

HOW MUCH ARE DRUGS WORTH? THE POWER OF PROBABILITY SCHOOL OF JAZZ



of

UNIVERSITY OF TORONTO MAGAZINE

WILD THING

CAMPUS LIFE FROM
DUSK TO DAWN

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Beating the Odds

Drug researchers are helping to develop new weapons in the fight against cancer

IN JANUARY, I RECEIVED A DISPIRITING E-MAIL MESSAGE FROM A FRIEND LIVING abroad. Doctors had discovered a cancerous tumour in his right side, which would require surgery. The news was deeply worrisome, but also frighteningly common. Almost everyone these days knows someone who is dealing with cancer. According to the Canadian Cancer Society, almost 150,000 Canadians were diagnosed with the disease in 2005. A recent *Globe and Mail* article about “Chasing the Cancer Answer,” a CBC documentary that aired in early March, cites an even more shocking statistic: a North American’s lifetime chance of getting cancer has risen from one in 10 in the 1950s to almost one in two today.

Yet as much as we know about the frequency with which cancer strikes, we still don’t know all that much about its causes or how to stop it. Dozens of doctors and professors at U of T, as well as thousands around the world, are investigating how cancer cells behave and trying to find better ways to slow their growth, eliminate them or prevent them from forming in the first place.

A promising avenue of research, which is being followed at U of T’s Leslie Dan Faculty of Pharmacy, focuses on how to deliver cancer-fighting agents to precisely where they’re needed in the body. Too often, the therapy dissipates before it arrives at the site of the cancer, or harms healthy cells while attacking cancerous ones. Professor Raymond Reilly, whose research centres on a relatively uncommon form of breast cancer, is trying to circumvent these problems by attaching a radioactive cancer-killing agent to the protein in the body that fuels the tumour’s growth. Krista Foss reports on Reilly’s promising “Trojan Horse” treatment as part of a feature highlighting the new Leslie L. Dan Pharmacy Building (“A Twist of Fate,” p. 20).

It’s human nature to imagine the worst. So when statistics professor Jeffrey Rosenthal learned a week before he was slated to fly to New York City that an aircraft had crashed at the city’s John F. Kennedy International Airport, he naturally worried that his plane would be next. Then he discovered that the airport handles 5,000 flights a week, and figured he was probably safe. As *U of T Magazine* managing editor Stacey Gibson notes in her profile of Rosenthal (“Games of Chance,” p. 30), the 38-year-old probability expert, who moonlights as an amateur comedian, is adept at explaining to students and lay audiences how mathematical concepts, such as probabilities, play an important role in our daily lives.

Classes are a vital part of the U of T experience, but an awful lot occurs outside of the lecture hall – sometimes at unusual hours. *Varsity* editor Graham F. Scott explored the St. George campus over several nights in February (“After Hours,” p. 36) and spoke to students conducting experiments, playing sports, writing, performing, broadcasting, and yes, even studying. In the wee hours of the night, what shone through was the students’ dedication – to the task at hand, and often to a greater goal – and desire to succeed. As second year-student and varsity swimmer Marco Monaco put it: “It’s the will to win.”

SCOTT ANDERSON

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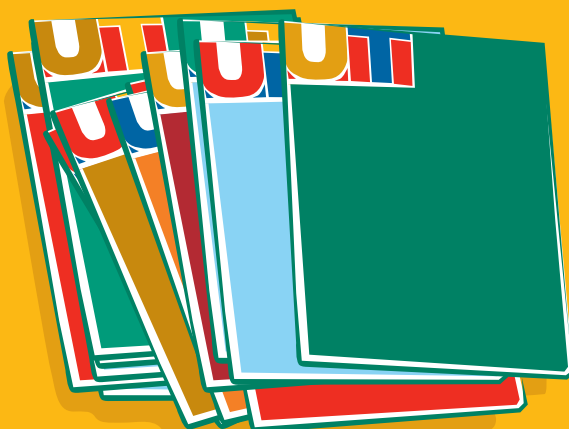
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In recent issues, we've featured stories about clean-energy alternatives to fossil fuels; the unique accomplishments of Supreme Court judge and University of Toronto alumna Rosalie Abella; the importance of ethics in business; and the amazing surgical separation, by U of T doctors, of the Mufuka twins, who were born conjoined at the abdomen.

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

In the past three years, The Canadian Council for the Advancement of Education has recognized *U of T Magazine* for excellence in writing and photography with three gold and five silver awards. The magazine has also received two National Magazine Award nominations.

We could not have achieved this without your help. Thank you for reading *U of T Magazine*. If you would like to join other alumni in contributing to the magazine, please visit www.magazine.utoronto.ca, under "Support the Magazine."

Measuring Up

What university rankings do and don't tell us

ALUMNI SOMETIMES ASK ME WHERE U OF T STANDS COMPARED to other universities in Canada and worldwide. My answer is always, "It depends." It depends on what dimensions you measure and it depends on how you measure them.

In 2005, for example, *Maclean's* ranked the University of Toronto number one among Canadian medical-doctoral institutions for the 12th year in a row. It's a fabulous record. However, during my academic career in healthcare performance measurement, I learned to be wary of aggregate rankings of institutions. Imagine a hospital that was superb at heart surgery but had a mediocre obstetrics program. The combined rating for those two programs would be useless for heart patients and expectant women alike! It's much the same when complex universities are reduced to a single score.

For better or worse, the seductive reductionism of institutional rankings still gets attention all over the world. One popular "league table" is published by the *Times Higher Education Supplement*. The *Times* ranked U of T 29th on its annual list of the world's top 200 universities, up eight spots from our 2004 ranking. We were the top Canadian university in biomedicine, science, social science and technology, but stood fourth in arts and humanities and ended up slightly behind McGill overall.

Another popular global ranking is published by the Institute of Higher Education at Shanghai Jiao Tong University. Their system put U of T 24th in 2005, top among Canadian universities, with UBC and McGill respectively second and third in Canada.

Why the differences? The *Times* creates a composite score by combining reputation ratings, research outputs, proportion of international students and faculty, student-faculty ratios and survey data from employers or recruiters. The Shanghai scoring system relies overwhelmingly on research performance measures.

In January 2006, Alex Usher and Massimo Savino from the independent Educational Policy Institute took a constructively critical look at university league tables worldwide. They noted that within individual countries certain institutions invariably rise to the top, regardless of the ranking scheme: Oxford and Cambridge in the U.K.; Harvard, Yale, Princeton, MIT and Stanford in the U.S.; Peking and Tsinghua in China; and the University of Toronto in Canada. But the authors also cautioned that the basis for this convergence remains mysterious.

Their trenchant observations reminded me of Northrop Frye's description of human thought – "a process stumbling through

emotional entanglements, sudden irrational convictions, involuntary gleams of insight, rationalized prejudices, and blocks of panic and inertia, finally to reach a completely incommunicable intuition."

I am delighted, of course, that "incommunicable intuition" confirms our top Canadian ranking. That aside, we really need hard data to guide us as we strive to make U of T an even better university. That's why U of T has worked for years to develop and refine its own performance indicators. And that's also why we publish an array of indicators that hold our institution up to critical scrutiny.

This year's report is available at <http://www.provost.utoronto.ca/English/PerfIndic2005.html>. It offers both temporal and inter-university comparisons. The report also includes new information from surveys of the student experience at U of T. While our undergrads give U of T high marks for academic standards, they tend to rate their overall experience below that of some of our peers. In contrast, a majority of students in graduate and professional programs rate diverse aspects of their U of T experience from very good to excellent.

When it comes to performance measurement, as I mentioned earlier, how we're doing depends on what gets measured. We've got good reasons to celebrate our overall "top-of-class" average. But there are some lower grades on our report card, and we're committed to becoming a "straight-A" institution.

One postscript: In healthcare I quickly learned that some of the most important aspects of institutional performance received the least attention. In universities, indexes of alumni engagement and support are among the measures that are often overlooked. U of T's alumni as a group must surely rank as our most capable ambassadors, our most effective champions, and our most constructive critics. To all of you, your alma mater owes immeasurable thanks.

Sincerely,

DAVID NAYLOR

PHOTOGRAPHY: LAURA ASKE



We've got good reasons to celebrate our "top-of-the-class" ranking, but there are some lower grades on our report card

Paper of Record

Why *The Varsity* matters

RAIN, SNOW OR SHINE

The article “125 Years of *The Varsity*” (New & Notable, Winter 2006) contains a serious oversight concerning the role of women in the paper’s history.

The late Betsy Mosbaugh (BA 1945 UC) of Huntsville, Ontario, was the paper’s sole editor-in-chief in 1944-45. Betsy maintained a high standard and encouraged many of her staff in their careers. (The late writer Hugh Kenner [BA 1945] is an example.)

Betsy’s greatest triumph came during the huge winter storm of December 1944. The university, indeed most of the city, closed down: the TTC gave up, leaving streetcars and buses abandoned in the streets; the *Toronto Globe*, *Telegram* and *Star* made no attempt to publish.

But Betsy insisted (as only she could insist) that *The Varsity* come out. It was the only Toronto newspaper to appear during the height of the storm.

George Garland
BASc 1947, MSc 1948
Huntsville, Ontario

THE PRESIDENT WILL SEE YOU NOW

After reading your article on *The Varsity*, I came across my grandmother’s copy of the paper from Dec. 8, 1905. It contained two items relevant to President Naylor’s installation address, and to the importance of providing greater contact between professors and students.

An article noted that the student representative from the School of Practical



Science (now Applied Science and Engineering) had complained to the University Commission that there was only one lecturer for every 25 students, but in the Faculty of Arts the ratio was one to 13. There also appeared an advertisement as follows: “The president will be in his

office daily, except on Saturdays, from 10:30 a.m. to 12:30 p.m.”

David Ouchterlony
BPHE 1962, MD 1966
Toronto



FIGHTING APARTHEID

As someone who worked as a *Varsity* reporter between 1983 and 1987, I take issue with Megan Easton’s description of the paper’s editorial stances in the 1980s, which she feels may have reflected the “more conservative ethos of the ‘me generation.’” During the early- to mid-1980s, *The Varsity* relentlessly attacked the university for investing in companies that did business in apartheid South Africa. We invited the South African ambassador to speak on campus, and

asked corporate executives with close ties to U of T why they could tolerate doing business with such a regime. The editorial board pushed hard for “disinvestment” and demanded that the university recast its investment policies with a view to human rights and corporate conduct. Hardly the work of a self-involved editorial staff, I’d say.

John Lorinc
BSc 1987 UC
Toronto

A GREAT LEADER

Thank you for a wonderful article on Justice Rosalie Abella (“Just ‘Rosie’,” Winter 2006). Like so many people she has inspired and mentored, I am one of

her fans. Unfortunately you missed an important part of her career: she was chair of the Ontario Labour Relations Board (OLRB) from 1984 to 1989.

During her stint at the OLRB, Rosie brought in new ideas and new blood, and inspired her colleagues to be the best they

could be. I was fortunate to be part of that magical era and am still grateful for Rosie’s special inspiration.

Janet J. Ruzycski
Ontario Labour Relations Board
Toronto

THE FUNNY MRS. CRAIGIE

“The Bunny Party” (Campus Stories, Winter 2006) brought back memories of Prof. Craigie’s vertebrate anatomy course, which I took in 1949-50. The first term was spent studying the anatomy of the

A SPIDER'S WILL

I read the article "Dangerous Liaisons" (New & Notable, Winter 2006) with much interest. Professor Maydianne Andrade is to be commended for her extraordinary work on the mating habits of redback spiders.

However, it seems to me a little presumptuous to claim that the dying male knowingly and deliberately breaks his copulatory organ in order to prevent other males from copulating with the same female. Is the dying insect really concerned about a future lover? Perhaps the rigid organ simply snaps in the death agony of the hapless male.

We then have the remarkable statement that all this is the result of natural selection. Freely confessing my ignorance and naiveté, could someone tell me how natural selection would create this dance of death?

Paul W. Roberts
MD 1947
Markham, Ontario

Prof. Andrade responds: "Deliberately" is shorthand, and is not meant to imply cognition. In redback spiders, the male sex organ has a defined breaking point and fits directly into the female's genitalia in a way that prevents sperm of subsequent males from entering. Even males that manage to survive the copulation (those that are not cannibalized) leave this structure behind in the female. Accurate placement of the "plug" results in close to 100 per cent paternity. I suggest Richard Dawkins' classic *The Selfish Gene* for an accessible discussion of natural selection and its implications.



rabbit. The second term was devoted to studies of other creatures. The textbook was by Prof. Craigie, so if anyone asked a question, the invariable answer was "look in the book" (pronounced in a Scottish brogue as "luke in the buke"). I believe ours was the first year without a bunny party. The lab assistants told us that they were sad to see the end of this festive event. Mrs. Craigie, said to be the life of that party, was a noted comedienne who regularly appeared on the stage of Massey Hall at the Toronto Symphony's annual Christmas concert.

Christopher Helleiner
BA 1952 UC
Halifax, Nova Scotia

ENGINEERING BY A FOOTBOARD

Fond memories flooded back while reading about engineering students' annual chariot race ("U of T's Oddball Charms," Winter 2006).

I was reminded that the genesis for this singular annual event probably dates back – way back – to the late winter of 1948. All faculties were challenged to a one-lap race around the front campus with beds on casters as chariots.

Six students pushed each bed with a seventh aboard in a highly competitive jostling event marked by cheers, jeers, outrageous tactics and general mayhem.

Letters may be edited to fit available space and should be addressed to University of Toronto Magazine, 21 King's College Circle, Toronto, M5S 3J3. Readers may also send correspondence by e-mail to uoft.magazine@utoronto.ca or fax to (416) 978-3958.

Or was it bedlam? In comparison, the running of the bulls at Pamplona would have been a walk in the park.

As one of engineering's six "horses" in that inaugural year, my recollection is that meds and engineering led the pack as the finish line approached. And if memory is not clouded by bias, engineering won by a footboard.

William A. Dimma
BAsc 1948
Toronto

REMEMBERING REZNIKOFF

In "U of T's Oddball Charms," under the heading "Deliciously Diabolical," writer Graham F. Scott asserts that the U of T historical figure Reznikoff "lingered in obscurity" until an eponymous café opened last fall.

Poppycock!

One of the U of T colleges hosted a regular pub/dance in the 1980s called "Reznikoff's." Not yet being of legal drinking age, my friends and I used to sneak in sometimes to enjoy the dancing. Your "error" brought back some happy memories.

Peter Murphy
LLB 1993
Toronto

GREETINGS FROM AFRICA

Although I graduated from U of T in 1992 and am living very far from Toronto, the magazine brings back fond memories and connects me once again with my alma mater. I always read the president's messages, and through them grasp what U of T is striving to be. *Asante sana*. In Swahili: "thank you very much."

Stella Bendera
EdD 1992
Dar es Salaam, Tanzania

Outdoor Sweatshops

U ofT geography professor Ken MacDonald is challenging unfair labour practices on the slopes of the Karakoram Mountains

IN Pakistan in July 2004, anniversary celebrations were held for the first summiteers of K2 – the world’s second-highest mountain and, with its severe glacial terrain, arguably the deadliest. The government invited hundreds to honour Italian alpinist Ardito Desio and members of his 1954 expedition. But one group did *not* receive invitations: the mountain porters who accompanied them – the local men who carried the trekkers’ *saman* (food and goods), provided knowledge of dangerous regions and were crucial to the expedition’s success.

As well, during those July celebrations, six porters died while accompanying tourists on treks of K2. The sheer number of hikers and climbers that summer meant inexperienced local men were offered double wages to carry loads, and, with only minimal government regulations on portering, they accepted. The result? Five drowned while taking a shortcut across a glacial stream; another fell, unroped, into a crevasse. Two of the men’s bodies were left on a rock in the Braldu River because authorities would not pay to recover them.

This indifferent attitude led Ken MacDonald, a professor of geography at U ofT Scarborough, to start Khurpa Care: an organization that educates trekkers about the injustices porters face, and also teaches porters about medical concerns, such as high-altitude sickness, and their rights as labourers. MacDonald has spent almost 20 years off and on in Pakistan, many of them in academic study of the plight of porters. As a master’s student pursuing glaciological fieldwork in the late 1980s, he lived in villages



Porters are often outfitted in cheap shoes and clothing and required to carry up to 35 kg on their backs

in the Karakoram Mountains of northern Pakistan, and observed the disparity between the porters’ conditions and those of the trekkers. After completing his PhD, he began investigating the political economy of labour relations in mountaineering and high-altitude trekking.

The average North American likely wouldn’t consider scaling an inch of the 28,250-foot glacial mountain without four-season tents, Gore-Tex jackets, proper trekking boots and a variety of other mountain equipment. But porters are often outfitted in cheap rubber

shoes, polyester sweaters, used jackets and small plastic sheets that serve as raincoats. At night (in temperatures that plummet to -25°C) up to a dozen porters sleep under a single tarp. They are sometimes required to carry boxes of supplies weighing up to 35 kilograms on wooden frames strapped to their backs with ropes. If porters are struck with high-altitude sickness, some guides will force them to continue the trek under threat of lost wages. The poor working conditions lead to serious health problems for porters, including respiratory infec-

“There is a lot of promise in this form of tourism, but what porters want is a more equitable distribution of the benefits”

tions, neurological damage and arthritis. Deaths occur regularly.

The main reason for this abuse is the rise of the “middleman,” or subcontractor, within the travel industry, says MacDonald. Fifty years ago, mountaineers and trekkers would hire porters upon reaching Karakoram; now they often book their trips through a North American company, which subcontracts labour arrangements to a Pakistani firm. Many of these brokers in both North America and Pakistan have the sole aim of producing profit – resulting in what MacDonald calls “outdoor sweatshops” for porters. “In many ways, it’s a fascinating structure of ignorance. A lot of these North American firms do no monitoring whatsoever,” he says. “They’re basically using structures of labour that we would put people in jail for here if they contributed to labour deaths the way that these companies

are contributing to labour deaths.”

Travellers also reinforce the unequal treatment of porters because they may view them as “other” or the differences as “natural,” says MacDonald. This perspective has its roots in colonialism, he says, citing the writings of a French mountaineer who climbed K2 in 1938: “Their misery was terrible to behold, but they did not appear to feel this in the slightest. It seemed to fit them naturally, as naturally as the rags in which they were clothed.” MacDonald then quotes a British mountaineer he interviewed in Karakoram in 2001: “I think it’s fair to say that they are different. That they are better able, for whatever reason, physically or mentally, to handle pain than we are. They are able to cross 6,000-metre mountain passes in flip-flops when we wouldn’t even think of trying.”

“When they’re saying they’re physically different or mentally different, they’re attempting to say, ‘They’re tougher, we’re weaker, they don’t need the protection we need’ – which is nonsense,” says MacDonald.

In order to put a stop to the exploitation of porters, mountaineers and trekkers need to ensure that the porters have adequate equipment and food before the trip begins, and oversee the guides to ensure that the porters receive full payment, says MacDonald. If porters come down with high-altitude sickness, trekkers need to see that these men get paid regardless. “You are the ultimate employer, even though you’re giving money to a company who is arranging things,” says MacDonald.

He adds: “This has to be emphasized: nobody wants [portering] to stop. There is a lot of promise in this form of tourism and the economic benefits it could provide. But what people at the low end of the scale want is more equitable distribution of the benefits – and that’s not what’s happening now.” — *Stacey Gibson*



Dino’s “Duck Bill” Not Linked to Sense of Smell

The massive, hollow crests of duck-billed dinosaurs (also known as lambeosaurs, which lived up to 85 million years ago) might have been used to attract sexual partners or warn of predators, but one theory about the crests is now being sniffed at: that it was the main location of the dino’s sense of smell. David Evans, a PhD student in zoology at the University of Toronto at Mississauga, reconstructed the brain and nasal cavity of the lambeosaur using fragments of fossil bone, and determined that the system responsible for the sense of smell did not change drastically in lambeosaur evolution. He also confirmed that it is unlikely that the crests evolved primarily to heighten sensitivity to smells. These findings add weight to two popular theories: that the complex nasal passages inside the crests were used to create honking noises to attract mates or warn of predators, and that the crests were used for visual display in mate selection or species recognition. — *Nicolle Wahl*

The Politics of Suspicion

ON May 11, 2004, Steve Kurtz – an art professor in Buffalo, N.Y., – awoke to find his wife, Hope, dead of what was later determined to be a heart attack. After arriving at Kurtz’s home, a paramedic noticed lab equipment and “petri dish artworks,” and reported what he deemed to be suspicious activity to law officials. Kurtz was, in fact, a member of the Critical Art Ensemble – a collective of protest and performance artists – and the equipment was used to create his artistic works protesting products of biotechnology, such as genetically modified food. In the midst of dealing with the death of his wife of 20 years, Kurtz found himself at the centre of a Patriot Act bio-terrorism investigation, in which he was detained for questioning; friends were interrogated; and his lab equipment and computers were confiscated. (Eventually, he was arraigned not on any bio-terror charges – but on wire and mail fraud.)

Kurtz’s story is retold in a graphic-novel format with text by Timothy Stock,

Artist Steve Kurtz found himself at the centre of a Patriot Act bio-terrorism investigation, in which he was detained for questioning

a PhD student and philosophy lecturer at the University of Toronto, and graphics by illustrator Warren Heise, in the latest issue of *Alphabet City*. The ideas-oriented periodical, edited by John Knechtel (BA 1987 UC), explores the politics of suspicion in a post-9/11 world through a collection of photography, essays, film stills and fiction. In his introduction to the issue, Knechtel asks: “How does one forgive for being made to fear? What is the appropriate response to the suspect?”



Can anyone feel secure after terror?” The questions surrounding suspicion are examined in an essay from U of T philosophy professor Mark Kingwell (BA 1985 St. Mike’s), fiction from Jack McClelland writer-in-residence Camilla Gibb (BA 1991 UC), photography by alumna Rita Leistner (BA 1988 Woods, MA 1990) and other works – raising new responses to the intertwined world of those doing the suspecting and those being suspected. — S.G.

Rinse May Identify Risk of Gum Disease

Gum disease – which attacks the bone and gums that support teeth – will affect up to 70 per cent of North American adults during their lifetime. But a new oral rinse developed by



Portraits of a Universe in Motion.” (Left, the galaxies are shown a few million years after the merge begins with the smaller Milky Way on the bottom.)

The DVD also contains eight other simulations, ranging from galaxy formation, galaxy interactions, and star and galaxy clusters. Using the super-computer at U of T’s Canadian Institute for Theoretical Astrophysics, Dubinski

has captured the universe’s complex gravitational dances. The pieces run from two to 8 minutes, and generally cover 50-100 million years per second. “It’s akin to time-lapse photography, except you take one frame per million years,” says Dubinski. He collaborates with composer John Kameel Farah – who intertwines such sounds as Middle Eastern music, baroque and electronica – to provide an ethereal musical backdrop. The DVD is available at www.galaxydynamics.org. – S.G.

Heavenly Dance

The universe may be expanding, with most galaxies moving away from one another, but not so for the Milky Way and neighbouring galaxy Andromeda. They are on a trajectory to collide in three billion years, and over another one billion years will merge and be reborn as a single elliptical galaxy. Astronomer John Dubinski, who specializes in the dynamics and formation of galaxies, has created a supercomputer simulation of the event on his DVD, “Gravitas:

Placental Problems Linked to Heart Disease

Pregnant women who experience placental syndromes have double the risk of developing cardiovascular disease later in life, according to a U of T study led by Dr. Joel Ray of the department of medicine. This risk increases three- or fourfold if the fetuses experience impaired growth, or if there is fetal death.

Researchers studied more than one million Ontario women who were free from cardiovascular disease before their first delivery. While the increased cardiovascular risk is associated with pre-eclampsia, gestational hypertension, placental abruption or placenta infarction, the reasons for it aren’t yet certain. “It has nothing to do with the child that’s born, but it may reflect genetics or the lifestyle of the mom – or both,” says Donald Redelmeier, a professor in the general internal medicine division at U of T, and senior author of the paper published in *The Lancet*.

Affected women should have their blood pressure and weight assessed about six months after delivery, and practise a healthy lifestyle, says Redelmeier. They also should be checked for high blood cholesterol and high blood sugars – both of which can be treated after the mother has finished breastfeeding. – Elizabeth Raymer

Professor Michael Glogauer at University of Toronto’s Faculty of Dentistry could help identify those at risk. In trials, the quick-acting rinse allowed periodontists to count the number of infection-fighting white blood cells, called oral neutrophils, in patients’ mouths. When present in higher-than-average numbers, these neutrophils cause

damage to bone and gum tissue.

Glogauer administered the rinse to both healthy patients and those with periodontal disease. He found that patients with periodontal disease had higher levels of oral neutrophils, but these levels declined among the patients who were successfully treated. “Patients who responded well

to treatment had a 43 per cent reduction, while those who responded poorly showed no significant changes,” says Glogauer. “This non-invasive, painless oral rinse is an excellent research tool, and we hope that dentists will one day use it to quickly identify patients at risk for bone and gum destruction.”

– Elizabeth Monier-Williams

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Culinary Conquerors

The atmosphere may not have been as flamboyant as its televised cousin, but U of T's first-ever Iron Chef competition contained the same frenetic energy as the Food Network cook-off show. In the Sidney Smith cafeteria, 10 teams of three students battled to create a gourmet meal (each team used the same selection of ingredients) – which was then judged on taste and presentation by a panel of professional chefs. Team Afrekans boiled and baked their way to first place with salmon in a red wine sauce, garlic mashed potatoes and cabbage Cobb salad. The reward? 1,500 “flex” dollars valid at campus Sodexo food outlets, the company that organized the November event.

“I used to be known for burning water, so everyone I know

is surprised,” says Afrekans member and New College English student Sheena Blake – who prepared the salmon. She credits her improved skills to teammates Rodney Mills (centre), an economics and geography major at New College, and brother Denzel Mills, an information technology student at U of T at Mississauga. The brothers often cook at home, where Denzel acts as head chef and younger brother Rodney performs as sous-chef. They took this approach in the competition, with Denzel creating the all-important sauce and Rodney preparing the potatoes. The two say they inherited their passion for food from their mother, whose specialty is African soups. “Cooking is in our blood,” says Denzel, “but so is competing.”

– Megan Easton



U of T Brings Home Olympic Gold, Bronze

PHOTOGRAPHY: PAUL CHIASSON/ICP; KEN ANDREIO; MACDONELL PHOTOGRAPHY; HENRY FEATHER

A trio of U of T Olympians returned triumphant from the Turin Olympics in February. Alumni Vicki Sunohara and Jayna Hefford (BPHE 2004), members of the Canadian women's hockey team, won gold medals, while figure skater Jeffrey Buttle, an engineering student (above), earned bronze.

Hefford scored Canada's final goal in the women's hockey championship match against Sweden. "This may be the most balanced team in the tournament," she told CBC reporters. "It was a real team effort."

Buttle, Canadian men's figure skating champion, rocketed back from sixth-place in the Olympic short program to a bronze medal with his performance in the free program.

Skating to "Samson and Delilah," Buttle scored high marks for his difficult footwork and inventive spins. His free program scores were second only to Russia's Evgeni Plushenko, who won gold.

— Elizabeth Monier-Williams

New Appointments

Three of U of T's largest faculties have appointed new deans. Professor Cristina Amon, an expert in computational fluid dynamics, has been named the new dean of the Faculty of Applied



Amon

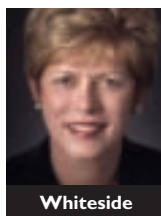
Science and Engineering. Amon was formerly the director of Carnegie Mellon University's Institute for Complex Engineered Systems.

Professor Mayo Moran (JSD 1999) was appointed dean of the Faculty of Law in December. Moran, an associate professor of law and former associate dean at U of T, teaches tort law, trust law and legal theory.



Moran

Catharine Whiteside (BSc 1972, MD 1975, PhD 1984) is the new dean of medicine. A graduate of U of T's Faculty of Medicine, Whiteside has sought ways to improve the student experience throughout her university career. In 2000, she became associate dean (graduate and interfaculty affairs).



Whiteside

As the new associate vice-provost (students), Professor Tony Chambers' first priority will be to evaluate the student experience at U of T and advise on how to improve it. "The biggest challenge will be translating what we learn about the student experience into programmatic and institutional change," says Chambers, an assistant professor in the department of theory and policy studies in education, OISE/UT. "It may require us to listen to each other in a different way."

— Jenny Hall, Kathleen O'Brien and Nicolle Wahl

Going Global

The Economist is Trinity College student Gunwant Gill's second favourite magazine. It's *The Toronto Globalist* that's closest to her heart. Gill, 21, is in her third year of international relations, political science and economics at U of T. She is also editor-in-chief of the new undergraduate international-affairs magazine launched in November. The publication (available free on campus and online at www.globalistfoundation.org) has a volunteer staff of 14 students, and joins a growing network of *Globalists* at universities around the world. (Rawen Huang, a student at Yale University,

established the umbrella organization – the Globalist Foundation – in January 2005.)

People often say that your generation doesn't care about politics – so what's wrong with you?

GG: I think it started at an early age, always hearing my parents talk about politics and how it's important to participate in that process.

Are they politicians?

No. But my great-uncle, Lachman Singh Gill, was the premier of Punjab, India, from 1967 to '68.

Tell me about the *Globalist*.

The international network is what really sets us apart. To my knowledge there's no other network of international-affairs magazines.

Kudos

They have debated their way around the world – from Kuala Lumpur to Cambridge – and in January, U of T students Joanna Nairn and Michael Kotrly won the 2006 World University Debating Championship title in Dublin. Nairn, a fourth-year political science student and North American debating champion, and Kotrly, a third-year law student and national champion, beat out 320 teams from more than 40 countries. The duo won the Grand Final for their argument against abolishing laws prohibiting cruelty to animals.

U of T professors Margaret MacMillan (BA 1966 TRIN) and John Wedge have been appointed officers of the Order of Canada. Wedge, a professor in the department of surgery, is an international authority on reconstructive hip surgery and surgeon-in-chief at the Hospital for Sick Children. MacMillan is provost of Trinity College and author of the bestseller *Paris 1919: Six Months that Changed the World*. Jon Dellandrea (BA 1973 UTSC, MEd 1980, EdD 1987), former vice-president and chief advancement officer, was named a member of the order. Dellandrea

played a critical role in U of T's \$1-billion fundraising campaign.

Carmela Murdocca (BA 2000 UC, MA 2002), a PhD candidate at OISE/UT, has been awarded a Canada-U.S. Fulbright Fellowship to study for a year at Columbia University in New York City. Murdocca's research examines the relationship between race, criminal sentencing and nationalism.

A U of T scientist at the forefront of nanotechnology research has been named to the 2005 *Scientific American* 50 – the annual list recognizing leaders in science and technology. Professor Ted Sargent (PhD 1998) of electrical and computer engineering was selected for his development of paintable solar cells that can absorb infrared light – a discovery that could boost solar cell performance.

Professor Janet Rossant of medical genetics and microbiology and chief of research at the Hospital for Sick Children has received the 2005 Michael Smith Prize. The \$100,000 annual prize honours a Canadian researcher who has demonstrated a high degree of innovation, creativity, leadership and dedication in health research.



Don't pick an argument with world debating champs Joanna Nairn and Michael Kotrly

PHOTOGRAPHY: DAVID COOPER/TORONTO STAR



Gill

Which schools are publishing their own editions now?

It began with the Yale *Globalist*, and expanded to Cambridge. There's now a Sydney chapter in Australia, one at Peking University in China, one at the Hebrew University of Jerusalem and ours. Chapters are also being set up in India and Africa.

What is the Globalist network trying to accomplish?

The goal of the foundation is to connect youth from different perspectives and backgrounds to let the rest of the world, especially our politicians and think-tanks, know what the next generation of leaders is thinking and what changes we would like to see.

Your first issue centres

on nuclear politics. How did you choose the theme?

We were looking for an attention-grabber that we felt was important in international affairs. We also chose it because some people feel it's an issue of a bygone era, the Cold War, but if you think about it – the acquisition and proliferation of nuclear weapons and new technologies – there's so much going on.

When's your next issue?

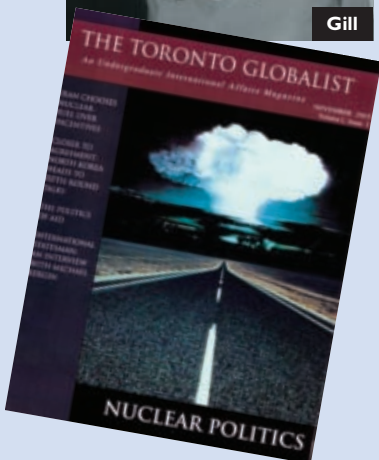
End of March. The theme will be global epidemics.... There's also an annual *Globalist* issue with contributions from all the chapters coming up. Each chapter picks the issue they think is most important to youth in their country; we picked Canadian identity.

The issue will also be looking at the foreign policy objectives of each of our universities. Which countries does the president of the university visit? What does he say about our university?

International affairs seems a euphemism for unsolvable international problems.

Do you have a sense that there are more possibilities for solutions in the 21st century, or fewer?

I think there definitely are more. I know it's a cliché, but we do live in a global village and it's much easier to find out what other people are thinking. And avoiding international conflict is all about knowing the other person's perspective. — Lisa Rundle



Dial M for [murmur]

It started with one question: what impact does a narrative have on a physical space? To answer that artists Shawn Micallef, James Roussel and Gabe Sawhney created [murmur] – a community art project that uses the cellphone to make oral history come alive. The project was launched in 2003 in Toronto’s Kensington neighbourhood, Vancouver’s Chinatown and along St Laurent in Montreal and has continued to crop up in new neighbourhoods: wherever you see the [murmur] signs, you can dial up a number provided on the sign and listen to recorded stories ranging from literary histories to tales of neighbourhood transitions to the purely personal. The narratives create a connection to place that “counteracts the sense Canadians can have that ‘this is nowhere,’” says Micallef.

[murmur] has expanded yet again, with a Hart House installation that launched March 15. “It’s not the formalized history you might hear from other sources,” Hart House program advisor Jenifer Newcombe emphasizes. “Hart House has a long, rich history but it’s also a transient place – students come and then move on.” The connection to the past, to the people who have passed through, can

be fractured – and [murmur] helps counteract this. “This big institution becomes really personal; it’s a human-scaled way of understanding it,” says Micallef. Part of the house’s

Creativity Conceived programming, the anecdote-sized narratives (which run from one to two minutes) are being recorded by students involved with the Hart House Art Committee. Twenty to 30 stories will eventually be available in eight to 10 locations around the building – both the expected (such as the theatre and the Great Hall) and the unexpected nooks and crannies (such as the third-floor hallway). The process is ongoing, and stories will continue to be collected after the launch.

[murmur] is a people’s history, but those people will include a few of Hart House’s famous friends. Atom Egoyan (BA 1982 TRIN) will contribute a tale about his experience with the Hart House Film Board. Trinity College provost Margaret MacMillan (BA 1966 TRIN) will also share her story of dressing up as a man to get into a Hart House debate she wished to attend. (Women were prohibited from becoming members of Hart House until 1972.) – *Lisa Rundle*

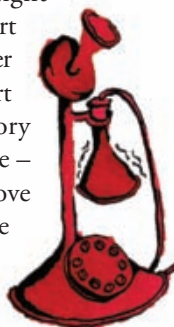
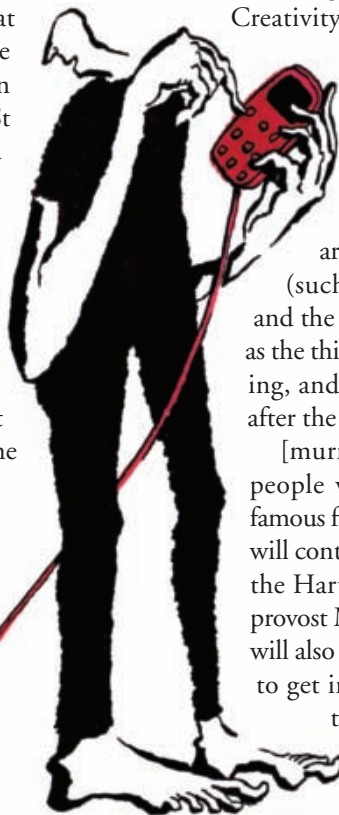


ILLUSTRATION: BELLE MELLOR; PHOTOGRAPHY: STEVE JAUZENIS



The \$34-million Communication, Culture and Technology Building at the University of Toronto at Mississauga officially opened in March but it has been a centre of activity for students since September 2004. Designed by Saucier + Perrotte Architectes, the four-storey, glass-walled facility houses a state-of-the-art multimedia studio, editing suites, a 500-seat lecture theatre and an electronic art gallery. The building received financial support from all levels of government, as well as the GE Foundation, Hitachi Canada Ltd., the Mississauga Board of Chinese Professionals and Businesses, and friends of R.H. McNutt.



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F A T E

A Twist of

RAYMOND REILLY WAS LOOKING FOR A BETTER WAY TO DIAGNOSE BREAST CANCER. INSTEAD, HE DISCOVERED A NEW WAY TO TREAT IT BY KRISTA FOSS

There are a few things you need to know about **Raymond Reilly**. The self-effacing associate professor of pharmacy doesn't give up easily. And he's not given to dramatic exaggerations. So when he says that his almost decade-long effort to bring his novel breast cancer therapy to the stage where it can be tested on

humans was a challenge, you can assume it's an understatement.

Another thing to know about Reilly is that he doesn't turn up his nose at the gifts of serendipity. Consider this anecdote:

The University of Toronto professor, who is also a scientist with the Toronto General Research Institute, had been anxiously trying to find a source for a



PHOTOGRAPHY: KEVIN KELLY

Leslie Dan Faculty of Pharmacy professor Raymond Reilly (left) is developing a “Trojan Horse” therapy that could one day help thousands of Canadian women like Cathie Long (above), whose type of breast cancer is difficult to diagnose and treat

rare biological substance that he needed before his therapy could proceed to clinical trials. He had exhausted his options through traditional avenues. He was, he says, at wit's end. So late one evening, as a last resort and expecting nothing, he turned to Google.

Reilly typed "pharmaceutical quality epidermal growth factor" into the search engine and, to his surprise, the query produced three hits. The last link, from a biotechnology company in Ithaca, in Upstate New York, turned out to have

and the infrequent interventions of fate. Above all, the narrative is one of perseverance. But when researchers such as Reilly prevail, the world ends up with evermore sophisticated, effective therapies to beat back mankind's most flummoxing diseases. In other words, the endings of such tales can be very satisfying indeed.

Cathie Long (BA 1971 Trinity) is an accountant, a mother and an avid French horn player. But ask her to explain Reilly's

Dr. Katherine Vallis (left) asked Long if she would like to take part in an experimental new breast cancer treatment, and Long decided she would. "The approach of delivering radiation in a really targeted way made sense to me," she says



the stock, the quality of material and the desire to supply research efforts such as Reilly's. Nine months later, Reilly's unique targeted radiation therapy was being tested on breast cancer patients in Canada, the first in the world to receive the breakthrough treatment.

To know Raymond Reilly's story is to understand a lot about the story of new cancer therapies: they almost never involve a smooth trajectory from stunning laboratory results to patient benefits. More often, the tale is an epic of wrong turns, aggravating switchbacks

unique treatment, and she sounds a lot like a biophysicist. Long, 56, has a vested interest in understanding how and why Reilly's approach has potential in the fight against breast cancer.

Long, who lives in Cobourg, Ontario, found out she had aggressive breast cancer in 1995. She underwent surgery, chemotherapy and radiation, then enjoyed nearly seven years of remission. But in 2002, she felt a pain near her sternum that turned out to be cancer; the disease had metastasized. Since then, she has tried radiation treatment and four sep-

arate chemotherapy regimens. She suffered from fatigue, hair loss, gastrointestinal effects and a blood disorder in the process.

The Canadian Cancer Society reports that nearly 150,000 people in Canada were diagnosed with cancer in 2005. Although lung cancer is still the leading cause of cancer deaths among adults, breast cancer continues to affect more Canadian women than any other form of the disease.

In the past 20 years, the understanding and treatment of cancer has been helped immeasurably by genomics. The sequencing of the human genome, completed in 2003, has enabled researchers to identify a host of genetic targets in cancer cells and develop new therapies. Recently, a related field called functional proteomics has energized cancer research. This specialty identifies the proteins produced by genes, and proteins are often the first warning sign of disease.

Long has a type of breast cancer that produces a particular protein. Those with breast cancer producing this protein tend to have a poorer prognosis than those with other forms of the disease. As it happens, Reilly's novel therapy targets precisely the kind of breast cancer cells that are invading Long's body. His treatment takes the old work-horse therapy of radiation and makes it more deadly, more effective and less toxic by getting it inside these individual cancer cells.

Long was asked to take part in the earliest human experiments with Reilly's targeted approach, and she decided to opt in. "I had developed resistance to chemotherapy, and I wasn't a candidate for [the cancer drug] Herceptin," she says. "The approach of delivering radiation in a really targeted way made sense to me."

Like so many researchers throughout the history of science, Reilly stumbled on a new way to treat cancer while looking for something else.

For much of his career, Reilly made radiopharmaceuticals. These compounds emit gamma rays that are captured by

An Esthetic Marvel

The Leslie L. Dan Pharmacy Building doesn't open till September, but it's already turning heads

It's only a few blocks from his office at 19 Russell St. but pharmacy professor Raymond Reilly's lab at the new Leslie L. Dan Pharmacy Building seems worlds away.

The brand new \$75-million facility at the northwest corner of College Street and Queen's Park Crescent is a sunlit cathedral of glass and black granite. It's a far cry from the cramped maze and winking fluorescent lights of the circa-1960s Russell Street building that the Leslie Dan Faculty of Pharmacy currently calls home.

While faculty and students will soon be able to appreciate the state-of-the-art research laboratories, the design by architects Foster and Partners of London, England, is nothing short of an esthetic marvel. The panes of glass forming the five-storey atrium are so large they had to be ordered from Luxembourg – the home of the world's only supplier that would cut the panes that big. The glass allows an unobstructed view of the elegant heritage buildings next door – the Tanz Neuroscience and FitzGerald facilities.

Inside the light-filled atrium, two large pods float overhead like smooth white eggs. Inside the larger "egg" is a 60-seat classroom; the smaller one contains a 24-seat computer training centre. These suspended classrooms could not have been built five years ago, says Darren Lobo, the project coordinator for PCL Constructors Canada, the firm heading the construction. The computer software to design them simply didn't exist.

The spacious seven-storey cube on top of the atrium will house research and administrative offices, laboratories and unique teaching environments, such as the Herbert R. Binder/Shoppers Drug Mart Professional Practice Laboratory. This lab will give pharmacy students practice in counselling "patients" (played by actors). Their interactions can be taped and observed by classmates and professors through a closed-circuit television system. In the building's basement are two large lecture halls – 240 and 300 seats – stacked on top of each other, like the Elgin & Winter Garden Theatre Centre a few blocks away.

Leslie L. Dan (BScP 1954, MBA 1959, DScP Hon. 1997), chairman and founder of Novopharm, donated \$13 million to the construction of the cutting-edge facility. Apotex and Shoppers Drug Mart are also major contributors, along with the province of Ontario and the University of Toronto.

The new building, which opens in September, will enable the Leslie Dan Faculty of Pharmacy to double its enrolment to 240 students in the undergraduate pharmacy program and significantly increase the number of faculty, researchers and graduate students.

"The private sector must play a greater role in ensuring that we help meet the need for a greater number of skilled professionals in the province's pharmacies," says Dan. "On a personal level, as a U of T alumnus, I feel it is incumbent upon me to give something back – something that will benefit the university and society. The University of Toronto provided a great start to my career, and now I want to make certain others benefit from those same opportunities."

– Krista Foss



The \$75-million Leslie L. Dan Pharmacy Building at College Street and Queen's Park Crescent houses state-of-the-art laboratories, lecture halls and two unique "suspended" classrooms

Cathie Long and Raymond Reilly visit Reilly's lab at the Toronto General Research Institute



So far, Phase 1 trials have confirmed that Reilly's new treatment is safe for human use. If further trials are successful, the therapy could be approved for use by the end of the decade

sophisticated cameras and produce images similar to a CT scan. They help radiologists "see" disease, infection or injury in the body. Different radiopharmaceuticals can help visualize different ailments. And early on, Reilly began thinking about designing radiopharmaceuticals that help doctors detect specific kinds of cancer.

His work in imaging and diagnosing disease led to his interest in designing a radioisotope that would not only locate breast cancer, but also tell doctors about the idiosyncrasies of each tumour. "Breast cancer is not just one disease, though often it is treated that way," he says. "Tumours differ because of their biology. Some are more aggressive than others."

Tumours, like cats, can be very finicky about what they eat. Reilly wanted to

understand the specific growth factors, or proteins, preferred by the tumours of different breast cancer patients. The rationale was simple: the more information doctors can have about the specific diet of each tumour, the better they can use drugs and other therapies to interfere with the diet that allows the tumour to grow unchecked.

Cancer specialists were already well aware that certain breast cancers have a healthy appetite for the hormone estrogen. Inside these cancer cells are entities called estrogen receptors, which attract the hormone and absorb it directly into the cancer cell nucleus, where it triggers cell growth.

By the time Reilly began his doctorate work in medical biophysics in the mid-1990s, these estrogen-receptor-pos-

itive breast cancers were being successfully treated with drugs such as tamoxifen, which inhibits the cancer cell's ability to take up estrogen and slows cell growth. But not all breast cancers are hungry for estrogen. Reilly became interested in another kind of tumour, which is harder to diagnose and treat. "I wanted to identify patients with a poor prognosis – those who don't respond to tamoxifen and who might need to be treated more aggressively with chemotherapy," he says.

By poring over research literature, Reilly found that breast cancers that don't feed off estrogen have another kind of receptor – one that attracts a peptide called epidermal growth factor (EGF), which is produced by the body's salivary glands.

Reilly speculated that if he attached a radionuclide to EGF, it would act like a homing device and take the imaging tracer directly to cancer cells with EGF receptors. The radionuclide would cause the EGF-receptor-positive tumour to light up on the camera image, creating an easy, accurate and non-invasive way to diagnose this more stubborn subset of cancer tumours.

So in 1996, Reilly was well on his way to developing a helpful new imaging agent. Little did he know that the fickle gods of research had something a little different in mind. In the midst of his doctoral work, Reilly attended a meeting of the Society of Nuclear Medicine where he noticed a research poster that only a radiopharmacist could love. It described how a decaying radiopharmaceutical (a form of iodine 125) could damage a cell's DNA by emitting Auger electrons. Named for the French scientist Pierre Auger, who first published research on them in 1925, these electrons have a low energy and can only travel short distances – mere nanometres. But this is all that's needed to wield a hefty blow within the confines of a cancer cell nucleus.

Reilly was dumbstruck by the enormity of the possibilities. He was using another Auger-electron emitting radioisotope called indium-111 for his work

Pinpoint Delivery

Professor Christine Allen uses nanotechnology to ensure cancer-fighting drugs get where they need to go

Many new drugs under development have the potential to do some good. But after being swallowed or injected, they scatter, dissolve or disappear in the body before making it to the site of the disease.

This is where Christine Allen comes in. To get these drugs to where they're supposed to go, the assistant professor of pharmacy at U of T is building nanoparticles to encase the drug molecules. Then she targets these nanoparticles to breast cancer cells in much the same way as her colleague Raymond Reilly targets his radiotherapy. She attaches them to epidermal growth factor peptides, which smuggle the nanoparticles inside the cancer cells where the encased drug is released. Her creations are so small



that she has to use an electron microscope to see them.

Allen, whose doctoral work was in polymer chemistry, researches her unique nanoparticles in a distinctly high-tech fashion. Using software that produces 3-D images, she creates virtual models of the new materials used to make up the particles on the supercomputer at the Molecular Design and Information Technology Centre, a leading Canadian academic bioinformatics centre devoted to drug design. Allen says the centre's software predicts how these

materials will interact with the drug they're carrying – helping her rule out certain designs and saving the inestimable expense of making mistakes in the lab.

While the work of this avowed “chemistry geek” is still in the early stages, she is beginning to test some of her unique compounds on animals. And she has plans to collaborate with other scientists, such as Reilly, to create hybrids of their targeted approach. “As a material scientist working in nanotechnology, I couldn't be in a better institution,” says Prof. Allen, who appreciates being in close proximity to other like-minded researchers at the Leslie Dan Faculty of Pharmacy. “I can just walk down the hall and get answers to all sorts of questions.” — K. F.

PHOTOGRAPHY: STEPHEN SIMMON

on a new imaging agent. It occurred to him that the tool he was developing to better diagnose EGF-receptor-positive breast cancer might actually end up treating it.

When scientists try to decode their complex drug delivery work to a layperson, they often use metaphors of weaponry and stealth: the smart bomb versus the carpet bomb, or the sniper versus the indiscriminate machine gun. Way back in 1996, Reilly started to think of his potential new therapy as a Trojan Horse – a way of smuggling a deadly payload into enemy territory under the guise of something friendly. He had a good hunch that if he attached indium-111 to the EGF peptide (to create an EGF conjugate) it would be taken inside EGF-receptor-positive cancer cells. And he bet that when indium-111 started decaying in the cell, the emitted Auger electrons would be close enough to the cell nucleus to irreparably damage its DNA. In other words, he planned to exploit the cancer cells' appetite for EGF by feeding them what

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they wanted – and smuggling a radioactive ambush into each cell.

Back in the lab, Reilly found that radio-labelled EGF could actually kill breast cancer cells. In fact, when Reilly compared his indium-111 EGF conjugate to the conventional chemotherapy drug methotrexate, the conjugate was 300 times more toxic to cultured breast cancer cells. Never in his professional life had he come this close to yelling, Eureka! “I couldn’t believe it,” he says.

Last October, Long got her one-and-only intravenous treatment of indium-111 EGF as part of the Phase 1 clinical trial for the therapy. Her ears momentarily turned red. Her blood pressure dipped slightly. And, for a brief moment, she felt nauseous. Small stuff.

Long kept her sense of humour, especially about the precautionary measures. She wasn’t allowed to sleep next to her husband for the first week. She also had

to flush the toilet three times after using it, keep her towels separate, stand back a few metres from anyone she encountered and avoid public transportation. Because indium-111 is a radionuclide, it’s regulated by the Canadian Nuclear Safety Commission – and that means lots of precautions.

“It was overkill really, but in terms of inconvenience it is minor compared to six months of chemotherapy,” says clinical scientist Dr. Katherine Vallis, a U of T associate professor of radiation oncology and medical biophysics.

Several years ago, Vallis, who is also a radiation oncologist at Princess Margaret Hospital, joined forces with Reilly to get his therapy ready for clinical trials. Together, they’ve spent much of the intervening years proving that indium-111 EGF is worthy and safe for testing on humans.

EGF receptors are not only produced by specific cancers, they occur on the surface of healthy cells in the liver and

kidneys. The team had to show that the indium-111 EGF conjugate would not be unduly toxic to these organs or the bone marrow. Once they developed animal models to test their therapy, they were in for a happy surprise: even at 42 times the planned maximum dose for humans, the new therapy tested on mice resulted in no toxicity to the kidneys, liver or bone.

Despite these cheery results, the process of obtaining Health Canada approval for their clinical trial had as many ups and downs as a barometer in spring. (Pharmaceutical companies have whole departments dedicated to ensuring that promising drugs make it through the rigorous government approval process. Academic researchers, such as Reilly and Vallis, must deal with all of the paperwork themselves.) “Certainly there was a point where we thought the regulators were demanding so much that we did some heart-searching about what our role was – if, in fact, we should just do



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the preclinical work and leave the actual trials to someone else," says Vallis.

In total, it took 18 months and 1,300 pages of documentation to gain Health Canada approval. In his office, Reilly devotes most of a long shelf to the fat white binders that house these documents.

"It was the worst-case scenario," says Reilly. For starters, the team was testing a conjugate that had never been previously studied in humans. Also, the conjugate was a radiopharmaceutical – one that emits radiation. Finally, the radioisotope was attached to EGF, a biotechnology product that itself attracts a high level of regulatory scrutiny.

In January, the Phase 1 clinical trial of indium-111 EGF was 18 months old and six months shy of completion. The team has gradually increased the dose levels throughout the trial in an attempt to determine the highest dose that can be safely administered. So far the Phase 1 trial has confirmed that indium-111 EGF is safe for human use.

This confirmation is fuelling a lot of plans. Reilly and Vallis are exploring new clinical-trial possibilities for other cancers that express EGF receptors. They're also considering the potential of conjugating the breast cancer wonder drug Herceptin to indium-111. They hope the result would combine the super drug's growth-inhibiting factors and the Auger electrons' cancer-killing properties to deliver a one-two punch to cancer cells. And they are looking for an industrial partner to help them move their indium-111 EGF breast cancer therapy to the next level of clinical trials. If these trials are successful, and the team continues to receive funding, the novel treatment could be approved for use by the end of the decade.

Long received only one injection and at a low dosage. Since then, she has made the 80-minute trip between Cobourg and Toronto for hours of followup. And yet for someone with a lot at stake, she keeps a sublimely practical outlook.

"I feel justified in saying that whatever the outcome of this particular clinical trial, even if it doesn't go the way I hope, things will be learned from it to use for the future," she says. "My cancer is slow-growing though incurable and progressive. So there is a little time to experiment on me, and it's my way of giving back to the people and the whole system."

Certainly Long understands as well as the researchers that developing a new therapy can move as slowly and in as tiny increments as an Auger electron. But if the ultimate effect is precise and inexorable, she figures it will be worth the risk she decided to take. Reilly, meanwhile, is keeping counsel with the type of optimism that researchers who've faced a mountain of challenges are best at – the guarded yet hopeful kind. ■

Krista Foss is a writer in Hamilton, Ontario. She wrote "Miracle at Sick Kids" in the Summer 2005 issue.

REQUEST FOR MILITARY ARTIFACTS

Military artifacts are requested for the Soldiers' Tower Memorial Room Museum. Items of a non-weapons nature belonging to, associated with, or collected by UofT veteran men and women which would honour their memory can be donated. Canada Revenue Agency and university policy regarding gifts of this nature apply.

Display space is limited, and conformity with the existing collection will be a consideration. The Soldiers' Tower artifact committee requests your understanding of the limitations of acceptance. Small items and single documents adaptable to display case drawers may be of interest; however, collections of paper documents will be

gratefully declined. Collections already exist of service medals and some regimental pictures. Specific decorations and honours are of particular interest, as are items associated with the WWI 67th Battery.

Please send a photo and/or a description of your artifact and its significance to the memory of the university's veterans.

Please reply to:

The Soldiers' Tower Committee
University of Toronto Alumni Association
J. Robert S. Prichard Alumni House
21 King's College Circle
Toronto, ON M5S 3J3
Telephone: 416-978-0544
E-mail: senior.alumni@utoronto.ca



UNIVERSITY of TORONTO



How Much Are Drugs Worth?

A FLEDGLING MEDICAL SCIENCE ATTEMPTS
AN ANSWER BY JOHN LORINC

Last summer, Leslie Cowan, a 41-year-old mother of two, left her home in Toronto, travelled to Buffalo, and checked into a medical centre to be treated with a cutting-edge cancer drug called Herceptin. The drug had shown encouraging results in the U.S., but hadn't been approved in Ontario because of its high price tag: \$35,000 to \$45,000 per patient per year. To pay for her treatment, Cowan was prepared to remortgage her home, knowing she may no longer be able to help pay for university for her kids. But, as she said, "at least I'll be alive."

Herceptin is now available in Ontario, but its long journey to market underscores a profoundly difficult question for the people regulating the province's strained health-care system. Do the overall benefits of such life-prolonging drugs exceed their considerable costs? For cancer patients, the answer is a resounding, "Yes, they do." But how much are we, as a society, prepared to pay for new drugs that purport to save – or prolong – a life? Is the sky the limit?

Dr. Murray Krahn, an associate professor in the department of Health Policy, Management and Evaluation at U of T, is an expert in cost-effectiveness analysis, a relatively young science that provides quantitative measures to help determine which drugs provide the most bang for the buck. "Cost-effectiveness analysis is kind of like a Consumer Reports for drugs," says Dr. Krahn, the F. Norman Hughes Chair in Pharmacoeconomics. "It tells you whether a new drug is a good deal."

In theory, says Dr. Krahn, cost-effec-



tiveness calculations are straightforward. Analysts compare the cost of prescribing a new drug to the cost of using an older treatment – which could be a well-established pharmaceutical, or a combination of drugs and medical treatment. Experts in pharmacoeconomics then examine how the new therapy performs compared to previous treatments. They compare health benefits, such as long-term survival rates, tumour shrinkage, side effects and disease recurrence. The point is to assign a dollar value to the improved health promised by the new drug. This dollar value is what provincial drug plans should be willing to pay for the new therapy.

In practice, such calculations involve a complex array of clinical data and economic estimates. To illustrate the difficulty of such calculations, Dr. Krahn

points out that a cost-benefit analysis of an

everyday consumer product is tricky because value is a malleable and fundamentally subjective term. For example, is a Volvo worth more than a Hyundai? The price suggests that it is, but the extra value offered by a Volvo may not be worth the additional cost. It depends how you measure the benefits of owning a Volvo. "Shopping for a car is hard enough," says Dr. Krahn. "Health is way more difficult. There are millions of diseases and millions of interventions."

Consider a new osteoporosis drug that promises to reduce the incidence of hip fractures. Among patients who are prescribed the drug, one can presume that hospital expenses – emergency-room visits, surgery, nurses' salaries, administrative overhead – will drop. You need to estimate the total reduction in hospital

expenditures and weigh it against the cost of administering the drug.

Mike Tierney (BPharm 1978), the director of the Common Drug Review at the Canadian Coordinating Office for Health Technology Assessment, an independent agency that conducts such evaluations, says hospitalization costs can be estimated using data collected by the Canadian Institute for Health Information. The tricky part is that hospitalization rates vary significantly from province to province (and even from region to region) due to, for example, home-care policies and different treatment approaches. The point: the relative value of a new drug may vary depending on where it's administered.

Even more difficult is gauging the effectiveness of a new treatment against previous therapies. Health Canada approves a drug based on how well it performs in experimental trials. The problem is that drugs behave differently in the real world, where a patient's lifestyle –

The potential for miscalculation has some clinicians and epidemiologists complaining about the lack of standards in making evaluations, which are typically conducted by drug companies. Dr. Krahn says this skepticism is well deserved. "Cost-effectiveness evaluations are exponentially more complex from a design point of view than randomized controlled trials and more subject to the bias of the investigator." In Australia, a 2000 review of 326 drug applications to the country's Pharmaceutical Benefits Scheme found "significant problems" with two-thirds of the pharmacoeconomic evaluations conducted for the board, including biased or incomplete studies. In other words, evaluation experts may be basing decisions about whether or not to approve a drug on shaky economic analysis.

Equally contentious is what such studies actually reveal. When a new drug is subject to cost-effectiveness analysis, it results in a number that purports to tell policy-makers approximately how much

\$50,000 as the unofficial line separating overly pricey from affordable treatments. But, as Dr. Krahn observes, "No one knows what threshold we should be using. It's a question of how we value some standard unit of health."

With very expensive cancer drugs coming onto the market all the time, can Canada's ailing health care infrastructure continue to bankroll these therapies without forcing financial sacrifices on other parts of society?

Most observers say the answer is political, but policy-makers still need to be able to tally up the actual costs and benefits. As Dr. Krahn puts it, cost-effectiveness evaluations are "a very powerful way of supporting decision-making." Yet a pair of McMaster University health policy experts published a study in the *Canadian Medical Association Journal* in 2003 that cast doubt on whether cost-effectiveness analysis serves to contain overall drug expenditures. Arguing that the use of such evaluations is "a prescription for increased expenditures," Amiram Gafni and Stephen Birch noted that the addition of a costly new drug to the provincial drug plan tends not to accompany cost reductions elsewhere in the system. As Dr. Laupacis points out, "Most drugs don't replace older drugs; they expand the market." In other words, as a greater number of drugs are approved, more drugs are being prescribed – and that means higher overall costs.

"What you fund is not a purely technical question," says Dr. Peter Singer, the director of U of T's Joint Centre for Bioethics and the Sun Life Financial Chair in Bioethics. Drug approvals must involve what he calls the "three Es" – evidence, economics and ethics. In his view, a cost-effectiveness assessment is necessary but insufficient. "The fundamental question is how much benefit a particular drug should have, and at what cost, before 13 million Ontarians are willing to pay for it," he says. "There's no straightforward answer." ■

The fundamental question is how much benefit a particular drug should have, and at what cost, before 13 million Ontarians are willing to pay for it

whether he misses pills, smokes, drinks, or dines predominantly on potato chips – can undermine a drug's effectiveness. What's more, trials offer limited data on how a new drug will fare in the long run. "This is one of the problems of going through with this kind of evaluation," says Dr. Krahn. "People are called upon to do economic evaluations when the data isn't as mature as you'd like."

Dr. Andreas Laupacis, president and CEO of the Institute for Clinical Evaluative Sciences and a drug evaluation expert in U of T's Faculty of Medicine, cites the example of Iressa, a lung cancer therapy that was approved for use in 2003 on the basis of its promising performance in trials. "My understanding is that when it was evaluated in patients over the long term, the benefits were marginal," he says.

extra cost a drug plan can expect to incur each year of a new treatment for one patient to achieve an improvement in quality of life. In a highly controversial 1992 paper that Dr. Laupacis wrote to provoke debate, he proposed that new drugs approved by Health Canada that have a net cost of less than \$20,000 for each year of treatment per patient be deemed affordable and included on provincial drug plans, while those north of \$100,000 be considered too pricey. "People asked, 'Where did you come up with those numbers?' The answer is, 'We made them up.'"

Tierney insists that policy-makers don't rely only on hard-and-fast thresholds to determine whether a new drug is too expensive relative to the benefits it provides. Still, many in the field regard

John Lorinc (BSc 1987) is a Toronto writer. His book The New City was just published.

$$\#\{n: X_n \in A\}$$
$$\sim np \text{ as } n \rightarrow \infty$$

$$P[\min_{1 \leq i \leq n} D_i > \delta]$$
$$= P[D_1 > \delta]^n$$

$$E[N] =$$
$$\sum_{i=1}^k \int g_i \mathbb{1}_S dQ$$

$$r = \sqrt{x^2 + y^2}$$

$$\theta = \arctan\left(\frac{y}{x}\right)$$

$$P[|X| > \varepsilon]$$
$$= \int_0^{2\pi} \int_{\varepsilon}^{\infty} f r dr d\theta$$

$$\text{Var}(X) =$$
$$E[(X - \mu_X)^2]$$

$$\text{dist}(x, A)$$

$$\stackrel{\text{def}}{=} \inf_{y \in A} \|x - y\|$$

$$P[X \in A]$$
$$= \int_A f d\lambda$$

MATH PROF AND AMATEUR COMIC
JEFFREY ROSENTHAL EMBRACES RANDOMNESS
– BOTH ON STAGE AND IN CLASS
BY STACEY GIBSON

Games of Chance

IT'S a snowy Friday night in February, and wind lashes at the clusters of young professionals on their way to the Irish pubs and Greek restaurants of Toronto's trendy Danforth strip. But inside studio two of the Bad Dog Theatre – a three-year-old, hole-in-the-wall comedy joint – the heat is making the audience flush harder than an off-colour Andrew Dice Clay routine.

The ratcheting temperature can be blamed on the tiny quarters: the 400-square-foot windowless studio holds 25 spectators and four maniacal comedians, who are performing improv for the pay-what-you-can crowd. A comedic version of rapier sword-fighting, improv is an intellectual sport in which each strike of an ad lib helps build a scene. The troupe members play off one-liners (or “offers”) that they throw each other, parrying and jostling their way to laughter or careening downward to a thud of silence.

Perhaps the most boisterous troupe member is U of T

statistics professor Jeffrey Rosenthal – a six-foot-three, scruffy fellow with broad shoulders, a head of curly brown hair and a thunderous voice. (“He is Little John from Robin Hood,” says improv buddy Mike Ranieri. “A big, burly, lovable guy.”) Rosenthal ricochets from playing a son yearning for the acceptance of his housepainter father to a jilted housewife. Then – channeling a bellowing, frenzied version of Mel Gibson in *Braveheart* and adding the most diabolical Scottish accent outside Glasgow's Barlinnie prison – he turns to a familiar role. He roars: “Alright then little boys and girls. It's me first day teaching so I don't want anybody giving me a hard time. That includes *yew*.” [looking at a cast member in a chair]

Student [cast member]: “Yes, Mr. Angus.”

Rosenthal: “Now look – I was told that you're a difficult class. So here's what I want you to do. I want you to just cower in fear and repeat after me: “I'm a miserable *NOBODY*.”

Students [cast members], en masse: “I'm a miserable nobody.”

Rosenthal: “You're really not a bad class after all.”

PHOTOGRAPH: LAM SHARP

Two weeks earlier, in his U of T office, Rosenthal wisecracks about what I will write if the performance flops: “He said he did improv but I went to the show and he’s actually an idiot. All his other work must be fraudulent, too.” And comedy *is* a crapshoot, requiring a steely self-confidence and high-spirited sociability. Rosenthal, 38, started improv classes in 1995 at Theatresports in Toronto and began performing gigs after almost three years of training. “There’s a lot of randomness in how it goes, but when it goes well, and I actually make people laugh and enjoy themselves it’s exciting. And it also made me start thinking about other things differently...” He speaks of learning to “go with the moment” both on the stage and in the classroom. “Improv applies pretty much to your whole life – you’re always being confronted by things that you didn’t expect, or you couldn’t anticipate. And are you going to let it throw you off? Or are you going to embrace it and go with it?”

Embracing randomness – and being aware of its dangers and delights – is Rosenthal’s specialty. His latest book, *Struck by Lightning: The Curious World of Probabilities* (HarperCollins Canada 2005), shows readers how to use simple mathematical concepts – most notably, probability theory – to assess the odds of random events happening to them. In other words, how likely are you to actually get walloped by one of those rare occurrences that obsess you on a sleepless Sunday night? If, for example, you worry excessively about being the victim of a homicide, there is a chapter on how to assess crime statistics correctly. (According to Rosenthal, if we look at the difference between counts [total number of homicides] and rates [homicides per 100,000 people], we can see that the risk of being murdered in Canada has been on a slight decline since the mid-1970s – indicating it may be our *fear* of violent crime that is on the rise.) And during those raging late-summer electrical storms, it might be useful to know that only three Canadians died after being struck by lightning (as compared to, say, 74,824 of cardiovascular diseases) in 2001.

If, on the other hand, you hanker to beat the house at craps or 21 or blackjack, *Struck by Lightning* might help you calculate your odds. (Hint: rein in your inner Ben Affleck, and step *away* from the table – you’re not going to get rich quick. Casinos guarantee that games are weighted in their favour by employing probability theorists to calculate the average net payouts.) The book also includes chapters on understanding the margin of error in polling; interpreting medical studies; and – for those who vacillate over decisions large and small – utility functions (numerical ratings), which can help you decide whether to buy house insurance, ask out an attractive colleague or try a new medical treatment.

The book has clearly hit a public nerve: last year, it reached number seven on the *Maclean’s* bestseller list, and is now slated

for release in the U.S., Germany, Australia, New Zealand, Japan and Italy. *Struck by Lightning* is an example of a publishing industry trend: books that merge an academic specialty with the concerns of a general audience. “The book shows how we can understand and interpret the events of our lives using simple math. If nothing else, it makes probability and statistics interesting and accessible for the layman,” says Radu Craiu, an assistant professor of statistics at U of T.

Rosenthal’s academic field is an exclusive one: he studies Monte Carlo algorithms (his specialty within this branch is an even bigger mouthful: Markov chain Monte Carlo randomized computer algorithms). In simplest terms, Monte Carlo algorithms are a way of using randomness to gauge quantities that are too difficult to compute directly. As Rosenthal explains in his book, they were first used at the Manhattan Project in New Mexico – birthplace of the atomic bomb – during the Second

“Improv applies to your whole life – you’re always being confronted by things you didn’t expect. Are you going to let it throw you off? Or are you going to embrace it and go with it?”

World War. Scientists needed to ensure the bomb contained the correct amount of uranium: too much, and it would explode prematurely, killing those surrounding the project. Using some of the world’s first computers, scientists randomly simulated the motion of neutrons and the atomic-bomb chain reaction over and over again. This allowed them to deduce how the neutrons would behave on average, and what fraction would escape. Monte Carlo algorithms are now used in almost every sphere where randomness exists: from managing investment portfolios to gauging which medicines work during trials. “One neat thing about probability, as opposed to many branches of mathematics, is that it is connected to so many things on a personal level *and* a professional one,” says Rosenthal.

In an early chapter of *Struck by Lightning*, Rosenthal explains how mathematicians invented Erdős numbers – a chain-of-connections game in which anyone linked to the gifted Hungarian mathematician Paul Erdős would be assigned a number value, with the most direct link receiving a number one. A Hollywood variation of the pastime, Six Degrees of Kevin Bacon, is now ubiquitous in the pop-culture landscape. And, given the number of U of T family connections Rosenthal has, anyone who has stepped on U of T soil might be able to play a new version of the game: Six Degrees of Jeffrey Rosenthal. His father, Peter, is a professor of mathematics at the university who specializes in operator theory. (For a decade, Rosenthal and his dad worked two floors apart in Sidney Smith Hall.) His mother, Helen,



recently retired as a math lecturer at U of T Scarborough. Brother Alan is a computer science lecturer on the St. George campus, while brother Michael is an instructional technology analyst at OISE/UT. Jeffrey's wife, Margaret Fulford, is the faculty librarian at the Faculty of Dentistry.

While Rosenthal was growing up in Scarborough, Ont., his numerically minded parents introduced him to mathematical concepts at an early age: by the time he was eight, he could prove the classic math idea that the number of prime numbers is infinite. He also had a working knowledge of probability theory, which he used to increase his chances of vanquishing his two brothers at Monopoly: he would compute the probabilities of his brothers rolling certain numbers on the dice and landing on certain squares, to decide whether to buy houses for his property. (Unfortunately, they employed the same tactics, making for some cutthroat Monopoly games.) And when he was a teenager studying math, physics and computer science at U of T in the late 1980s, he could envision "mathematician" as a profession in a way other undergraduate students didn't seem to grasp. "For me, it seemed the natural career choice to work in mathematical sciences," he says.

After graduating with a bachelor of science from U of T in 1988, Rosenthal attended Harvard University, earning a PhD in mathematics at the tender age of 24. It was at Harvard that he first began applying probability theory to everyday situations. In his second year, Rosenthal was slated to fly to the John F. Kennedy International Airport in New York to visit relatives – but a week before his departure, a plane crashed

near the airport, killing 73 people. Rosenthal was skittish about getting on his flight, but found solace in the currency of cold hard numbers: he determined there were about 5,000 flights a week to the airport – and that the chances were probably less than one in 5,000 that, in the following week, there would be another disaster. The odds were low enough to convince him to board the plane. "At first I thought, 'Oh my God there's been a plane crash at JFK.'... It was only upon calming myself I thought, 'Wait a minute – I should stop and think about this more,'" he says. "When you're doing research work it tends to be so specialized that it's easy to forget the connections to things around you. You're working on your subtleties and you don't look around so much. It was a case of trying to blend what I'm working on with the everyday."

Translating difficult concepts for a general audience, and playing to a crowd, are roles that come naturally to Rosenthal. Improv friend Ranieri explains how, a few years back, Rosenthal bought a video camera and solicited his friends to write and act in amateur movies with him. (One of their most recent pieces is the "Night of the Living Dead Christmas Special," in which Rosenthal sings about "slay rides" and chomps on gifts of "brains" made of cauliflower.) The friends decided to create a movie trailer for Rosenthal's first academic textbook, *A First Look at Rigorous Probability Theory*. "At first I thought, 'What a stupid thing to do a movie on' – a preview movie for this boring stats book. But we thought 'That's why it's funny, right?' so we did *Rigorous Probability: The Movie*," says Ranieri. Rosenthal now shows the video to his graduate classes.

In the first episode of the hit TV show "My Name is Earl," a two-bit thief finds a winning scratch ticket worth \$100,000. In sheer revelatory joy, he punches the air, whoops with glee and dances his way out onto the road – where a senior citizen in a Buick slams into him, and sends his ticket casting off into the wind. While Earl is in hospital, his wife visits to hand him divorce papers, inform him she is having an affair with the local bar owner, and that her two children aren't his. Stunned, drugged and imprisoned in a cast, Earl turns on the TV, and watches an interview with MTV personality Carson Daly – who is talking about how karma changed his life. "*Karmaaaa*," says a gob-smacked Earl, who undergoes a spiritual epiphany. Convinced he is being paid back for a lifetime of bad deeds, Earl makes a

list of all his wrongdoings – from siphoning gas to rigging a high school football game – and sets out to make amends with the universe. The result? While crossing number 136 (“been a litterbug”) off his list by cleaning up a motel parking lot, he finds the lost winning ticket in the detritus.

Is there karma? Is someone above taking notes and keeping score? When you’re a probability theorist, the idea of fate or the existence of the karma gods of Earl’s universe appear, well, highly improbable. In fact, Rosenthal is a member of the Humanist Association of Canada, a non-theistic group that believes life choices should not be guided by a belief in supernatural deities, but by human reason and compassion. Rosenthal speaks on the discord between fate and probability. “Often people will point to certain statistic examples: Here’s a good guy who almost died and then he didn’t and there must have been some divine intervention or master plan, but that’s what we the probabilists would call a selection bias... You can just as easily find examples where the opposite happened: the bad guy got away and the good guy got killed. I say, well that’s perfectly consistent with the idea that these things happened randomly and that there is no all-powerful force controlling them,” he says. “To me it seems more useful to understand and deal with the world that we have and try to take actions that will improve the world based on what it is – rather than to ascribe things to it that there’s not evidence of.”

In October 1999, Rosenthal married Margaret Fulford in a humanist ceremony at Hart House: the service took place in the Debates Room, and the reception in the Great Hall. Rosenthal, an amateur musician (he plays everything from the trumpet and keyboard to the saxophone and bongo drums), sang and played guitar for his new bride. “The really romantic part was he sang a song that he had written for me when we had just been dating for six weeks, which was called ‘Margaret, Won’t You Fly to P.E.I. with Me?’” says Fulford. “He also sang a Paul Simon song called ‘Kathy’s Song,’ which was the first song that he sung for me when we were first dating. It was very sweet.”

IT’S a Wednesday afternoon, week 17 of the first-year seminar class “Probability and Uncertainty” in Sidney Smith Hall on the St. George campus. The room, with its austere windowless surroundings, is oddly reminiscent of the Bad Dog Theatre studio. The crowd is slightly smaller, and the laid-back atmosphere has a Sunday morning sleepiness, with students – in oversized sweatshirts, baggy jeans and caps – slouched low in their seats. Hardcover editions of *Struck by Lightning* sit on the maroon tabletops.

Rosenthal enters in a green sweater, khakis and beige sneakers. He begins talking at the hotfoot pace that he uses

when he is enthused about something – which seems to be most of the time. Today the group is studying the “p-value” (the probability that an observed result occurred by pure chance) that is built into medical studies. Five per cent is the standard p-value, but Rosenthal wants the students to really *think* about what this means. He wants them to understand that it raises the possibility that one medical study in 20 might be wrong. “If we see something through observation, we always have to wonder if they just got lucky – whether shooting hoops or conducting medical studies,” he says.

He whips out a deck of cards, and his p-value performance begins. He tosses one club, one diamond and one heart to the student next to him and asks him to put the cards face down. “Question: do I have psychic powers?” Rosenthal looks at the back of the card, thinks hard, and guesses “clubs” – it’s a diamond. He misses on all three. “That seems to indicate I don’t have psychic powers.”

The mission extends to the students. With the enthusiasm of entering a game of Texas Hold ’em, they gather in groups of two and three to try it for themselves. They do a series of telepathic “tests” – from staring at a facedown card, to inhaling over it, to running their fingers across it – to see if they

“When you’re doing research it tends to be so specialized that it’s easy to forget the connections to things around you. I try to blend my work with the everyday.”

can determine the card’s suit. (They must guess right three times in a row – 1/3 times 1/3 times 1/3 – to reach a statistically significant p-value of 3.7 per cent.) The jokers in the crowd make loud snorting noises during the inhaling segment. There are yells of “cheater.”

At the end of the trials, Rosenthal asks, “Who, according to current scientific standards, has psychic powers?” Three of the 17 students raise their hands. The talk parlays into what further experiments could be done to clarify results, and what tricks pharmaceutical companies could employ if they were desperate to get a new drug approved. “There is a flip side,” says one astute student. “Maybe a drug that could have saved lives was lost because there was too rigid a standard.” The students start thinking discriminately.

Before they leave Rosenthal runs over next week’s assignment: publication bias. It’s a loaded topic dealing with the medical-study controversy surrounding Dr. Nancy Olivieri and the pharmaceutical company Apotex. But he also asks them to read anecdotes in the book with names such as “Jumping Frog,” “Happiness Hat” and “Meditation Medical Miracles.” Because even in the curious world of probabilities, there’s always room for a little improvised entertainment. ■

Stacey Gibson is managing editor of U of T Magazine.

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AFTER HOURS

BY
GRAHAM
F. SCOTT

CAMPUS LIFE FROM DUSK TO DAWN

“Pulling an all-nighter” is a quintessential university experience. But harried-looking students flipping through textbooks or staring bug-eyed at their computers at daybreak are only part of the story. U of T bustles with activity after dark. Tag along as we pull an all-nighter of our own (well, several, actually), to explore the nooks and crannies of a campus that never sleeps.



University College



11:44 P.M.

Hart House Theatre

10:52 P.M.

There aren't any cheering crowds – just the fluorescent glow of the ice and the thrum of the Zamboni as captain Michael Georgas gears up his team to hit the ice at Varsity Arena.

This is how most intramural hockey is played at U of T: late at night with few spectators. Tonight, the engineering hockey team, the Skuleyard Bullies, is taking on U of T Scarborough. The game is played for fun, not glory.

"I love hockey," says Damien Frost, a third-year engineering student and the Bullies' right defenceman. "It's great to play in an intramural setting because you know most of the people on your team. It's like playing with your buddies."

Georgas sends out his players to warm up with some passing and shooting drills. "Our players are from all different years," he says. "It's a way to get people together." *Continued on page 38*

"*The Rocky Horror Show* is a midnight kind of experience," says Jenna Rocca, batting her fake eyelashes and adjusting her bowler hat. Rocca and her friend Bill Hulme have taken front-row seats at Hart House Theatre for UC Follies' production of the cult classic, and they've dressed for the occasion. Rocca has chosen to wear a black bra as a shirt, and Hulme has smeared gold glitter on his bare chest. Rocca is what *Rocky Horror* veterans call a "virgin": it's her first time seeing a theatre production of the campy rock opera.

"But I've seen it at least six times on video," she says.

Rocky Horror is the raunchy tale of a transvestite alien, Dr. Frank N. Furter, who seduces an innocent couple, Brad and Janet, at his secluded mansion.

While the Hart House Theatre crew are resetting the stage for the midnight premiere, cast members speak about rehearsing for the notorious musical.

"It's like no show you've ever been in," says Peter Jermyn, who plays Rocky, the doomed title character. Flesh-baring costumes heighten the racy vibe – Jermyn wears little more than a shiny jockstrap. Not surprisingly, rehearsals centred on getting the actors comfortable with the revealing outfits. "We had to become, um, familiar with each other," says Claire Burns, who plays Columbia, one of Furter's "assistants."

The hard work has paid off: tonight's show is one of four sold-out performances.

It's almost midnight!" gasps Burns, checking her watch. "All the crazies are going to come out!"



PHOTOGRAPH: FERNANDO MORALES

Continued from page 37

Each year, about 8,500 students play intramural sports, participating in everything from triathlons to table tennis. While some of the teams play at a varsity level, there are divisions for all types and abilities – inner-tube water polo, for instance, for students who need help staying above the water-line.

Anne Richards, one of the nine sleepy-looking spectators in the stands, is here to see her son Mark skate for the engineers. “The teams only play five games in a semester, so if you miss one, you’ve missed a lot of the season,” she says. The late start time is fine with Richards: “It’s more convenient, actually,” she says, eyes on the ice. “This way, it doesn’t conflict with anything except sleep.”

12:28 A.M.

Fiona Rankin studies a set of graphs scrolling across her computer screen in the sleep laboratory at the Toronto Rehabilitation Institute on University Avenue. The graphs measure the breathing patterns, heart rates and brain waves of three patients. Rankin points to a long flat section in one graph. “This man essentially stopped breathing for a full minute,” she says.

Rankin, a technician, is working three 12-hour shifts this week. Most patients at Sleep Research Laboratory have sleep apnea, a condition that can cause them to temporarily stop breathing dozens

of times a night. Heavy snoring is one indicator of apnea. In Rankin’s office, three Fisher-Price baby monitors, one for each patient, emit a gentle rumble.

“Did you hear that?” Rankin asks. “He started breathing again after 81 seconds. That’s a very long apnea.”

Dr. Douglas Bradley, a U of T professor and the laboratory director, is investigating how sleep disorders relate to cardiovascular problems. In a recent study, Bradley and his research team found a link between sleep apnea and the risk of stroke.

As for Rankin, she says that the rewards of assisting with this type of research are high, but admits that working at night takes a toll. “I have a lousy sleeping pattern,” she says.



Information Commons, Robarts Library

1:07 A.M.

“In this lab, we study nematode worms,” says Mariam Alexander, a second-year master’s student in medical genetics. She and Alexandra Byrne, a third-year PhD candidate in medical genetics, are using the tiny worms to determine how specific genes affect muscle development and also how genes work together in the context of a whole animal.

Their lab is on the 12th floor of the sleek new Terrence Donnelly Centre for Cellular and Biomolecular Research, which offers a shimmering, nighttime view of downtown Toronto through its floor-to-ceiling windows. On any given night, you’ll find a handful of masters and PhD students in this

lab, completing experiments, crunching data and compiling results.

“The worms have a three-day life cycle,” explains Byrne, so for students engaged in a complex experiment, that means working to the worm’s schedule.

“It’s a biological organism,” says Alexander, “so it’s not like we can turn it off and come back and continue the experiment. The worm will die, and then you lose everything.”

Byrne and Alexander, who have been working in the same lab for about two years, say the new Donnelly Centre labs are a vast improvement over the windowless rooms of the Medical Sciences Building, where they used to conduct research. “Here you can see the sun rise and set,” says Alexander, “There’s actually daylight.”



3:24 A.M.

In a reading room at the Robarts Library, the students look either bored, desperate or deep in concentration. Several are completely unconscious.

Mai-Ling Truong, Joey Ng and Kristin Eberth are staked out at a table in the main lobby. They all have looming deadlines.

“I’m working on an essay on the Indian Act,” says Truong, a second-year Aboriginal studies student. “It was due today.”

Ng, a fourth-year life sciences student, is writing a book report about Filipino culture on the Internet. “It’s one of the most boring topics ever,” she groans.

Eberth, a third-year political science student, is supposed to be writing about Quebec separatism for an essay that was due two days ago. “My enthusiasm is unparalleled,” she says, while rolling her eyes.

The three are no strangers to late-night work, although Eberth says that the frequency of their midnight study marathons varies. “Sometimes I don’t work late at night at all and sometimes five nights in a row.” It may not be for everyone, but it’s a system, says Eberth, her friends typing furiously beside her. “We don’t usually wake up until 1 p.m., so this is our time.”

2:16 A.M.

“This is why we don’t have any glue sticks left,” sighs Claudia Calabro, editor of *The Gargoyle*, reaching up to pull an errant tube of hardened glue off the ceiling where an anonymous prankster has stuck it. Calabro is the editor of the *Gargoyle*, University College’s irreverent, often satirical and sometimes plainly juvenile newspaper. Tonight the paper’s staff is working on its election issue.

Part of the *Gargoyle*’s enduring appeal is its grungy, hand-made look, which comes from assembling it the old fashioned way – by cutting out pictures and text with X-Acto knives and gluing them onto large sheets of paper. About a dozen student staffers are gathered around the conference table – an abused billiards table, with the snooker balls lumped in the pockets – to survey the layout.

“We can’t tell this joke,” says someone at the far end of the table, arguing that it’s too tasteless, even by the paper’s risqué standards. An editor quickly renders the one-liner unreadable by crossing it out with a thick black Magic Marker.

“There are still four pages left to do,” Calabro hollers from her desk, where she’s writing her editorial. “We have to get everything done in half an hour or it won’t be printed tonight.”

Thirty minutes later, the edition is edited and glued down. Calabro shouts a victorious, “Somebody call a taxi!” The students clear the billiards table and bundle up the pages. Calabro and company head out into the cold and assemble on the front lawn of University College to see their baby into the cab that will rush it to the printer.

4:05 A.M.

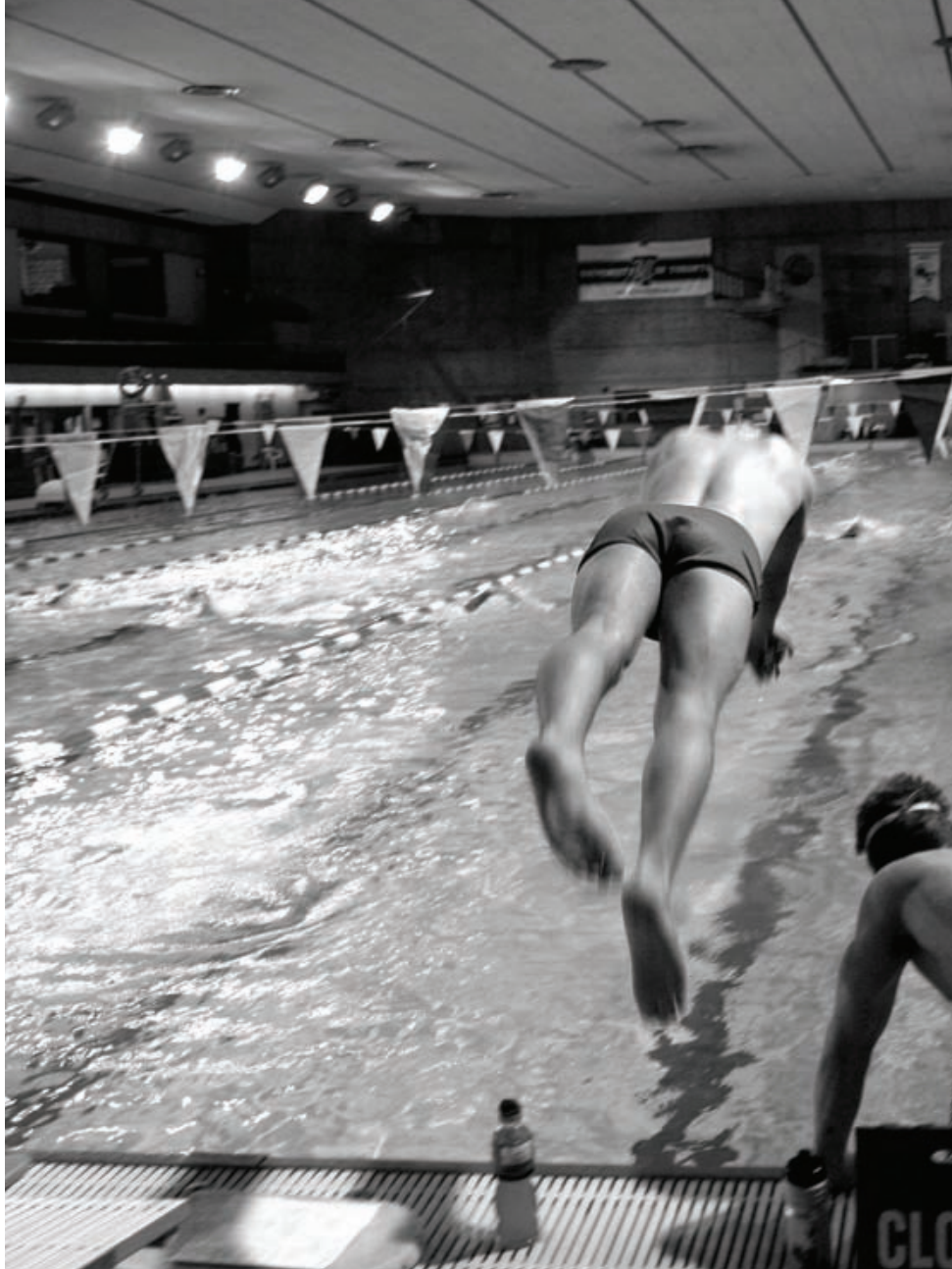
In the deepest reaches of the McLennan Physics Building on St. George Street is a room that's crucially important to every student, and staff and faculty member – though few have ever seen it. Stored in this heavily air-conditioned bunker are the e-mail servers, payroll mainframes, Cray supercomputers and hundreds of other blinking, whirring and buzzing computers.

Network Operations (as it's called) is like Grand Central Station, and it's Sam Harrichand's job as a shift supervisor to keep the trains running.

"See that red light?" asks Harrichand, pointing to a blip on one of the five monitors that indicate network traffic. "That's someone launching an attack." The hacker, location unknown, can't find a chink in U of T's armour. But other hacks have broken through.

"If the network goes down or the mail servers fail, I have to wake people up in the middle of the night to fix it," he says. While such hacker attacks present a serious inconvenience, Harrichand says they make his job interesting. "I have to act quickly to get the network back in working order," he says.

Harrichand blocks about a dozen attacks during a 12-hour shift, but the threats are mostly minor. "I like the work," he says. "It's quiet."



6:01 A.M.

It's windy and well below freezing, but in the attic at 91 St. George St., Jahmin Haye and Ricky "Turbo" Brown are heating up the airwaves with the rhythms of the Caribbean. Their radio show, *The Morning Ride*, is a mix of reggae and dancehall. Every Monday, it broadcasts live from 6 to 9 a.m. out of U of T's community radio station, CIUT 89.5 FM. But today is no ordinary Monday: It's Bob Marley's birthday, and they're dedicating a whole show

to the music of the reggae legend.

"Today is going to be an extra-special celebration," says Brown, introducing the show. "We're celebrating the life of Robert Nesta Marley, born February 6, 1945, part of the Jamaican group the Wailers."

CIUT's signal has the largest broadcast reach of any campus radio station in Ontario. Today's first caller, from Buffalo, requests "Could You Be Loved," saying it's his favourite Marley track.

"The Morning Ride" is consistently one of CIUT's most popular shows, reflecting both the size of the Jamaican

community in Toronto and the appetite for reggae generally. "You can't stop the music, man," says Brown. Haye nods in agreement.

After doing "The Morning Ride" for nine years, they still find getting up at 5 a.m. a little hard to take, but they're dedicated. "It's love, man, just a passion for the music," says Haye. "It's still not like a job because it's ..." he turns to Brown and asks, "What's the word I'm looking for? It's a responsibility."

And with that, the red On Air light is back on. Duty calls.



Athletic Centre

Through the windows of the Athletic Centre, the sky is a strip of dingy grey. Members of U of T's swim team are wandering onto the deck of the pool for morning practice. Every sound in the humid, chlorinated air echoes sharply, yet it's surprisingly quiet — just the sound of flip-flops on tile as the team members yawn, stretch, and get the kinks out before plunging in.

"I swim all five weekday mornings at 6:15, a little later on weekend mornings and then three nights a week," says first-year student Hannah-Jo Ryan. "But if there was no coach on deck, I would have a tough time getting in this early."

Each morning, the team spends two hours swimming laps and doing exercises to build strength and endurance and to improve their technique. For second-year student Marco Monaco, the training has paid dividends: he recently took silver and bronze medals in the breast-stroke at the Canadian Interuniversity Sport championships in Quebec City. The U of T men's swim team placed third in all of Canada.

Such success requires exceptional dedication. "We train an extra half-hour a day just to take off tenths of a second," says coach Byron Macdonald. "Marco happens to be one of the more intense trainers on the team.

"It's the will to win," says Monaco. "Getting up so early and having classes all day gets you really tired. But it all comes with what you do."

The concentrated training schedule separates varsity athletes from other students. "You can't really be like other people," says Ryan. "A lot of my friends will stay up until 4 a.m., sleep through classes, and get up and do it all again. I can't do that."

The crack-of-dawn practices bring their own rewards, though. "If you start the day off with a really good workout, you feel great," she says. "You feel like you've already accomplished something." ■

7:55 A.M.

Pat Cave is now working days as a portress at St. Hilda's College. But she has seen an awful lot of night shifts since beginning her career at the Trinity College women's residence 40 years ago. "When I started working here, a young woman who wanted to be out after midnight had to go to the don and request a 'late night out,' and sign the book," says Cave. "Then the don would give her a key." Now the residents — both men and women — have their own floor keys. And there's no one keeping a log of their nightly comings and goings.

In the 1960s and '70s, the women who lived at St. Hilda's weren't permitted men in their rooms, except on weekends. Weekday visits were restricted to "the pink room" — a large room on the first floor, where several visits often took place simultaneously.

Cave, who came to Canada from Guyana in 1964, worked as a cook for two years before starting at St. Hilda's. Cave figures that she met thousands of students during her career — and got to know surprisingly many of them. "Some of the girls that live here now, their mothers were here," she says. In February, Cave received a card from someone who had heard that she'll be retiring in June.

With another shift beginning, and visitors coming and going under Cave's watchful eye, she says she's ready for retirement. But Cave intends to come back to visit. "Whenever I'm downtown, I can just drop in on St. Hilda's and make sure it's all in working order."





SCHOOL OF

JAZZ

FOR U OF T MUSIC STUDENTS, IT'S ALL ABOUT PASSION AND THE DESIRE TO PLAY

BY PAUL FRAUMENI

High above Philosopher's Walk, on the third floor of the Edward Johnson Building, Sandra Salverda idly plays with the valves of her trumpet. The 24-year-old music student is being tested in a third-year improvisation class by her professor, Quinsin Nachoff. To an outsider, Nachoff's instructions don't make much sense. "Play a half-note diatonic line through the chord changes," he says, and "Try a 5321 pattern." But to the two jazz musicians – one professional and one learner – the words provide a route to what they hope will be the perfect musical expression of Duke Ellington's "In a Sentimental Mood."

"What tempo?" Salverda asks.

"Whatever you think you can execute," Nachoff suggests.

Accompanying Salverda are fellow

students on standup bass, drums and piano. Together they quickly map out how they're going to play, and the bass player mumbles, "One, two, three ..."

The music begins. What was an informal exchange of ideas between players becomes a surprisingly accomplished rendition of a standard from the Big Band era. Closing your eyes, you'd think you were in a real jazz club.

But just when the musicians are really swinging, Nachoff waves at them to stop. They resume their insiders' talk. Being able to improvise

PHOTOGRAPHY: KCARSTRONG

around a central melody is a key skill for any jazz musician, and learning how to do this involves constant playing and reviewing. “When you get to performing, you have all the freedom you want,” says Nachoff. “But you have to practice specific elements of a piece over and over.”

The cluttered performance room at the Faculty of Music is not far from Toronto’s downtown jazz clubs, but the journey from one to the other is a long haul. Students enrolled in U of T’s four-year jazz studies program practise and perform about 40 hours a week while also writing essays and exams. Many do paying gigs on the side: Salverda plays in a mariachi band at a Mexican restaurant; other students sit in on sessions at The Rex, a downtown blues and jazz bar. They are required to compose their own music, study music history and theory, and arrange songs into a jazz format (reinventing the Beatles’ “Yesterday,” for example, as a jazz instrumental). On a practical level, students also learn how to market themselves as musicians and manage their business affairs. Most will not make a full-time living from jazz. But they are all committed to trying.



Sandra Salverda

to make a serious decision about how they want to learn jazz. “If you want to throw yourself into playing 24/7, don’t do this. This is for people who want a degree – who want to stretch their mind, to think about what modernism and post-modernism mean because they don’t think music is just about playing. Our students get the university experience and they continue to polish their craft with really good teachers.”

Those “really good teachers” are a major draw for students. “Everyone who teaches here is a jazz player,” says Promane, an accomplished trombonist who played with Rob McConnell’s famed Boss Brass. “We discuss the music as a classical art form. The conversation always circles around the large body of the jazz canon and the jazz mindset.”

U of T’s Faculty of Music launched the jazz program in 1991 with the goal of providing an intimate kind of music instruction. “You have to get to know your students personally so you can help them artistically,” says Prof. Paul Read, the program’s founding director, who now heads up the master’s program. “With 65 students, you have a far better opportunity of doing that than if you have 300.” Read worked

ANY ONE-ON-ONE YOU GET CAN ONLY BE BENEFICIAL IF YOU REALLY WANT TO LEARN TO PLAY YOUR INSTRUMENT

Professor Terry Promane, the director of U of T’s jazz studies program, says younger students usually find improvisation class the toughest. “At first, most people can only handle a very basic set of chord changes.” He illustrates by singing, “Five foot two, eyes of blue,” emphasizing the nursery rhyme-like simplicity of the song. “By the time the students are finished, they’ve progressed to a sophisticated and professional level.”

Students receive an hour a week of private lessons from a faculty member, which can yield significant skill improvements, says Promane. “Students come to you as a big block of granite, and every lesson you knock off another chunk. By the time you get to fourth year, you hope the statue is complete.”

Despite the gruelling work and high expectations, the young musicians seem to welcome the intensity of the learning experience. “Any one-on-one you get can only be beneficial if you really want to learn to play your instrument,” says Salverda.

But can jazz – the heady brew of syncopation, improvisation and rhythm created by African Americans in the early part of the 20th century out of their other monumental musical invention, the blues – really be an *academic* pursuit? Isn’t it best learned in a dark club over shots of bourbon?

That’s something of a Hollywood stereotype, but Gage Averill, dean of the Faculty of Music, believes that students do have

with Canadian jazz legend Phil Nimmons (who is still a faculty member at age 82) to design the program. They hoped their students would take an interest in different styles of music. “We wanted students who were interested in broadening their scope,” says Read.

Before North American universities began teaching jazz in the 1950s and 1960s, most faculties of music offered programs in classical music and opera, which were considered a better fit with a university’s academic approach. “That feeling kept jazz out of universities for a long time,” says Read. “But music is music. There are more similarities between learning to play music in the jazz idiom and the classical idiom than there are differences.” He says jazz has suffered from some unfair stereotyping. “This music has come a long way from the dance hall or the smoky bar. It still has those dimensions, but it is also a very sophisticated art form with a wide range of expressions.” Still, there are risks to submitting jazz to the rigours of academe. “One of the biggest challenges we face is to not kill off the spontaneous street character of the music by taking an overly academic approach,” says Read. “You can throttle it by talking it to death and overanalyzing it.”

Performance remains a focus of the program. And students say the daily exposure to veteran jazz musicians is crucial. Last October, Dan Fortin, a third-year bassist from Peterborough,

Ontario, was the accompanist with Canadian jazz guitarist Lorne Lofsky in a master class (where prominent professional musicians participate with students in a mix of performance and detailed analytical discussion). For Fortin to be able to play alongside Lofsky is akin to an aspiring novelist getting Margaret Atwood (BA 1961 VIC) to review a first draft.

“This is the great thing about arts education,” says Fortin. “It’s about finding people who are working in the medium. They guide you and show what can inspire you. They don’t say ‘This is what you need to learn.’ They allow you to do your own thing.”

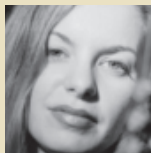
The program also balances the artistic exploration of jazz with the practical realities of building a career. Vocal instructor Heather Bambrick (Mus Bac Per 1997) – a recent winner of two National Jazz Awards – says what she learned from singer and former U of T instructor Carol Welsman was invaluable. “I could pick her brain and say, ‘How do I do a demo? How do I organize my first band or my first record?’ The one-on-one time students have with the instructors is pretty amazing.”

Another U of T faculty member is Chase Sanborn, a veteran studio musician and former member of the Ray Charles Orchestra. Sanborn encourages young musicians to consider the business side of music and to develop a career strategy. At a clinic he gave for U of T students last fall, he offered advice on marketing, promotion, and finances and taxes. “The program should be about learning to do what you do, but you also need to keep your mind open to how to make a living,” says Sanborn.

What drives these young people to pursue the life of a musician? Not riches or superstardom. Although several U of T alumni have gone on to international prominence, not many musicians can devote their careers to playing *only* jazz. This might have been possible in the 1930s and ’40s during the Swing Era, when the bands of Duke Ellington and Artie Shaw were at the height of their popularity and Ella Fitzgerald and Billie Holiday topped the charts. But in the 1950s, rhythm and blues and rock ’n’ roll came along and captured the minds and ears of a younger generation. Jazz continued to evolve, with the emergence of Charlie Parker, Miles Davis, John Coltrane and such new styles as bop and fusion, but it never regained its mainstream popularity. Although a vibrant jazz scene still exists around the world, most professional jazz musicians flesh out their incomes with composing and arranging, teaching, corporate Christmas parties and stage musicals.

The Players

Visit jazz clubs or festivals, or enrol in a jazz program at a North American school, and you’re likely to encounter a graduate of U of T’s jazz studies program. Among the most well-known U of T jazz alumni are:

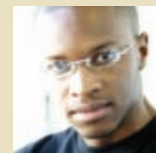


Lina Allemanno, trumpet
2005 CBC Galaxie Rising Star Award

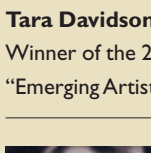
Mike Malone, trumpet
One of Canada’s leading jazz composers; member of the Dave McMurdo Jazz Orchestra; faculty member at Mohawk College



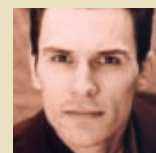
David Braid, piano
2005 Juno Award winner for traditional jazz album of the year



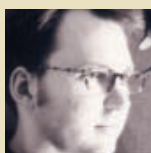
Mark McLean, drums
Jazz Report Post-Secondary School Musician of the Year in 1998; has since played with Oscar Peterson, Jane Bunnett and Molly Johnson, among others



Tara Davidson, saxophone
Winner of the 2005 Distillery Jazz Festival “Emerging Artist Award”



Anthony Michelli, drums
Jazz Report Post-Secondary School Musician of the Year in 1995; winner (with



Andrew Downing, bass
Eaton Graduating Scholarship winner from the Faculty of Music (1996). His band, Great Uncles

the Nancy Walker Quartet) of the 2003 Grand Prix de Jazz General Motors at the Festival International de Jazz de Montreal

of the Revolution, won the 2004 Juno Award for contemporary jazz album for “Blow the House Down”

Dariusz Terefenko, piano
Faculty member at the Eastman School of Music at the University of Rochester

Faculty member Phil Nimmons understands a musician’s passion for jazz and the drive to play, despite the financial difficulties that can come with it. For decades, his bands (Nimmons ‘N’ Nine and Nimmons ‘N’ Nine Plus Six) practically owned the Canadian jazz scene. But that’s not how his career started. While attending the University of British Columbia in the 1940s, Nimmons planned to become a doctor. As talented as he was in the sciences, however, he couldn’t let go of music. “I think this is something you can sense in our students. They have this desire. This is what they want to do.”

Like Nimmons, most musicians – pro and student alike – find it difficult to put their passion into words. Jazz piano virtuoso Bill Evans once described his interest in Zen Buddhism this way: “I don’t pretend to understand it. I just find it comforting – and very similar to jazz. Like jazz, you can’t explain it to anyone without losing the experience. That’s why it bugs me when people try to analyze jazz as an intellectual theorem. It’s not. It’s feeling.”

Third-year student Fortin spends a lot of time in class talking about jazz, but he says the difficulty of explaining the music is part of its attraction. “Sometimes you can’t really explain what you love about jazz or why it affects you. And that makes it satisfying and mysterious.”

Paul Fraumeni is the editor of U of T’s research magazine, Edge.

PHOTOGRAPHY: NADIA MOLINARI; COURTESY OF DAVID BRAID; MARC DOWNING; COURTESY OF MARK MCLEAN, ANTHONY MICHELLI



Alumni Launch Campaign to Restore Convocation Hall

The U of T Alumni Association (UTAA) has kicked off an ambitious campaign to refurbish Convocation Hall with a \$500,000 gift, announced by outgoing UTAA president Brian Burchell (BSc 1987) at the association's annual meeting last November.

Next year marks the 100th anniversary of the opening of Convocation Hall, and the UTAA hopes to spearhead the restoration of a building that has tremendous architectural and historical significance for U of T and its alumni, Burchell said. "All alumni pass through Convocation Hall, so it is only fitting that the UTAA take a leadership role in inspiring others to support this project."

As part of the planned renovations, the stage will be refinished, many of the auditorium's 1,731 seats will be refurbished or replaced and a new corridor of accessible washrooms will be installed. Extensive decorative finishing will enhance the historical millwork – including the trim, baseboards, and casings around doors and windows. The walls and floors will be

painted and treated, and the exterior of the building will be cleaned. Future plans include the creation of a pedestrian plaza in front of Convocation Hall with trees and walkways.

The UTAA hopes its gift serves as a catalyst for other donations – from individual alumni, corporations and other organizations – to make the complete renovation of Convocation Hall and its surroundings possible.

President David Naylor (MD 1978) commended the association for its pledge, noting that U of T alumni were instrumental in raising funds for the construction of Convocation Hall a century ago. At that time, the university hoped to raise \$25,000 from alumni to build a hall in memory of those who had fallen in the Fenian raids and the Boer War. The scope of the project grew after alumni raised \$50,000 and the provincial government contributed another \$50,000. The building design, by Frank Darling and John Pearson, was inspired by the Sorbonne theatre in Paris; its cornerstone was laid in June 1904.

– Elizabeth Raymer

PHOTOGRAPHY: SUSAN KING



Bluma Appel has helped fund a new lab for nursing students

Hats Off to Nurses

Like many Canadians, Bluma Appel was moved by the courage of the nurses who fought to contain the SARS epidemic of 2003 – and was saddened by the deaths the disease caused. Now Appel, a social activist and philanthropist, has given \$350,000 to help fund a state-of-the-art training lab at the University of Toronto’s Faculty of Nursing.

Appel says her gift reflects a personal commitment to Canadian nurses and an appreciation for their work on the front line with patients. “I became very interested in nursing during the SARS epidemic,” says Appel. “So many nurses got sick, and some even died because they were taking care of sick patients. My friend Jeannie Butler, who is a nurse and a very good friend of the faculty, says better training with infectious disease control will help save lives.”

The training lab is located in the newly renovated home of the Faculty of Nursing at 155 College Street. The facility opened in January, and contains an isolation room for infectious disease training – the only one of its kind in Canada.

Appel says it is particularly important to support training for health-care workers now, as nurses will play a crucial role in the event of a global influenza pandemic. “I think nursing is the most underappreciated profession,” she says. “Nurses have great courage and commitment.” Appel and Butler are now in the preliminary stages of developing a new fundraising campaign for the faculty called “The Flight of 1,000 Nightingales.”

– Laura Rosen Cohen

The Evolution of Medicine

Medical education often focuses on the latest scientific advances, but a new chair in the Faculty of Arts and Science will support the study of illness and medical practice through history.

Professor Emerita Pauline Mazumdar and her husband, Dipak Mazumdar, have committed \$3 million to create the Pauline M.H. Mazumdar Chair in the History of Medicine at the Institute

for the History and Philosophy of Science and Technology (IHPST). The centre’s director Paul Thompson says the chair will deepen the organization’s expertise in life sciences and raise its international profile. “This gift guarantees that the institute will play a key role in advancing our understanding of the origins and evolution of medicine, and in making its history available to students,” he says.

Trained as a medical doctor in England before shifting her focus to the history of medicine, Pauline Mazumdar taught in the Faculty of Arts and Science

Centre for Sexual Diversity Studies Receives \$1 Million

Toronto businessman and University College alumnus Mark Bonham (BComm 1982) has made a \$1-million commitment to the University of Toronto's Centre for Sexual Diversity Studies, the largest the centre has received since its undergraduate program was founded in 1998.

Located at UC, the centre offers both major and minor undergraduate degree programs, hosts academic and community events, and promotes research into a variety of sexual identities, including gay, lesbian, bisexual, transgendered and heterosexual. The centre – one of only a few in North America – acts as a hub for faculty and about 150 undergraduate and graduate students. It also serves as an academic resource for community members interested in understanding how society perceives sexual diversity and sexual practice.

"Mark has been a strong supporter of SDS for years," says the centre's director, Professor David Rayside. "His generosity and commitment made a real difference for our students in the early years of our undergraduate program. Now once again, and more dramatically than ever, Mark has shown great confidence in what we have accomplished, and in the dreams we have for the centre's future." Bonham's gift will provide ongoing support for program expenses, distinguished academic visitors and conferences.

Born in Guelph, Ontario, in 1959, Bonham is chairman and CEO of Stoney Ridge Estate Winery in Vineland, Ont. He directs the M. Bonham Charitable Foundation and serves on the advisory board of the annual Inside Out Lesbian and Gay Film and Video Festival in Toronto. In 1999, he received U of T's Arbor Award for volunteer service to the university. "I'm proud to be able to support this important program at University College, and I'm pleased that this new endowment will enable the program to carry on well into the future," says Bonham. – *F. Michah Rynor*



Bonham

for 23 years. She retired from the IHPST in 1999, but continues to teach and supervise doctoral students. Dipak Mazumdar, an economist, is an adjunct professor affiliated with U of T's Centre for International Studies.

Pauline believes her academic specialty has a unique and vital mandate. "The history of medicine allows students to explore political, cultural and technical history," she says. "Owsei Temkin, a past W.H. Welch Chair in the History of

Medicine at Johns Hopkins University, used to say that all eras are worth understanding for their own sake. I decided to fund a chair at U of T to perpetuate that ideal."

Professor Pekka Sinervo, dean of the Faculty of Arts and Science, says the history of medicine is an important part of the university's teaching and research endeavours. "This gift ensures that future generations of students will be able to engage in a crucial area of academic and social inquiry," he says. – *Diana Kuprel*

Help for Scarborough Students

University of Toronto Scarborough has teamed up with a local branch of the Canadian Federation of University Women (CFUW) to offer scholarships to students interested in women's issues. The first of the three awards will be given out this fall.

"We are thrilled that we've been able to strengthen our relationship with U of T Scarborough by assisting students from our community," says Kathie Krashinsky, the awards convenor for CFUW Scarborough. "This gift celebrates the importance of grassroots community partnerships, which are at the heart of our chapter's mission."

The new CFUW Scarborough Entrance Scholarship will be open to any graduate of a Scarborough high school entering the first year of a humanities program at UTSC. Two CFUW Scarborough In-Course Scholarships will be awarded to students entering the third or fourth year of a major or minor program in women's studies at UTSC. All three scholarships are open to men and women, and special consideration will be given to students who demonstrate a commitment to community leadership and who support women's groups and women's issues.

For 30 years, members of CFUW Scarborough have contributed to a scholarship fund for young women from local high schools. "Our initial intention was to relieve the financial burden facing young women who attend university," says Krashinsky. Over the years, the fund has grown to \$56,000. The Ontario Student Opportunity Trust Fund will match CFUW Scarborough's gift, creating a permanent endowment of \$112,000 for future UTSC students – an opportunity that was too good to pass up, says Krashinsky. "CFUW Scarborough and U of T Scarborough share common goals and values about education and about individuals in this community. This arrangement is a reflection of our long relationship and will have a great impact on students."

CFUW is a voluntary organization of more than 10,000 women university graduates who are active in such areas as public affairs, education, law and social education. – *Anjali Baichwal*

Renowned Scholar Joins Dentistry

One of the world's leading experts in prosthetic dentistry has joined the Faculty of Dentistry at U of T, where he plans to introduce the latest teaching technology and forge greater links with the local dental community.

Professor Asbjørn Jokstad, who arrived in Toronto in October from the University of Norway in Oslo, is the new Nobel Biocare Chair in Prosthodontics. The chair was created in 2004 through a \$2-million gift from the Swedish dental company Nobel Biocare to promote prosthodontics scholarship.

Prosthodontists specialize in the replacement of missing teeth or parts of teeth due to injury, aging or disease. "Dr. Jokstad is among the most highly regarded academic prosthodontists in the world," says Professor David Mock, dean of U of T's Faculty of Dentistry. "He excels at using information technology to assist and augment learning, and is very student-oriented. He's going to make our faculty more receptive to student concerns and orient our programs more directly around the student."

Dr. Jokstad is also keen to bridge what he sees as a gap between academics and the dental community. He hopes to eventually establish more links between U of T and Ontario's 7,500 dentists and to encourage more practising dentists to engage in research and to share their clinical experience. He replaces retiring professor George Zarb, the inaugural chair holder and North America's foremost expert in implant dentistry.

Heliene Canepa, president and CEO of Nobel Biocare, says her company places a high value on its links to universities. "We rely on the dental profession to tell us what patients need," she says. "Together we are strong." – Elizabeth Monier-Williams and Scott Anderson



Coming Soon to a Theatre Near You

Patrons and actors alike will benefit from a refurbished Hart House Theatre, thanks to a lead contribution from *Saturday Night Live* creator Lorne Michaels (BA 1966 UC) to the Hart House Theatre Endowment.

Michaels performed in University College productions and directed and co-wrote the UC Follies while attending U of T. The musical revue, which he directed in 1964, provided a taste of the satire to come a decade later when *Saturday Night Live* made its debut. "What I do now professionally, I first did here as an amateur," Michaels told a graduating class at Convocation Hall in 2002. He said his happiest time at U of T was spent at Hart House: "lunch in the Great Hall, reading in the library, but most of all in the theatre."



Michaels

As part of the theatre's planned \$1-million renovation, improved lighting and seating will be installed in the auditorium, and the green room and dressing rooms will be gutted and remodelled to give the actors more space. A bar will be constructed in the Lorne Michaels Lobby, and washrooms will be expanded and made accessible. The foyer will be redecorated with theatre memorabilia and renamed the Macdonald Heaslip Performance Walkway, in honour of a \$500,000 gift from Nona Macdonald Heaslip (BA 1951 St. Mike's) and the late William Heaslip. "The renovations will ensure a high-quality performance space for student groups, and will continue to provide an outlet for creative expression," says Paul Templin, the theatre's managing director.

The Hart House Theatre campaign aims to raise a total of \$8 million to cover the playhouse's renovations, and to create an endowment to support ongoing operations. Donations from such high-profile alumni as Norman Jewison (BA 1949 VIC), chair of the theatre's Council of Patrons, and Michaels have helped Hart House raise awareness about the theatre's plans. Renovations are slated to begin in 2007.

– Carla DeMarco

ILLUSTRATION: HOWARD RIDEOUT; PHOTOGRAPHY: MARCIETHURSTLICK

EXPLORE THE WORLD

UNIVERSITY OF TORONTO ALUMNI TRAVEL PROGRAM 2006



Each year we offer exciting new tours specifically for the University of Toronto community. In 2006, we celebrate the musical genius of Mozart, travel the legendary Silk Road, and enjoy renowned California Bay Area cuisine. We invite you to explore the cultures, landscapes and histories of communities around the world.

Prices quoted are in Canadian dollars, per person and based on double occupancy. Dates and prices are subject to change. Individual tour brochures are available approximately 4 - 6 months prior to departure. To request a brochure, please call 416-978-2367 or 1-800-463-6048 or e-mail alumnitravel@utoronto.ca or visit us at www.alumnitravel.utoronto.ca or mail this coupon to: University of Toronto Alumni Travel, 21 King's College Circle, Toronto, ON M5S 3J3

Name: _____ Grad Year: _____

Address: _____

City: _____ Province: _____ Postal Code: _____

Tel: _____ E-mail: _____

Alumni ID number (printed on mailing address of U of T Magazine) _____

Please send me additional information about individual trips: Yes No

Please check off the trips for which you would like to receive information:

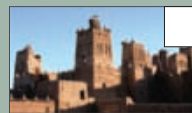
Great Journeys



May 15 - 26
In the Footsteps of Mozart
(Vienna, Salzburg, Prague)
\$5600 + air



Aug 31 - Sept 13
The Blue Danube
(Germany to Romania)
From \$4195 + air



October 21 - 29
Exotic Morocco
\$2820 + air



May 17 - 29
Legendary Passage
(Holland, Germany, France, Switzerland)
From \$4295 + air



Sept 16 - Oct 7
China's Silk Road
\$7890



November 1 - 9
Alumni College in Tuscany
(Italy)
\$2745 + air



May 20 - 29
Alumni College in Sicily
\$2745 + air



September 19 - 27
Alumni College on the
Adriatic Riviera (Slovenia)
\$2545 + air



November 2 - 19
Romancing South India
\$7890



June 13 - 21
Village Life - Dalmatian
Coast (Italy & Croatia)
From \$3495 + air



Sept 25 - Oct 3
Cruise the Majestic
Passage (Germany)
From \$2545 + air



Great Cities

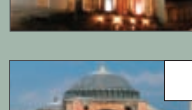
May 19 - 26
Berlin (Germany)
\$2990



June 20 - 28
Alumni College in Portugal
\$2595 + air



Sept 30 - Oct 16
Cruise Europe (Holland, Germany,
Austria, Slovak Republic, Hungary)
\$5095+ air



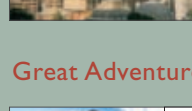
September 15 - 22
Istanbul (Turkey)
\$2945



Alumni College in the
Ukraine
July 1 - 10
\$1545 + air



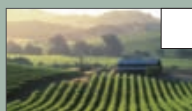
October 13 - 21
Island Life in Ancient
Greece (Greece & Turkey)
From \$3530 + air



Great Adventure




August 11 - 24
Journey of the Czars
(Russia)
From \$2255 + air



October 16 - 23
Best of the Bay
(California Wine & Cuisine)
From \$2735 + air



October 6 - 16
Peru's Inca Trail
\$2150 + air



1956. She always pushed the envelope.
She played hockey at Victoria College
and she played championship softball.
Everyone thought she would make her
presence felt in this world.

JACKIE (WICKWARE) PHILP
BA 1956 VIC

Did she?

Come find out Jackie's story at Spring Reunion – the annual U of T alumni gathering that brings together former classmates and friends. Spring Reunion 2006 honours graduates of years ending in 6 or 1, with special events planned for alumni celebrating their 25th and 50th anniversaries. The President's Garden Party and the Chancellor's Medal Presentation (honouring the 55th, 60th, 65th, 70th, 75th and 80th anniversaries of graduation) round out a weekend of rediscovering friends and places, old and new. For more information and to register for Spring Reunion, please visit the website or contact: 416-978-5881, toll free 1-888-738-8876 or spring.reunion@utoronto.ca.



SPRING REUNION

June 1 – 4



**UNIVERSITY
of TORONTO**

www.springreunion.utoronto.ca



Living off the Grid

Every day is Earth Day at Anthony and Mary Ketchum's custom-built sustainable house in Hockley Valley, Ont., but they still enjoy celebrating April 22 by inviting visitors to tour their weekend home. More than 1,400 people have made the one-hour trip northwest of Toronto to see the residence since its completion in 1998. "It's successful, practical, attractive and comfortable – a great demonstration of what can be done," says Professor Dennis O'Hara, director of U of T's Elliott Allen Institute for Theology and Ecology, who has been bringing students to the house every Earth Day for the past five years.

The Ketchums' house is not connected to the power grid and functions entirely on sustainable energy. "I've always had a very strong bent towards preserving the planet," says Anthony (MEd 1974, EdD 1979), crediting his rural upbringing outside Port Hope, Ont., for his commitment to environmental issues.

When the Ketchums decided to build a country getaway on four acres of land in the Hockley Valley, the hilly terrain seemed to present a serious obstacle, says Anthony, a retired English teacher who supervised construction of the project. Then he and Mary (BSW 1961) met Greg Allen (BASc 1970), an engineer who specializes in *Continued on page 54*

PHOTOGRAPHY: COURTESY OF TORONTO AND REGION CONSERVATION

Continued from page 53 sustainable design. Allen looked at a particularly steep slope and saw an opportunity to use the hillside for warmth and shelter in the winter and cooling in the summer. The colder sides of the house – the north and east – are built into the hill for insulation, with two storeys below ground level.

- The sun streams through 174 square feet of triple-glazed windows on the home’s west and south sides. Krypton gas between the window panes prevents heat loss. Without any active heating, the temperature inside never falls below 10 C. In the summer, trellises of northern kiwi and grape vines

shade the windows and help keep the house cool.

- For the coldest months, there is a seven-tonne masonry wood heater that extends between the main living area and kitchen. “If you get a good fire going, you only have to light it once every 24 hours, even in the dead of winter,” says Anthony. It also features a built-in bake oven.

- Seven 64-watt solar panels provide the electricity, with a 350-watt wind turbine as backup. “We’ve captured the sun’s energy in every possible way,” he says.

- Rainwater travels from two flat roofs into a 9,000-litre underground cistern, which provides water for bathing and washing. After it’s been used, this “grey water” flows into a 30-square-foot lush indoor garden of tropical plants. “Our plants just thrive on it,” says Anthony. Dry composting toilets produce fertilizer and eliminate the need for a septic system. Drinking water comes from a dug well.

- The structural walls are constructed of Durisol blocks made from recycled wood chips and cement reinforced with concrete. Roxul, a mineral wool made from waste slag from mines, provides additional insulation. Inside, brick walls and tile floors provide maximum heat absorption.

- The 1,600-square-foot home has a living room, dining room, kitchen, office and spare bedroom on the first floor, and two bedrooms and a bathroom on the second floor. There is even a radio and 12-inch TV. “It has all the comforts of home,” says Anthony. “We don’t miss a thing.”

– Megan Easton



Meet the President

The new president of the University of Toronto Alumni Association (UTAA) wants to see the organization become an even stronger force for supporting the university’s mission. “We’re very proud of the UTAA’s recent \$500,000 pledge to revitalize Convocation Hall, and this is the type of significant contribution we hope to continue to make,” says Michael Deck (MBA 1990). The UTAA directors elected Deck and their 2005-2006 officers during a Dec. 14 meeting.

Increasing awareness of the alumni association among the university’s more than 400,000 graduates is another of Deck’s priorities, a task that he says can be challenging at a large institution with a college system.

“U of T is an extraordinary place, with multiple affiliations. Yet the people I meet are just so proud of the place in general.”

Deck served as a parish minister and program consultant for the Anglican Church of Canada for more than a decade before completing his MBA at the Faculty of Management (now the Joseph L. Rotman School of Management). While there, he developed an interest in business ethics. “Ethics gave me a conceptual bridge between the church and the world of business,” he says. Deck was on faculty at the school from 1990 to 1996 and helped establish the Clarkson Centre for Business Ethics & Board Effectiveness, where he served as the first executive director.

After leaving Rotman he led the ethics and integrity practice at accounting firm



Deck

Kudos

Opera can be cool. Composer James Rolfe (BMus 1983, MusM 1984), known for making operas a hot ticket with a wide audience, has received the Louis Applebaum Composers Award. The \$10,000 prize, established by the Ontario Arts Foundation, honours excellence in music composition for theatre, music theatre, dance or opera. Rolfe composed the opera sensation *Beatrice Chancy*, which was performed across Canada between 1998 and 2000. George Elliott Clarke, the E.J. Pratt Professor in Canadian Literature at U of T, wrote the libretto for *Chancy*, while soprano Measha Brueggergosman (Mus Bac Perf 1999) performed the title role. Rolfe's new children's opera, *Elijah's Kite*, will premiere in New York in April.



Four alumni have been appointed to the Order of Canada – the country's highest honour for lifetime achievement. Joining the order as members are Michael Macklem (BA 1950 TRIN), founder of Oberon Press, for communications; Lorna Marsden (BA 1968 UC), president and vice-chancellor of York University, for education/administration; Willy Norris (PhD 1956) of Calgary for science; and Clayton Ruby, partner, Ruby & Edwardh, for law.

Professor Wendy Pfeffer (MA 1974, PhD 1979) of the University of Louisville has a new title to add to her business card – Chevalier. The Government of France named Pfeffer a Chevalier in the prestigious Ordre des Arts et des Lettres (Order of Arts and Letters) for her work as a scholar of French literature.

Naked ambition sometimes pays off. Actor David Julian Hirsh, star of the Showcase TV series *Naked Josh*, won a Gemini for Best Performing Arts Documentary Program for producing a film about Canadian actors looking for their big break in

Los Angeles. *Camp Hollywood* follows the highs and lows of aspiring actors – including Hirsh himself – living at the Highland Gardens Hotel, a low-budget lodging just off Hollywood Boulevard. Hirsh studied criminology at U of T in the early 1990s.

Mario Bento (BASc 1988) is helping keep an island paradise clean and sustainable. Bento is project manager of Antigua's first plastic and aluminum recycling facility, the Waste Recycling Corporation. The Rotary Club of Antigua-Sundown, which opened the facility last fall, won the United Nations Volunteers program award for "Volunteerism for National Development." As the club's director of service projects, Bento accepted the award on behalf of the Rotary Club at UN House in Barbados in December. – M.E.

KPMG LLP and was a director in global risk management solutions at PricewaterhouseCoopers LLP. Today he is managing director of Ethidex Inc., a risk management service he founded with colleagues from PricewaterhouseCoopers.

Deck's past volunteer involvements at U of T include serving as chair of both the Joan E. Foley Quality of Student Experience Award selection committee and the Toronto School of Theology board of trustees. He was elected to the UTAA board of directors in 2001 and is a member of the President's International Alumni Council. "Volunteering at the university has been an out-and-out pleasure," he says. "I've been continually overwhelmed by the extremely high quality of people at U of T." – M.E.

Sociology Alumni Unite

In 1937, the first U of T sociology students received their degrees; almost 70 years later, sociology grads have their first alumni organization at the university. The Sociology Alumni Association began unofficially when the department's alumni development officer, Linda Gardiner (BSc 1977 UTSC), organized a dinner for graduates and the department chair at the U of T Faculty Club in December 2004. "It started with a conscientious group who wanted to give something back to the sociology community," says Gardiner. After several meetings and much planning amongst the group, the formal launch came the following June during Spring Reunion, when the association hosted a reception and talk by sociology graduate Robert Sirman (BA 1968 VIC, MA 1969), administrative director of Canada's National Ballet School. Other recent activities have included a historical walking tour and an author-led book discussion, and there are plans to participate in the job-shadowing program for undergraduates. To join the Sociology Alumni Association executive or learn about upcoming events, contact Gardiner at (416) 946-4058 or sociology.dept@utoronto.ca. – M.E.

ALUMNI EVENTS

June 1 to 4. **Spring Reunion** is the premier event for alumni at U of T, with thousands returning to visit their alma mater. All alumni are welcome, but those from the graduating classes of 1926, '31, '36, '41, '46, '51, '56, '61, '66, '71, '76 and '81 will be honoured. Many faculties and colleges will also honour those from '86, '91, '96 and 2001. Chancellor's Circle Medals will be awarded to those celebrating their 55th, 60th, 65th, 70th, 75th and 80th year of graduation. Special events include the 25th anniversary reception, 50th anniversary luncheon, the President's Garden Party and the alumni book fair. Information packages will be mailed to all honoured years in March. (416) 978-5881, spring.reunion@utoronto.ca or www.springreunion.utoronto.ca

EXHIBITIONS

Doris McCarthy Gallery, U of T Scarborough

March 16 to May 12.

Return, Afghanistan, by photographer Zalmāi, is a dramatic personal account of the beginnings of reconstruction in a country still threatened by factional violence, poverty and the resurgence of the Taliban. Tuesday to Friday,

10 a.m.-4 p.m. and Sunday, noon-5 p.m. 1265 Military Trail. (416) 287-7007, dmg@utsc.utoronto.ca or www.utsc.utoronto.ca/dmg

Hart House

To April 16. **Installations and Interventions**. The Hart House Installation Collective transforms parts of Hart House into creative spaces via contemporary art installations. 7 Hart House Circle. (416) 978-8398

University of Toronto Art Centre

To June 17. **Frank's Drawings: Eight Museums by Gehry**, curated by Larry Richards, former dean of the Faculty of Architecture at U of T. This is the first exhibition in two decades devoted entirely to Frank Gehry's

drawings. The Art Gallery of Ontario is presenting a parallel exhibition, Frank Gehry: Art + Architecture, which runs until May 7. General admission \$5; \$3 for seniors; free to all students, U of T faculty and staff and Art Centre members. 15 King's College Circle. Tuesday to Friday, 12-5 p.m., Saturday, 12-4 p.m. (416) 978-1838, www.utoronto.ca/artcentre

The Thomas Fisher Rare Book Library

May 23 to Sept. 1. **Pungent Personalities: Arts & Letters Club Drawings by Arthur Lismer, 1922-1943**. This exhibition includes nearly 200 caricatures created by Group of Seven artist Arthur Lismer. The artworks were executed by Lismer primarily at The Arts & Letters Club of Toronto – a favourite meeting place for artists. 120 St. George St., Monday to Friday, 9 a.m.-5 p.m. (416) 978-5285 or www.library.utoronto.ca/fisher/index-exhibitions.html



"The First Harvest" is part of the "Return, Afghanistan" exhibit at the Doris McCarthy Gallery

CONCERTS

Faculty of Music

April 8. **Wind Ensemble**. Gillian MacKay, conductor. Philip Sparke's Dance Movements, and works by Leonard Bernstein and Dmitri Shostakovich. The world première of a commissioned work by Brian Cherney, the Michael and Sonja Koerner Distinguished Visitor in Composition. Tickets \$13; \$7 for seniors/students. 7:30 p.m.

April 12. University of Toronto Symphony Orchestra

The MacMillan Singers; Doreen Rao, director. University Women's Chorus; Robert Cooper, director. Master Chorale; Brainerd Blyden-Taylor and Lori-Anne Dolloff, directors. Raffi Armenian, conductor. Brahms:

Ein deutsches Requiem. Tickets \$17; \$9 for seniors/students. 7:30 p.m.

MacMillan Theatre, Edward Johnson Building, 80 Queen's Park. (416) 978-3744, www.music.utoronto.ca

U of T Scarborough

April 9. **Year-End Musical Finale** features the UTSC Band and Choirs. 3 p.m. ARC Theatre, Academic Resource Centre. (416) 287-7076, www.utsc.utoronto.ca/cultural

CONFERENCE

Centre for Reformation and Renaissance Studies

April 22. **Canada Milton Seminar II** is a one-day conference on Milton scholarship featuring Annabel Patterson of Yale, Balachandra Rajan of University of Western Ontario, Nicholas von Maltzahn of University of Ottawa and Andrew Hadfield of University of Sussex. Tickets (with lunch included) are \$25 for faculty, \$10 for students. 10 a.m.-5 p.m. Alumni Hall, Old Victoria College, 71 Queen's Park Cres. E. (416) 585-4484, crs.vic@utoronto.ca or www.crrs.ca/events/conferences/milton/seminar.htm

LECTURES

Hart House/Joseph L. Rotman School of Management

April 13. **The Creative Economy** lecture with Professor Ajay Agarwal of Rotman and Greg Reed, former CEO of Altamira. 6 p.m. East Common Room, Hart House, 7 Hart House Circle. hh.advancement@utoronto.ca

UTM

April 27 to May 25. **The Canadian Perspectives Lecture Series** offers a historical perspective on current issues and introduces new ideas and technologies. The weekly series costs \$40; individual lectures cost \$10 each (except the May 11 lecture, which is \$15 and includes lunch). Lectures are held every Thursday at 10 Matthews Auditorium, Room 137, Kaneff Centre, UTM, 3359 Mississauga Rd. N. For more information, contact Sue Prior at (905) 828-5454 or sprior@utm.utoronto.ca

Puzzle Crazes: The Appeal of Sudoku

By Marcel Danesi

British map-maker John Spilsbury invented the jigsaw puzzle in the 1760s to educate children about geography. The puzzles became so popular in the U.S. during the Great Depression – they were an inexpensive form of entertainment – that manufacturers had to print as many as 10 million a week to keep up with demand. The crossword puzzle became a cultural phenomenon in the U.S. in the 1920s, when clothing, songs and even a Broadway show featured the popular word game. In the 1980s, millions of Rubik’s cubes were sold around the world.

The latest puzzle craze to sweep the globe is *sudoku*, a logic game invented in the U.S. The first “number place” puzzle (as it was originally called) appeared in the *Dell Pencil Puzzles and Crossword Games* magazine in May 1979 but generated little interest. Five years later, a Japanese magazine editor came across the puzzle and decided to include it in his own magazine under the name *sudoku* (meaning “single number”). Within a year, every major daily Japanese newspaper was carrying it. Sudoku’s popularity remained confined to Asia until Wayne Gould, a retired judge from New Zealand, discovered it while on a trip to Japan. Not knowing how to read or speak Japanese, he was drawn to the puzzle (which he thought was a crossword at first) and became hooked. He developed a computer program to devise his own sudoku puzzles and in 2004 convinced *The Times* of London to begin running them daily. They’ve caught on so quickly that major newspapers across the U.K. and North America now carry the puzzles, and an immense industry has sprung up to meet demand for the game. A Web site, www.sudoku.org.uk, offers new puzzles daily,

		7			3		6	5
2				6				
					7		2	1
7	1			3	8	2		
8				4			1	
			3		4		5	7
3	7		2				8	4
	8							2

as well as information on how to solve them, news of sudoku championships, and descriptions of different kinds and styles of sudoku puzzles (there are even three-dimensional versions).

A typical sudoku appears on this page. The challenge is to fill in the grid of 81 squares with the digits 1 through 9 so that every row, every column and every three-by-three box of squares contains each of these digits only once.

There’s no right or wrong place to start – but we do have to start somewhere, so let’s look at the first row of three-by-three boxes at the top of the puzzle and consider where in the very top row to place a 2. It can’t go in either of the two columns

in the three-by-three box on the left, because that box already has a 2. The same goes for the three-by-three box on the right. Therefore the 2 has to go in one of the two squares in the top row of the middle box. The left column of that box already has a 2 (second from the bottom), so the 2 must go in the middle column of the top row. By process of elimination you should be able to determine how to fill in the rest of the squares in the grid.

The puzzle’s difficulty varies with the number of digits included. This sudoku is of moderate difficulty. Be careful not to make a mistake; if you do, you will have to start from scratch. Good luck! *The answer appears on p. 61.* ■

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Join us for our **Summer Writing School at 158 St. George Street** from July 10 to 14. This one-week intensive creative writing program features panel discussions and workshop sessions led by well-known writers. Choose one of these streams: poetry, short story, novel, narrative non-fiction, or personal narrative. Those who attended last year's Summer Writing School gave it top marks. In the words of one student, it was "One of the most stimulating weeks of my life."

Registration is open for all Spring and Summer continuing studies courses. For more information and to register, visit learn.utoronto.ca or call 416-978-2400.

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Gotcha!

For students, every day is April Fool's

RUDE AWAKENINGS

During my first year at Gilson House at St. Mike's, a third-year engineering student grew tired of the noise made by his two frosh neighbours. A true engineer, he snuck into their room when they were at class, installed a small buzzer inside an unused phone jack and ran a wire back to his room. At all hours of the day and night, he used the buzzer to create a loud and mysterious noise, causing many a sleepless night for the two students.

However, the frosh eventually discovered the source of the unwanted noise and immediately began plotting revenge. One day, when the engineer left the residence for a five-hour lab, the two recruited several other first-years to help fill his room from floor to ceiling with crumpled-up newspaper. When the engineer returned, he was, of course, furious with the mess – but probably more upset to have been trumped by the frosh next door.

*Mike Driscoll
BA 1989 St. Mike's
Buffalo, New York*

HANG IN THERE, RUSS

Two important facts about this story: First, our metallurgy lecturer was short of stature. Second, the custodial staff – after cleaning the room's sliding chalkboard – would leave it at its highest point, near the ceiling.

At the beginning of each lecture, our short instructor had to make a gallant leap to seize hold of the chalkboard's lower handle, and ride the board down to the floor. We began applauding this feat, which our instructor acknowledged with a gracious nod.

One day, however, one of our classmates banged two wooden wedges under the board, immobilizing it. Our lecturer's

leap upward was not followed by a measured descent, but by an indecorous hanging and wriggling, followed by a resigned drop to the floor. No harsh words came, though, just good-humoured acceptance.

*David G. Stone
BAsc 1958
Caracas, Venezuela*

WATER WARS

In February 1961, a first-year student found himself in a water fight at Taylor House at University College. Not content to use just bags of water, he decided to turn on the firehose – but turned it off quickly when he saw how much water came flooding out. Little did he know that abruptly stopping fast-flowing water can cause a lot of damage. A weak joint in the pipes burst and the basement began filling with water. Thankfully, help was called and little harm was done.

The dean was not pleased, however, and dressed down the hapless student with the admonition that he would have to bear the costs of repair. The story has a happy ending, though: knowing that

it would be a struggle for the bursary student to come up with the money, the other residents of Taylor House chipped in and helped pay for the repairs.

Forty-five years later, I still appreciate what those fellows did for me.

*Bob Meldrum
BA 1964 UC
Ottawa*

ICE, ICE BABY

As an undergraduate in the early 1980s, I and my fellow physics majors spent far too much time in the physics building. For entertainment, we occasional helped ourselves to chips of dry ice. We would keep the ice fragments in a paper bag and take them on the subway, where we'd pop them into our mouths. You can imagine how our fellow passengers reacted as we suddenly started breathing "smoke."

When you're taking five physics and math courses, it doesn't take much to push you over the edge.

*Glenn Starkman
BSc 1984 UC
Cleveland, Ohio*



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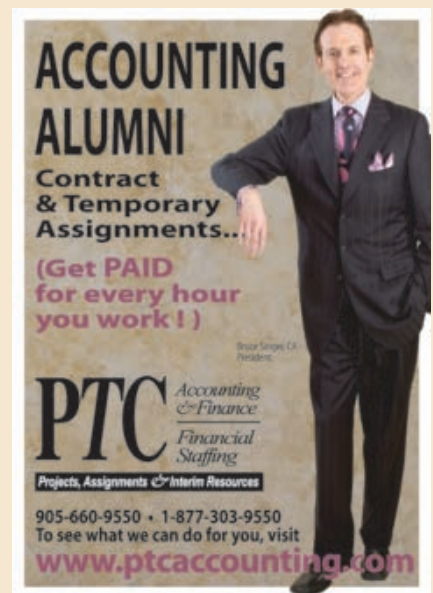
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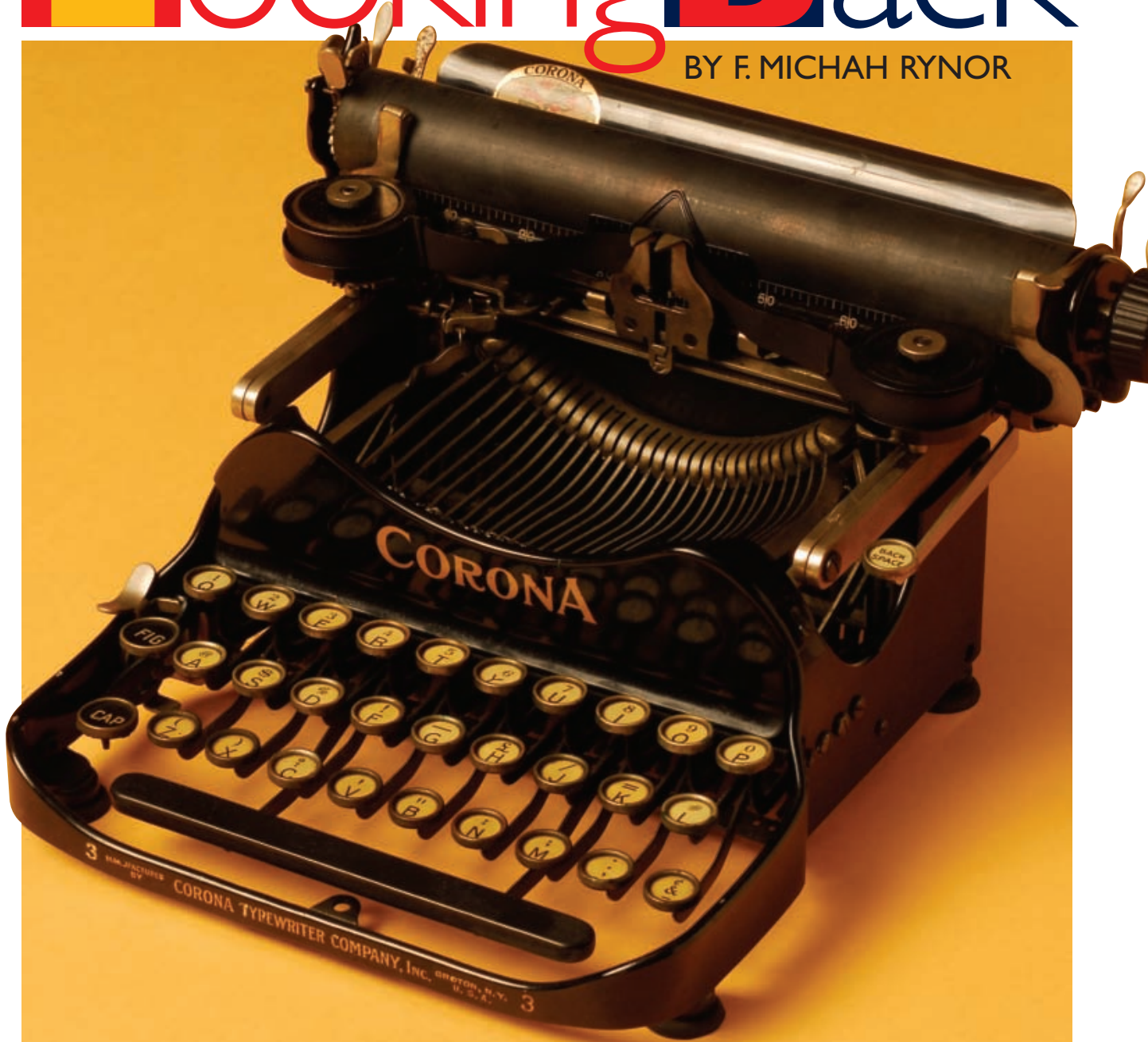
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Answers to Puzzle (continued from page 57)

1	9	7	4	2	3	8	6	5
2	4	8	1	6	5	3	7	9
6	5	3	8	9	7	4	2	1
7	1	9	5	3	8	2	4	6
4	3	6	7	1	2	5	9	8
8	2	5	6	4	9	7	1	3
9	6	2	3	8	4	1	5	7
3	7	1	2	5	6	9	8	4
5	8	4	9	7	1	6	3	2

Looking Black

BY F. MICHAEL RYNOR



Instrument of War

The tap-tap-tapping sound of fingers hitting these ivory white keys hasn't been heard for many years even though a workable ribbon is still wound through the cogs. Silence, of course, isn't something typewriters are known for; when in use, this Corona from the First World War era is no exception. But it is a featherweight amongst "writing machines" (as they were occasionally called). Newspaper reporters often took these 10-inch by 11-inch portables – which can be folded inside a purse-sized carrying case – to the frontlines and the high seas to record the horrors of battle. So important were they that "the captain of a battleship insists that there be

typewriters on board before he feels fully equipped to meet the enemy," according to author Bruce Bliven's book *The Wonderful Writing Machine*. Today, this Corona sits in the Trinity College archives, a gift from the family of Professor William Selby Rogers (BA 1940). Rogers, who died in 2002, was a French professor at Trinity for more than 30 years and served as the college's dean of arts from 1974 to 1978. This particular writing machine is shrouded in mystery: could such an unassuming instrument, with its delicate keys and tiny metallic limbs, really have been used to type the names and tragic stories of those who didn't come home? ■

PHOTOGRAPHY: MICHAEL VISSER

Provincial health plans cover less than you think

*Barb Henderson
Product Manager –
Manulife Financial*

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[†] As of January 2005, there were 2.47 million self-employed Canadians out of a total of 16.057 million in the labour force. There was also a 1.6% increase in self-employment from January 2004 to January 2005. Source: Statistics Canada's Labour Force Survey, February 2005.

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