dragonfly will be 10 times better than any other telescope on the planet at detecting very diffuse objects – at a fraction of the cost.

Abraham makes it clear, though, that Dragonfly isn't about doing more of the same with less: It's about doing something altogether different.

“Dragonfly can explore galaxies whose properties make them undetectable using other telescopes,” he says. “We're in an age of discovery with this thing. Who knows what we're going to find?” – **PATCHEN BARSS**

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BOUNDLESS



MAN ON THE MOVE

New Toronto mayor John Tory aims to get the city back on track

ON HIS SHORT MORNING SUBWAY RIDE to City Hall one bitterly cold day in January, Toronto mayor John Tory found himself chatting with a young woman heading to work. As he often does when approached on such journeys, he asked her about the TTC. The woman told him something about the importance of predictable service that took him aback.

“She said, ‘At our company, you get a fine for every 15 minutes you’re late,’” recounts Tory, who leaves his Bloor Street condo every morning at 6:15. “I said, ‘I’ve been on [corporate] boards, and I’ve never heard of such a thing.’”

He has now.

In his brief tenure as mayor, Tory (BA 1975 Trinity) has listened to all sorts of accounts from people who offer up a polite greeting and a personal story: office cleaners who depend on packed all-night Yonge Street buses to get to job sites by 4:30 a.m., or health-care workers who must navigate several connections en route to University Avenue

hospitals in time for the 6 a.m. shift change. The woman he spoke to that January morning had another commuting pressure on the other end of her day: getting home in time to make it to a night school, where she’s studying to be a nutritionist.

Despite his years as a call-in radio show host, such random encounters seem to have struck a nerve. Tory recalls that at one of his first transition meetings, TTC CEO Andy Byford brought in a map showing where transit service had been reduced or eliminated as a result of recent budget cutbacks. “It’s quite a stunning picture,” says Tory. The lines on Byford’s map, combined with those morning stories, have started to “match up,” he adds. “People tell you about how they get to work, and that the service is so bad.”

That encounter occurred just days after Tory launched his first budget, which featured a \$95-million boost to the TTC, plus a fare hike. Pundits and critics were quick to note that Tory had helped himself to one of the main planks in

Olivia Chow's mayoral campaign (a pledge to restore bus service) while breaking one of his own (a promise to freeze TTC fares), all in one gesture.

The budget launch came in the midst of a frenzy of mayoral activity that began almost from the moment the former Rogers executive took office. In his first hundred days, Tory launched an aggressive effort to ticket vehicles stopped illegally on downtown streets during rush hour; ordered up a series of key studies for his SmartTrack transit plan; and asked former mayor Art Eggleton to lead a rethink of the city's affordable housing policy. He even waded into the middle of a tense fight between the local board of education and the provincial government over proposed school closures.

All the while, the chatty 60-year-old lawyer has set to work rebuilding morale in the civil service and turning down the rhetorical temperature after four years of the Ford brothers' brand of chaotic populism. He releases his schedule to the media, holds frequent press conferences, answers reporters' questions and makes appearances all over Toronto. Even the blinds to his office overlooking Nathan Phillips Square are left wide open, something that rarely happened in the Ford days.

There's little doubt that Tory is seeking to position himself as a socially conscious leader who's careful with the taxpayer's dollar. With the tell-tale impatience of someone steeped in the ways of the private sector, Tory wants to unclog the municipal machinery and fast-track agreements with other levels of government to bring investment, jobs and more opportunity to low-income communities.

It's an ambitious program, and Tory admits he's still trying to determine how to tackle tough issues, such as high levels of youth unemployment. "He resisted the idea of a 'hundred days' agenda," observes John Duffy (BA 1986 Trinity), a long-time Liberal insider who advised Tory on the campaign. The mayor, Duffy says, wanted to figure out council and the tasks ahead of it. "He's a rookie, and he knows it."

Tory may be a neophyte in the municipal arena, but he's hardly a newbie when it comes to politics. One of four siblings, he grew up in a family intimately tied to the Canadian establishment. His great-grandfather helped found Sun Life; his grandfather started the law firm now known as Torys LLP, which his father, John Sr. (who died of a stroke in 2011), and his uncle James later joined. Among their most prominent clients: the late Ken Thomson, who sought their advice as he built his newspaper chain into a global conglomerate.

After graduating from the University of Toronto Schools, Tory studied politics and history at U of T in the early 1970s, soaking up the animated lectures and discussions in small classes offered by such legendary profs as Ken McNaught and Robert Bothwell. In his spare time, Tory hung out in the Buttery at Trinity College playing cards or working at the Top 40 AM station CFTR, where he eventually became a radio reporter. Despite dabbling in journalism, he always had his sights on law and politics.

As a young lawyer, Tory served as principal secretary to former Ontario premier Bill Davis, and later volunteered for Brian Mulroney and Kim Campbell. After the federal Progressive Conservatives' historic drubbing at the polls in 1993, Tory returned to the private sector, first as CEO of Rogers Media, and then president and CEO of Rogers Cable. Off the clock, he put his name and extensive contact list behind fundraising campaigns for organizations such as St. Michael's Hospital, the United Way and the Salvation Army.

In the early 2000s, he returned to politics, finishing second to David Miller in Toronto's 2003 mayoral race. Tory followed that campaign with a successful bid for the leadership of the Ontario PCs, but lost the provincial election in 2007, largely because of a pledge to offer funding to religious schools. He retreated from politics, but kept his name in the public eye with a radio show on CFRB.



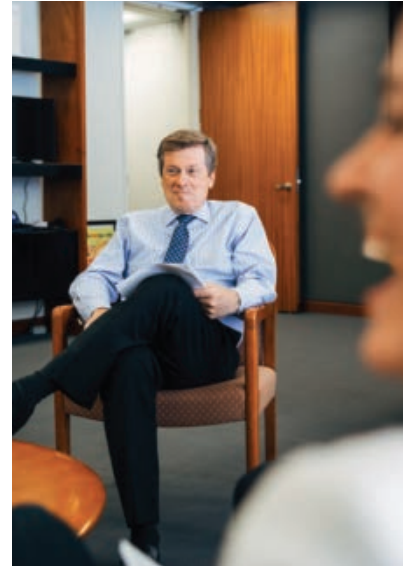
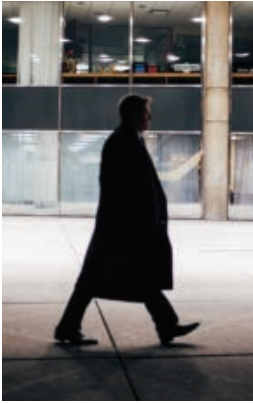
On a Tuesday morning in January, Tory, city manager Joe Pennachetti and budget chair Gary Crawford take their places at a lectern in a City Hall lounge and launch the 2015 budget process, an annual ritual of jockeying and handwringing that typically produces a spending plan by March.

As the budget press conference begins, Tory offers up some sound bites about the proposal and then talks up his transit investment, including a plan to allow children under 12 to ride for free – "we are doing something to help those who need the help most," he says. For transit, the budget also includes a \$75-million payment to Metrolinx to compensate for the cancellation of the Scarborough LRT in favour of a \$3.4-billion Scarborough subway, as well as \$2.4 million for studies on SmartTrack, an electric rail service that will run on existing Go Transit tracks from Markham to Union Station and then back up toward Pearson International Airport.

Tory claimed during the mayoral race he'd pay for SmartTrack's \$8-billion price tag using federal and provincial grants, as well as "tax increment financing" (TIF), a revenue tool that allows municipalities to borrow against future tax assessment growth by investing in infrastructure meant to boost property values.

Tory persuaded his executive committee and council to spend \$340,000 to retain U of T's Transportation Research Institute, headed up by Eric Miller, a professor of civil engineering, to conduct a detailed analysis of the SmartTrack proposal and how to integrate it with the rest of the region's transit network. "For years, I've been arguing that the city needs a comprehensive transportation planning study," says Miller, who came out in support of SmartTrack during the campaign. "We have a chance over the next six months to do a bit of that."

Going back to the mid-1980s, Miller's research group has been conducting transportation surveys in Greater Toronto. The province and regional transit agencies draw on the



Almost from the moment the election results were announced, John Tory has given every appearance of a guy in a hurry. Besides the endless cycle of public appearances and press availabilities and council sessions, he's set in motion numerous studies, task forces and reviews.

results, compiled every five years, to plan service levels, but Miller also uses the findings to project rider use of proposed transit lines. "I think SmartTrack will be a good addition to the network," he says. But, he adds that he's not jumping to conclusions. "We have to find that out. We need to seriously test SmartTrack – and test it against other ideas."

Those other ideas, Miller says, will likely include various routes of the proposed Relief Line, a subway plan meant to relieve pressure on the Yonge-Bloor interchange, and a possible eastward extension of the Sheppard subway.

Quite apart from Miller's analysis, Tory says he's interested in finding ways for the city to work more closely with its four universities. Earlier in the winter, he met over dinner with the presidents of York, Ryerson and OCAD universities and U of T's Meric Gertler to talk about issues such as student housing, as well as ways to link research to policy-making and economic development. "We talked a lot about the notion of putting the resources of the university to work for the

city – both in terms of advice, but also in terms of jobs and economic development," says Tory, who feels the city should regard the universities' students, teachers and researchers as a resource – "partners in innovating." He mentions how Rotman MBA students have developed case studies on topics such as improving the condition of Toronto Community Housing's apartment stock. "We never see the output of that," he muses. "There are probably 25 good ideas coming out of the minds of 25-year-old students who are bright and imaginative and thinking differently than the way we think. But are we smart enough to call down and say, 'could you send us their answers?'"

Even though the expert evaluations of Tory's transit plan won't be completed before fall, the mayor is already hearing plenty of feedback about both the route and the eventual cost of both SmartTrack and the Scarborough subway. Susannah Bunce, a professor in the City Studies program at UTSC, says neither the three-stop subway nor SmartTrack will help

the low-income communities in east Scarborough she works with. “I have been disappointed with the conversation about Scarborough transit and the focus on west and central Scarborough,” she notes, adding that dedicated bus lanes and additional stops would do more to help commuters in those areas. “Transit access is a really big issue.”

The financial picture is also fuzzy. Tory said during the election that he’d ask Ottawa to contribute a third of SmartTrack’s cost – about \$2.7 billion, a figure that exceeds the total amount of federal infrastructure funding currently allocated to all of Ontario. As for the TIF contributions, Tory’s campaign estimated that the money could be generated by new development along the corridor. Enid Slack, director of U of T’s Institute on Municipal Finance and Governance, points out that TIF has been used successfully in American cities aiming to revitalize derelict areas, but not with a transit project on the scale of SmartTrack. “We have to be careful about what development occurs along those lines,” she observes. “If we overestimate, we’ll be in trouble if the development doesn’t occur.” She adds that the city “has to look for other revenue sources and not rely on just one.”

As Toronto’s new mayor strides briskly to a mid-morning meeting with some economic development boosters high atop an office tower on Bay Street, he abruptly veers off the sidewalk and darts into the sluggish traffic downtown.

“You can cross wherever you want,” Tory half shouts over his shoulder, in the direction of a small retinue of handlers. “People have this misguided notion that you actually have to go to the intersection. That’s the safest way to do it. But it’s not against the law unless you’re impeding traffic.”

Almost from the moment the election results were announced, Tory has given every appearance of a guy in a hurry. Besides the endless cycle of public appearances and press availabilities and council sessions, he’s set in motion numerous studies, task forces and reviews. He attends monthly meetings of a high-level committee of city officials assigned to co-ordinate construction and unclog the roads, as well as strategy sessions with other mayors from both the region and across Canada.

And unlike his predecessor, he spends hours – often early in the morning, before the day’s agenda gets ugly – poring over the mind-numbingly detailed reports and budget documents that stream out of City Hall. It’s not just about learning the issues. Drawing on his stint as a Rogers executive, Tory has elected to be a highly visible manager, and he’s taken to cold-calling the staff members whose names appear at the bottom of reports, peppering them with queries.

Such overtures are partially to sate his curiosity about the inner workings of the byzantine bureaucracy he now oversees, and they’re also meant to signal to city staff that the chief magistrate is on the job again. Tory well knows that the recipients will tell their colleagues about such calls. His objective is to use praise and engagement as leverage to get things moving after a period when Ford routinely disparaged the civil service as self-interested, reckless and bloated.

Tory says that by the time he stands for re-election, he will want to show voters that there’s been employment growth and investment throughout the city, including its economically sluggish areas – and especially the more remote regions of Etobicoke, North York and Scarborough. As for Toronto’s stubbornly high youth unemployment rates, another major talking point for Tory during the campaign, the mayor says

MEET MISSISSAUGA’S NEW MAYOR

Bonnie Crombie calls U of T Mississauga a “nucleus for ideas, innovation and excellence”



Mississauga politics, dominated for decades by Hazel McCallion, is not a sport for amateurs or pushovers. So it’s not surprising that Bonnie Crombie (BA 1982 St. Michael’s) emerged as McCallion’s successor after a political trial by fire that included a short, tumultuous stint in the federal Liberal caucus, cyberstalking by a self-styled Mississauga watchdog and even a local fight over a crematorium development.

Crombie, who studied political science, economics and international relations, says her undergraduate experience sparked her interest in public policy and administration. “U of T encouraged me to become more involved in the political process.” A long-time Liberal and former government relations executive, Crombie entered federal politics in 2008, running for the federal Liberals in the riding of Mississauga Streetsville. Crombie jumped to municipal

politics after losing the seat during the Conservatives’ 2011 sweep, urged by McCallion to run in a council by-election. Facing a high-profile challenger – outspoken McCallion critic Carolyn Parrish (BA 1969 St. Michael’s, BEd 1970) – Crombie squeaked into office, besting her rival by 241 votes in a crowded field. During McCallion’s final term, Crombie’s name surfaced regularly as a potential successor.

Noting that U of T Mississauga injects \$1.3 billion annually into the Peel Region economy, Crombie says she sees the campus as “a nucleus for ideas, innovation and excellence” and points to her record of supporting the city’s \$10-million investment in UTM’s Innovation Complex and the I-Cube accelerator. Mississauga’s future economic competitiveness and success,” she says, “mean supporting the research, students, faculty and goals of UTM.” – JOHN LORINC





U OF T'S

Illustration by Isabel Foo

WORLDWIDE

WEB

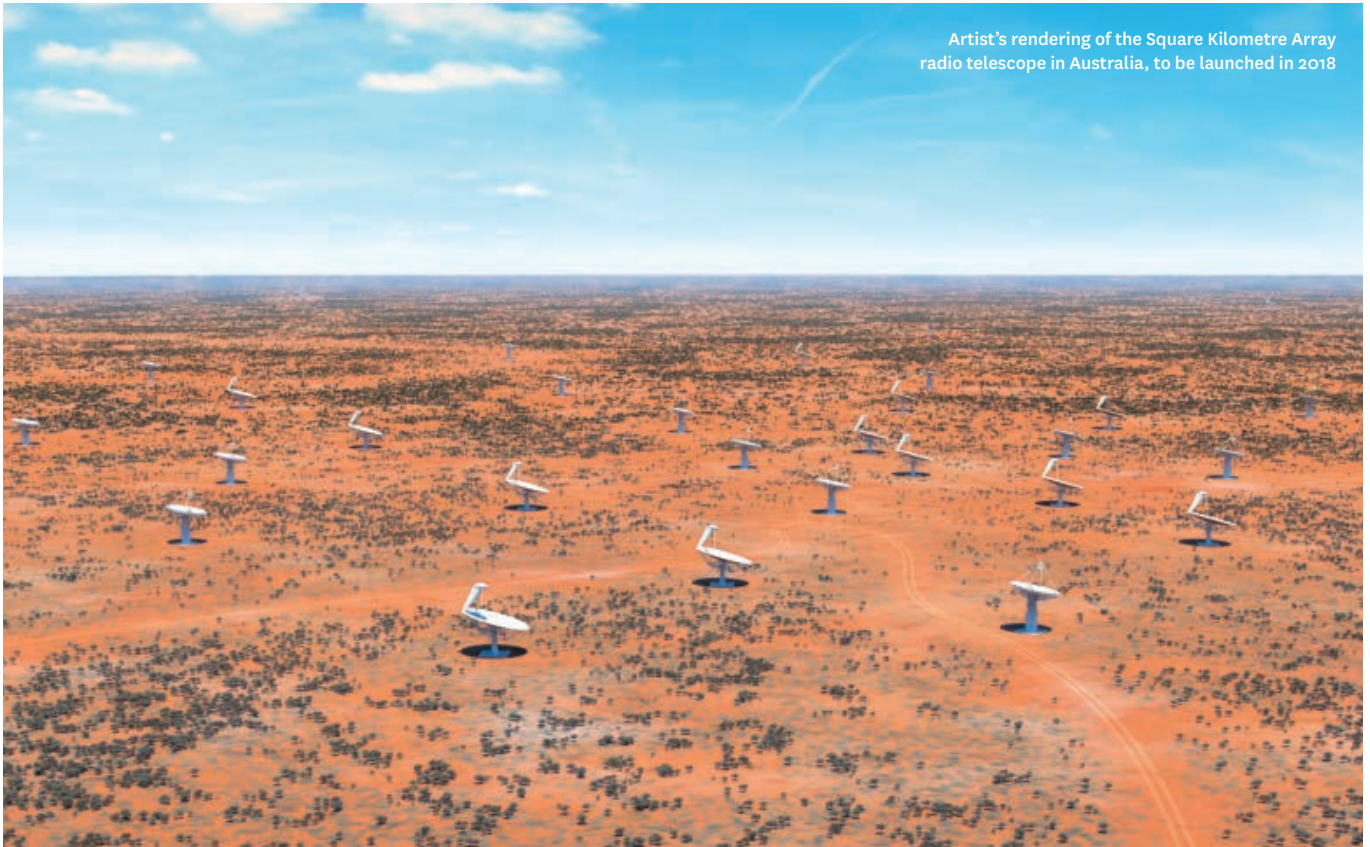
The university's scholars are collaborating with partners in every region of the globe to answer questions that challenge us all

SCHOLARS TODAY DON'T WORK ALONE. Every year, U of T faculty and students fan out across the globe to investigate new ideas and challenge existing ones, working with colleagues in more than a hundred countries, from Boston to Tokyo, São Paulo to Mumbai. And every year, the university welcomes students and faculty from around the world at each of its three campuses.

While it's impossible to capture the scope of U of T's international collaborations in a few pages, the eight stories that

follow hint at their flavour. They show how U of T scholars, selected from every campus and a variety of faculties, are using their creativity and expertise to assess the impact of a warming Arctic, for example, or help build the world's largest radio telescope or improve mental health among young people in low-income countries.

There are more than 8,000 of these projects happening at the University of Toronto right now. Together, their impact is truly boundless.



Artist's rendering of the Square Kilometre Array radio telescope in Australia, to be launched in 2018

THE ORIGINS OF LIFE

LISTENING FOR E.T.

A massive new telescope could yield insight into how life forms and whether it exists elsewhere in the universe

When you're building a telescope, size matters – and an ambitious new radio astronomy project known as the Square Kilometre Array is *all about* size. The vast multinational project, now under construction on two continents, is due to begin scanning the sky in 2018.

The array will consist of thousands of individual antennas, located in southern Africa and western Australia. When used in unison, the antennas will simulate a giant telescope with a collecting area of one square kilometre – offering 50 times the sensitivity of any previous radio instrument.

Bryan Gaensler, director of the Dunlap Institute for Astronomy and

Astrophysics at U of T, is part of an international team that will use the Square Kilometre Array to study the origins of magnetism in the universe – at this stage, a complete mystery. Understanding the workings of magnetism on a cosmic scale will help us understand other crucial questions in cosmology and astrophysics, Gaensler says, from star formation to the creation of the complex organic molecules required for life.

The telescope array is also poised to shed light on dark matter and dark energy, to probe the universe's large-scale structure, and to test Einstein's theory of gravity near black holes. It could spot planetary systems around other stars, and detect the chemical signatures of life beyond earth. And if ET happens to phone home – or happens to phone anyone in our direction, using radio waves – it could potentially spot that, too.

Eleven countries are participating in the billion-dollar project. Canada is taking part through the National Research

Council in partnership with a half-dozen universities, including U of T – a key partner whose researchers are already working on prototype telescopes that will demonstrate technology vital to the array.

“Right from the beginning, it was realized that it had to be an international project,” says Gaensler, who is also the chair of the array's Canadian Advisory Council. “There's been this wonderful spirit of co-operation and collaboration from around the world.”

Once it's running, the array is going to generate enormous amounts of data, spewing out more zeroes and ones each second than the entire Internet generates today. There's no way to store that much data, so scientists – including Gaensler – will be developing artificial intelligence algorithms that can process the numbers in real time – throwing away most of the data, and just keeping the “interesting” bits. “The computational problem is insane,” he says.

– DAN FALK

RESILIENT SOCIETIES

CARING FOR CHINA'S ELDERLY

Twenty years ago, social work was a foreign concept in China. Not any more, thanks to one U of T prof

When Prof. Ka Tat Tsang first brought the idea of social work to China almost 20 years ago, it was a tough sell. The Cultural Revolution had occurred only a few decades earlier and the economic reforms of the 1980s were only just taking off. Social work was literally a foreign concept. Today, however, there is an established infrastructure of texts, teachers and institutions – thanks in part to U of T.

“We have definitely made a significant contribution to the creation of the first generation of Chinese social work scholars and educators,” says Tsang, a professor in the Factor-Inwentash Faculty of Social Work and director of the China Project, a two-pronged effort aimed at both communities in China and Chinese communities in Canada.

As a result of China's one-child policy, introduced in 1979, there are a lot of older people who now depend on relatively few working adults for support – and many young people caring for aging parents. “They need effective strategies to deal with their elderly service,” says Tsang. The one-child policy has also made it tougher for many Chinese to form long-term relationships, as there are fewer young people in the

“dating pool.” One of U of T's social work graduates now runs workshops in Shanghai about how to meet and date people.

Tsang visits China at least twice a year and works with leading institutions, including the universities of Peking and Tsinghua in Beijing. Increasingly, he also works closely with front-line service providers such as NGOs and health-care systems. Recently he visited an orphanage in the Muslim autonomous region of Ningxia, where he emphasized the importance in children's development of acquiring skills and life strategies. In 2008, he organized a team of mental health professionals to help victims of the massive earthquake in Sichuan Province. He's also worked – through the Canadian consulate – with labour activists in south China, to help with training, leadership and community development.

Much of Tsang's effort involves disseminating the principles of his own system of therapeutic change. Called Strategies & Skills Learning & Development, it emphasizes people's ability to change through skills acquisition, and it has been used to meet a variety of social challenges, from urbanization to aging, in both China and Canada. Tsang notes that the Chinese population in Canada is better served than other immigrant communities, but not as well as the mainstream. Together with other academics, he's now looking at the experience of mainland Chinese immigrants to Canada. – **BRENT LEDGER**



As a result of China's one-child policy, many young people are caring for aging parents

BRINGING LEADING MINDS TOGETHER



Collaborations with other top global schools are good for U of T's students and faculty – and for Canada

Thousands of U of T faculty members conduct research with colleagues around the world. But the university itself also teams up with leading international institutions. These partnerships give U of T students and faculty opportunities to engage with some of the world's top scholars; they help attract the best faculty and students from around the world to U of T; and they enhance Canada's ability to find solutions to global challenges. U of T has long-standing partnerships with universities in the U.S. and Europe, but has been developing new relationships in rapidly growing regions such as Asia and South America.

FAMILY MEDICINE IN CHINA

U of T's Faculty of Medicine and Chinese universities exchange faculty, conduct research and foster Chinese student placements at U of T. For example, U of T's department of family and community medicine works with Fudan University to improve physician training. And U of T's Centre for Integrative Medicine collaborates with two universities in Hong Kong to integrate traditional Chinese medicine with conventional medical care.

SUSTAINABILITY IN INDIA

U of T is one of the three Canadian institutions (along with UBC and the University of Alberta) that are part of an India-Canada research collaboration called IC-IMPACTS, which aims to find solutions to challenges that affect the lives of both Canadians and Indians, such as water safety, disease prevention and treatment, and safe and sustainable civil infrastructure. Projects include “green concrete” technology and the development and evaluation of new technologies in water and health.

JOINT CONFERENCES IN SÃO PAULO

U of T and the University of São Paulo have agreed to hold joint conferences, the first four of which have taken place, on the subjects of neuroscience, oncology, international politics (through the Munk School of Global Affairs) and global cities, which President Meric Gertler attended in São Paulo last fall.

ENGINEERING EXCHANGES WITH CHINA

Engineering partnerships with China focus on graduate student education and student mobility. For example, one program enables Peking University undergraduates to spend a semester at U of T and U of T undergrads and faculty to participate in a four-week summer program at Peking University.

And in mechanical and industrial engineering, students at U of T and three Chinese universities visit each other's campuses and collaborate on design projects provided by GM, Bombardier and Siemens.



Director Kivu Ruhorahoza's film *Grey Matter* offers up a powerful portrait of the Rwandan genocide

CROSS-CULTURAL UNDERSTANDING

LIGHTS, CAMERA, AFRICA!

Julie MacArthur screens African films in Canada as a way of fostering a conversation about the challenges facing the continent

African countries release thousands of feature-length films a year. Nigeria alone has the second-largest film industry in the world, after India and ahead of the United States.

But almost none of these films ever get shown in North America, and that's a shame, says Julie MacArthur, a history professor at U of T Mississauga. She notes that younger African filmmakers are creating personal, visually daring and intellectually engaged films that cast new light on topics such as identity and belonging, gender rights, sexuality, violence and social justice.

"So many of the images and narratives we receive about Africa come from a Western gaze, and they often reflect a very particular, and limited, viewpoint," says MacArthur. "African filmmakers

not only offer a different perspective, but provide a lens into the richly diverse experiences and stories from across the continent."

In her academic work, MacArthur examines film as a principal means by which Africans compose, edit and consolidate their histories, and engage with contemporary issues and challenges facing the African continent. Recently awarded a federal research grant for a project focusing on what she calls the "new wave" of young African filmmakers, MacArthur is using the film medium to foster dialogue across cultures and regional boundaries. Through screenings, festivals, workshops, conferences and publications, she is exposing academic and mainstream Canadian audiences to African cinema and bringing young African directors to Canada to discuss issues raised in their films.

Grey Matter, for example, directed by Kivu Ruhorahoza, provides a powerful and poetic portrait of the Rwandan genocide without ever addressing the atrocity by name. *Grey Matter*, released in 2011, was the first feature film made

by a Rwandan living in Rwanda. In a departure from other films depicting the genocide, Ruhorahoza wanted to portray the massacre and its aftermath in philosophical, psychological and personal dimensions, emphasizing the interior lives and shared traumas of those affected on all sides.

It is "a story of individuals and not heroism," Ruhorahoza says of his film. "I did not want to make a war film... I wanted to focus on individuals to tell a story that is really big."

MacArthur first became involved in promoting African films as a graduate student in England. Since then, she has run film festivals and curated special exhibits across East Africa, Europe and in Canada, where she has programmed African short films for the Toronto International Film Festival. "Exposing global audiences to this new wave of filmmaking challenges how African cinema, and indeed Africa itself, is conceived," says MacArthur. "It opens up new possibilities for public and academic engagement with the pressing social, political and historical questions facing the continent." - ALICE TAYLOR

OPEN SOCIETIES

A DIGITAL PUBLIC SQUARE

The Munk School of Global Affairs aims to give citizens of even the most repressive regimes the online tools they need to hold their governments to account

During the Arab Spring in 2011, social media use in some countries soared as citizens turned to Twitter and YouTube to spread news of protests. But governments also attempted to block Internet use, and in Egypt, for a time, the web was almost entirely inaccessible.

The Munk School of Global Affairs wants to ensure that people in the region and beyond can continue to share information about their governments online, and is expanding its successful program of “digital democracy” launched two years ago in Iran to other parts of the Middle East.

Shortly after Canada severed formal diplomatic relations with Tehran in September 2012, the Munk School reached out to Iranians directly. It developed and deployed powerful technology to help people get around government-instituted firewalls. It also built online tools to help citizens monitor their government’s performance. One such tool, the Rouhani Meter, compares the current president’s promises to his actions. The site is available in both English and Farsi and relies on visitors to submit evidence to

show whether a promise has been kept.

In a country where the government routinely censors social media and, according to some reports, up to half of the 500 most popular sites on the web, the experiment had great appeal. All told, the Munk School’s various tools and platforms have attracted 4.5 million unique users.

Now armed with a \$9-million grant from the federal government, the Munk School is using the lessons learned in Iran to create Digital Public Squares in other parts of the Middle East, notably northern Iraq and eastern Syria. The goal, says Janice Stein, project director, is to give people the tools they need to hold their own governments to account.

In Iran, this has meant providing access to information and forums for dialogue and dissent. It’s similar to the BBC Overseas Service during the Second World War when people tuned in at great risk – except that the current platforms are far more interactive. “People contribute knowledge, data, evidence, opinions,” says Stein, the Munk School’s former director. “We simply enable that conversation to take place.”

“The challenge,” she says, “is to find exactly the right tools that people will respond to and feel comfortable with.” Each country is different, and the Munk School will be working with academics, NGOs, civil society leaders and ordinary people to create systems appropriate to each local culture. The school wants to reach as many people as possible.

“The greater the engagement, the more we know we’re asking appropriate questions,” says Stein.

For people in the target countries, online participation is not without its risks. In Iran, for example, bloggers and even Facebook page administrators have been arrested. But the Munk School wants to ensure the benefits to users outweigh the risks. It has promised to destroy the IP addresses of all participants and hopes to teach people the best ways to increase anonymity and security online.

Not only is free speech inherently valuable, says Stein, it has tangible benefits. Whether it’s public health or economic growth, she says, “Open societies do better on every measure of welfare.”

– BRENT LEDGER



SOUTH AND CENTRAL AMERICA

GLOBAL HEALTH

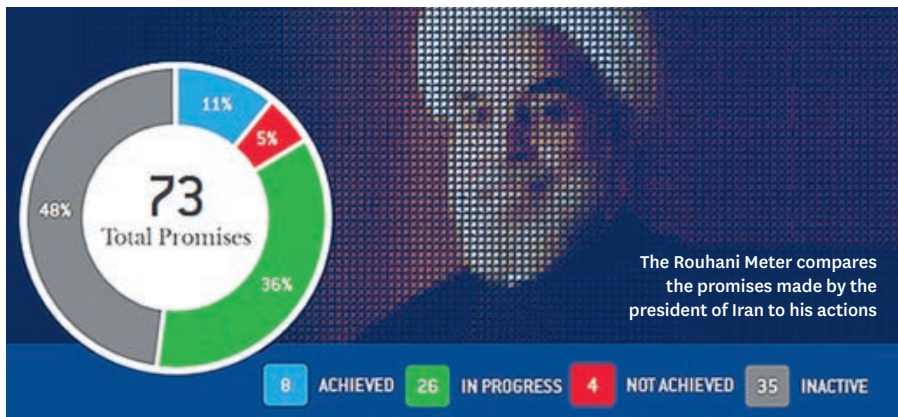
A DEPRESSED STATE

A U of T prof is helping Nicaragua address high rates of suicide and psychiatric illness by taking mental health information directly to youth

When young people experience anxiety, depression or suicidal thoughts, they often aren’t sure where to go for help. Many don’t even ask. So Arun Ravindran, a professor in U of T’s psychiatry department, came up with a novel but straightforward idea: take information about mental health to them by embedding it into the high school curriculum.

Ravindran is testing the approach right now in a research project with colleagues from the National Autonomous University in Nicaragua – the country with Central America’s highest suicide rates.

“We wanted to see whether we can improve the wellness of high school and university students through prevention,”





says Dr. Ravindran, who is also a senior scientist at Toronto's Centre for Addiction and Mental Health.

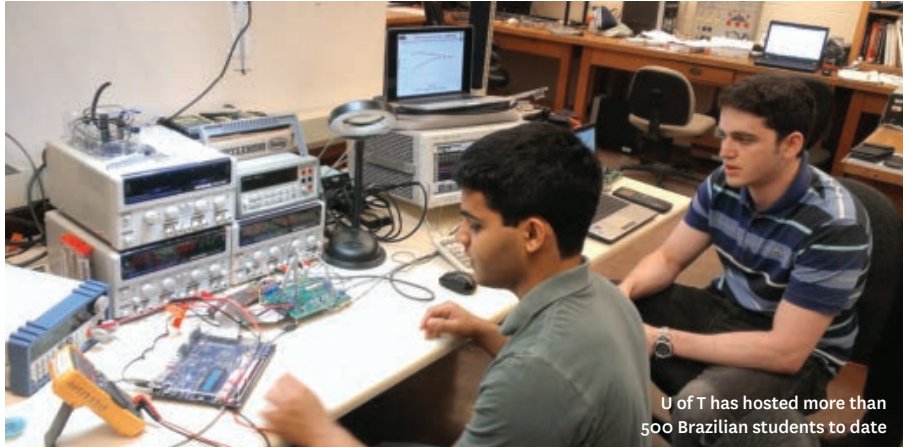
Most cases of depression or anxiety begin in the late teenage or early adult years. To reach this group, Dr. Ravindran and his research team first translated relevant materials and adapted them for the local culture. Then they trained teachers in Leon, Nicaragua, on how to use the materials to inform students about mental health, mental illness and stigma, and how to improve wellness through lifestyle. The researchers supplemented these in-class sessions with an online platform, designed to appeal to youth. Teachers were also trained to identify students with mental health needs and refer them to local clinicians.

One of the poorest nations in the Western Hemisphere, Nicaragua's recent history includes a complex mix of street violence, civil war and natural disasters. The country shows elevated rates of post-traumatic stress disorder, substance abuse and family turmoil, with youth aged 15 to 24 the most likely age group to suffer from psychiatric illness and addictions.

Dr. Ravindran says the program's results – measured through student focus groups and questionnaires completed both by students who took part and those who did not – have been encouraging. Program participants show improved understanding of mental health, visits to clinics have increased, and students and teachers are both enthusiastic. Administrators now want to expand the program to other parts of Nicaragua.

"Using the schools to reach students before they require treatment is not only better for their well-being, but it's also cost-effective," says Dr. Ravindran. "Our hope is to expand the program to countries in the region with similar problems, such as El Salvador and Guatemala." He adds that the program could also be adapted for use in Canada, where mental health is generally not part of the high school curriculum.

– CLAIRE MORRIS



STUDENT EXPERIENCE

WELCOMING BRAZIL'S BEST AND BRIGHTEST

In hosting dozens of Brazilian science students each year, U of T is building academic ties with a country that has huge potential for growth

Luis Eduardo Abratti always wanted an opportunity to study abroad. But for the life sciences student from southern Brazil, cost was prohibitive. "Unfortunately my parents were unable to afford this kind of investment," he says.

That changed in 2011 when the Brazilian government launched *Ciência sem Fronteiras* (Science Without Borders), a program to send more than 100,000 Brazilian students overseas to study science, technology, engineering and mathematics.

U of T has received the lion's share of Canadian placements, hosting more than 500 students to date. For Abratti, the program provided an opportunity to take advanced genetics courses and work in a cell and systems biology lab far more sophisticated than any he'd seen. "The laboratories at U of T are simply mind-blowing," he says.

When he returns to Brazil, Abratti will be able to work with researchers there to develop similar state-of-the-art facilities. "There are benefits beyond

international exposure and experience," says Miranda Cheng, director of U of T's Office for International Experience. "Students can share their knowledge and prepare for leadership roles."

U of T also stands to gain from nurturing its relationship with a country whose academic workforce has grown significantly in recent years. U of T researchers from medicine, nursing, engineering and forestry have organized joint conferences and co-authored papers with their Brazilian counterparts, resulting in innovative research and discovery for both countries.

Science Without Borders adds another dimension to this mutually beneficial relationship.

Engineering student Mateus Lemes de Aguiar, for example, spent part of the program prototyping a bricklaying robot designed to improve the efficiency of masonry construction and to decrease the risk of accidents. De Aguiar worked under the supervision of Prof. Kamran Behdinan, of mechanical and industrial engineering, to develop the technology.

Upon returning to Brazil, many of the students introduce their home professors to the pros they met at U of T for potential future collaborations. They also spread the word about Canada and U of T as a destination for Brazil's brightest students. As Cheng says, "In a short time, U of T has developed a large pool of ambassadors who will help deepen our connections to Brazil."

– ANJALI BAICHWAL

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Arctic temperatures could rise by between two and eight degrees by the end of the century

CLIMATE CHANGE

THE BIG MELT

How will global warming and retreating sea ice affect marine life along Arctic coastlines?

By the end of this century, the average world temperature is expected to increase between one and four degrees, with widespread effects on rainfall, sea levels and animal habitats. But in the Arctic, where the effects of climate change are most intense, the rise in temperature could be twice as much.

Understanding how Arctic warming will affect the people, animals, plant and marine life and economic activity in Canada's North are important to the country's future, says Kent Moore, an atmospheric physicist at U of T Mississauga who is participating in a long-term, international study of the marine ecosystem along the Beaufort Sea, from Alaska to the Mackenzie delta.

The study will add to our knowledge of everything from the extent of sea ice in the region to how fish stocks will

change to which areas could become targets for oil and gas exploration to the impact on the indigenous people who call this part of the country home.

Moore, who has worked in the Arctic for more than 20 years, says his research has already found that thinning sea ice and changes in wind patterns are causing an important change in the marine food chain: phytoplankton is blooming two to three weeks earlier. Many animals time their annual migration to the Arctic for when food is plentiful, and have not adapted to the earlier bloom. "Animals' behaviour can evolve over a long time, but these climate changes are happening in the space of a decade rather than hundreds of years," says Moore. "Animals can't change their behaviour that quickly."

The data Moore is gathering will also help fill in gaps in our current climate models. When sea ice is smooth, for example (as thinner ice often is), wind speed tends to be faster, but the exact relationship between the two is poorly understood. The models also don't properly take into account differences

over a small area. Patches of open water within sea ice can have a significant impact on the local climate, says Moore. "Until we get all these things right, we won't get an accurate read on how the climate is changing."

A warmer Arctic is expected to have important effects on human activity in the region, as the Northwest Passage becomes navigable during the summer, and resource extraction becomes more feasible. Information gained from the study will help government, industry and communities make decisions about resource management, economic development and environmental protection.

Moore says the study – which involves Canadian, American and European researchers and government agencies – will also use a novel technology to gather atmospheric data: remotely piloted drones. "The drones have the capability of a large research aircraft, and they're easier to deploy," he says, allowing the researchers to gather information on a more regular basis than they would be able to with piloted aircraft. - **SCOTT ANDERSON**

CITY BUILDING

URBAN EATING

By looking to places such as India and Singapore, Toronto could create a much more vibrant culture and economy around food

For many people around the world, food plays a central role in culture. What we eat and how we prepare it helps define who we are. For many, it's also a means to earn a living. In Canada, new immigrants often open – or work in – restaurants that serve food from their homeland.

In 2012, several UTSC faculty members, with academic partners in New York, Singapore, Delhi, Hong Kong and Sydney, launched an international collaboration called “City Food: Lessons from People on the Move,” with the goal of examining the cultural, economic and nutritional significance of

food in cities. They hope to apply insights from the project locally in Toronto.

“Food is an economic and cultural driver of communities, especially in diverse ones such as Toronto, and in the diverse neighbourhoods near UTSC,” says history professor Daniel Bender, a participant in City Food. Drawing directly on the insights of this project, Bender and several UTSC colleagues have created courses in which students conduct food-related research in Scarborough neighbourhoods. The faculty members have also formed a hub at UTSC for food studies called the Culinaria Research Centre.

The group has a particular interest in street vending and is hoping to draw on the experiences of City Food’s partner cities to gain more insight into the debate over food trucks in Toronto. The conversation in Toronto has devolved to being about “quirky meals for down-

town hipsters,” says Bender, when it should be a broader discussion about culture, entrepreneurship and how food is regulated in the city. “The crucial conversation around food trucks in Toronto is one that finds a way for ordinary people to start new businesses with very little capital,” he says.

Street food, a form of low-capital entrepreneurship, plays a crucial role in local economies worldwide. In Toronto, embracing street food in this way could provide both economic benefits and a deeper understanding of Toronto’s myriad diverse cultures. “By thinking of street food in new ways and understanding how it is integrated in other parts of the world,” says Bender, “we can turn the process of eating into a very powerful way to build cross-cultural relationships while encouraging entrepreneurship opportunities within our diverse community.”

- ANJALI BAICHWAL



Street food in Toronto could be so much more diverse



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May 27 – 31

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12:30 p.m.

- The Architecture of Healthy Choices — Dilip Soman
- The Rise and... (Gulp!)... Further Rise of Depression as a Diagnosis — Edward Shorter

1:45 p.m.

- Innovation in Children's Health: Improving the Nutritional Health of Children Globally — Stanley Zlotkin
- Forbidden Fruit: A Brief History of Literary Censorship — P.J. Carefoote

3:00 p.m.

- An Educator's Journey: Navigating the Spaces In-Between for Work-Life Balance — Ann Lopez

SATURDAY, MAY 30

9:45 a.m.

- Symbols of Reality — Jordan Peterson
- Rethinking Retirement — Lynn McDonald

2:45 p.m.

- Engineering Today with Speakers from the Faculty of Applied Science and Engineering
- Science at the South Pole — Keith Vanderlinde
- Making it by Faking it: The World of the Art Forger — Doug Purdon

Please note that the lecture schedule is subject to change and additions. Visit springreunion.utoronto.ca for up-to-date information.

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FRIDAY, MAY 29

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SATURDAY, MAY 30

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11 a.m. – 12:30 p.m.

U of T Alumni Celebration
Convocation Hall
31 King's College Circle

Featuring:
Presentation of UTAA's Alumni Award for Community Engagement

Keynote address by Dashan
a.k.a. Mark Rowswell
(BA 1988 University College)

UTAA AGM (brief business meeting)

See ad on the next page for details.

12:30 – 2:30 p.m.

Alumni BBQ
Tent, Front Campus

STEP 5

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Hosted by the University of Toronto Alumni Association (UTAA)

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A.K.A. MARK ROWSWELL**

BA 1988 University College

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- Recognized in 1999 as one of the 100 Alumni Who Shaped the Century by *U of T Magazine* and one of the Leaders for the 21st Century by *TIME* magazine

Find out more at www.dashan.com

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 Dashan a.k.a. Mark Rowswell
- UTAA AGM (brief business meeting)

ALUMNI BBQ

Immediately following the Alumni Celebration

12:30 – 2:30 p.m. on the front campus

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Get more details and RSVP at:

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**Celebration and BBQ are
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All alumni are welcome.



All About Alumni

“If we are trying to change people’s minds, we need to change their hearts”

Film producer Lisa Valencia-Svensson (BA 1990 UC) on her documentary about solitary confinement

p. 47



Shawn Ahmed looks at charity in a new light... and it’s made a huge difference to health workers and schoolkids in Bangladesh

A New Way to Give

Shawn Ahmed’s Uncultured Project reinvents charity for the digital age

ON ONE OF SHAWN AHMED’S first visits to his parents’ homeland of Bangladesh, he gave the shirt off his back to a child in the slums of Dhaka. He was no more than five years old, and it was a sweater that his grandmother had spent months knitting – a detail that’s now part of family lore.

It’s been almost 30 years since that most basic act of charity, and Ahmed (BA 2005 Trinity) is still giving to his ancestral country. His parents fled after a civil war in 1971, immigrating to Canada before he was born. “They raised me to be mindful of how privileged I was to live in Canada instead of on the streets of Bangladesh,” he says.

Every time he went back, he felt an urge both to help the poor and document their lives. “I started with photos. Then, when my parents bought this over-the-shoulder VHS camera that looked like a rocket launcher, I lugged that over and filmed my first videos.”

The advent of social media in the early 2000s gave this self-described “tech geek” an idea about how to put his passion into practice. In 2007, Ahmed dropped out of grad school at the University of Notre Dame, packed his laptop and camcorder, and headed to Bangladesh. He launched the Uncultured Project (uncultured.com), which raises awareness and funds for marginalized Bangladeshi communities using YouTube, Twitter, Instagram and Facebook.

Ahmed’s YouTube video blogs are a central point of connection in the Uncultured Project. The people he films have names, they smile and laugh, and they speak for themselves about the needs in their villages. In one video, ➤



Chance, Trinidad, the setting of Sabrina Ramnanan's novel, is fictional. But there are real-life places in Trinidad called Enterprise, Sans Souci, Felicity, Friendship Village and even Hardbargain

The Happy Novelist

Continuing Studies program leads student to publishing contract



Sabrina Ramnanan

WHEN SABRINA RAMNANAN enrolled in the School of Continuing Studies' Creative Writing Program in 2010, doors started swinging open.

There, Ramnanan (BA 2005 UTSC, BEd 2006), whose parents grew up in Trinidad, began her first novel. It chronicled the comical goings-on in a Trinidadian village after a young woman is caught in the mangrove trees with the village pandit's son. But the story had never made it past her front door. To take her story into the world, Ramnanan needed a mentor.

Into the classroom walked Rabindranath Maharaj, an instructor tailor-made to be her coach. Like Ramnanan, Maharaj writes about Trinidad and lives in Ajax, Ont. "I bump into him at Starbucks," says Ramnanan. "He has taught me lots about character development and how to use dialogue effectively." Maharaj also encouraged her to submit a short story to *Diaspora Dialogues*, which published it in one of its anthologies.

For new writers, the publisher's door can seem nailed shut. But another instructor and mentor, Kathryn Kuitenbrouwer (MA 2013),

and the Creative Writing program head, Lee Gowan, used their contacts to have Lynn Henry, then Doubleday Canada's publishing director, read Ramnanan's half-finished book. Soon Ramnanan was strolling into the boardroom where Henry slid her card across the table and told Ramnanan to send her the completed novel.

Ramnanan can write three or four chapters a day, sometimes laughing out loud as she does. "I know instinctively when I'm writing well because I'm enjoying myself," she says. "I'm so happy when I write. It's what I'm supposed to be doing."

Doubleday will release Ramnanan's novel *Nothing Like Love* in April. - SUSAN PEDWELL

OVERHEARD



Be yourself. That's what touches people: your unique voice, not your insincere imitation of someone else. Find your own voice and be true to it.



Academy Award-winning film composer Mychael Danna (BMus 1986, BEd 1987) at Convocation last June.



➤ a young woman named Fatima travels across rickety bridges and dirt paths to reach a baby girl suspected of having pneumonia. Fatima is one of 100 health volunteers from villages in Bangladesh who received money from the Uncultured Project to cover their travel costs. "Thank you, YouTube!" she says in English, before reverting to Bengali. "In the trips I and others will take with this funding, within a year we will have helped an additional 10,000 children."

The videos went viral in 2008, and the Uncultured Project now has more than 100,000 YouTube followers. "People are more engaged if they're invested in someone's story, and if you give them messages of hope and positivity," he says.

Ahmed chose the word "uncultured" to express the informal, unconventional nature of his venture. It is not a registered charity, and he has never drawn a salary (he has scraped by with the help of family, friends and a nominal

income from YouTube and occasional speaking engagements). He calls it "an unplanned journey to build bridges across cultures, religions and the digital divide." The funds Ahmed helped raise have provided emergency disaster relief and construction, delivered clean water systems, created a post-secondary scholarship program and built schools. One school funded by the project is operated by the Catholic Church on land it donated, but employs a Hindu teacher and serves mostly Hindu students. Ahmed has also provided uniforms for a Buddhist school, created a new school in a Dhaka slum and has another in the works. The Uncultured Project's independence from the conventional aid system has also allowed Ahmed to handpick causes that conventional NGOs might miss or avoid because the initiatives are secular in nature.

"I'm a small fish in a big sea of charities, so I can find the nooks and crannies that they overlook," he says. - MEGAN EASTON



Herman Wallace's wish list for his house included guest rooms for activists, libraries and a giant communal kitchen

Jacob Korenblum, president and CEO of Souktel



an entrepreneurial solution to a social challenge," he says. Korenblum's solution was Souktel, which he co-founded in 2006.

Linking young Palestinians with potential employers – using simple cell phones – was Souktel's first initiative. Most Palestinian youth still don't have computers or access to the Internet. Although many do have mobile phones, smartphone availability varies dramatically, Korenblum says. "And unlike in Canada where every university has a career centre," he adds, "no Palestinian high schools or colleges offer resources to help graduating students." Souktel's platform allows each job seeker to post a mini CV and employers to post ads, all of which is uploaded to a database. For the equivalent of a few pennies per request, users can instantly access listings – by text or audio – that match

their criteria. Korenblum says, "It's a lifeline for youth entering the workforce."

From that start, Souktel has branched out to serve communities in Africa and elsewhere in the Middle East. Its subscribers now include nomadic peoples, rural farmers, refugees confined to camps and families fleeing regional conflicts. It's all-important that the staff is "almost entirely from Palestine and Jordan," Korenblum says. "Because our team is based in a conflict zone, we directly understand the challenges communities face, looking for work or seeking social services." Users need "affordable, on-demand information that can be accessed safely," he says – services that are culturally appropriate and offered in their own language.

While Souktel is "primarily a business," Korenblum says, "knowing that I'm running a venture that's really helping people" is what he's most proud of. "Whatever social challenge you find in the world, you can go out and tackle it in your own way. At the end of the day, you can go home feeling like you've helped make society better." – **JO CALVERT**

Making a Mobile Marketplace

Jacob Korenblum connects people in countries where web access isn't easy

"IT'S BEEN A REALLY INTERESTING ADVENTURE," says Jacob Korenblum (BA 2004 UC) of his evolution from a student of international relations in Toronto to the president and CEO of Souktel, a company based in Palestine that has pioneered using text messages as a substitute for Internet-based communications in low-income communities.

Studying international relations at U of T sparked Korenblum's interest in global affairs. While still a student, he worked on a project in Senegal funded by the Canadian International Development Agency; later he studied Arabic in Morocco. Both planted the seed for Souktel, he says, and a later fellowship in social entrepreneurship at Harvard helped him build the idea. "The fellows are encouraged to develop

One Man's Life in Solitary



Herman Wallace

"If we are trying to change people's minds, we need to change their hearts," says documentary-film producer Lisa Valencia-Svensson (BA 1990 UC), who traces her work on the film *Herman's House* back to the activism of her student years. "We want to hear a good story about someone's struggles. When we care about one person, we care about the issue."

The issue in *Herman's House* is the inhumanity of solitary confinement. The person is Herman Wallace, confined alone for almost 40 years, in a two-by-three metre cell, in a Louisiana prison. The story is his 12-year collaboration with artist Jackie

Sumell, who asked Wallace to describe his dream house, then worked with him to design it.

"It's rare that you never see your subject," says Valencia-Svensson of the film, in which Wallace is only present through his voice. His inaccessibility not only emphasizes his situation, but challenged the filmmakers to find innovative ways to make him visible. His powerful story is all about "imagination and creativity," she says, "and the role they play in responding to injustice." The film's premiere on PBS in 2013 earned it the Emmy for Outstanding Arts & Culture Programming in 2014.

Herman's House is available on DVD. – **JO CALVERT**



37% of food bank clients in Toronto's suburbs are children under 15, compared with 22% in the city core

THE TWO OF US

UC's Fireball Lit This Match

For Farrah Schwartz and Rob Manne, travels together and adventures apart have created the perfect balance



FARRAH (BA 2001 UC): I was in first year, and I noticed this guy around Diabolo's. I found out that he was known as "nice guy Rob" – which sounded good to me. We were introduced at Fireball, the big formal dance at University College. Then, just before reading week, I went to Diabolo's with my sister and she encouraged me to give Rob my number.

Not long after we met, I went off to camp in California, and then he graduated and travelled to Europe. Then he went to Japan for a year to teach English, and later I enrolled in graduate school in New York. This was the before the age of Skype, and we were paying pretty steep long distance charges. But the idea of not being together just didn't make sense.

We got married in October 2003, and we now have two daughters. The summer after we got married, we visited Europe together and I recently read the trip journal as a bedtime story for our older daughter. It's great to have a reminder of how much fun we have together.

ROB (BA 1998 UC): A couple of months after we started dating, I came down with mono and had to move in with my grandparents to recuperate. Our relationship was so new and I wasn't sure what to expect. But Farrah was amazing and she really took care of me. In a relationship, there are good times and bad times, and she really showed me early on that she would be there for me.

We're different, but we complement each other. I'm happy-go-lucky and goofy, and she's super fun but more strong-willed. A lot of our stories involve me getting us into a predicament and then Farrah coming to the rescue. My style of travel used to be to show up with a Lonely Planet guide and scramble. Farrah has us a little better organized now.

We make a conscious effort to spend time together, and we end up joking around about the same things we did when we were kids. Every so often, for milestone occasions, we still go back to Diabolo's. We just sit and have a coffee and just bask in the memories.

Volunteers till the fields at the Good Karma Farm in Caledon East, Ontario



Rooted in Tradition

Last spring, in a field in Caledon East, Ontario, nearly 100 volunteers helped plant vegetables. Most of them were users of the Seva Food Bank, Good Food Brampton or the Knight's Table – to which these peppers, eggplants and tomatoes were ultimately donated. This is Good Karma Farm, part of the non-profit KarmaGrow.

The non-profit's co-founder, Jaskaran Singh Sandhu (BA 2008 New) explains that while the project is an initiative of the World Sikh Organization of Canada, where he was recently hired as director of development, he and his team "have been working very hard to make this a collaborative community project. Even the name Karma is a universally understood term."

Sandhu says that 2014 was intended simply to test KarmaGrow's charitable infrastructure. "We thought that anything we grow is bonus – and we got 3,000 pounds of produce!"

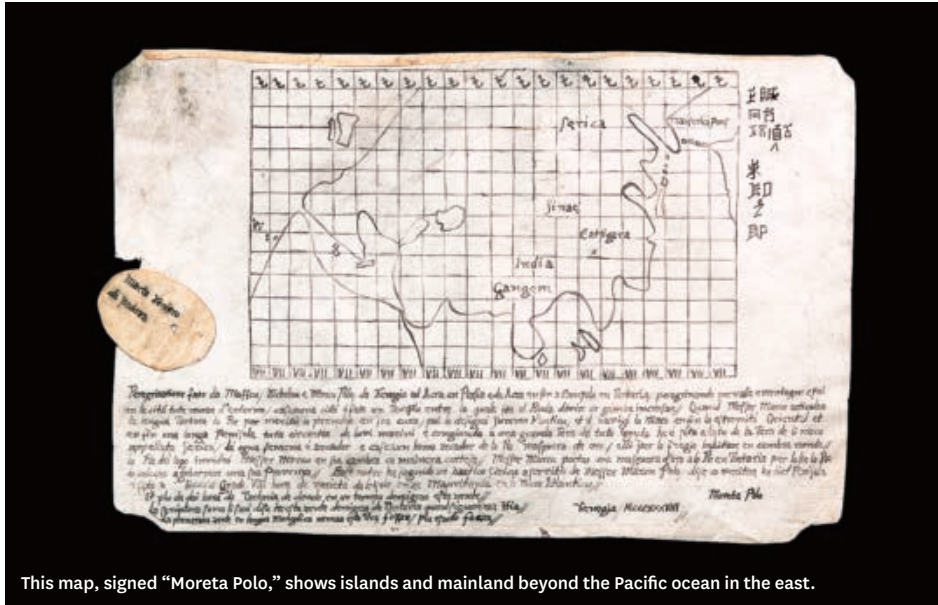
In 2015, they're growing in other ways as well – with new farm projects in Calgary, Edmonton and Surrey, B.C. And since Good Karma Farm wasn't easily accessible by public transit, they're moving into Brampton – onto two acres loaned to them by developers.

Unsurprisingly, given his background of legal and human rights advocacy, Sandhu observes, "Being able to have the basic necessities of life – that's a human right." – **DALE SPROULE**

To learn more, visit karmagrow.org



"I have not told half of what I saw." – Marco Polo, in his *Books of the Marvels of the World*



This map, signed "Moreta Polo," shows islands and mainland beyond the Pacific ocean in the east.

Some years after graduation, I tracked down a set of obscure early maps and texts owned by a private collector. These maps intrigued me because of their background. They had been brought to the U.S. by an Italian immigrant named Marcian F. Rossi, and were now held by one of his descendants. Rossi had traced his lineage in Italy back to an admiral who had known Marco Polo, the Venetian merchant who trekked the length of Asia between 1271 and 1295.

The maps had been discussed in an article from the 1940s, but no detailed study had been done, so I seized the opportunity. Thus began years of investigation and analysis, including the arduous task of

FIRST PERSON

A Journey with Marco Polo

Benjamin Olshin's research suggests an unexpectedly connected 13th-century world

SEVERAL YEARS BEFORE I ARRIVED AT U OF T for graduate school, I had left my hometown in Philadelphia and begun travelling the world: studying development projects in Sri Lanka, taking courses in classical history and archeology in Italy, teaching in England and making art in Portugal.

Boastful of my sojourns, I placed pins on a broad world map marking each new destination that I had "conquered." But I also became intrigued by the idea that this map wouldn't exist if there hadn't been bold explorers who first headed out into the unknown and recorded what they saw.

Alex Jones, a classics professor I met when I arrived at U of T in 1988, must have sensed this curiosity when he told me: "The history of cartography – that's the subject for you." And so, during my studies at U of T's Institute for the History and Philosophy of Science and Technology, I had the opportunity to carry out several years of research on the history of maps and exploration in the medieval period.

Early maps are pictures of lands and seas, but they are also pictures of how earlier civilizations perceived the world. They did so in ways often very different from us, building maps based on exploration but also on myth, hearsay, speculation.

translating obscure bits of Latin, medieval Italian and even Chinese on the documents.

The documents themselves, done in ink on vellum, recount a previously unknown history of the famous Polo. One text speaks of a "land of frost" and "sea lions," and refers to the far reaches of northeast Asia, which is also what some of the maps apparently depict – a region not found in the traditional Polo narrative. This same text also speaks of a "remote peninsula washed by the seas, where the people, because of the extreme cold, live in caves..." Such descriptions, and some renderings on the maps themselves, are suggestive of early knowledge of the western shores of North America, some two centuries before Columbus. The documents also imply a charting of the northern Pacific Ocean and maybe even part of Alaska 500 years before the Russians first sent expeditions there. The quantity of the materials (some 14 maps and texts in all), and the number of connections within and among them, added to the intrigue of the case and the complexity of the investigation.

With the recent publication of my book, *The Mysteries of the Marco Polo Maps* (2014), a much wider audience has the chance to understand the beauty and complexity of these and other maps, and the role that merchants and explorers such as Marco Polo had in expanding our knowledge of distant lands. I like to think that somehow my own travels – which, after graduate school, finally included several years in Asia – are an echo of Polo's curiosity about the world beyond his humble origins.

Benjamin B. Olshin (MA 1990, PhD 1993) is a professor at the University of the Arts in Philadelphia.

60 SECONDS WITH

Zoe Cormier

Join the science party!



Zoe Cormier's love of science was perhaps unexpected, given her artistic family background (she's the granddaughter of the late actor Don Harron). But the former *Varsity* science editor (BSc 2005 Victoria) has used her zoology degree most creatively: as an author, broadcaster, and co-founder of Guerrilla Science, a group that brings the science of "vice" to rock festivals and art galleries. In her book *Sex, Drugs and Rock 'n' Roll* (2015), Cormier explores the workings of our rowdiest pastimes, as she tells **Cynthia Macdonald**.

Sex, drugs and rock 'n' roll are three of the best things known to humankind. But you point out that elsewhere in the animal kingdom, sex isn't very nice. For fish and amphibians, it's pretty boring –

and cat penises have spines that point backwards: the scraping of these spines in the vaginal tract is required to induce ovulation.

Ouch! Pass the painkillers. Speaking of drugs, the story of LSD is a "great trip" down memory lane. LSD wasn't initially developed as a psychedelic drug, but as something to prevent post-partum hemorrhaging. Eventually, though, [inventor] Albert Hofmann thought it could be to psychiatry what the telescope was to astronomy, or the microscope to biology: a tool, for people who were interested in the psyche. At first, he couldn't imagine it as a drug of abuse because he didn't think anyone would take it for fun. However, he did take it himself to age 96; he obviously learned to like it a lot.

So these pursuits aren't restricted to the young? At some point, do we inevitably trade Sex, Drugs and Rock 'n' Roll for Gardening, Baking and Bridge? By no means! People should be able to enjoy music throughout their lives, and sex for as long as possible. And Lord knows, the drugs you get for pain relief when you're older are a blessing.

Some years back, a study came out saying that listening to Mozart would make you smarter – they called it "the Mozart Effect." But as you point out, the hype over that was overblown. Only one study ever found a link between Mozart and cognitive enhancement. But later studies found that listening to [English pop group] Blur produced the same effect. It's not about listening to Blur, Mozart or heavy metal – it's about listening to music that you like.

So should people be far more critical when reading about science? Absolutely! We need a greater degree of scientific literacy in the public at large. Science is just a tool to understand how beautiful the world is. Everyone has some kind of interest in it, and a right to know about it.

Milestones



Charles Sy

Charles Sy (BMus Perf 2013), a tenor, took first prize and **Dimitri Katotakis** (BMus Perf 2013), a baritone, took second at the 2014 Canadian Opera Company Ensemble Studio Competition in the fall. Sy also scored the audience choice award.

Julia Hamilton (BEd 1973) was inducted into The Alberta Order of Excellence for her crusade for workplace safety, launched after her son was killed by a high-voltage line.

More than a dozen U of T alumni were named to the Order of Canada on Boxing Day. **James Miller** (MA 1967, PhD 1972) was named an Officer of the order for outstanding scholarship on the history of relations between Indigenous Canadians and settlers. Named Members: diversity researcher **Caroline Andrew** (PhD 1975), heritage conservationist **Christina Cameron** (BA 1967 Trinity), business leader **Wendy Cecil** (BA 1971 Victoria), head of the 1998-2014 Aboriginal Healing Foundation **Michael DeGagné** (BSc 1983 UTSC), writer **Charles Foran** (BA 1983 St. Michael's), politician **Bill Graham** (BA 1961 Trinity, LLB 1964), dentist and free clinic organizer **Thomas Harle** (DDS 1980, MSc 1990), charity organizer **Patrick Johnston** (MSW 1980), music and arts supporter and lawyer **John Lawson** (BA 1948 Trinity), refugee rights scholar **Susan McGrath** (PhD 1999), investor and philanthropist **Russell Morrison** (MA 1947), playwright **Dan Needles** (BA 1978 Woodsworth) and children's author **Eric Walters** (BEd 1990).

The firm of Daniels Faculty instructor and alumnus **Kevin Weiss** (BArch 1989, MUD 2002) won the 2015 Winnipeg Warming Huts competition with a design for a playful riverbank shelter for skaters.

Achieve more.

Megan Nelles

Student, Business & Professional Studies. Megan holds a PhD in Medical Biophysics and is a Scientific Associate with the Ontario Cancer Institute, University Health Network.

“After completing a graduate degree, I chose to study Business Innovation, an area that was completely new to me and completely relevant to my career trajectory.”

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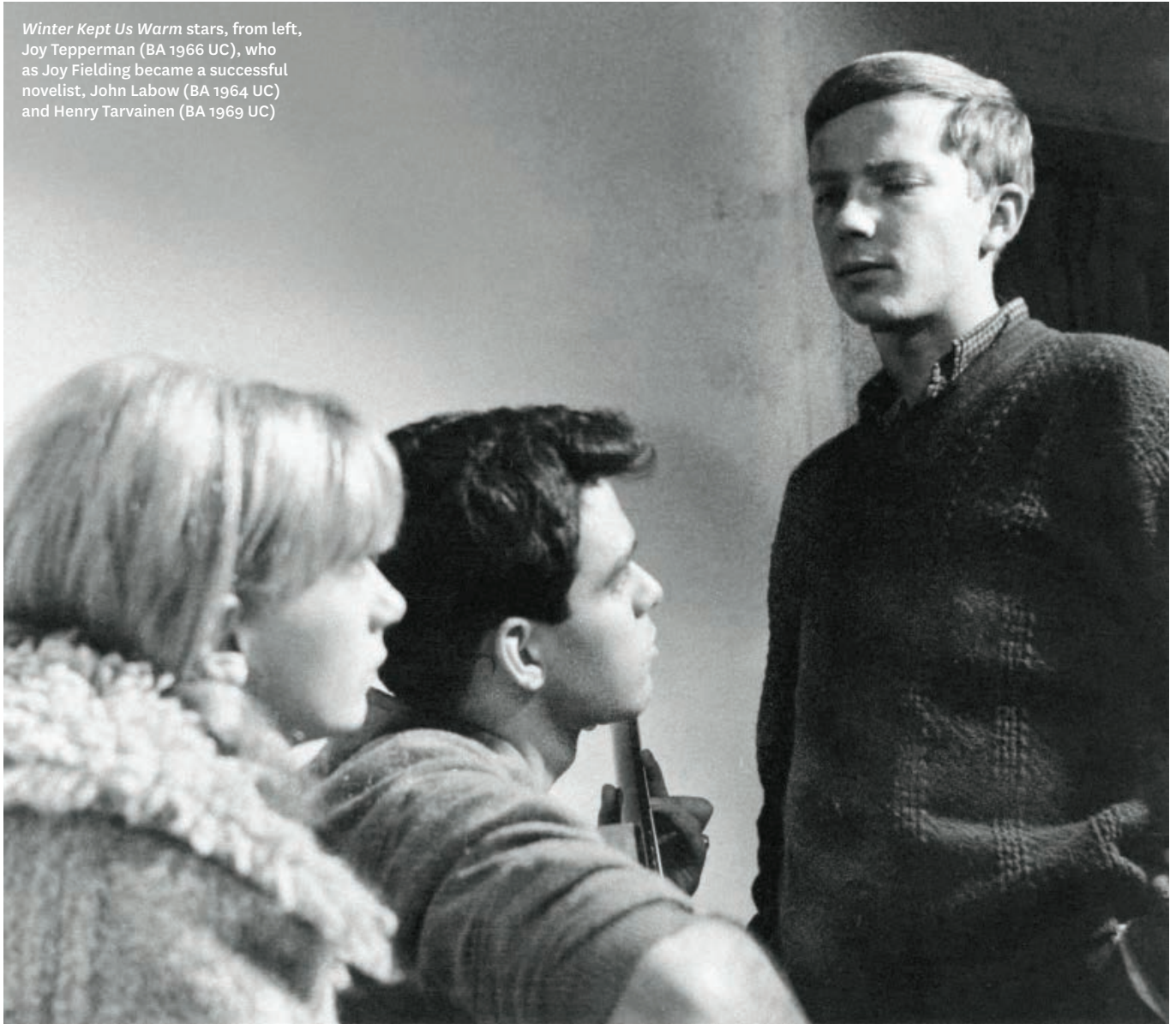
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Winter Kept Us Warm stars, from left, Joy Tepperman (BA 1966 UC), who as Joy Fielding became a successful novelist, John Labow (BA 1964 UC) and Henry Tarvainen (BA 1969 UC)



WINTER KEPT US WARM

May 1966

Canada's first feature film with a gay theme

At the 1966 Cannes Film Festival, David Sector, then 22, dined across the table from Sophia Loren, head of the jury. "I'm not sure she knew who I was," Sector recalls.

She should have. The film the University College student (BA 1965) co-authored and directed was the hit of Cannes' Semaine de la Critique, which showcases the work of new filmmakers. "*Winter Kept Us Warm* did get a bit of buzz," admits Sector. "It was the first English Canadian feature to debut at Cannes, and one international critic called it 'the best North American movie at Cannes,' preferring *Winter* to *Doctor Zhivago*, which also premiered that year."

Set on the U of T campus and shot for just \$8,000, *Winter* charts the rites of passage that university students

go through. Read between the lines, though, and it's about one man's love for another.

Inspired by Sector's unrequited love for a freshman, the film is Canada's first feature with gay themes. "Back then nobody even acknowledged homosexuality," says Sector. "One dean who read the script declared, 'Nothing like that is happening on this campus!'"

"Homosexuality was a triple taboo – the church proclaimed it a sin, the state considered it a crime, and medicine called it mental illness. The film outed me, and I still wonder how I found the chutzpah to make *Winter*."

To celebrate the 50th anniversary of the film's initial release, it will be screened at University College (May 29, 1:30 p.m.) during Spring Reunion. – **SUSAN PEDWELL**

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Friday, May 29

12:30 p.m.

The Architecture of Healthy Choices
Prof. Dilip Soman

The Rise and... (Gulp!)... Further Rise of Depression as a Diagnosis
Prof. Edward Shorter

1:45 p.m.

Forbidden Fruit: A Brief History of Literary Censorship
P.J. Carefoote

Innovation in Children's Health: Using Science, Smart Partnerships and Perseverance to Improve the Nutritional Health of Children Globally
Dr. Stanley Zlotkin

3 p.m.

An Educator's Journey: Navigating the Spaces in Between – Maintaining Work-Life Balance
Ann Lopez

Saturday, May 30

9:45 a.m.

Symbols of Reality
Prof. Jordan Peterson

Rethinking Retirement
Prof. Lynn McDonald

2:45 p.m.

Engineering Today
Speakers from the Faculty of Applied Science and Engineering

Making it by Faking it: The World of the Art Forger
Doug Purdon

Science at the South Pole
Prof. Keith Vanderlinde