

Author Incubator Growing literary giants / Teaching Teachers OISE's new direction / Prof. of Adventure Harold Innis
Tech in 2025 Robot cars and more / Restoring UC Updating an iconic college / Why Diets Fail Dr. Freedhoff explains

UofT Magazine

SUMMER 2014

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A celebration of unique, extraordinary and record-breaking facts from the university's 187-year history



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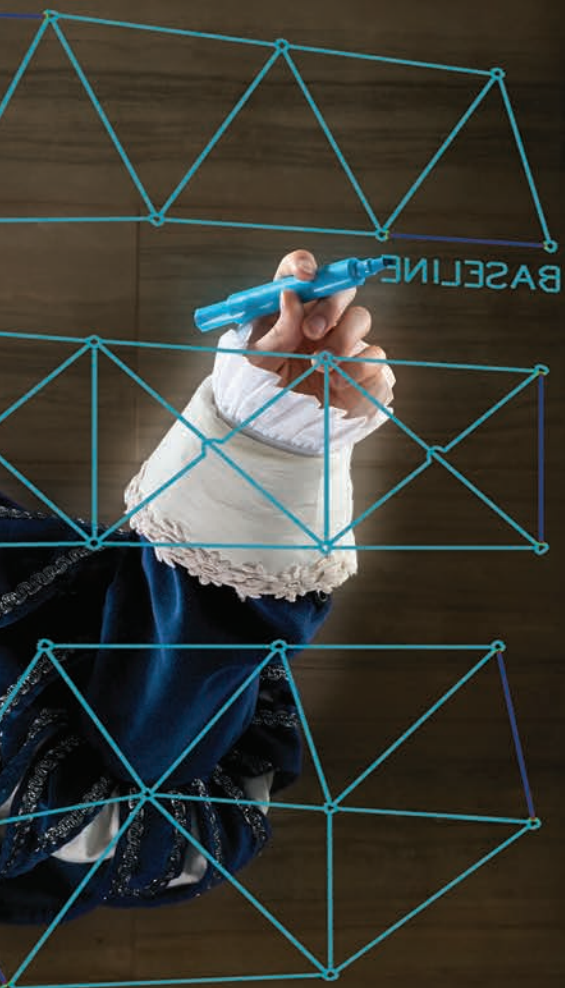
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Summer 2014

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How a creative writing program with just a handful of students is cultivating the country's newest literary talents

BY KELLI KORDUCKI

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Five intriguing technologies that could change your life by 2025

BY PATCHEN BARSS

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Departments

Nobody really stands out here, because everybody stands out at the same time

– Vera Belazelkoska (MA 2013), on participating in a unique project to celebrate the diversity of Toronto, p. 48



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19 What happens to our digital selves when we die?



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Letters



PhDs are the thinkers, communicators, problem-solvers, innovators and leaders that Canada and the world need now and tomorrow

REINHART REITHMEIER
UNIVERSITY OF TORONTO

Applause for Career Planning

When I was studying to become a chemical engineer in the 1950s, I was required to work for a number of hours in the chemical industry in order to receive my degree. That on-the-job experience coupled with what I was learning in the classroom provided terrific career preparation.

A good university education is a key ingredient in helping a person achieve a rewarding and successful life, but the rising cost of a university degree has called into question whether its value, measured in better lifetime earnings, still exceeds its cost.

The “Step Forward” program, as outlined by President Meric Gertler (“Job Ready,” Spring 2014), sounds like a very good idea. Carrying that further, perhaps it’s time for U of T to offer courses on career planning. Students would gain access to data regarding what new jobs can be found (and where), as well as the talents and skills necessary to rank among the best-qualified candidates for these jobs.

I applaud President Gertler’s leadership in developing programs that will help students succeed after graduation. This could very well become one of the most important competitive values that U of T offers to its students and, as he stated, to our society.

RICHARD M. CLARKE
BASc 1954, WESTPORT, CONNECTICUT

We Need More PhDs

In his recent column, President Meric Gertler affirms the value of a university education, noting that the competencies and knowledge U of T students gain “will help prepare them for a lifetime of success.” Graduate education, particularly at the PhD level, focuses on research, which imparts high-level skills. In the biochemistry department, only 15 per cent of PhD graduates now end up in academia, so the department created a graduate course in professional development, intended to help students develop a broader skill set while expanding their professional network. These students are more prepared to take advantage of today’s diverse career opportunities. We need more PhDs in industry, in business, in the charitable sector and in government. PhDs are the thinkers, communicators, problem-solvers, innovators and leaders that Canada and the world need now and tomorrow.

REINHART REITHMEIER
PROFESSOR, DEPARTMENT OF BIOCHEMISTRY,
UNIVERSITY OF TORONTO

Dangerous Knights

The “Time Capsule” photo in the spring issue (“Game of Kings and Queens”) caught my attention. As an undergraduate, I was fortunate to participate in two simultaneous chess matches at Hart House. The first, held in the

Debates Room in the fall of 1953, was a 50-board test with the grandmaster Samuel Reshevsky, considered by many (including Bobby Fischer) to be one of the finest chess minds of that decade. A few months later, I found myself, with 99 others, seated in the Great Hall for an exhibition with Frank Anderson, then Canadian champion. No need to dwell on the outcomes: Reshevsky, working his two knights into my ranks, carved me up with surgical precision; the latter contest, although taking much longer, had the same result. Nonetheless, they remain treasured memories from my five years at the University of Toronto.

PAUL VAN LOAN
BA 1957 VICTORIA, MSc 1958, SANTA CRUZ, CALIFORNIA

The Uses of Invisibility

The technology developed at the University of Toronto to make objects invisible to radar will no doubt please the military (“A Real Life Cloaking Device,” Spring 2014). The article’s last sentence, however, suggests implications that might not be entirely beneficial: “A more advanced version of the technology might one day work with light waves, making objects invisible to the human eye.” This would be good for bank robbers and home burglars, but not so good for bank managers and home owners. On the other hand, it would be ideal for teens sneaking into the house after curfew!

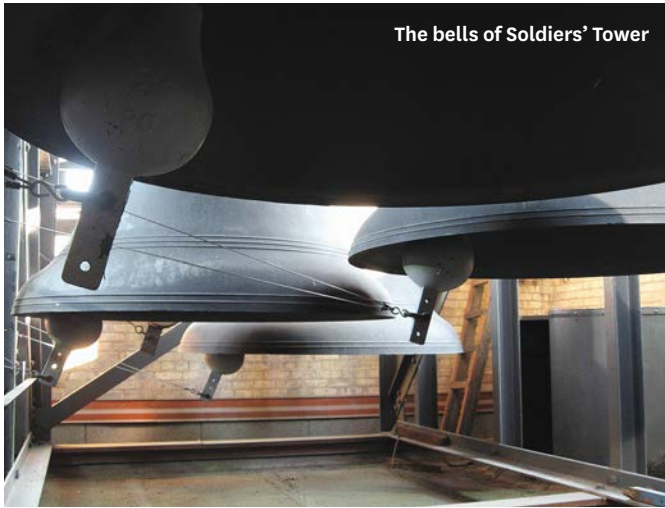
GEOFF RYTELL
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Write to Us!

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

Calendar

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



JULY 1 TO SEPTEMBER 14

Soldiers' Tower Carillon Recitals

The bells of the historic Soldiers' Tower war memorial will ring out for a series of recitals this summer, commemorating the 100th anniversary of the beginning of the First World War. The free, outdoor events will proceed rain or shine. The Memorial Room inside the tower will also be open to visitors. July 1, Canada Day, 1–2 p.m. July 2, 9 and 16, 6–7 p.m. August 4, Civic Holiday, 7–8 p.m. September 14, 3–4 p.m. Soldiers' Tower, beside Hart House, 7 Hart House Circle.

Contact Kathy Parks, 416-978-3485 or soldiers.tower@utoronto.ca.

Alumni

July 16

Calgary

Calgary Student Send-Off. Alumni welcome new students to Skule. Free. 6:30–8:30 p.m., Bow Valley Club, 250 6 Ave SW #370, Calgary. For info: kb Blanch@ecf.utoronto.ca.

Exhibitions

To July 27

Blackwood Gallery, U of T Mississauga

Incident Light: Gendered Artefacts and Traces Illuminated in the Archives. Artists from around the

world address the presence and absence of gender narratives from collective national memories. Free. 3359 Mississauga Rd. 12–5 p.m. Mon.–Fri. (to 9 p.m. Wed.), 12–3 p.m. Sat. and Sun. 905-828-3789, blackwoodgallery.ca, blackwood.gallery@utoronto.ca

To August 29

Thomas Fisher Rare Book Library

Vesalius 500. An exhibition of books commemorating the 500th anniversary of the birth of Andreas Vesalius, the “Father of Anatomy.” Free. 9 a.m.–5 p.m. Mon. to Fri. 120 St. George St. 416-978-5285 or fisher.library.utoronto.ca/ events-exhibits/current-exhibition

September 2 to November 1

Doris McCarthy Gallery, UTSC

Relay. Artist Lois Anderson engages with kinetics and wordplay.

Free. 11 a.m.–4 p.m. Mon.–Thurs. (to 8 p.m. Wed.), 12–5 p.m. Sat. 1265 Military Trail. 416-287-7007, utsc.utoronto.ca/dmg

September 2 to November 15

U of T Art Centre

We're The Revolution. Diamond-dusted self-portraits and performance art by AA Bronson. **Portraits by Robert Giard.** In the wake of the AIDS crisis, a photographer celebrates gay and lesbian literary figures. Free. 12–5 p.m. Tues.–Fri. (to 8 p.m. Wed.), 12–4 p.m. Sat.

15 King's College Circle. 416-946-7089 or maureen.smith@utoronto.ca, 416-978-1838, utac.utoronto.ca

September 2 to December 6

U of T Art Centre

The Photography of Allen Ginsberg.

More than 200 photographs from the remarkable collection of the Beat poet. Free. 12–5 p.m. Tues.–Fri. (to 8 p.m. Wed.), 12–4 p.m. Sat. 15 King's College Circle. 416-946-7089 or maureen.smith@utoronto.ca, 416-978-1838, utac.utoronto.ca

Special Events

July 31

Hart House

Hart House Craft Beer Festival.

Join us for an evening of craft beer tasting and BBQ. Price includes 8 beer sample tickets; additional tickets \$2. \$36 (\$31 students). 7 p.m.–midnight. 7 Hart House Circle. Buy tickets at harthouse.ca.

August 5 to 8

Bahen Centre for Information Technology

Classroom Adventures in Mathematics: Summer Institute.

Hands-on workshops, lectures and discussions for educators about everything mathematics. \$150 (includes lunch), teacher candidate discounts available. 9 a.m.–4 p.m.

daily, 40 St. George St. For info: outreach@math.utoronto.ca or uoft.me/mathplus.

August 11 to 15

St. George Campus

Three math and science summer camps for kids. 9 a.m.–4 p.m.

daily. Limited bursaries available, please inquire before registering. **Summer Math Kangaroo Camp** for Grade 3 to 8 students: hands-on, fun and enriching. \$250. Before/after camp program available. outreach@math.utoronto.ca or uoft.me/mathplus

Summer Math Academy for Grade 9 to 12 students with experience in mathematics: includes introduction to math research. \$325. Applications required. outreach@math.utoronto.ca or uoft.me/mathplus

Science Unlimited for students entering Grade 10 or 11: workshops and activities from five U of T departments. \$325. Applications required. contactus@scienceunlimited.utoronto.ca or scienceunlimited.utoronto.ca

Sports

September 1

Varsity Centre

Varsity Blues Football 2014

Home Opener vs Laurier. The 153rd season of football at U of T kicks off on Labour Day. 7 p.m. \$12 (\$7 youth and seniors; free for U of T students and children 8 and under). 299 Bloor St. West. Buy tickets at varsityblues.ca/tickets.

Theatre

September 4 to 6, 13 to 15

Helen Gardiner Phelan Playhouse

The Misunderstanding. Innkeeper Martha has taken to drugging male guests before throwing their bodies into the river. Based on the play by Albert Camus. \$15 (\$10 students), pay at the door. 8 p.m. Thurs.–Sat. 79 St. George St. dramacentre.utoronto.ca

A Big Step Forward

The Ontario and federal governments have signalled a serious commitment to globally competitive research excellence



Veteran advocates for post-secondary education in Ontario have gained a lot of sympathy for Sisyphus. In recent decades, they have rolled many stones up University Avenue to the doorstep of the Legislature, only to see them roll back down, drawn by the gravity of populism, electoral considerations or fiscal austerity. They have experienced a similar phenomenon on Parliament Hill in Ottawa, too.

But our efforts may now be bearing fruit. In recent months both the Ontario and federal governments have signalled a serious commitment to enabling our research-intensive universities to compete more effectively in the global arena. The one-size-fits-all mentality in funding post-secondary education – as a result of which we have many similar, good institutions, but few uniquely great ones – is giving way to the principle of differentiation.

Simply, this means that in an increasingly competitive, globalized knowledge economy, we need to foster excellence of all kinds – from undergraduate-focused institutions to graduate intensives and from regional comprehensives to global research powerhouses. It also means, crucially, that we need to allocate resources accordingly. In jurisdictions around the world where differentiation is already well established, we see that it leads to more choice and a better educational experience for students. It creates greater efficiency and value for taxpayers by reducing duplication and allowing institutions to focus on what they do best, raising the quality of programs across the board. Most important, it enables countries to develop universities where top talent gathers, world-changing discoveries are made, and new fields and industries emerge – institutions that are critically important to our long-term prosperity.

Last fall, in its Differentiation Policy Framework for Postsecondary Education, Ontario stated that “the government has opted for differentiation as a primary driver for the system...: Our overriding goals...[are to] help focus the well-established strengths of institutions, enable them to operate together as complementary parts of a whole, and give students affordable access to the full continuum of vocational and academic educational opportunities... required to prosper in our contemporary world.” As a first step in implementing the policy, the province is entering into

a Strategic Mandate Agreement (SMA) with each institution.

As Ontario’s most research-intensive university, it makes sense that U of T should enrol a greater share of the province’s graduate students, and be supported in leveraging its vast research enterprise to enrich the undergraduate experience. On the latter point, the university’s research strength enables us to create a unique experience, in which students learn from some of the world’s greatest scholars and have unparalleled opportunities to join them in advanced research. We’ve made a lot of progress in strengthening undergraduate education over the past decade, creating more small-group and experiential learning opportunities and entrepreneurship incubators for students across our campuses and faculties. But we need to do more; and, perhaps paradoxically to some, funding commensurate with our research strength will be a key part of our success.

So, at the provincial level things are going in the right direction, and if our forthcoming SMA document guides future resource allocation – as it is intended to do – this bodes well for our prospects. But, as they say, there’s more.

In its 2014 budget, the federal government announced the creation of the Canada First Research Excellence Fund, which will reach \$200 million annually by 2018–19. What’s new about this fund is that allocations will be based on competitive, peer-reviewed research excellence, enabling Canada’s universities to “leverage their key strengths into world-leading capabilities that will generate benefits for Canadians.” Through this major new investment, Canada’s most competitive research universities will be given sustained means to support established and emerging areas of excellence. It’s a big step forward, placing our country more in line with other jurisdictions around the world.

Ultimately, U of T’s research success stems directly from the superb faculty, staff, and students we are able to attract and retain. As the university continues to develop its unique strengths, it will be better positioned to serve the needs of its students, compete internationally and contribute to a prosperous future for Canada.

Sincerely,
Meric Gertler

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2015 Alumni Travel Destinations

Windward Islands

(Caribbean)

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Eastern & Oriental

Express: Bangkok to Bali

(Thailand, Singapore, Indonesia)

Jan 18–30

From \$6,295 US + air

Tahiti & French Polynesia

Feb 12–21

From \$5,830 US incl. air from LA

Caribbean Paradise

Feb 23–Mar 5

From \$2,799 US incl. air

Bhutan

March 11–22

\$4,995 US + air

The Real Galapagos

(Ecuador)

Mar 22–31

From \$7,250 US + air

Treasures of

Southern Africa

(South Africa, Zimbabwe)

Mar 25–Apr 8

From \$6,995 US + air

Holland & Belgium

April 17–25

From \$2,495 US + air

Pearls of Antiquity

(Greece, Turkey)

Apr 17–May 2

From \$4,195 US + air

European Coastal Civilizations

(Portugal, Spain, France, UK)

Apr 23–May 1

From \$4,195 US + air

Pathway through Panama

(US, Colombia, Costa Rica, Nicaragua, Guatemala, Mexico)

Apr 23–May 9

From \$2,999 US incl. air

Mediterranean Coastal Hideaways

(Spain, France, Monaco, Italy)

Apr 24–May 3

From \$2,999 US incl. air

Great Houses of England

May 13–21

\$4,995 CAD + air

Cruise Europe

(Netherlands, Germany, Austria, Slovakia, Hungary)

May 16–31

From \$4,595 US + air

Ancient Kingdoms of China

May 18–Jun 1

From \$4,195 US + air

France's Cultural Crossroads

May 19–28

\$4,495 US + air

Apulia

(Italy)

May 26–Jun 3

\$2,395 US + air

In the Wake of the Vikings

(Scotland, Norway, Denmark)

May 28–Jun 5

From \$4,520 US + air

Normandy

(France)

Jun 3–11

\$2,895 US + air

Baltic Sea

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

Jun 4–13

From \$6,285 US + air

Haida Gwaii

(Canada)

Jul 15–22

\$4,850 CAD + air

Grand Danube Passage

(Bulgaria to Czech Republic)

Aug 22–Sep 5

From \$4,595 US + air

Lifestyle Explorations Provence

(France)

Aug 22–Sep 20

From \$5,695 US + air

Canada's Northwest Passage

Aug 23–Sep 5

From \$8,695 CAD + air

Spain's Costa Verde

Aug 27–Sep 7

\$3,995 US + air

Rivieras & Islands of France, Italy, Spain

Aug 28–Sept 5

From \$5,560 US + air

Trade Routes of Coastal Iberia

(Portugal, Spain, Gibraltar)

Sep 11–19

From \$5,450 US + air

Italian Riviera

(Italy)

Sep 12–20

\$2,995 US + air

Sicily

(Italy)

Oct 16–25

\$2,795 US + air

Amazon Discovery

(Peru)

Oct 19–29

From \$3,995 US + air

Isles & Empires of the Adriatic

(Italy, Greece, Montenegro, Croatia, Slovenia)

Oct 29–Nov 7

From \$2,699 US incl. air

Mekong River Cruise

(Vietnam, Cambodia)

Oct 29–Nov 10

From \$4,595 US + air

Build a School in Ecuador

Nov 14–22

\$3,495 US + air

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

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Life on Campus

“It’s been called the ‘Old Souls of Canada’ – that’s part of the mystique of the place”

Outgoing Massey master John Fraser, on the college he’s called home for 19 years

p. 14

Tamara Mitchell, a public school teacher in Toronto, holds a master’s degree from OISE



OISE’s New Direction

Education faculty to more than double the size of its graduate programs in teacher ed, eliminate BEd

SOON EVERYONE STUDYING EDUCATION at the University of Toronto will be a grad student. U of T’s Ontario Institute for Studies in Education (OISE) announced in May that it will phase out its Bachelor of Education and diploma programs in teacher education and become an all-graduate institute of teaching, learning and research.

OISE’s decision follows an announcement from the province last year that requires all faculties of education in Ontario to lengthen teacher training to two years from one.

The province also said it will fund only half as many undergraduate places each year because of a worsening job market for teachers, and will cut the grant it gives for each bachelor of education student by 33 per cent.

As a result of the changes, OISE will expand its graduate program, increasing enrolment to 430 students, up from 200 currently. Students who graduate with a Master of Teaching degree or Master of Arts in Child Study and Education are licensed to teach in Ontario.

Julia O’Sullivan, OISE’s dean, says focusing on graduate education will benefit both students in the program and education in Canada generally. “Ontario has one of the best school systems in the world. But having more educators who understand the research – and know how to apply it in the classroom to improve learning for all children – will strengthen the system overall.”

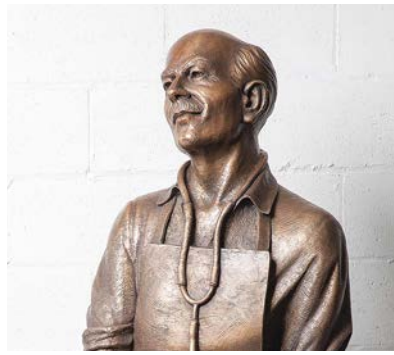
For example, educational research has shown that a ➤



Norman Bethune's grandfather, also named Norman, was one of the founders of the Upper Canada School of Medicine, later incorporated into Trinity College and eventually U of T

New Sculpture Honours Norman Bethune's Legacy

The U of T-educated doctor had a huge impact on health



CANADIAN PHYSICIAN NORMAN BETHUNE (BSc Med 1916) was a military surgeon, inventor and humanitarian who greatly advanced medical science and helped improve life in his adopted country of China. Now, on the 75th anniversary of his death, a new sculpture celebrating his accomplishments will grace the grounds of U of T's Medical Sciences Building.

The piece was created by Toronto sculptor David Pellettier, the artist behind the ferry terminal statue of late NDP leader Jack Layton. The initiative was made possible through a donation from Chinese businessmen Zhang Bin and Niu Gensheng, which will also fund student awards in Bethune's name. The sculpture, unveiled May 30, is part of the faculty's Bethune Legacy Celebration recognizing his international impact on health care and the university's associations with China. "The sculpture will commemorate Dr. Norman Bethune, one of our most celebrated alumni," says Catharine Whiteside, dean of the Faculty of Medicine.

"The celebration is an opportunity for us to recognize both the donors and Bethune, whose contributions will continue to inspire many generations."

Bethune developed the first mobile blood bank service, which allowed for blood transfusions on battlefields. He also pioneered new surgical techniques and instruments, and was one of Canada's earliest proponents of universal health care. He is revered in China for training its doctors and paramedics and ministering to wounded soldiers and sick villagers during the Second Sino-Japanese War. The life-size bronze sculpture features him wearing traditional Chinese clothing and a stethoscope.

"I hope people who see it get sense of the man and his great achievements, as well as his deep humanitarianism," says Pellettier. - **SHARON ASCHAIK**

Ephemera



A 200-Year-Old Political Cartoon

Graphic styles may have changed, but the political cartoons of 200 years ago are very much like those of today in one crucial respect: they critique through humour.

This cartoon from 1812, which shows a character representing Britain with an extremely bloody nose and a black eye courtesy of an American figure, is one of 23 reproductions included in the display "Huzza for Freedom!" The exhibit – of work by historical and contemporary artists – was curated by four master's students in museum studies, in collaboration with the Ontario Heritage Trust. View it at the Parliament Interpretive Centre in Toronto until September 1.

- **SCOTT ANDERSON**

➤ child's reading ability by age 10 is the best predictor for whether he or she will graduate from high school. So it's important, O'Sullivan says, for educators to be familiar with the teaching approaches that are proven to make a difference in early-years reading.

The same applies to math skills, the other cornerstone of primary education. Ontario students' math scores have been slipping for several years. O'Sullivan says educators who know the research on what works – and, importantly, what does not work – when teaching math to children will be better equipped to help turn around the slide.

OISE's graduate programs also allow teachers to specialize in early years' education or in teaching children with exceptional needs. As the programs expand, the faculty will offer other options, such as aboriginal and urban education.

O'Sullivan notes that OISE's decision to focus on graduate

education better aligns the institute with U of T's role as a research-intensive university, and with the province's goal to create greater differentiation among teaching programs in Ontario. "The masters programs are research-based," says O'Sullivan. "Candidates conduct research and study policy options. The programs allow for specialities, which can open up broader career options."

Although many graduates of the Master of Teaching and Master of Arts in Child Study degrees go on to assume leadership positions in education, others pursue careers in health care, government and the private sector – often in employee training. In an era of constant change, most businesses will need employees to upgrade their skills and undergo training regularly. "These graduates have a deep understanding of how to teach in different contexts, and how people of different ages and abilities learn," says O'Sullivan. - **STAFF**



University College and Annesley Hall at Victoria College are the only two places at U of T that have been designated National Historic Sites



A reimagined West Hall, as a reading room

are packed with students writing exams. He races up one more flight, to a classroom featuring a stained glass window and skylights. “These halls, which are so central to the history of the university, sit empty far too often, which strikes me as a tremendous waste of resources for our students.”

As part of a proposed 10-year renovation and restoration campaign, Ainslie is hoping to return these rooms to an updated version of their former glory. The college has retained Taylor Hazell Architects, a Toronto heritage architecture firm, to develop a plan to convert them into an integrated library, reading and study space. Ed Clark, the former TD Bank CEO, and his wife Frances last winter donated \$2.5 million to underwrite the cost of building the reading room.

Croft Chapter House will become a conference and reception space, a renovation that will involve opening up the stunning room – originally designed as a chemistry lab – to the rest of the building. Also on the repair list: the UC quad, which requires improved walkways, benches and the relocation of some unsightly air conditioning units.

The linchpin of the whole process, Ainslie points out, is the accessibility plan. The college is filled with staircases large and small. And the sole elevator is frequently out of service. Ainslie brings out a diagram of the college and traces the circuitous path that an individual in a wheelchair would have to take in order to enter the building. “We’re the ‘open college’ but if you can’t handle the stairs we’re not – especially if the elevator’s not working.”

To address those shortcomings, the Taylor Hazell restoration plan includes a new \$1-million elevator to be located in the main building, as well as improved access to the Croft Chapter House. Over the longer term, the college will gradually rebuild UC’s classrooms, ensuring they are outfitted with proper teaching and wireless technology.

Ainslie expects the renovation to begin within two years, and he is eager to get started. It will mark the beginning of a new chapter for one of Toronto’s oldest institutions; as he notes, the 1970s “is the last time the building has had major renovations.” – **JOHN LORINC**

Restoring UC’s Glory

University College is embarking on an ambitious 10-year plan to renovate one of U of T’s most iconic buildings

ALONG WITH OSGOODE HALL, Union Station and Old City Hall, University College belongs on a very short list of Toronto’s most iconic historic structures. As principal Donald Ainslie points out, the storied 1859 building is the postcard shot of U of T and “stands in for higher education in Canada generally. It is a pretty spectacular building.”

For all its prestige, UC is not an easy building to navigate. Nor is it well suited to the needs of contemporary students and faculty. By 21st century standards, the college – which endured a devastating fire in 1890 – is not broadly accessible, and contains stunning spaces that are oddly underused.

Ainslie, whose grandfather was a student at UC, bounds up the central staircase to a foyer between the hushed East and West halls on the second floor. On this spring day, both halls

NAMECHECK

The Buttery



In these health-conscious times, why is the Trinity College cafeteria called The Buttery?

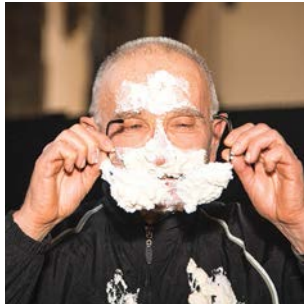
It has nothing to do with butter. In the Middle Ages, a buttery was a room in a castle for storing wine, ale, and other alcoholic beverages. The word derives from the medieval French word *botte*, meaning “cask” or “barrel.” At Oxford and Cambridge universities, it became a place where students could get a drink.

There was a buttery in Old Trinity (where Trinity Bellwoods Park is situated) from which

beer and biscuits were served to students until 1902. Trinity College moved to its current location on Hoskin Avenue in 1925 – but that wasn’t the last of the buttery. After Strachan Hall was built in 1941, the room in the basement – commonly called “the Buttery” – was the centre of informal social life. Twenty years later, when the Larkin Building was built, a café named the Buttery was incorporated into it, and stands today as a casual eatery where students, faculty and staff can enjoy a hot meal. – **NADIA VAN**



ReStart, near Seattle, is the first residential treatment centre in the U.S. intended to help people overcome compulsive computer use



Pie a Prof

Semra Sevi is probably not the first student ever to have daydreamed about getting back at a prof for handing out a lousy mark. But she's likely the first to have turned the idea into a successful fundraising campaign.

Because of Sevi, several lucky students got to "pie" their prof at an event in March – and help raise \$13,700 for child refugees in Jordan.

Since 2011, millions have fled violence in Syria – many to neighbouring Jordan, a country that's poorly equipped to handle the influx of newcomers now living in temporary camps.

Sevi, a master's student in political science, became deeply concerned about the situation and approached War Child Canada with an offer to

support schooling for refugee children in Jordan.

Sevi then convinced six professors to compete in "Pie-a-Prof." Whoever raised the most money would be spared the public embarrassment of getting a pie in the face.

In mid-March, the dollars were counted, and Clifford Orwin, of political science, was declared the winner. He, along with dozens of onlookers, got to watch as colleagues Janice Stein, Nelson Wiseman, Jeffrey Kopstein, Robert Austin and Paul Gooch lined up to have a plate of whipped cream smeared in their face. "For a student fundraiser, I think it was a successful one!" says Sevi, who credits professors Michael Ignatieff and Paul Kingston for making the event possible. – SCOTT ANDERSON

SOUND BITES

What is U of T's best kept secret?

The American Studies program. A diverse range of very informative courses taught by engaging professors.

Emmett van Perchoi, @Emmett_Choi

The cherry blossoms in May outside Robarts.

Asim Ashraf, @AshrafAsim

Professor Jeffrey Kopstein, of political science! What an amazing lecturer.

Komal Nadeem, @HoneyKomes

Innis Café. \$1 coffee, fulfilling meals under \$7, really nice vibe.

Vipasha Shaikh, @vipashashaikh

The zombie dungeon. I mean...Oops.

Adam Fox, @AdamUofT

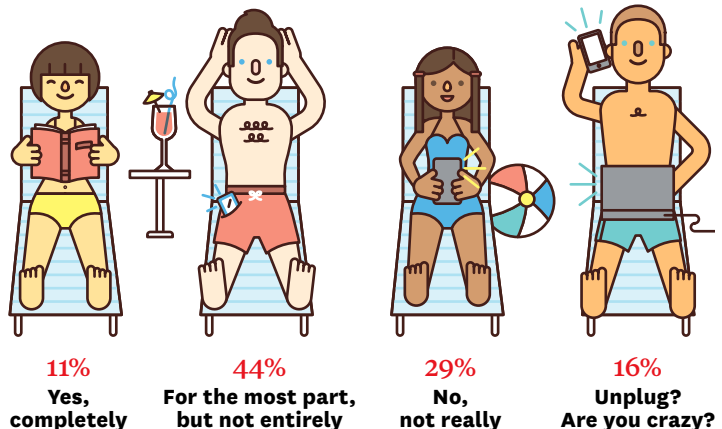
Join the conversation at twitter.com/uoftmagazine.

Poll | Do you unplug from the Internet when you go on vacation?

People who frequently send and receive emails about work outside of regular business hours are more likely to have problems with sleep, physical symptoms of stress and feelings of psychological distress, according to research by U of T sociologist Scott Schieman, who studies boundaries between work and personal life.

Being connected to the Internet doesn't necessarily mean you're responding to work emails, but a large minority of members of the U of T community report they have difficulty disconnecting – even when they go on vacation. "I find unplugging stressful," says Paul Bretscher, a PhD candidate. Lanz Clavel, a fifth-year philosophy student, sees the benefit, though. "Turning off quiets your mind," he says. – STAFF

This highly unscientific poll of 100 members of the U of T community was conducted on the St. George campus in May.

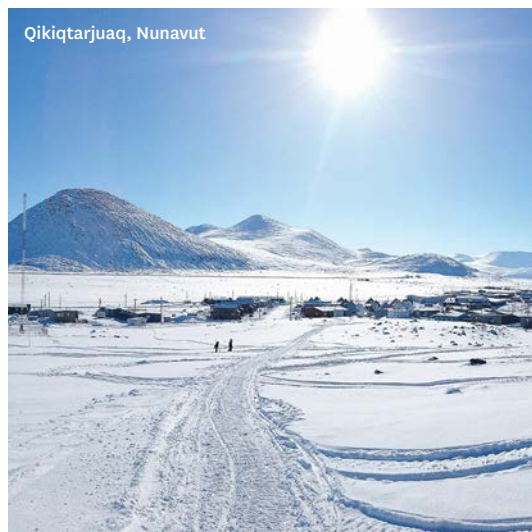




A properly constructed igloo will support the weight of an adult standing on the roof

The Challenge of Building in the Arctic

How should architecture adapt to the Far North's unique climate and culture?



FOR ARCHITECTS AND URBAN PLANNERS, Canada's Arctic communities present a blizzard of challenges – everything from solving the structural riddle of building on permafrost to designing housing suitable for historically communal – and, until recently, nomadic – societies that exist in an extreme climate. Moreover, until quite recently, there was no indigenous architecture beyond the igloo. Most of the building styles seen in Nunavut's 25 far-flung communities have been imported from the south.

At this year's Venice Biennale of Architecture, a Canadian faculty-student team – which included an architecture prof and two students from the John H. Daniels Faculty of Architecture, Landscape and Design (as well as a professor from the University of Waterloo and representatives of five Nunavut organizations) – has created a series of 25 designs and models proposing

innovative solutions for these Arctic towns. The installation, Arctic Adaptations, will be featured in the Canadian pavilion from June to November.

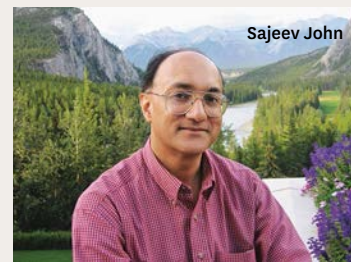
Much of the 1970s-vintage architecture in remote communities such as Resolute or Iqaluit is "very dated and hasn't adapted" to the changing needs of a very young population, observes Mason White, who teaches at the Daniels Faculty and is a principal at Lateral Office, a Toronto architecture firm. Scrolling on his laptop through photos of Iqaluit from a recent trip with the team, White demonstrates the often extreme architectural experimentation in the city of 7,000: a dome-shaped church that's clearly riffing on the igloo theme, and a school that looks a bit like an ice-cube tray on its side. The problem with many Iqaluit buildings, White says, is that they are not easily adapted to other uses.

After spending a month researching the various archetypes of northern architecture since the 1970s, the two students travelled to Iqaluit to learn first hand about the deficiencies of the existing buildings, especially housing, and to interview local residents about their needs.

The resulting proposal, displayed at the biennale, is a complex of easily adapted live-work units clustered around a courtyard that doubles as a common public space. The units could be used by artists for studio space, professionals, and businesses. A yoga studio is set to open in Iqaluit, but space for such entities is hard to come by. "We're trying to channel ideas of what could work," says White.

The Daniels team's biennale entry, its members say, offers an opportunity for Nunavut residents to take a holistic view of the cities they are building. "In a way," White says, "all the projects are about stepping back and saying, 'what if?'" – **JOHN LORINC**

People



Sajeew John

Prof. **Sajeew John**, of physics, and Prof. **Andreas Mandelis**, of engineering, have each won a 2014 Killam Prize, one of Canada's most prestigious scholarly awards. Prof. John is recognized for his groundbreaking work on photonic crystals. Prof. Mandelis's research involves creating new tools that use light for the non-invasive diagnosis and management of diseases such as cancer and diabetes.

Prof. **Sienna Dahlen**, of the Faculty of Music, was the sole U of T winner at the Juno Awards earlier this year. She picked up the honour for Vocal Jazz Album of the Year for her performance on *Notes on Montreal* alongside composer and guitarist Mike Rud.

The deans they are a-changin', with four new appointments this summer. Prof. **Linda Johnston** of Queen's University Belfast will become dean of the Lawrence S. Bloomberg Faculty of Nursing, Bank of Canada senior deputy governor **Tiff Macklem** will head the Joseph L. Rotman School of Management and **Locke Rowe**, a professor of ecology and evolutionary biology, takes over as dean of the School of Graduate Studies and vice-provost, Graduate Research and Education. Prof. **Jutta Brunnée** becomes the new interim dean of the Faculty of Law as **Mayo Moran** leaves to become the 15th provost of Trinity College.

Senator **Hugh Segal** will become the fifth master of Massey College. Segal succeeds **John Fraser**, who retires on June 30 after nearly two decades as master (see p. 14).

The U of T Alumni Association honoured 22 faculty, staff, students and alumni and one department with **Awards of Excellence**. Read about the award winners at alumni.utoronto.ca/awardsofexcellence.

P.O.V.

Farewell to the Master

Outgoing Massey College master John Fraser decodes the unusual traditions and unique contributions of U of T's only graduate college



For those who don't really know Massey College, how would you describe it? Some people think it's a residence with an attitude problem. We're better than that, honestly! We do something that very few universities can do, which is to bring people from different fields in graduate studies together to commune with each other. It's been called "Old Souls of Canada" – that's part of the mystique of the place.

And the role of "master"? It's an unusual title. I close windows, turn off lights, and make sure the bar is open on time. Slightly more seriously, a senior fellow here once

said you have to run very fast to stay the same. I run very fast to keep Massey going – to keep it connected to the town, to serve the university and, most of all, to serve the needs of the students. Robertson Davies, the first master, told me that if you let the college fall back into the woodwork of the university, it's lost. It's not that the university doesn't care for Massey; the university cares for it a lot. But the university is very big. And the redeeming feature of Massey is that it's very small.

Has the role of master changed in 19 years? The essential things are the same. My job is to make a memorable home for young scholars, ensure that they have access to leading figures of the day and that they understand the interconnectedness of all things – academically and in life itself.

What's unique about this place for you? There's something very special about living on the job. When the furnace breaks down you suffer along with the students. You also have a more intense relationship with them.

Massey has a strong sense of tradition – the gowns, the high tables, the snuff. This is theatre to a great extent. Davies' theory was that the crust of civilization was very thin and that if you had some traditions, even if they were instantly made, they would resonate. And as long as they weren't taken too seriously – belittled or venerated – they would neutralize superficial differences, such as clothing, and allow you to get to more interesting areas for discussions. The snuff is considered a great joke and great fun.

Have the traditions changed? Are selfies permitted during a high table? There's a basic rule of courtesy that you don't use a cell phone in the common room or the dining room. A lot has changed, mostly to conform to current mores. When I arrived, people were in a terrible pique about cohabitation. It was the easiest thing in the world to solve. These are serious graduate students, and if they want someone staying with them, well, this is *their* home. The only thing is, I said, if it's more than two nights, I want money. And I want to know who the guests are, for security's sake.

What's been the most enjoyable aspect for you of being master? Pretending that I'm 27 years old and a graduate student.

What are you planning to do next? I'm thinking of busking – banjo and harmonica together.

Seriously. My wife and I are going to go away for a year. We want to explore Africa, and I hope to write again. I'm hanging loose.

Read a more in-depth interview with John Fraser at magazine.utoronto.ca

Why I Give



The Weisdorf family – Mark, Lorraine and their two daughters – recently made a pledge to fund scholarships at Innis College and, additionally, to match all new gifts toward the renewal of Innis Town Hall, up to \$50,000. Mark (BCom 1979), who works at J.P. Morgan Asset Management in New York City, says his inspiration for the gift harks back to his own experience at Innis, and his desire to help today's students who may require financial assistance in order to attend U of T, as he did.

Mark: "My family and I immigrated to Canada from Poland, and my experience at U of T was transformational in providing me the opportunity to develop critical thinking skills, leadership abilities and a creative, multidisciplinary approach to my work. This put me on a journey to one of largest financial service organizations in the world.

"I took no courses at Innis College, but my involvement in university life was centred there. Innis was my oasis in a very large organization. I really care about it. I didn't choose a career in programs offered by Innis, such as cinema, urban or environmental studies, but these humanistic subjects resonated with me.

"Innis Town Hall is used by the U of T community and the surrounding citizenry for events. With Innis's 50th anniversary this year, it struck me that it would be wonderful to be supportive of the Town Hall – the heart of the Innis community – and to boost the scholarship funds available to students who, as I was, may be in need of financial assistance to attend U of T. I respond well to incentives, and I hope the matching program will motivate others to support these initiatives as well."



At the average reading-out-loud speed of 150 words per minute, the author of U of T's longest-ever thesis would take about 40 hours to present his work. For details, see p. 26



peace, justice, citizenship and human rights.

“The values Mandela held, and what he accomplished, make him an inspirational figure. Through this award, we are encouraging students to develop in themselves the same kinds of qualities,” says Jill Matus, U of T’s vice-provost of students, who grew up in South Africa and who, as a university student there, participated in free-Mandela protests.

The university has created a \$250,000 fund, and each year will grant two awards of \$5,000 each or four awards of \$2,500 each to successful applicants.

The initiative was announced last December at an event held by the university to honour the remarkable achievements of the anti-apartheid revolutionary, politician, lawyer and philanthropist, who died on Dec. 5 at age 95. Mandela’s commitment to promoting human rights and tackling institutionalized racism in South Africa endured throughout his 27-year incarceration after being convicted for planning to overthrow the state, and his perseverance eventually led him to become his country’s first black president.

The commemoration event, which was co-hosted by Ontario Lieutenant Governor David Onley (BA 1975) in partnership with South African community members, included tributes to Mandela by Ontario premier Kathleen Wynne (MA 1980); South African Consul-General Tselane Mokuena; U of T chancellor Michael Wilson (BCom 1959); and Desmond Tutu, who sent a video greeting recorded for the event. In his address, U of T President Meric Gertler said, “The Nelson Mandela Award is just one fitting tribute to an extraordinary individual whose legacy has changed so many lives and made the world a better place.” - **SHARON ASCHAIK**

Walking in Mandela’s Footsteps

A new U of T student award promotes the ideals of Nelson Mandela

IN HIS FIGHT FOR SOCIAL EQUALITY in apartheid-era South Africa, Nelson Mandela believed the most powerful way to change the world is through education – and the University of Toronto is celebrating that idea and the extraordinary life of the man himself with a new student award in his name.

The Nelson Mandela Award will be given annually to fourth-year students in any program who have demonstrated academic excellence, leadership and involvement in their communities, and particularly, a commitment to promoting

The 3-Minute Thesis

Students vie to condense years of research into an elevator pitch and win \$1,000



A sort of “TED Talks of the doctoral research world” came to Ontario last month, and U of T graduate student Daiva Nielsen stole the show.

The PhD candidate in nutritional sciences won first place and \$1,000 at the Three Minute Thesis Provincial Championship, in which doctoral students condense years of dissertation work into a compelling 180-second presentation. Nielsen’s winning talk, which allowed U of T to defend its 2013 championship title, focused on whether genetic-based dietary recommendations change eating behaviour.

Her year-long, randomized controlled trial involved about 150 participants split into two groups that each received instructions regarding salt, sugar, caffeine and vitamin C consumption – but one group’s advice was according to members’ genetics, while the other’s was generic. Those who received DNA-based dietary advice were more likely to follow it than those who received one-size-fits-all dietary

advice. As Nielsen said in her talk, this suggests genetic-based dietary recommendations have a greater impact, and can be used by health practitioners to motivate patients to change their eating habits.

Nielsen’s first crack at the provincial contest was at the U of T competition in March, where she beat 15 finalists for the \$1,000 university prize, and qualified for the April provincial competition at McMaster University. At the standing-room-only public event, 19 competitors did short-but-sweet talks on topics such as novel high blood pressure treatments, tea’s benefits for bone health, and former prime minister John Diefenbaker’s role in Canadian-Soviet relations.

“I saw it as an opportunity to speak about my work in a new, more accessible way,” says Nielsen, who was slated to compete in the first-ever national Three Minute Thesis competition in late May. - **SHARON ASCHAIK**

IN MEMORIAM

Dennis Smith

Pioneer in biomaterials brought together experts from chemistry, medicine and dentistry to advance innovative new field



EVER SINCE THE ANCIENT MAYANS first used sea shells as dentures, scientists have worked hard to identify which substances can be safely introduced within the body to repair, replace or even create body parts. Hence the fascinating field of biomaterials: one that has given rise to everything from heart pacemakers to contact lenses to modern-day tissue engineering.

Dennis Smith is recognized as a major figure in this ever-changing domain. The U.K.-born chemist, who passed away in February at the age of 85, came to Canada in 1969 and eventually attained the position of Professor Emeritus at the Faculty of Dentistry. Smith first achieved renown for his contributions to hip replacement surgery. While working at a dental hospital in Manchester, he devised the idea of using dental acrylic cement to

fuse an artificial hip with a human femur. The idea worked, and is still in use today.

This mix of chemistry, medicine and dentistry was unlikely at the time – but Smith’s particular brilliance lay in bringing these worlds together. “He was a communicator,” says Robert Pilliar, an engineer who was encouraged to work at U of T by Smith. “One of his great strengths was that he was very sociable, and able to reach out to anyone who might make a contribution.” In 1971, two years after his arrival in Canada, Smith gathered talents from four disciplines to found the Canadian Biomaterials Society, the first of its kind in North America. He later established the Centre for Biomaterials at U of T, where researchers have since produced a stream of innovations extending to almost every aspect of human health. The centre later merged with the Institute of Biomedical Engineering to form the Institute of Biomaterials and Biomedical Engineering.

After Smith’s retirement from the university in 1993, he became involved in what was perhaps the most heavily publicized biomaterials story in history – investigating the safety of silicone breast implants. A physical chemist, he had particular expertise on the reactivity of inert materials with living systems. Yet, it is worth noting that the implant crisis came at the dawn of great transition in his field. Around this time, “scientists started thinking not just of whether or not inert materials would harm the body, but whether they could actually contribute to cellular activity,” says Pilliar. Thus it is that Smith’s successors now use synthetic materials as scaffolding for living cells, from which they can actually grow new body parts.

The IBBME today includes professionals from three partner faculties, all working together to create a brave new world of biomedical advancement. Forty-five years ago, says Pilliar, “the university wasn’t tuned into the fact that we could create this level of activity between disciplines and faculties. That they eventually did was certainly very much Dr. Smith’s doing.” – CYNTHIA MACDONALD

IN MEMORIAM

Mona Gauthier



U of T scientist helped discover key factor in risk for breast, ovarian cancers

Ovarian cancer claimed the life of 45-year-old Mona Louise Gauthier (PhD 2002) in December, but not before the cancer researcher had helped expose how the disease manifests.

As a principal investigator at Princess Margaret Cancer Centre’s Campbell Family Institute for Cancer Research, where she worked side by side with her husband, clinical breast pathologist Dr. Hal Berman, Gauthier co-led a 2013 study revealing estrogen’s role in predisposing women with a specific gene mutation to breast and ovarian cancers. Her relentless mission to understand and eradicate the inherited forms of these diseases also unfolded at her lab at U of T’s Department of Medical Biophysics, where she studied the biology of how breast cancer begins.

“She rigorously campaigned against the scourge of these cancers so future generations might not have to suffer her own fate,” says U of T professor Dr. Tak Mak, co-director of the Princess Margaret Institute and Gauthier’s co-researcher on the 2013 study.

Gauthier’s cancer battle was always as much personal as professional, as she had inherited the mutated cancer-predisposing gene from her mother, who died of breast cancer at 51. During her four years fighting ovarian cancer, she helped establish OVCApeers, a support network for Greater Toronto Area women living with the disease. At the 2011 Weekend to End Women’s Cancers walk, Gauthier spoke eloquently about the power of facing the disease together, saying “Survivorship is sharing the uncertainty, collectively.” – SHARON ASCHAIK

Leading Edge

“The restaurant industry is the tip of the iceberg”

Prof. Jeffrey Reitz on Canada's temporary foreign workers program

p. 21



Jonathan Yam (BASC 2014)

A Quicker Fix

A new app aims to smooth out the often prickly relationship between residents and property managers

LIKE MANY YOUNG TORONTONIANS, JONATHAN YAM, a 23-year-old U of T engineering grad, knows a thing or two about the aggravations of apartment living: the elevators conk out; the fire alarm test occurs when no one expects it; a window pane from the tower being constructed next door crashes onto your balcony.

Yes, these incidents really do occur. But Yam, who heard the story about the falling glass from a condo dweller, noticed something else about that episode: before the clean-up crews came to gather the debris, the property manager

had to trudge from apartment to apartment, requesting that tenants stay off their balconies.

The abundance of such stories and complaints represents the fuel behind a nascent business venture Yam has launched with two partners, Armin Mahmoud, a mobile app developer, and Chantelle Buffie, a Simon Fraser University business grad. Through The Next 36 entrepreneurship program, they developed Fixo, a mobile app and web platform meant to take some of the sand out of the often prickly relationship between tenants and property managers.

When Yam and his partners began developing the idea last winter, they interviewed people on both sides, then built a prototype. The app allows tenants to report problems and submit work order requests, as well as share digital photos of the problem. It also preserves any exchanges between tenant and landlord over the status of repairs. For property managers, the technology creates a one-stop platform for communicating with tenants and providing updates on everything from ➤



About 90 per cent of malaria-related deaths occur in sub-Saharan Africa. The majority of these are children under the age of five

➤ out-of-service elevators to the installation of new appliances.

From their research, Yam and his colleagues discovered that many tenants were often frustrated in their dealings with their property managers, who mostly communicate through email or require tenants to fill out paper forms. Some tenants said they often didn't bother submitting work orders because of the complicated process.

Fixo aims to change that equation. All interactions between the tenant and manager are electronic and logged. Both parties are notified as updates arrive, so messages don't get caught in a spam filter or lost in a stuffed inbox. Yam also plans to include third-party repair contractors to capture everyone involved in the process.

The Fixo business model is that property managers would subscribe to the service as a means of improving tenant satisfaction, reducing turnover in their buildings and avoiding the costs associated with finding new tenants, estimated to be about \$300 per unit per year.

Armed with \$5,000 seed capital from The Next 36 and another \$2,000 from winning an entrepreneurship competition, the trio has developed a beta version of the Fixo app, and is testing it in a handful of U of T student buildings. Yam and his partners, meanwhile, are going to spend several months living together – in “true start-up style,” Yam jokes – to work out the kinks and recruit the first paying clients.

The Fixo team has made inroads with a handful of property firms, and are in the process of testing pricing schemes. But Yam's vision goes well beyond the inhabitants of apartments. As he says, residential is only the first floor of this business venture. “Our ultimate vision is to improve communications in the entire property management sector.” – **JOHN LORINC**

A Spoonful of Mustard

First-year student discovers a potential new treatment for malaria



A SAFE, CHEAP, EASILY AVAILABLE TREATMENT FOR MALARIA could be as close as your kitchen cabinet, says Jessie MacAlpine, a first-year science student who has been investigating antimalarial solutions since she was in Grade 11. She thinks mustard oil, a staple of kitchens in India and elsewhere, is deadly to the parasite that causes the disease.

MacAlpine stumbled upon the discovery while she was trying to create an environmentally friendly herbicide using a chemical – allyl isothiocyanate – that gives mustard, horseradish and related foods their characteristic kick. Herbicides, she read one day in the paper, could be used against malaria because the parasite that causes the disease has some plant genes. MacAlpine wondered whether mustard oil, which also contains the chemical, could be used to fight malaria.

MacAlpine tested mustard oil on the parasites and found that it was 96 per cent effective, “more effective than the clinical dose of existing drugs” and with no known negative side effects. Better yet, it's inexpensive. Most of the more than 200 million people who contract malaria each year live in poorer parts of the globe, notably sub-Saharan Africa, and of these, the hardest hit are children with undeveloped immunity. For a drug to help them, it has to be cheap as well as effective. Current drugs are cheap – by Canadian standards – but mustard oil is much cheaper. At current prices, says MacAlpine, “you can purchase about 10 million doses with \$30, which is very, very cost effective.”

MacAlpine will test the mustard oil in mice this summer and then, if it works, in human clinical trials. It's still a long shot for becoming a widely used malaria treatment, but Prof. Ian Crandall, of medicine, who supervised MacAlpine's laboratory work, says “it's important in that it's a natural product which then makes it easier to produce if it does prove effective.” – **BRENT LEDGER**

LINGO

Honest lying



Throughout our lives, we sometimes make statements that we know to be false. But there are also instances where people will lie because they deeply believe something to be true, even though it isn't. Morris Moscovitch, the Max and Gianna Glassman Chair in Neuropsychology and Aging at U of T, has dubbed this phenomenon “honest lying.”

It arises most commonly in people who are suffering from a brain dysfunction caused by damage to the frontal lobes. Moscovitch says honest lies can be obviously untrue – claims of having travelled in outer space – but also can consist of memories. (For example, a man who says he spent the weekend with his wife, even though she's deceased.)

Even healthy people can engage in a mild form of “honest lying,” according to a recent article in *Scientific American*: “We sometimes explain away unusual phenomena without ever becoming conscious of our own fibbing.” To understand where “honest lies” come from neuroscientists are investigating how we form memories, and our sense of what's real.



Scheaffer and McEwen interviewed 18 recently bereaved Facebook users to see what impact the social network had on their experience of loss. (The sample size was small owing to the difficult emotional process of participating in the research.) On the positive side, mourners said that memorialized pages gave them access to immediate support; posts by others could be deeply comforting.

But the researchers also found that Facebook can spur a sort of jockeying among mourners where users compete to show who loved the deceased person best. Further, Scheaffer speculates that the constant lure of a perpetually accessible page might induce pathological grieving, whereby the bereaved aren't able to move on with their lives.

Michael Massimi (PhD 2012) is a post-doctoral researcher with Microsoft who studies the Internet's role in social support. He contends that Facebook can be a powerful outlet for mourning, especially for those who can't attend memorial services in person. But in his work with Bereaved Families of Ontario, he also found "that people sometimes want a separate, safe space away from Facebook...they don't want to talk about their grief [there] because it seems like a frivolous place to talk about something so profound. Just think of a news feed where ads and funny photos of kittens might be intermixed with sincere expressions of grief."

And what if the personal archive of an ardent atheist becomes a vehicle for the religious well-wishing of relatives he might not even have liked? Scheaffer points out that unless living users deal with their own digital property pre-mortem, their powers of personal curation are threatened – not only by Facebook but by other companies as well. Massimi says that question is "very much an open one," dependent on local jurisdiction and legal precedent.

In view of all this, Scheaffer and McEwen recommend that Facebook offer users "digital estate options," and that they freeze users' profiles completely, so they are separate from memorial pages.

Facebook is skewing ever-older in its demographic reach, which is why Scheaffer believes that it – and other social networking websites – have an obligation to take their policies on user death seriously. Her views are timely in a world where deceased users' photographs have been misused, and "likes" erroneously attributed to them. "I'd like to see a little more education around digital identity, and pressure on companies to make decisions based on research rooted in integrity – not just what's best for them," she says.

– CYNTHIA MACDONALD

THE BIG IDEA

What Happens to Our Digital Selves When We Die?

For Facebook and other technology companies it's still an open – and troublesome – question

FOR A DECADE, PEOPLE HAVE BEEN USING FACEBOOK to tell friends and family about milestones in their lives, posting pictures and sharing anecdotes to create rich virtual representations. But what happens to those representations when the people who made them die?

The problem of what to do with accounts of the dead is very real, and Facebook's own policy keeps changing. Currently, it does not offer living users any way to specify what will happen after their death. But a loved one's survivors have three options: after supplying proof of death, they can either deactivate the page, leave it as is, or "memorialize" it. The latter choice effectively transforms a profile from personal journal to gathering place, where mourners assume the job of posting content. Depending on the user's privacy settings, anyone can share memories on this type of page.

Kathleen Scheaffer is one user who finds these options limiting. A librarian at the Faculty of Information, Scheaffer found herself wondering about online mourning practices after losing several people close to her who were Facebook users. To investigate the question, she teamed up with Rhonda McEwen, a professor at the Institute of Communication, Culture and Information Technology at UTM.

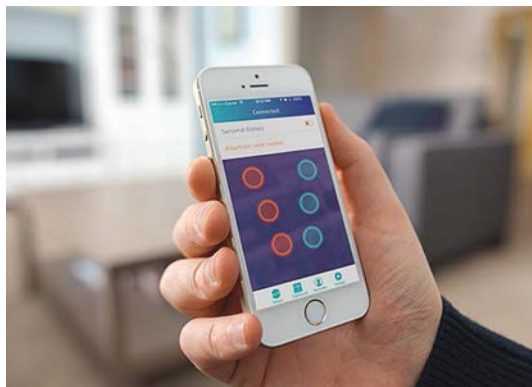


In several American cities, inhabitants speak with a distinctive accent. In Pittsburgh, for example, “downtown” is pronounced *dahntahn*.

PROTOTYPE

The Danger of Sitting Still

A new device promises to ease a major health concern for people with mobility problems



tem developed by David Mravyan, founder of Sensimat Systems, and Milos Popovic, a professor at the Institute of Biomaterials and Biomedical Engineering, could make a world of difference.

The Sensimat is designed to help wheelchair users prevent pressure sores from forming in the first place, by outfitting the user’s chair with a sensor-lined mat. Once the user sits in a chair, the mat, using Bluetooth technology, sends signals to a smartphone app that alerts the user when they need to shift their weight – and where – once pressure has begun to build up. Red indicates trouble spots; green, pressure-free zones.

Alerts can be monitored remotely, making it useful for caregivers and for health professionals such as occupational therapists, who might want to track their patients’ activity outside the clinical setting.

According to recent data, 2.2 million people in the U.S. and Canada rely on wheelchairs. As many as 350,000 suffer from spinal cord injuries; 95 per cent of this group will develop a pressure ulcer at some point in their lives.

Sensimat Systems, which has patented its sensing technology, is now looking at ways to expand the system for use in long-term care facilities. Rather than waiting for set rotation hours, caregivers could respond to alerts from the Sensimat to move bed-bound patients when they need to shift position. Data can also be collected over the course of weeks or even months. “What this system offers is a quality metric for long-term care reporting,” says Mravyan.

The Sensimat is currently undergoing testing at the Lyndhurst Centre, part of the Toronto Rehabilitation Institute. And in April, the company raised almost \$17,000 in a crowdfunding campaign to help bring its product to market.

“We want to get it into the community now. Based on the feedback we receive we’ll be able to refine the product, raise more investment funds, and significantly improve quality of life for wheelchair users everywhere,” says Sensimat Systems co-founder Will Mann. – ERIN VOLLIICK

SEVEN YEARS AGO, PHILIP STILES suffered a debilitating spinal injury that left him unable to walk, and with minimal movement in his hands. Within just a couple of weeks, he developed a pressure ulcer on his back that became infected and had to be surgically treated. “I didn’t get out of bed for 2½ months,” he says.

For people with severe mobility problems, pressure ulcers are a common – and serious – problem. Sitting or lying in the same position for a long time eventually cuts off the blood flow to an area, causing the tissue to die and a sore to form. Even a small sore that’s treated effectively still carries a high risk of infection. This can lead to surgeries, hospitalization and even death.

But a new pressure-sensing system

Findings

Toddlers Understand All About Accents



A new U of T study has found that by the age of two, children are surprisingly good at comprehending speakers who talk with regional accents that they’ve never heard before.

Even more striking, say the researchers, is the finding that children as young as 15 months who at first have difficulty comprehending unfamiliar accents will begin to understand after hearing the speaker for a short time.

Elizabeth K. Johnson, a U of T Mississauga psychology professor, and her team studied if and how children in the early stages of learning their first language come to understand words spoken in different regional variants of that language (Australian versus North American English, for example).

This is the first study showing that infants this young can rapidly adapt to the way people from other areas speak. – DOMINIC ALI

Homelessness Linked to Brain Injury



Almost half of the homeless men in downtown Toronto studied by researchers had suffered at least one traumatic brain injury; 87 per cent of those injuries had occurred before the men lost their homes. While assaults were a major cause, about 40 per cent had at least one injury due to potentially non-violent causes such as playing sports and vehicle collisions.

The study, led by Dr. Jane Topolovec-Vranic, a University of Toronto professor and a clinical researcher at St. Michael’s Hospital, looked at data for 111 homeless men aged 27 to 81. Of those who had experienced a traumatic brain injury, 70 per cent had their first injury before age 20. Topolovec-Vranic says it’s important for those who work with homeless people to be aware of brain injuries because of links to mental health issues, substance abuse and poorer physical health.

– LESLIE SHEPHERD



Q&A

Labour Troubles

Canada's temporary foreign workers program needs a rethink, says immigration expert Jeffrey Reitz

Controversy over Canada's temporary foreign workers program – and perceptions that some employers are abusing it – made headlines earlier this year. *U of T Magazine* editor **Scott Anderson** asked **Jeffrey Reitz**, a sociology professor at the Munk School of Global Affairs who studies immigration, for his perspective on the debate.

Typically, who is permitted to immigrate to Canada? For 40 or 50 years now, we have selected immigrants on the basis of skill level, with a preference for higher-skilled workers. Recently, though, the Canadian government has altered the selection criteria for permanent immigrants. They now emphasize more immediate employment prospects as opposed to long-term employment prospects. And they have vastly expanded the temporary foreign workers program, which allows employers to bring in immigrants of all skill levels in very large numbers.

The temporary foreign workers program has been around for more than 40 years. Why the recent controversy? Since 2006, the program has grown from tens of thousands of workers to hundreds of thousands. It was designed to address situations where Canadian employers need workers for a short time, and can't find Canadians to do the job. This is difficult to administer because, in most cases, it's very difficult for the government to verify that Canadians are actually *not* available for these jobs.

Then there's the challenge of enforcement – of the rules of the program, but also the rules of labour relations in Canada. Workers without permanent resident status tend to be more compliant. It's easier for employers to ask them to do extra work for low or no pay.

These folks are required to leave Canada when their visa expires. Unskilled workers are more likely than skilled workers to continue working in Canada without a visa. So what we're doing, in effect, is creating a problem of undocumented



workers simply so employers such as McDonald's can have access to a more compliant, low-skilled workforce.

Do you buy the argument that there are not enough Canadians to do low-skilled jobs? No. The fact is that we have high unemployment of less-skilled workers in some parts of the country and a high demand for low-skilled workers in other parts. In this context, it seems perverse to bring in people from thousands of miles away rather than focusing on making the best use of the Canadians who are closer at hand and looking for work – even if they are not in the immediate vicinity of an employer who's looking for low-skilled workers. We should not conclude that the only solution to the problems faced by these employers is to bring people in from overseas.

Do you think the federal government's solution – to eliminate the program for restaurants – is the answer? The restaurant industry is the tip of the iceberg. The problem exists right across the program, and the government hasn't invested enough resources to investigate whether employers are truly unable to find Canadians to do the work. That's why I think a large-scale, low-skilled temporary foreign workers program is unrealistic. The government has been advised to go slow on this kind of program, but it has expanded the program dramatically in a short time.

So would you suggest reducing the size of the program rather than investing in more resources to oversee it better? You could certainly invest more resources, but the government's general position has been to whittle down the size of the bureaucracy. I would advise cutting the program back substantially *and* monitoring it much more carefully. Currently, we don't even have the means to know whether temporary workers are leaving the country when they're supposed to.

Read a more in-depth conversation with Prof. Reitz at magazine.utoronto.ca



The first test tube baby was born in 1978. Since then, in vitro fertilization has been used successfully more than five million times

Stay Attentive, Drive Better



Summer is peak driving season for Canadians, which means that it's also peak season for traffic accidents. And, according to the Ontario Provincial Police, distracted driving has eclipsed driver impairment and speeding as the number one cause of road deaths in Ontario.

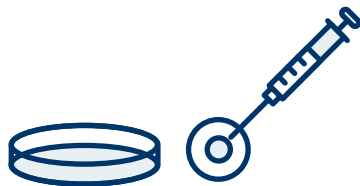
Birsen Donmez, a professor of mechanical and industrial engineering, is seeking to address this problem. She uses a vehicle simulator (pictured, left) to test how using technologies such as cell phones or satellite radio affect driver attention – and to see how feedback such as warning lights and auditory cues can be used to motivate people to drive more safely.

Donmez has found that when it comes to how easily drivers let themselves be distracted, they are more heavily influenced by what they believe the general population is doing than by their perception of what people close to them think they ought to do. So, for example, an eye-tracking system that reminds drivers who glance away for more than two seconds to look back at the road might not be as effective as one that also informs drivers how well they scan the road – and avoid distracting activities – compared to the average driver.

While it's possible that one day soon cars will be able to drive themselves, in the meantime, Donmez's research may help make them safer. – **SCOTT ANDERSON**

A Robot That Helps Make Babies

Micro device developed at U of T could dramatically boost IVF's effectiveness



ASPIRING PARENTS HAVING TROUBLE CONCEIVING often turn to in vitro fertilization (IVF), but only one in four achieve conception with this challenging procedure. Now, a new IVF technique – created by Yu Sun at U of T's Advanced Micro and Nanosystems Laboratory – uses a miniature robot that could help increase their odds.


Sun's robot, which is a little larger than a Rubik's cube and is built around a standard lab microscope, controls a micro device that can hold a sperm and fertilize an egg cell. Unlike

traditional IVF, which requires clinicians to be extremely dextrous and precise, this procedure is done automatically with a few mouse clicks by a human operator.

In a trial Sun conducted on hamsters, the procedure achieved fertilization 90 per cent of the time. Many factors affect IVF's success; the technique's effectiveness diminishes with the mother's age, though the use of donor eggs can increase chances. Sun says the high precision of his system can eliminate one other factor causing fluctuating success rates: the diverse skill levels across embryologists.

A human trial of Sun's system involving four participants took place in 2012 in collaboration with the Toronto Centre for Advanced Reproductive Technology, and resulted in fertilized eggs but no live births. (Sun says that this could be due to the participants' uterine and hormonal challenges.)

Currently, Sun is working to improve his technology. Making adjustments will require further testing, though, so he plans to seek funding to perform a larger-scale human trial. "IVF clinicians are saying that robotic techniques could revolutionize how IVF is done," says Sun, the Canada Research Chair in Micro and Nano Engineering Systems. "The end goal is to achieve consistently high success rates in fertilization and live births." – **SHARON ASCHAIK**

A close-up portrait of a young woman with long, straight brown hair and blue eyes. She is wearing a dark blazer over a light-colored top and has a slight smile. The background is a plain, light grey.

“The McAllister scholarship lets me pursue my engineering degree and the skills I’ll need as an entrepreneur.”

Megan Mattes
BASc 2017

Thanks to the J.E. McAllister bequest, Megan Mattes is exploring her options in the TrackOne generalist year at Canada’s top-ranked engineering faculty. By including a bequest to U of T in your will, you too can nurture the creative inquiry of future entrepreneurs like Megan.

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BOUNDLESS LEGACY

THE

NEWWEST S

COOLES

BRIGHT

BOLDEST

MARTEST

T BIGGEST

EST

The University of Toronto isn't just Canada's biggest university, or one that regularly scores highly on prestigious university rankings. When we delved into the records that U of T and its community members hold – Canadian bests, world firsts, campus biggest or oldests or even hottest – we uncovered a picture of a place bursting with creativity, tradition and personality.

BEST

STORY EVER TOLD ABOUT U OF T



MOST POPULAR LIBRARY BOOKS

Textbooks are the works most often checked out from U of T Libraries. In the last five years, the most borrowed books were copies of **The Psychology of Prejudice**, by Todd D. Nelson (2006) and **Constitutional Law of Canada**, by Peter Hogg (5th ed., 2007)



WORLD'S FIRST ANTHROPOLOGY COURSE

In **1857**, history and English literature prof **Daniel Wilson** (later to become the university's president), offered 'Ancient and Modern Ethnology' to students.

MOST INTRIGUING SPACE

When U of T's oldest dedicated library building, the Gerstein Science Information Centre, was remodelled in 1910, builders included **a two-level safe**, accessible from the chief librarian's office. From the shelf-lined walk-in level, a trapdoor and ladder lead down to a brick-lined basement safe below. In the library's early days, the safe kept rare books and valuables secure from theft, fire and flood. (Rumour also has it that it was the perfect place to cool off on sultry summer days before air conditioning, says Sandra Langlands, the library's director.) But after the Thomas Fisher Rare Book Library was built in 1973, valuable items were transferred over to the new facilities. Gerstein's spectacular safe now holds stray office supplies.



Student Lili Nkuzimana

CANADA'S FIRST AFRICAN STUDIES PROGRAM

When New College launched its African Studies program in 1978, it was the first such university program in Canada – and it's still the largest. Nearly 150 students benefit from the expertise of U of T's 28 Africanists. New College also hosts Canada's only Caribbean Studies program.

OLDEST ARTWORK



The most ancient artefacts in the three art collections held in public trust by the university are more than **4,000 years old**. The tiny stone mask and figurine both come from Bronze Age Anatolia.



LONGEST PhD THESIS

1,443 pages

In 1966, John Francis Quinn submitted *St. Bonaventure and the notion of Christian philosophy in modern scholarship; an introduction to St. Bonaventure and the livine immutability*: 1,443 pages of scholarly erudition. A priest of the Congregation of St. Basil, Father Quinn (BA 1955 St. Mike's, MA 1959, PhD 1966) went on to teach medieval philosophy at U of T's Pontifical Institute of Medieval Studies, also serving as registrar. He died in 1996.

ONLY CANADIAN-HELD COPY OF SHAKESPEARE'S FIRST FOLIO



Published in 1623, this book contains 36 of the Bard's famous plays. Only 228 copies survive, and U of T's

Thomas Fisher Rare Book Library holds the only one in Canada. As one of the world's most sought-after books – one copy sold for more than \$6 million in a 2001 auction – it's one of the few items in the collection that require special arrangements to view. But the public will be offered a peek at the Stratford Festival in Stratford, Ontario, from August 16 to 17.

BIGGEST ARTWORK

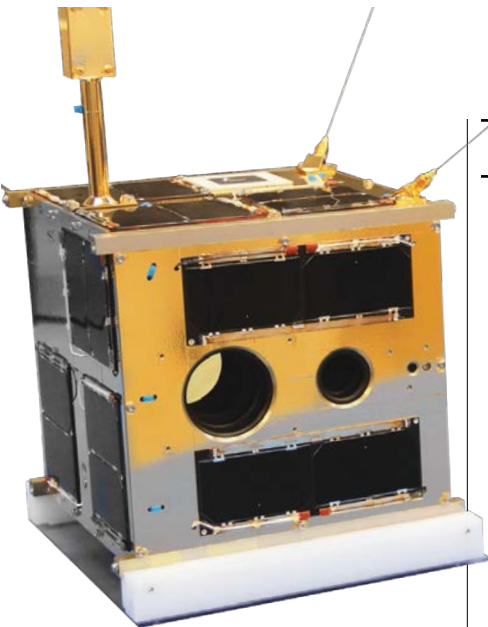


This 12-metre, powder-coated steel structure – **"Interregnum: Corner Displacement for John Andrews,"** by artists Daniel Young and Christian Giroux – was created in 2011 for the atrium of UTSC's Instructional Centre. As the sunlight shining through the overhead skylight moves throughout the day, the sculpture's form and shadows shift and change, symbolizing growth. John Andrews, the architect who designed the CN Tower as well as UTSC's original buildings, chaired U of T's school of architecture from 1962 to 1967.



WORLD'S FIRST WATER-PLAYED INSTRUMENT

Electrical and computer engineering prof **Steve Mann** (at right) invented **hydraulophones**, unique musical instruments that work like woodwinds but use water, rather than air, to create their otherworldly music. Since the 1980s, Mann has built, played and composed for his creations. Hydraulophones create sounds even on their own, but a musician can also play them by covering individual water jets to change the notes.



WORLD'S SMALLEST SATELLITES

A satellite as small as a toaster? Welcome to the world of nanosatellites. This June, two miniature orbiters were to be launched into space, each carrying a tiny space telescope, which will enable astronomers to learn more about the galaxy's brightest stars. U of T's Institute for Aerospace Studies and the engineering faculty collaborated for years to research, invent and build the amazing instruments.



FASTEST COMPUTER IN CANADA

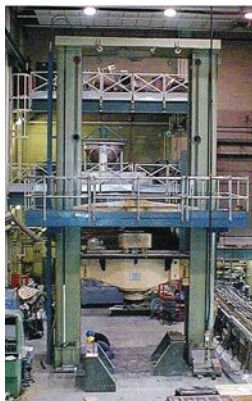
Installed in 2012, an IBM BlueGene/Q system, called Southern Ontario Smart Computing Innovation Platform, is the fastest computer in Canada (and 89th in the world). How fast is that? Try 419.4 trillion calculations per second. BGQ crunches data for projects from medicine (mapping brain neurons) to geophysics (modelling ocean tides).

FIRST BLACK HOLE DISCOVERED

In 1972, University of Toronto astronomer Tom Bolton published evidence of the first black hole to be observed in space. Theorists had been postulating about the existence of black holes for years, but had not been able to confirm the location of one. Bolton's paper was later included in a Harvard University Press selection of the most important astronomy papers published between 1900 and 1975.

BIGGEST STRESSOR (IT'S NOT EXAMS!)

The Structural Testing Facility in the department of civil engineering hosts a three-storey contraption called a Baldwin Universal Testing Machine that applies loads of 1.2 million pounds to check the strength of various building materials and designs. The facility also boasts a Shake Table and a Blast Generator, surely putting it in contention for most fun workplace on campus.



HOTTEST SPOT ON CAMPUS



The Laser Photonics Fabrication Lab in the department of electrical and computer engineering is a true campus hotspot. "When [we focus] ultrashort laser light inside transparent glass, nonlinear absorption in the focal volume heats the material to sun-like temperatures, peaking over 5,000°C for nanosecond durations," explains Jianzhao Li, research associate with the department.

WORLD'S FIRST SINGLE AND DOUBLE LUNG TRANSPLANTS

In 1983, a team of surgeons at Toronto General Hospital, one of U of T's partner hospitals, performed the first successful lung transplant. Three years later, the same surgical team performed the first successful double lung transplant surgery. Since then, the surgery has helped save thousands of lives around the world.

MOST STARTUP COMPANIES OF ANY NORTH AMERICAN UNIVERSITY

Between 2009 and 2012, U of T and its partner hospitals created 63 new companies – more than any other American or Canadian university. For the top spot, U of T surpassed MIT, a perennial entrepreneurial powerhouse, which produced 58 spinoffs over the same period.

WORLD'S LARGEST HEALTH STUDY

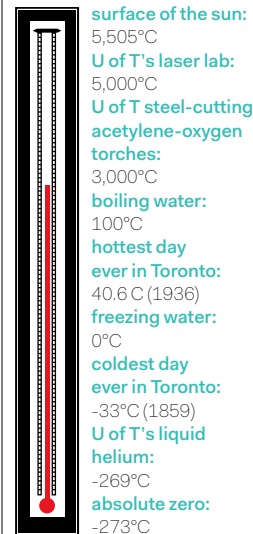
Prof. Prabhat Jha of the Dalla Lana School of Public Health wants to understand how people die so that we can take better care of the living. That's why in the past 12 years, he and his research team have examined the deaths of 600,000 people in India. What have they learned so far? That malaria kills far more people in rural areas than previously thought, and HIV-AIDS kills far fewer. His study has influenced health-policy decisions by the Indian government, and now serves as a model for other countries.



Prabhat Jha

COLDEST SPOT ON CAMPUS

4°Kelvin – that's four degrees above absolute zero, or a bone-chilling -269°C. These cold spots appear not just in labs where liquid helium is used but in hospitals – liquid helium is required to cool down the superconducting magnets used in MRI machines.





MOST DECORATED SPORTS TEAM

The **Varsity Blues men's swimming team** has taken 62 provincial titles since 1920 and is the current champ.

FIRST WOMAN TO SWIM THE ENGLISH CHANNEL NONSTOP BOTH WAYS

Cindy Nicholas (BSc 1979 UTSC) completed the feat in 19 hours and 55 minutes (also setting a speed record in 1977. In total, she did five double crossings (another record) and 19 solo crossings, earning the nickname "Queen of the English Channel."

STUDENTS FROM FARTHEST AWAY

If you dug a tunnel straight through the earth from U of T's iconic front campus, you'd come out in the southern Indian Ocean. Fifteen alumni have come from **Perth, Australia** (the closest point on land) – an intrepid group who have travelled farther than any others in order to attend university here.



BIGGEST WHISKERS

Where to begin when it comes to impressively hirsute chins? U of T's Victorian and Edwardian profs were masters of pogonology. Our favourite bearded portrait is that of **James Mavor** (right, 1854–1925), a political economics professor who also founded the Hart House Chess Club. Moustache honours are definitely due to **James Willmott** (DDS 1893) (1837–1915), dean of dentistry in the early 20th century.



MOST OLYMPIC MEDALS

5
Jayna Hefford (BPHE 2004) won four golds and a silver as part of the Canadian women's Olympic hockey team in five consecutive Winter Games, from 1998 to 2014.



MOST PARALYMPIC MEDALS

10
Joanne Bouw (BPhm 1986) (now Joanne Berdan) won 10 Paralympic medals in shotput, discus, javelin and long jump from 1984 to 1992, including eight golds.

MOST VALUABLE SCHOLARSHIPS

U of T awards thousands of scholarships to undergraduates every year; these are top dollar. Winners typically have marks averaging in the high 90s – but that's just for a start. The awards also emphasize leadership and community involvement.



University of Toronto National Scholarship (about 10 awarded annually): covers four years tuition, first year residence credit, and additional support based on financial need. Rewards academic performance, original thought and exceptional community engagement.

C. David Naylor University Scholarships (up to 10 awarded annually): \$20,000 annual award. Rewards academic merit and leadership.

Schulich Leader Scholarships (two awarded annually): one award at \$80,000 over four years and the second at \$60,000 over four years. Recognizes outstanding students in engineering, science, technology or mathematics.

OLDEST STUDENT CLUB

The **Trinity Debating Society** – The Lit – is also the oldest debating club in Canada. It was founded in 1846. While traditions remain writ large (they have a mace!), the group doesn't take itself too seriously. "In the earliest days, and again since about the 1960s, we've only done joke debates," explains Christopher Hogendoorn (BA 2014 Trinity), the club's 2013–2014 "Prime Minister." Notable alumni include columnist Andrew Coyne (BA 1983 Trinity) and videojournalist Hannah Sung (BA 2000 Trinity).



LONGEST-SERVING U OF T PRESIDENT

The university's fifth president, Sir Robert Falconer, served for 25 years, from 1907 to 1932. He saw the university through a building boom (including the original Varsity Stadium) and the trauma of the First World War (and the innovation and research expansion it provoked).



MOST RHODES SCHOLARS EVER IN A SINGLE YEAR

About 85 Rhodes Scholarships are awarded each year, just 11 from Canada, so you can bet U of T was extra proud in 2013 when students **Joanne Cave** (BA 2013 Woodsworth), **Connor Emdin** (BSc 2013 Trinity) and **Ayodele Odutayo** (MD 2013) all took prizes – the most Rhodes scholarships U of T has ever won in a single year. (Emdin is the 37th Rhodes Scholar from Trinity College, which boasts the most Rhodes Scholars of any U of T college.)



OLDEST AND YOUNGEST PERSON EVER TO HAVE RECEIVED AN HONORARY DEGREE

In June 2010, at the age of 89, Mayor **Hazel McCallion** received an honorary degree in recognition of her leadership of Mississauga since 1978 and for her work with Hazel's Hope, a World Vision charity that helps children affected by HIV-AIDS in Tanzania.

At age 12, **Craig Kielburger** (BA 2007 Trinity) co-founded the charity Free The Children. In June 2011, when he was just 28, he became the youngest person ever to receive an honorary degree from U of T – recognized for his work with Free the Children building schools in some 45 countries.

OLDEST BUILDING

At least 159 years old, but it depends how you measure.



The Louis B. Stewart Observatory at 12 Hart House Circle is built with the oldest stones on campus – it was erected in 1908 from the parts of the old observatory, first built in 1855.



University College, under construction from 1856 to 1859 (but in use from 1858) and considered the oldest building at U of T by the university Facilities Department.



St. Basil's Church and Odette Hall in St. Michael's College, built between 1853 and 1855 and in continuous academic use ever since. St. Mike's affiliated with the university in 1881.



COLLEGE WITH MOST NOBEL PRIZE WINNERS

Out of U of T's eight Nobel Prize-winners, both Lester B. Pearson (BA 1919) and Arthur Schawlow (BA 1941, MSc 1942, PhD 1949) were **Victoria** grads. Pearson won the Nobel Prize for Peace in 1957 for helping resolve the Suez Crisis while Schawlow was one of three co-winners of the 1981 Nobel Prize in Physics, awarded for the development of laser spectroscopy.

OLDEST STUDENT EVER

Selma Plaut didn't actually know her birthdate – it was some time around 1890, in western Germany. She emigrated in 1939 and starting at age 88, she completed 11 courses at U of T. On June 11, 1990, around the age of 100, she received an honorary BA at Convocation Hall. The oldest graduate is Saul Goldstein, who earned a BSc (Woods-worth) in 2004 at the age of 93.



FIRST CANADIAN UNIVERSITY PROGRAM IN FORENSIC SCIENCE

Torontonians who want to be a real-life Gil Grissom (the star of TV's CSI) don't have to leave home – U of T Mississauga has offered a BSc in forensic science since 1995, the first Canadian university to do so. The department's Forensic Crime Scene House may just be the university's scariest classroom too!



NEWEST DEGREE

In 2014, engineering graduate students can enrol for the first time for an MEngCEM – a Master of Engineering in Cities Engineering and Management degree. The 16-month MEng option includes a chance to solve a real-life urban management problem.

MOST COMMON ALUMNI NAMES

John and Mary (16,414 and 7,497 graduates over 187 years).

MOST ENVIRONMENTALLY EFFICIENT BUILDING

The Exam Centre on the St. George campus, retrofitted from an existing warehouse in 2008, was U of T's first LEED Gold Certified Project. Sustainable designs and technologies reduce the building's electricity consumption by 15 per cent and water use by 60 per cent compared to a similar building using standard technologies. In 2009, UTM achieved its first LEED Gold rating with the renovated third floor of the **William G. Davis Building**. UTSC's **Pan Am Centre**, under construction, will be submitted for LEED Gold certification.



By **Patchen Barss**
Illustration by **Mike Ellis**



THE FUTURE AS WE SEE IT

Five intriguing technologies
that could change your life by 2025

A LOT CAN HAPPEN IN A SHORT TIME. The sexiest new gadgets can suddenly become old school as they're replaced by even cooler technology. Seemingly impossible computing feats become commonplace. It's not just the advance of computing power – progress is driven at least as much by the creative thinkers who develop, research, adopt and adapt, discovering new ways for us to interact with our world, our devices and each other.

Inevitably, the most influential new tech trends are the ones nobody saw coming. Consider that a decade ago, the word “tweet” hadn't yet entered the public lexicon, and no one had ever visited an “app store.”

It's difficult to look forward even just a few years, but the following predictions about how technology will change over the next decade come from people who do more than just predict the future – as computer scientists, their job is to create that future. Even as the pace of technological change accelerates, these members of U of T's computer science department – a hub for new tech ideas since its founding 50 years ago – outflank it. They're already thinking ahead to a new generation of tools and toys that will be ready to change the world, just as soon as technology catches up with their innovations.

The Perfect Assistant

Craig Boutilier wants to put a real estate agent in your pocket. And a financial advisor. And a travel agent. And possibly an insurance broker, personal shopper, guidance counsellor, entertainment guru, athletic trainer and life coach. Anyone who can help you make informed decisions.

Naturally, all of these assistants would live on your smartphone – or whatever wearable technology has replaced it by 2025. Not only would they have access to the very latest news and information, but they would also understand your likes and dislikes better than your closest friends and family members. Boutilier, a professor of computer science, researches and develops “decision-support technologies,” akin to, but vastly more sophisticated than, the recommendation systems used by Amazon and Netflix.

“Right now, the entire planet is really focused on this idea of big data,” he says. “Every communication, business transaction, social interaction, car movement and so on can be monitored.” Data miners can now make precise predictions about traffic patterns, trends in consumer behaviour, stock market performance and other subjects by using computers to carefully analyze vast streams of information.

The trick is to use big data to help inform individual decisions. A smartphone app might have a very good sense of where the real estate market is headed, but that’s not the same as being able to recommend which house an individual should buy. “The bottleneck now is that we don’t have a good idea of what people want,” says Boutilier.



That’s because what people want is complicated. When buying a house, for instance, you might factor in price, neighbourhood and proximity to schools, shopping, parks, transit and nightlife. All of these and many other factors must be weighed against one another, meaning that decisions are based not just on what aspects you want, but also on how much you want them. “You might have an idea of your ideal house, but your ideal house doesn’t exist,” says Boutilier. “You have to ask, ‘How do I trade one attribute off against another?’”

Boutilier’s software doesn’t need to know everything about your likes and dislikes in order to help you make an informed decision. “If you like one house more than another, then that already gives me a fair bit of data,” he says.

Human real estate agents already practise a version of this type of learning – they’ll take you to a dozen houses to get a sense of what you love and hate, and then zero in on just a few possibilities that are right in the zone. The difference with Boutilier’s software is that it can learn a lot about you *and* have access to deep and broad data about every single house currently on the market. Combining big data with a

**IN 10 YEARS
YOU’LL BE ABLE TO**
Use an app to get
personalized advice
about complex decisions
such as buying a house
or planning a vacation

deep understanding of an individual would allow an app to guide someone all the way through the process, from choosing a house to determining how much to bid on it.

Ultimately, Boutilier foresees one piece of software that knows you so well it can help you plan a commute or a vacation, buy a book or a car, and choose an insurance plan or a cancer treatment. After all, many such decisions are inter-related. But it might not happen in the next decade.

“I’m not sure that we will have these fully integrated digital assistants by 2025. But in any one of these specific areas, I think there is a very good chance that there will be a fantastic app, web service or cloud service that will be very personalized,” he says. “They will know much more about you than they currently do and help you make good decisions through unintrusive conversations with you about your goals and preferences at any particular time.”

Ultimately, Boutilier expects all these decision assistants will talk to each other, creating a unified digital counselor with powerful insight into the best choices for each person.



Augment Your Life

“What’s so special about Mona Lisa’s smile?” a Louvre visitor quietly asks of his head-mounted display. Glowing text and graphics pop up, superimposed on Da Vinci’s famous portrait, showing geometry, history and analysis of her fascinating expression. Moving on, the visitor finds a wall-mounted museum map and asks, “Which way to Le Café Mollien?” Directional arrows appear on his headset, alongside menus and reviews. Passing through the crowds, the visitor is told that one of the faces is an old friend he knows from his university days in Toronto.

These are some of the potential applications for augmented reality – the superimposition of computer-generated information and images on the world around us. (Virtual reality, by contrast, is a *synthetic* world presented to the user.) It sounds futuristic, but it is not far away.

“In as little as five years from now, we will have vastly improved forms of augmented reality,” says Eugene Fiume, a professor of computer science. A single sign at an airport could display differently for each traveller, pointing toward the gate indicated on each person’s boarding pass. It could also offer information on current wait times at customs and security. Mechanics could refer to images of working machinery while tinkering with a broken engine. Surgeons could consult medical texts in the middle of an operation.

IN 10 YEARS
YOU’LL BE ABLE TO
Learn about the world
around you, without
having to look up the
information yourself

Several concurrent advances make it more possible for augmented reality to have its day: displays have gotten lighter and higher resolution; the required computing power can be squeezed into a very small space; Internet connectivity provides access to nearly unlimited data.

Augmented reality also benefits from the recent advances in voice recognition and head-mounted devices – both of which will contribute to its widespread use and success. Location-aware devices can figure out for themselves when you’re standing in front of the Mona Lisa and automatically provide context-specific information. And gesture-driven control minimizes the need for a mouse, touchscreen or other pointing device.

Fiume, who directs the University of Toronto’s Dynamic Graphics Project, also has an interest in moving beyond two-dimensional graphics to create 3-D environments that interact with the real world – a task greatly facilitated by the proliferation of head-mounted devices. “I mean *real* three dimensions,” he says. “You could situate information in a 3-D environment and use glasses and gestures to navigate. The emergence of consumer-level head-mounted displays will allow individuals to do this.”

The Car That Drives Itself

Since 2012, Google's self-driving cars have been plying public roads in three American states, and yet you won't find such cars at your local dealership. It's not just regulations or cultural inertia that keeps self-driving cars from proliferating – the technology itself still has some distance to cover.

In fact, a truly self-driving car – one that can start anywhere and go anywhere without human intervention – does not yet exist and will take some time to develop.

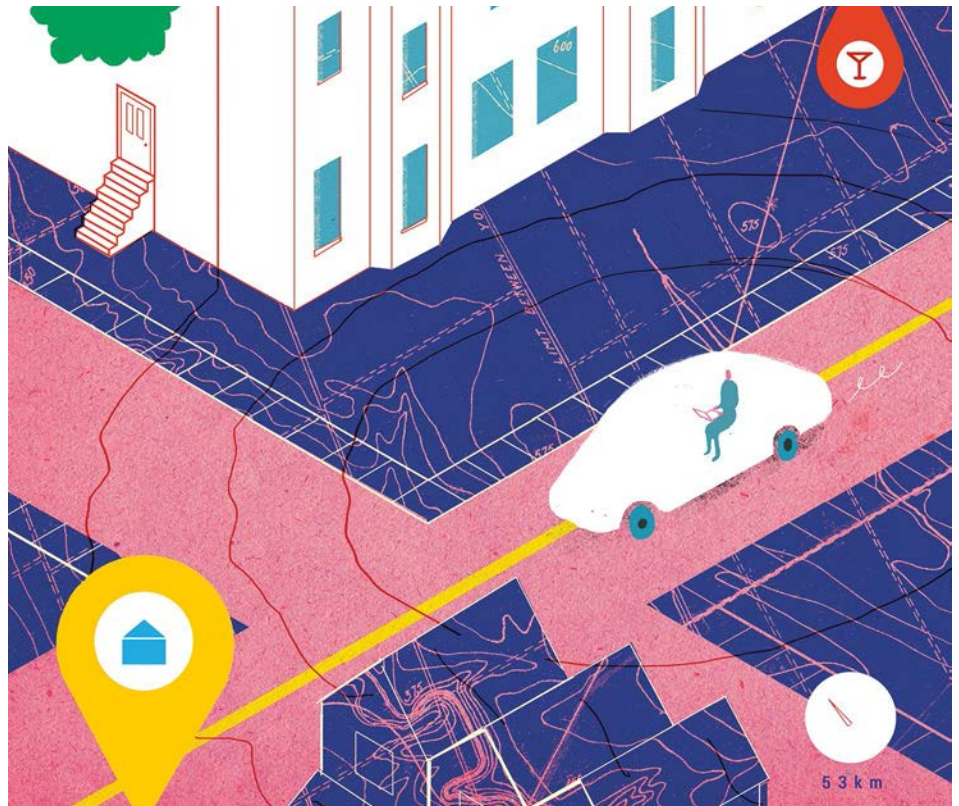
"A Google car works with maps that are annotated extensively," says Raquel Urtasun, a computer science prof who works on computer vision systems for self-driving cars. The location of stop signs and traffic lights, school and hospital zones, and key landmarks are all known to a Google car before it ever scans its local environment. "And they never drive in scenarios where they haven't driven manually before. So it's not as autonomous as one might think."

Not only do the most advanced autonomous cars on the road today depend on extensive human input in order to function, but they are also prohibitively expensive – just the laser-based scanning system used by many automated cars to survey their surroundings costs about \$80,000.

Urtasun would like to bring the cost down. "I'm trying first to replace the expensive sensors with just one or two cameras that cost \$30 to \$50 each, without sacrificing safety or reliability," she says. "And I want to get rid of the need for annotations, so you can drive in situations that you [and the car] have never encountered before."

Less expensive cameras and unmarked maps both create the same challenge: cars must navigate using significantly less information. Urtasun believes smarter machine learning algorithms can eliminate the need for costly equipment, creating cars that are both better at driving and cheaper to buy.

Urtasun's lab is using crowdsourcing to develop smarter software. Her team has amassed huge amounts of data that was gathered by physically driving a car equipped with the kinds of scanners and other information-gathering tools that might one day be used in commercial self-driving cars. In 2012, they released the data to hundreds of research labs around the world. Machine learning experts



who specialize in self-driving cars use this data to test and upgrade their algorithms – constantly improving machines' ability to make sense of the information. Algorithms are evaluated on their ability to do anything from figure out where in the world the test car had been driving, to predicting the behaviour of other cars.

This process has already helped overcome some of the major hurdles to affordable self-driving cars.

"The algorithms that people were using before this dataset, and the kind we've now found to be very, very useful, are quite different," she says. "People were using simple algorithms that were really looking at the colours and shapes at the pixel level. This doesn't work when you go to a complex scenario where the information is imperfect. The new algorithms are more global in their 'thinking.'"

In other words, rather than just scanning for stop signs and traffic lights, the most successful algorithms look at the larger context of the movement and interaction of many elements. This minimizes mistakes, and also leads to more sophisticated analysis.

Urtasun believes you will probably still need a driver's license in 2025. Even though today's cars can assist drivers in many different ways – from parking autonomously to proximity sensors – completely self-driving cars could be at least a decade down the road. "We are solving computer vision problems very quickly today that 10 years ago people thought were impossible," she says.

Now if they could only find a way to eliminate traffic.

IN 10 YEARS
YOU MAY BE ABLE TO
Tell your car where you want to go and then sit back and read a book or take a nap

Understanding How You Affect the Climate

Climate change happens on a scale too large for people to experience on a visceral level. True, we might notice that winters are different now than when we were children, or that water tables have dropped or weather seems more extreme. But in reality, climate is a global, multi-generational phenomenon – any single person’s experience is merely a tiny part of a barely fathomable whole.

The climate models that tell us where the planet is headed can seem as complex as the real-life Earth systems they simulate. Steve Easterbrook, a professor of computer science, sees this complexity as a problem – it both distances people from the issue, and also makes them vulnerable to the misinformation of climate change deniers.

He’s working on computer tools that would make climate models understandable and real to non-scientists. In the next five years, he hopes the general public will be able to run simulations themselves, plugging in different variables, and getting first-hand insight into the impact of various lifestyle choices.

He hopes that his user-friendly interfaces will both “inoculate people against nonsense,” and also make climate change feel more real. It’s all about the first-person experience. “I’m studying how you put those models in the hands of educators or on websites and blogs, so that people can play with the models themselves and improve their understanding of the

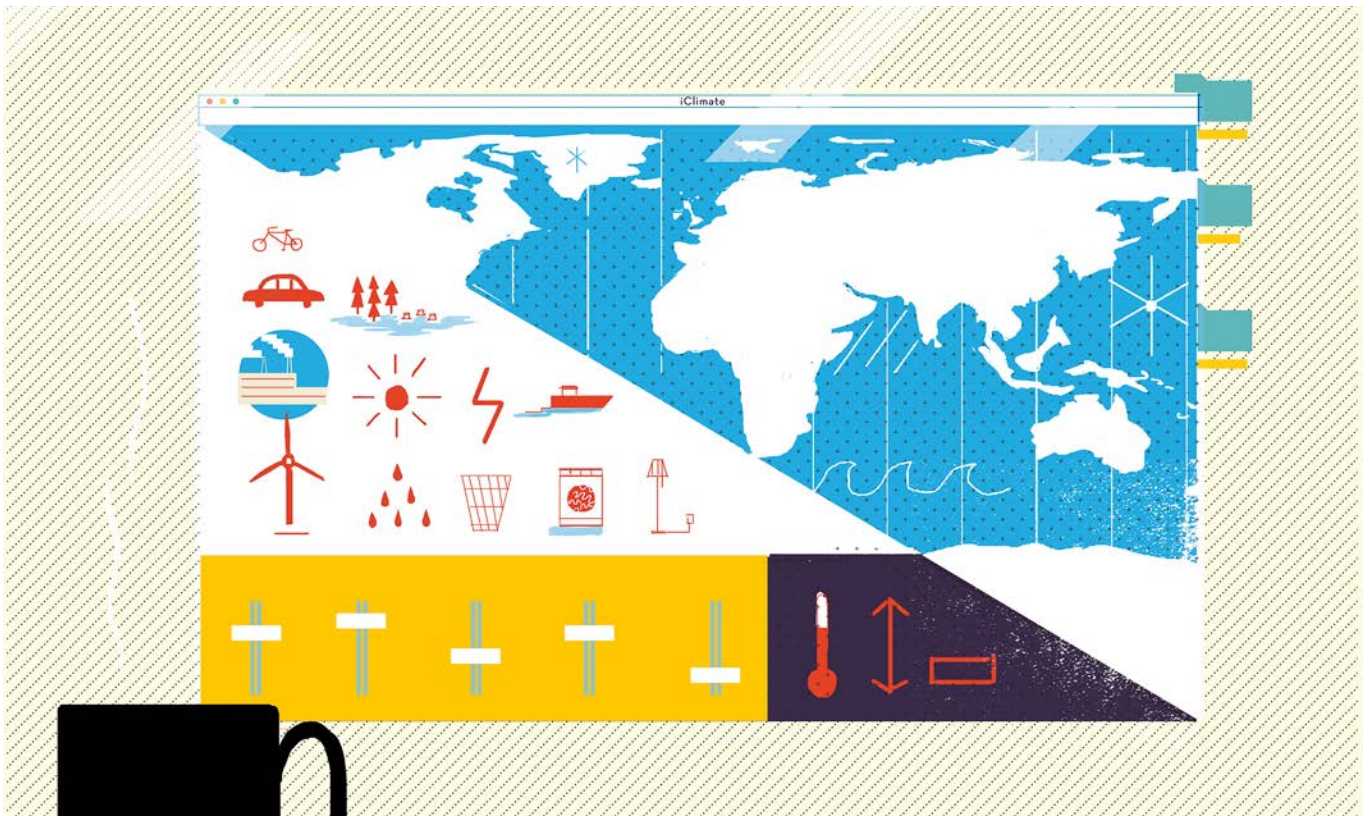
physical properties of the climate system,” he says.

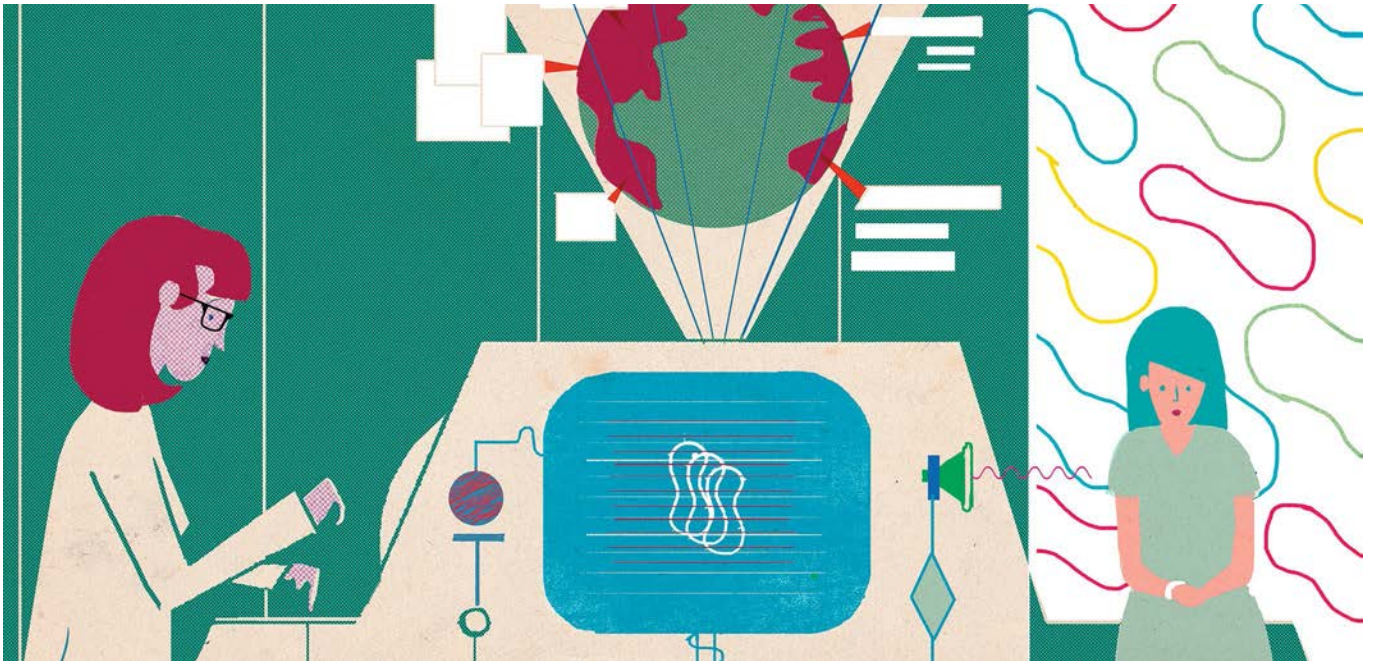
Easterbrook is developing apps for smartphones and websites that allow people to tap directly into the big picture of climate change. Ordinary people will be able to run their own simulations, to answer any “What if…” question they would like: What if we stopped all carbon emissions today? What if developing nations used energy at the same rate as developed nations? What if we replaced all planes and cars with rail travel? What if meat were banned worldwide?

“Each time you can set up an experiment like that and run the simulation, it reinforces your understanding of the physics,” says Easterbrook. “Somebody blogging about the science can incorporate one of these models and say, ‘I’m going to tell you a little bit about how the science works but don’t just take my word for it, here’s a model you can play with where you can see the effect that I’m talking about actually happening.’”

Easterbrook says we can’t afford to wait until 2025. “People dealing with climate policies say the next five years are absolutely crucial,” he says. “Today, climate carbon is definitely rising. To turn the ship around, it has to be falling steadily by the end of the decade. And the only way that’s going to happen is if more people are on board with the kind of transformational change that has to occur to make that happen.”

**IN 10 YEARS
YOU’LL BE ABLE TO**
Run your own global
warming simulations





Treating Rare Medical Disorders

Imagine that in 2025, somewhere in Canada, a child is born with bones missing from her hands. Her doctor refers her to a specialist, who has never seen such a condition before. A database check gives the specialist not only a name for the condition, but also information about which gene mutation is responsible. The specialist can offer counsel to the patient's parents, and provide a prenatal genetic test for the condition for any future children. The physician can do all of this – even though there might be fewer than 100 people in a world of eight billion who share this mutation.

Rare genetic disorders are the bane of diagnosticians. Such conditions are nearly impossible to identify because any one physician will likely see only one such case in their lifetime. For patients and families, the lack of information is often deeply worrisome. Well before 2025, though, researchers such as Michael Brudno, a professor of computer science and the director of the Centre for Computational Medicine at Sick Kids, hope to have a genetic test for every single rare disorder ever discovered – an estimated 14,000 conditions.

Symptoms of rare disorders can include missing bones, seizures, heart defects, developmental delays, disproportionate body growth and pretty much any symptom associated with more common disorders.

Each rare disorder occurs due to a unique genetic mutation, and the resulting conditions are both varied and devastating.

To aid both patients and the physicians who care for them, Brudno developed, and continues to refine,

an online matchmaking system called PhenomeCentral. Through this portal, doctors around the world can compare symptoms and genetic variants to diagnose rare disorders and expose the genes that caused them.

“There are cases where patients appear to have no known disorder – something is really wrong, and we don't know what,” Brudno says. “In a case like that, it's very hard to identify the genetic cause because there is going to be a million differences between any two people's genomes.”

Through PhenomeCentral, doctors describe their patients and add genetic information if they have it. The system identifies patients who have conditions with significant similarities and connects their doctors.

While there are few treatments for these disorders, PhenomeCentral may still help some patients. “For some cases where, say, your body is not generating a specific enzyme, it can be as simple as, ‘Here is the supplement you need.’ But those are really the exception rather than the rule,” Brudno says.

Because rare disorders are extreme forms of common disorders, Brudno says they provide a valuable testing ground for drug treatments that could be applied in the broader population. “Drug companies are starting to look at rare disorders as areas where they can deploy a drug and see if it's having an effect. It's easier to show the effect when you have an individual with more extreme symptoms,” he says.

Ultimately, Brudno expects PhenomeCentral to lead to faster and more accurate diagnosis and testing for genetic disorders by 2025.

**IN 10 YEARS
YOU'LL BE ABLE TO**
Receive accurate
diagnoses and medical
advice for even rare
genetic disorders

What do you want technology to do for you by 2025? Tweet us (@uoftmagazine), or email us at uoft.magazine@utoronto.ca, and we'll share your responses.

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By Kelli Korducki
Illustration by Vicky Lam

Canada's Next Top Author

How a creative-writing program that admits just seven students a year is cultivating the country's next generation of literary giants

GHALIB ISLAM IS A SLIGHT 32-YEAR-OLD whose unassuming demeanour belies the brilliant literary career that likely awaits him. *Fire in the Unnameable Country*, the author's debut novel released this spring by Penguin, has become one of the year's most hotly debated works of Canadian fiction.

Islam's book is unconventional, to say the least: at one point, its narrator, who happened to have been born on a flying carpet, turns into an owl. The story takes readers on a dystopian journey through an unspecified, if vaguely Middle-Eastern, country under the grip of thought surveillance. The book's publisher has said that, upon receiving

Islam's manuscript, there was a sense that they had found Canada's George Orwell.

But U of T found him first.

Though many years in the making, *Fire in the Unnameable Country* took shape in the university's two-year creative writing MA program. Islam, who earned his degree in 2006, was among the program's first graduates. It was during his studies that he completed the first draft of his novel. U of T is also where he befriended fellow student and author Jonathan Garfinkel, who would connect Islam to both his literary agent and eventual publisher. Islam's academic advisor – and reason

“For a young writer, so much depends on confidence and stamina. It takes discipline to spend days alone writing in a room. For this, you really need a network of support”



for applying to U of T in the first place – was none other than Margaret Atwood.

“He worked very hard and long on that book, taking it through several metamorphoses,” says Rosemary Sullivan, the program’s first director and one of its founders – and an award-winning author herself. “He always had the advice and support of Margaret Atwood, long after the formal mentorship was over.”

Islam says Atwood pointed him to works of fiction whose narrative styles influenced his own inventive approach. “Once in a while she would point to a text, and say ‘this is an example of metafiction I think you should look at,’” he recalls, laughing over his surprise when she recommended Emily Brontë’s *Wuthering Heights*. It had never occurred to him that his more obvious influences, such as the magic realism of Günter Grass and Jorge Luis Borges, had been cut from the same cloth as the 19th-century novelist.

A mentorship, which pairs each student with an author working in either poetry or prose, has proven to be one of the MA program’s key selling points. Atwood isn’t the only big name involved: Griffin Poetry Prize-winning poet A.F. Moritz, Dora Mavor Moore Award-winning playwright

Linda Griffiths, and former Poet Laureate of Toronto Dionne Brand count themselves among the program’s adjuncts.

The star cast of mentors isn’t the only major draw. Unlike programs that focus squarely on producing and workshoping a manuscript, U of T’s program also includes academic courses, allowing students to go on to pursue a PhD in English. Also unlike many MFA programs, U of T’s funding package provides students a paid teaching assistantship in the department of English, should they want it. It’s no surprise, then, that the program – which admits only seven students each year – is poised to produce Canada’s finest crop of upcoming writers.

“We get about 10 applicants for each available place, so the competition is very intense,” says the program’s director, Richard Greene, a professor of English at U of T Mississauga who took over from Sullivan in 2012. The requirements are stringent: prospective students must have earned a BA with no less than a B+ average. They must also have a “very fine portfolio of creative writing” (published or unpublished), says Greene, and sterling academic references. Without fail, each round of applications turns up countless gems. “There is nothing I hate as much as signing rejection letters for writers who are obviously full of promise,” says Greene. “But it happens every year.”

For 2012 graduate Suzannah Showler, U of T’s hybrid professional-academic approach made it the only creative writing graduate program she applied to. “At the time, the idea of doing an MA rather than an MFA appealed because I wanted to keep the door to a PhD ajar,” she recalls.

It was the late Michael Dickson, a professor in the department of English, who came up with the idea of introducing a creative writing degree to U of T’s School of Graduate Studies. He got an enthusiastic response from the English department’s other creative writers, so he approached Sullivan, a Governor General’s Award-winning

Creative Writing for Everyone

If you’re looking for a less intensive way than a graduate degree to improve your creative writing, U of T’s School of Continuing Studies offers many options

U of T’s highly selective, and tiny, creative writing MA program isn’t the only route for those looking to unleash their inner voice on the page. Since the mid-1990s, U of T’s School of Continuing Studies has offered creative writing courses; it formalized its creative writing certificate program in 2001.

Lee Gowan took the reins as the program’s director in 2003, and since then it has quadrupled in size. The focus is on process: students are taught elements of narrative and structure, then are given assignments that will get them using what they’ve learned in the classroom. Gowan reports that most of the program’s students are between the ages of 35 and 55, and many speak English as a second (or third or fourth) language.

“We have over 2,000 registrations per year,” says Gowan, and students can choose among

courses geared toward different types of creative writing. Among the program’s nearly 100 instructors are such celebrated authors as Dennis Bock, Michael Winter and poet Ken Babstock, who has also been involved with the MA program. Gowan says faculty overlap between the two programs is not uncommon.

Anyone can enrol in creative writing courses at the school, and it has produced its own share of notable alumni. Marina Nemat’s best-selling 2007 memoir *Prisoner of Tehran* was written during her time in Continuing Studies.

“These courses help people with the craft, they give people a deadline, and they give people a community, which is one of the most important things in a writer’s life,” Gowan says. “It can really help to have a group to support you and offer feedback to help you to improve.”

– KELLI KORDUCKI

writer, a colleague and a friend, in the early 2000s to spearhead the initiative.

Student funding was an early – and a crucial – consideration. In addition to the teaching assistantship, the program has always encouraged students to apply for the Ontario Graduate Scholarship and for funding from the Social Sciences and Humanities Research Council. In 2009, Carla and Clayton Gilders established the Adam Penn Gilders Scholarship in Creative Writing at the department of English, in memory of their son. The scholarship varies in amount and is awarded to one first-year creative writing student every year. (Then, in 2012, the department began offering the Avie Bennett Emerging Writing scholarships, worth \$7,000 and awarded to each student accepted into the program.)

From there, Dickson, along with his colleagues, determined that the program's first year would include academic coursework and a multi-genre writing workshop, with the second year devoted to producing a manuscript that would be defended in an oral exam. Sullivan came up with the idea to pair the students during the second year with professional writing mentors, who would offer advice and encouragement to each burgeoning author along the way.

"Those of us in the department who have had long experience in writing understood that it's really important to try to include a professional context in which the students could work," says Sullivan.

The idea was not to *teach* students how to write but to nurture the ability they already have. "There are of course writers' 'tricks,' in the best sense of the word, that can be taught to young writers, such as how to manipulate your characters' points of view, where metaphoric language works, how to create tone, the importance of structure and so forth," says Sullivan. Ultimately, however, the program aims to build a writer's self-assuredness.

"For a young writer, so much depends on confidence and stamina," says Sullivan. "It takes discipline to spend days alone writing in a room. For this, you really need a network of support."

Students hone and refine elements of their craft, but membership in a close, creative community is really the program's hallmark. As Sullivan puts it, "The students in a creative writing program gain as much from the support of the other young writers in the program as from the director; they gain a sense of community that sustains the outrageous desire to turn oneself into a serious writer."

Each mentor is paired with a student on the basis of mutual compatibility and interest. Often the students themselves will have an idea of a specific writer they'd like to work with; otherwise, the program's director will make a recommendation.

Most of the program's mentors are based in Toronto, but not all – Montreal-based poet, editor and anthologist Carmine Starnino is a first-time adjunct faculty member this year. He describes his approach to mentorship as

"A writing workshop is really about building the necessary arrogance you need to be a writer, to believe that you can survive as a writer in the world"



"full-service": a combination of manuscript guidance, professional direction and moral support.

"I think what young writers are missing is a sense of the lay of the land," says Starnino. "So, I can provide a lot of that. I think what U of T has in mind is to help poets not only write better poems but to help them talk to editors and understand the editorial process." He and his first assigned student corresponded through a combination of phone calls, email, and trips between the two cities – another glimpse of what writers can expect in an increasingly global publishing sphere.

Poet Michael Prior has been assigned to work with Starnino in the next school year. Prior considers himself fortunate to be able to tap into the writer-editor's wisdom around making a living as a poet. His fellow classmates have also proven themselves to be a useful professional resource; in the often-solitary world of writing, these connections can be hard to come by.

"[The program is] a great way to network with other writers and to get to know people," says Prior. "I'm really grateful for my classmates. They're all brilliant and very talented, and [working with them has] been a great way to develop my writing." He adds that having to actually sit in a room with six other people critically reading his work has made him extra-meticulous about his phrasing.

"I still think the best way to learn to write is to do so diligently and read widely, but the workshop is great for refining style and catching the parts of one's writing that one may be too close to, and consequently unable to identify as not working," says Prior. "As well, sharing class time and hanging out with each other has led to a sort of a collective library of influences – both in each other and in the writers whose work we admire and introduce to the class."

In this age of ebooks and dwindling publishing profits, network-building opportunities and business development skills are essential. Early on, the students listen to a talk about the ins and outs of the publishing industry that hones in on landing an agent and figuring out royalties. But the mentor also helps their student learn marketing and self-promotion.

Suzannah Showler is another of the program's recent luminaries. A 2013 finalist for the prestigious RBC Bronwen

Wallace Award for Emerging Writers, she released a book of poetry, *Failure to Thrive*, this past spring. (The award's 2013 winner, Laura Clarke, is also a graduate of the program.) Showler says she benefitted from the direction she got from Sullivan, in particular, who stressed a need for pragmatic thinking when considering a writing career.

"If I'm lucky enough that I get to keep writing, trying to find a balance of career and craft that feels authentic is something I'm probably always going to have to work at," she says. "When it comes to that, the U of T program gave me access to people to turn to as examples or sources of wisdom who I wouldn't have encountered otherwise." She considers, in particular, her mentor-student relationship with the writer Kevin Connolly as one that not only opened doors, but was instrumental in forming her book.

She describes the program itself as "really Canadian-feeling and collegial and supportive." Because of its small size, there's room for everyone to have their own identity and, as Showler puts it, "not be elbowing one another for territory."

While director Richard Greene is coy about how he sees the program evolving, he's excited to point out the addition of new mentors – the poet Karen Solie, for one. He's also proud of new entrance grants. "It has been a great development, easing the financial situation of the students," he says.

U of T's creative writing students and alumni have received countless honours for their fiction and poetry in the past decade, and have published more than 20 books. Among these are *All We Want Is Everything*, a collection of short stories by Andrew F. Sullivan, which placed on *The Globe and Mail's* Top 100 list of Canadian fiction for 2013.

Canada's literary darling *du jour*, Ghalib Islam, remains grateful for the hand U of T's program had in shaping his work, particularly for how it helped him develop new habits and a heightened sense of confidence. "I came to the program already a writer, but what changed were certain methods or processes," he says. "It was a very vibrant, dynamic program."

Though retired, Sullivan keeps abreast of the program's goings-on and its alumni successes with a sort of quasi-maternal pride. While she recognizes that the Internet age poses challenges to the publishing industry, she remains convinced that the demand for substantive, thought-provoking literature won't disappear anytime soon. And, as long as there are writers, the need for communities that support them will remain. Still, she deadpans: "A writing workshop is really about building the necessary arrogance you need to be a writer, to believe that you can survive as a writer in the world." As far as she and a legion of successful graduates are concerned, it's a worthwhile mission.

Kelli Korducki writes about culture, diversity and innovation for *The Globe and Mail*, *Hazlitt*, *The Walrus* and NPR.

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HOW TO ENTER

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All About Alumni

“Young people think they know it all – and they do...”

Engineer and mentor
Nadine Ibrahim
(BAsc 2000, MAsc 2003)

p. 47



Tye Farrow (BArch 1987) at One Spadina, the planned home of a new institute for Architecture and Health

Building for Your Health

Tye Farrow is creating architecture that can actually prevent disease

MOST OF US KNOW WHAT IT'S LIKE to be stuck in a building that makes you feel, well, gross: a place with stale air, bad lighting, clutter, and no humanizing or uplifting details.

Tye Farrow (BArch 1987) of Toronto's Farrow Partnership Architects Inc. wants to turn that all-too-common experience on its head: what would happen, he asks, if we embrace architecture that *causes* health? "What if health is the basis for judging every public space and building that we occupy?"

That question is the starting point for U of T's new Institute for Architecture and Health, a research initiative of the John H. Daniels Faculty of Architecture, Landscape and

Design (Farrow is a member of the faculty campaign cabinet). "The institute is intended to focus on design with expertise from public health, social work, engineering, geography and medicine," says dean Richard Sommer. "It's not just the architecture of [hospitals], per se, but finding healthier ways to reform the built environment through design."

Only a handful of North American universities delve into these issues, says Farrow. He has been actively exploring the relationship between health and hospital design in his practice, which has completed several innovative projects, such as Mississauga's Credit Valley Hospital and Israel's Kaplan Medical Center. Each features specific elements – such as natural lighting, enticing staircases and compelling window vistas – intended to improve the physical and mental well-being of patients and staff alike.

These design choices aren't merely about finding the best *feng shui* or building breezy atria. Farrow cites studies ➤



The Ebers Papyrus from 1552 BC includes a description of diabetes by Egyptian physician Hesy-Ra, who treated it with a porridge made of stone dust, grain, carob, oil and honey

Brew Crew

Lee Tseng's craft beers are a hit in Shanghai



LEE TSENG (BA 2002 TRINITY) is creating American-style craft beer with an Asian twist...in Shanghai. But getting there has been an adventure. Tseng describes the city as a Wild West – opportunity abounds since everything “operates in the grey, not black and white.”

The ability to adjust and adapt quickly is something Tseng honed in university. “At Trinity College it’s survival of the fittest,” he says. “The professors aren’t there to hold your hand, so you’ve got to figure it out for yourself.”

In the spring of 2008, Tseng opened a pub and brewery in Shanghai, creating some of China’s first craft beers infused with local ingredients such as kaffir lime leaves, mangos and Yunan tea. He and his original partners Kelley Ming Lee (a chef from California) and the late Gary Hyne (a Texan brewmaster) suffered an early setback when their main clientele – American expats – started to leave the city after the October 2008 financial crisis.

But when they tried opening a new brewpub in June 2009 in Shanghai’s trendy Yong Fu district, downtowners flocked to the bar.

Unlike some microbreweries in China, Boxing Cat doesn’t dumb down the hoppy bitterness or roasty edge of its award-winning brews in an effort to win over craft beer newbies. That unwavering focus on flavour has won Boxing Cat equal numbers of expat and Shanghainese imbibers – and made many of their brews top the “best beers of China” list found at beer-nerd mecca, ratebeer.com.

After opening a second pub with new head brewmaster Michael Jordan in 2010, this spring Tseng launched a third – Liquid Laundry, a Brooklyn-style gastropub that serves tripel ale, flavoured with pear shojou, ginger and Szechuan peppercorns, on tap. Tseng plans to move back to Toronto eventually – but he will miss his “Wild West.” “[It’s made] life more interesting.” – **CRYSTAL LUXMORE**

OVERHEARD



Toronto is a great place to conduct diabetes research. Every morning we wake up and think, ‘Banting and Best discovered insulin in 1922 – what am I going to do today?’



Daniel Drucker (MD 1980), a professor of medicine, on winning the 2014 Banting Medal for Scientific Achievement Award, in April.

➤ showing that heart surgery patients tend to make faster recoveries if they are in a room with a nice view. “If the quality of the environment was better, the length of stay would fall by 40 per cent,” he says. Moreover, hospitals built using these design principles tend to do better with staff retention and recruitment. “They walk in and feel like they’re part of an organization they want to be in.”

The healthy design dividend isn’t limited to the medical sector. Studies have found a 20 to 25 per cent increase in student performance in schools that have maximized the amount of natural daylight in classrooms, says Farrow, while an assessment of call centre employees found productivity was linked to more health-conscious design features.

Health-oriented architecture, landscape design, and urban planning could help slow the growth of health-care spending

(now estimated to exceed \$200 billion a year, or 11 per cent of Canada’s GDP), with a growing proportion of those expenditures flowing to the management of chronic diseases linked to poor lifestyle, Farrow says. Sommer, for his part, cites the advent of workplace trends such as the treadmill desk as symptomatic of planning that has led to a dearth of walkable streets, dynamic spaces and buildings that breathe. The goal, he argues, should be to create built environments that allow individuals to live active, healthy lifestyles.

Farrow has identified a handful of core principles for designers, including avoiding uniformity and blandness, as well as design that embraces nature and generates healthier and more productive behaviour, such as walking and the use of stairs. “These principles should be applied to every building type that’s out there,” he says. – **JOHN LORINC**



As well as being a mystery writer, Suzanne Kingsmill is a wildlife artist and a woodworker who builds her own furniture



Nadine Ibrahim

How to Build a Sustainable City

Can Toronto cut emissions by 80 per cent? If it's up to Nadine Ibrahim, yes

AS A STRUCTURAL ENGINEER, Nadine Ibrahim (BASc 2000, MASc 2003) initially planned to build bridges – literally. Now she's focused on building bridges of a different kind: bringing people together to create innovative solutions for climate change. This PhD candidate in the department of civil engineering is focused on strategies to help cities lower their carbon emissions.

When Ibrahim discovered that bridge construction and repair were not for her, she decided to look into environmental consulting and moved to Egypt, where she became involved in assessing the environmental and social impacts of The Grand Egyptian Museum, being built on a desert site on the outskirts of Cairo. "It's an incredible project and

incredible location; you can see the pyramids in the background," she says.

Now back in Canada, she currently works with the Sustainable Infrastructure Group, a research team in the department of civil engineering. "We take a holistic approach, looking at social, cultural, environmental and economic sustainability for healthy communities," she says. "While there are alliances of cities that follow a common approach, there is still no global approach to quantify greenhouse gas emissions and set strategies to reduce them. There is no process in place to ensure that targets will be met in the future."

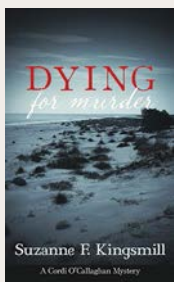
So, using Toronto as an example, she's working on a model that shows how the city could build on data in its greenhouse gas inventory, budget and climate plan to make cost-effective decisions to meet its emissions targets of 30 per cent below 1990 levels by 2020 and 80 per cent by 2050.

"There's no magic involved in achieving targets," says Ibrahim. "Conservation and demand management are low-cost strategies." She cites London, a city that came up with successful policies such as more bike lanes and incentives for electric cars, as a good example.

And let's not underestimate the power of youth, says Ibrahim, who has volunteered with organizations such as Engineers without Borders, Sprout/Ideas and TakingIT-Global, and mentored students at the university. "Young people think they know it all – and they do in their willingness and the driving force that they have," she says. "Even older people should look up to that."

What's coming down the pipeline? "I'd like to work with a global organization such as the United Nations to improve living conditions in cities around the world – whether it's in environment, health or education," she says. "Engineering has taught me the fundamentals of problem-solving and I get to take that with me wherever I go." - DONNA PARIS

Suspense on Spaniel Island



Suzanne Kingsmill has a flair for the unpredictable. She switched from studying English literature to zoology, and is now a medical journal editor by day, murder mystery writer by night. It's no surprise, then, that her crime novels keep both writer and readers on their toes. "My plot is usually a two-sentence idea," she explains. "If I had an outline, my mind would be wandering far from it within the hour."

Kingsmill's new novel, *Dying for Murder*, takes place on the imaginary Spaniel Island, where zoology prof Cordi O'Callaghan is coordinating a birdsong study. A hurricane hits, trapping the scientists – and when the research station director is found dead, Cordi investigates the murder. Kingsmill's scientific background is inherited by Cordi, while Spaniel Island is modelled

after a real barrier island off the east coast of the United States, where Kingsmill spent a summer conducting research on sea turtle hatching for her U of T master's thesis.

"When I'm writing, I 'accidentally' place certain clues throughout the novel without knowing it," says Kingsmill (BA 1975 UTM, MSc 1981). "Then 100 pages later, it's like 'Wow, I planted a clue already and it's going to work!'" Letting her mind wander to create plot twists also helps the author keep her storyline and characters fresh. "Every mystery novel needs tension," she says. "You need to keep the reader guessing." - NADIA VAN

To read an excerpt from *Dying for Murder*, visit magazine.utoronto.ca.



According to the United Nations, 3.2 per cent of the world's population – 232 million people – have immigrated to another country

THE TWO OF US

Reunion to Remember

Ann Nguyen and Paul Hiscock, two engineers from different worlds, decide to put a ring on it



ANN (BAsc 1986): I'm a boat person from Vietnam. When the Communists took over the South, they sent my father to a re-education camp for 13 years and my mother had no job. My mother paid to send my siblings and me away on a little boat when I was 15, and I ended up in a refugee camp in Indonesia. I came to Canada and I quickly realized that I would need an education to get ahead so I went to U of T. When I finished university and got my very first job, I bought a class ring to represent my hard work. I always planned on

giving it to someone truly special in my life, but I never felt a strong enough connection to offer anyone the ring. Then I met Paul again at our 25-year class reunion. He's such a gentleman, and he does everything straight from his heart. I offered him the ring, and he was thrilled to accept it. He tells everyone about it. I realize now that he's the only one who can wear it.

PAUL (BAsc 1986): I didn't really know Ann at university. She was very studious back then, and I just wanted to pass and get my degree. She was always sitting in the front of the class and I was always sitting in the back. Unlike her, I was in a position to take things for granted – but I did go on to use my engineering degree to open my own consulting company. When I saw Ann again at our reunion on April 8, 2011, I fell in love with her right away. I was living in Newfoundland, but a month later, I came to Toronto and we started dating then. I moved here to be with her a year later. She really supports me. I'm very proud of her and what she's done with her life. We're getting married on September 20, which is also my 50th birthday.



Vera Belazelkoska at Ralph's Hardware, a Toronto store that reminds her of her Macedonian home

The World in a City

After Vera Belazelkoska (MA 2013) fled civil unrest in her birth country, Macedonia, in 2001, she moved several times before she found a place where she felt welcome and comfortable.

"Having lived in a number of cities, I was surprised by how welcomed I felt as a newcomer in Toronto," says the 27-year-old, who arrived in 2012. "Over half of my class at U of T were from other countries, so I didn't have the sense that my immigrant status overshadowed my experiences and skills." When she heard about Cosmopolis Toronto, a one-year project launched last summer that aimed to photograph one immigrant from every country of the world living in Toronto, she wanted to be part of it.

Today Belazelkoska is one of more than 185 people – including about a dozen U of T alumni, students and staff – whose portraits and stories make up the project's website (cosmopolistoronto.com), travelling exhibitions and an upcoming photo book. Photographer Colin Boyd Shafer used social media and crowdfunding – along with a team of dedicated volunteers – to create his unique vision of Toronto's diversity, one face at a time.

Each participant appears in two photos: one in a Greater Toronto Area location where they feel at home, and one where they hold an object from their homeland. Many of the U of T participants chose to have their portraits taken on the St. George campus.

"Cosmopolis reflects my positive experience living in Toronto and attending U of T," says Belazelkoska. "Nobody really stands out here, because everybody stands out at the same time." – MEGAN EASTON



One of the world's more unusual crowdfunding projects raised more than £25,000 to build software that allows people to suggest blind dates for their friends

Good Neighbour

Nicolas Koff is helping crowdfund community improvement projects



LAST FALL, A GROUP OF VOLUNTEERS TRANSFORMED an empty sidewalk next to a food market loading zone into a funky, colourful public patio. This spring, they'll complete the design. The \$6,500 cost for the project, at Market 707 in downtown Toronto, was crowdfunded on Projexity, an online crowdsourcing platform that aims to help anyone to fund, design and carry out urban improvement projects in their own neighbourhood.

Projexity, which launched in April 2013, is a collaboration between architect Nicolas Koff (BA 2006 Victoria) and landscape architect Marisa Bernstein, along with Koff's brother Jonathan, a computer programmer.

How it works: An individual or group can suggest a candidate site for public landscaping or a project for urban improvement, and the public is invited to submit design ideas. After a open vote to choose three favourite designs, Projexity brings on board a team of local stakeholders – neighbours,

community groups, municipal councillors, the project leader – to select the winner. The project remains on the site to gain funding and volunteers.

There are two benefits, says Koff. First, Projexity creates opportunities for rising architects. "A lot of contracts go to the same companies," he says. "So it's hard for a young designer to break in and change the status quo. This is a good way to allow young designers to get their designs built."

Second, Projexity empowers citizens. "We want to get people involved, so they are not at the mercy of the city in how their space gets developed," Koff says. "Most people don't know how to approach an architecture firm." Moreover, plans for municipal capital improvements are set out years in advance. Depending on the idea, a project can happen through Projexity in as little as a month or two.

Projexity has funded six projects to completion and dozens more are now in the pipeline, many part of the site's partnership with the 100 in 1 Day citizen action initiative. One group intends to replant a park area with native plants; another to organize a clothing repair event.

Projexity takes five per cent of funds raised to cover its secure hosting and web design costs, and a further one per cent fee goes into the Projexity Urban Improvement Fund to be donated to other groups. "Those funds go to projects that don't generate as much funding," Koff says. "This helps level the playing field because some wealthy areas might be able to raise more funds. We want to empower everyone to be involved in urban development." – ABIGAIL CUKIER

World Changer

Katharine Hayhoe is one of the world's top voices for climate action



In April, Katharine Hayhoe (BSc 1994 Victoria) was named to the 2014 *Time* 100 list of the world's most influential people. Currently a professor and director of the Climate Science Center at Texas Tech University, Hayhoe conducts research to assess the impact of climate change and to help develop more informed policies. "We quantify the impacts human activities have on our world," she says, "and communicate those impacts to everyone who will be affected – from the inhabitants of low-lying islands on the other side of the planet to the kids at the school right down the street."

A Christian and a scientist, Hayhoe was chosen for the *Time* list because of her role as an "environmental evangelist," reaching out to conservative and Christian audiences with the message of Christians' responsibility to care for people and the planet.

Hayhoe had been on track for a career in astrophysics until she took a U of T geography class from Prof. Danny Harvey. "That marked the turning point in my education and my career," she says. "Climate science is, at its core, nothing more than applied physics. I still remember my complete shock when I realized that my physics and astronomy classes gave me the perfect foundation to study climate change. I was also surprised to find out how big the problem of climate change was, and how urgent."

– JELENA DAMJANOVIC



According to Health Canada data, a cup of seedless green grapes contains 110 calories. A homemade chocolate chip cookie has 78

60 SECONDS WITH

Yoni Freedhoff

This doc prescribes chocolate



A diet can be low in carbs, fat, or sodium – but above all else it should be enjoyable. That’s the advice of Ottawa-based weight management doctor **Yoni Freedhoff** (MD 1999) who says that human weakness just won’t let us endure too much deprivation. His new book, *The Diet Fix*, is full of tasty recipes, fun factoids (did you know that the first best-selling diet book was written by a British coffin maker in 1863?) and tips on how to make that diet last well beyond your high-school reunion. **Cynthia Macdonald** weighs in with the man many are calling one of “Canada’s foremost obesity experts.”

Is it true you actually write prescriptions for chocolate? I do! Also for Chinese food, beer, pizza, you

name it. Food is not just fuel: it’s comfort and celebration. The odds that you’re going to cut out something forever that regularly provides you with pleasure are very low. I’d rather people learn how to have the smallest amount of whatever it is they need to like their lives, than to eliminate it altogether.

I guess we all have our kryptonite. Mine is cake.... And mine is potato chips.

You’re a huge fan of food diaries. My experience with literally thousands of patients is that people who use them well lose up to three times as much weight as people who don’t. One of the main benefits is learning your foodscape, as I call it. Knowing the calories in all the foods of your life will help in determining how often you choose them and how much of them you choose.

And diary apps can also tell us how many calories are in our food. We don’t really know, do we? Calories are not intuitive – you can’t smell them, you can’t see them. Sometimes you want a lot of them, but you should know what you’re getting into. It’s like looking at price tags before you buy.

Many people don’t know that there’s a big caloric difference between fruits and vegetables, even though we always mention them in the same breath. With vegetables you can almost do no wrong. But certain fruits, like grapes, really pack a punch. I’ve had pears that have the calories of Mars bars.

Back to those potato chips. One thing that’s nice about this book is you’re not preachy: you have weaknesses too. There’s nothing I tell people to do in my book that I don’t actually do myself. I’ve kept a food diary every day since 2011, eat mostly home-cooked meals and make sure I’ve got protein everywhere. But yes, I will have potato chips and I enjoy my single-malt scotch. This is real life! If you’re caught up in trying to be perfect, you’ll create a lifestyle that isn’t sustainable in the long term.

People who use food diaries lose up to three times as much weight

To read an excerpt from *The Diet Fix* about why food is more important than exercise in weight loss, visit magazine.utoronto.ca.

Milestones



Sukhdeep Kaur

Sukhdeep Kaur (BA 2000 UTM) and **Gabriel Roman Ayyavoo** (MEd 1996, PhD 2013) have won Prime Minister’s Awards for Teaching Excellence, which honour outstanding Canadian elementary and high school teachers.

The organists at St. Paul’s in London have always been men – until this spring, when **Rachel Mahon** (BMusP 2013) joined the storied cathedral as an organ scholar.

Mina Mawani (MHSC 1998) is the new President and CEO of the Canadian Women’s Foundation. She is also on the board of the U of T-affiliated Women’s College Hospital.

It’s not a takeover, but it could be the beginning of one! Three U of T alumni were recently named deans of major law schools: **Gillian Lester** (LLB 1990) at Columbia Law School, **Sujit Choudhry** (LLB 1996) at University of California, Berkeley, and **Paul Paton** (BA 1988 Trinity, LLB 1992) at the University of Alberta.

Sustainable architecture pioneer **Peter Busby** (BA 1974 TRIN) has won the 2014 Gold Medal from the Royal Architectural Institute of Canada for making a significant and lasting contribution to Canadian architecture.

Vivian Bercovici (LLB 1988) is Canada’s newest ambassador to Israel. She formerly lived in the country when she studied at the Hebrew University of Jerusalem.

Congratulations to the 211 graduating U of T students who received **Gordon Cressy Student Leadership Awards** this spring. The honours celebrate outstanding community service and the ability to inspire others. The winners are listed at alumni.utoronto.ca/about/awards/cressy-awards.



LILY HANSEN-GILLIS

Psychology student
Art lover
Mingle Maven

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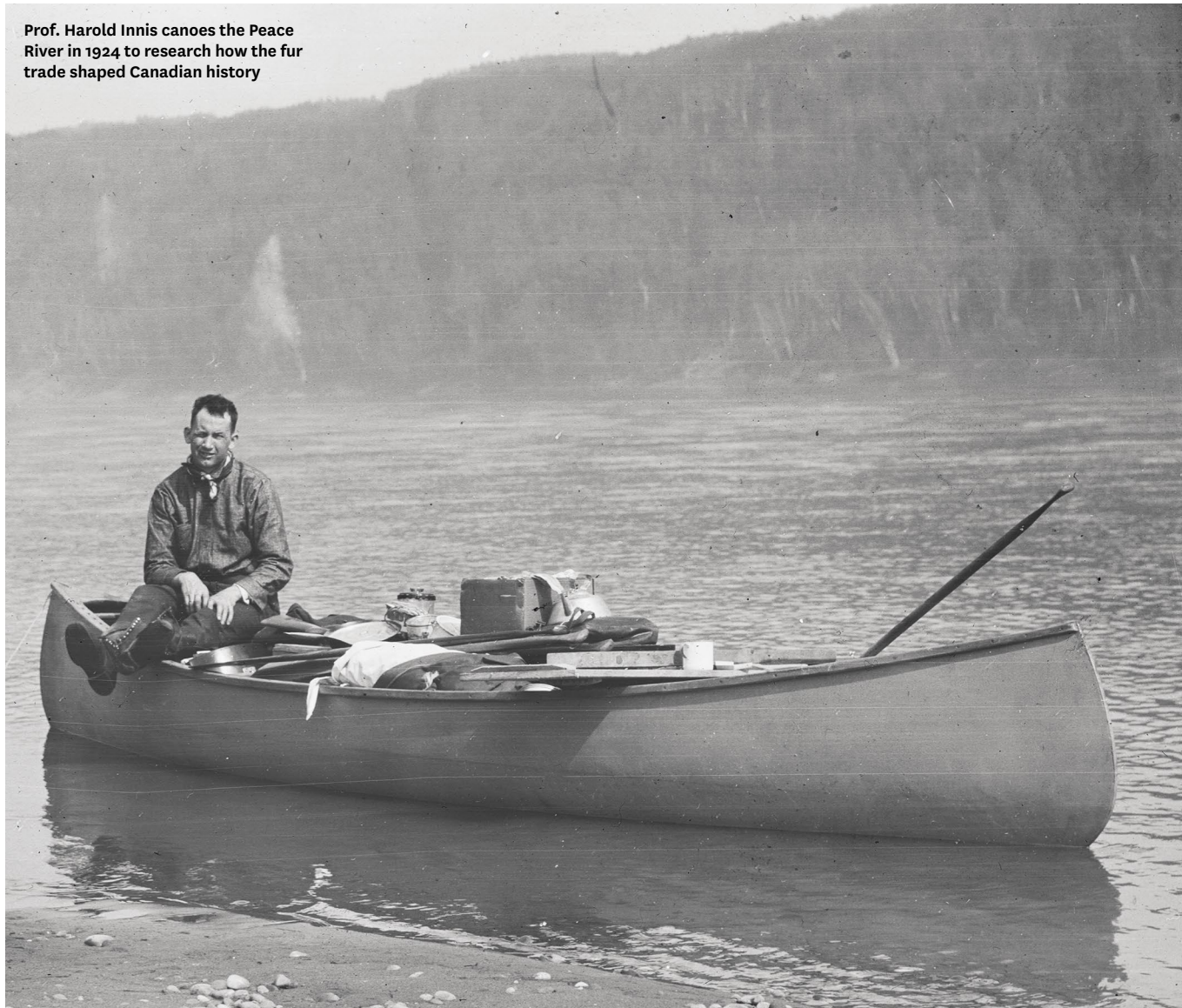
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Prof. Harold Innis canoes the Peace River in 1924 to research how the fur trade shaped Canadian history



VISION OF CANADA

Summer 1924

Harold Innis's fur trade research launched a celebrated academic career

When Harold Innis set off to explore the history of the fur trade in Alberta's Peace River basin, he was limping from a shrapnel wound that had ripped open his leg at Vimy Ridge. But by the time the junior assistant professor returned to U of T, he was able to throw away his cane.

A summer in the northern hinterland did more than restore Innis's health. It prompted the political economist to give Canadians a new vision of their country. Then, our jagged landscape was seen as an obstacle to overcome. Innis countered that Canada developed because of its geography, not in spite of it.

In his "staples thesis," he argued that Canada's exports of fur, timber, fish, fossil fuels and other commodities shaped its cultural and political development. Innis was the first to point out that Canada's economic reliance on

producing raw materials made it vulnerable to the whims of Britain, the U.S. and other manufacturing nations.

In his long career, Innis also wrote seminal books on communication, inspiring Marshall McLuhan to the point that McLuhan became his intellectual disciple.

This year, Innis College, U of T's only college to be named after a scholar, is celebrating its 50th anniversary by honouring its namesake. One event planned for November will feature communication theorists who, as Innis did, have a vision to share. Janet Paterson, the college's principal, points out that many of Innis's programs continue to further the scholar's legacy. "The college reflects some of Harold Innis's far-reaching ideas on communication with its vibrant programs in film, writing and rhetoric, and urban studies." — **SUSAN PEDWELL**

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No purchase necessary. Contest open to Canadian residents who are the age of majority in their province or territory of residence as of the contest start date. Approximate value of each prize is \$1,000 Canadian. Chances of winning depend on the number of valid entries received by the contest deadline. Contest closes Thursday, November 27, 2014, at 11:59 p.m. ET. Only one entry per person accepted. Skill testing question required.

Spring Convocation 2014

More than 12,500 U of T students converged on Convocation Hall this June, where they were officially welcomed into the university's alumni community. Joining this year's new grads as they celebrated this milestone were the six distinguished honorary graduands listed at right. Each honorary degree recipient addressed their convocation; webcasts are available at convocation.utoronto.ca.

Spring 2014 Honorary Degree Recipients

David Brillinger

BA 1959 Victoria
Renowned statistical scientist, whose work has contributed to the fields of ecology, forestry, animal and marine biology, neuroscience and engineering. He is a Fellow of the Royal Society of Canada

Ronald J. Daniels

BA 1982 UC, LLB 1986
President of Johns Hopkins University, former dean of U of T's Faculty of Law, corporate and securities law specialist, and founder of Pro Bono Students Canada

Mychael Danna

BMus 1986, BEd 1987
Oscar-winning and Genie-winning composer

Annabel Patterson

BA 1961 UC
Sterling Professor of English (Emeritus) at Yale University, a former U of T professor of English, a Guggenheim Fellowship winner, and a Fellow of the American Academy of Arts and Sciences

Indira V. Samarasekera

Esteemed metallurgical engineer, president and vice-chancellor, University of Alberta, a Fellow of the Royal Society of Canada, and an officer of the Order of Canada

Peter Stein

Acclaimed director of German theatre, film and opera, known for his landmark stagings of such productions as Edward Bond's *Saved* and Shakespeare's *King Lear*