



a place of mind  
THE UNIVERSITY OF BRITISH COLUMBIA

# UBC REPORTS

June 2012

3

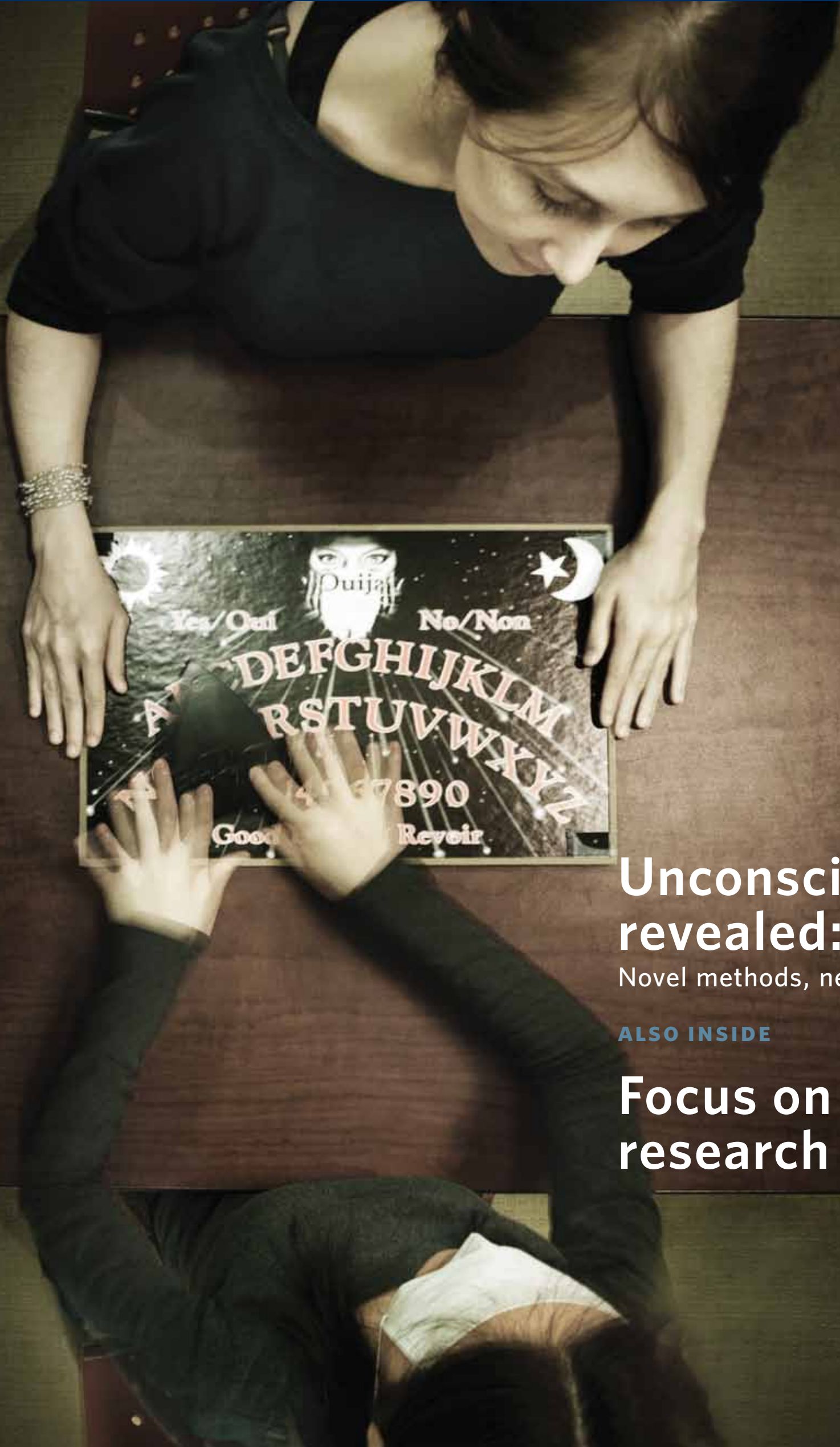
Blame it on chemo brain:  
exercise may help

7

UBC gets personal:  
new enrolment model

11

Nurses learn in Africa:  
placements to increase



## Unconscious revealed:

Novel methods, new insights 10

ALSO INSIDE

## Focus on animal research 4



Don Erhardt Photograph

## In their own words

### UBC REPORTS

VOLUME FIFTY EIGHT: NUMBER SIX  
WWW.PUBLICAFFAIRS.UBC.CA/UBC-REPORTS

#### Director

LUCIE MCNEILL lucie.mcneill@ubc.ca

#### Associate Director

RANDY SCHMIDT randy.schmidt@ubc.ca

#### Design Manager

ARLENE COTTER arlene.cotter@ubc.ca

#### Public Affairs Studio

PING KI CHAN ping.chan@ubc.ca  
AMANDA FETTERLY amanda.fetterly@ubc.ca

#### Photographer

MARTIN DEE martin.dee@ubc.ca

#### Web Designer

LINA KANG lina.kang@ubc.ca

#### Communications Coordinators

HEATHER AMOS heather.amos@ubc.ca  
LORRAINE CHAN lorraine.chan@ubc.ca  
JODY JACOB jody.jacob@ubc.ca  
BRIAN KLADKO brian.kladko@ubc.ca  
BRIAN LIN brian.lin@ubc.ca  
ANDY TORR andy.torr@ubc.ca  
BASIL WAUGH basil.waugh@ubc.ca  
MARYSE ZEIDLER maryse.zeidler@ubc.ca

#### Advertising

PEARLIE DAVISON pearlief.davison@ubc.ca

#### Circulation

LOU BOSSHART lou.bosshart@ubc.ca

#### Printer

TELDON PRINT MEDIA

#### Publisher

UBC Reports is published monthly by:  
The University of British Columbia  
Public Affairs Office  
310 - 6251 Cecil Green Park Road  
Vancouver BC Canada V6T 1Z1

#### Next issue: 5 July 2012

#### Submissions

UBC Reports welcomes submissions.  
For upcoming UBC Reports submission guidelines:  
www.publicaffairs.ubc.ca/ubcreports/about.html.  
Opinions and advertising published in UBC Reports do not necessarily reflect official university policy. Material may be reprinted in whole or in part with appropriate credit to UBC Reports. Letters (300 words or less) must be signed and include an address and phone number for verification.

#### Submit letters to:

The Editor, UBC Reports  
E-mail to publicaffairs@ubc.ca  
Mail to UBC Public Affairs Office (address above)

#### UBC NEWS ROOM

WWW.PUBLICAFFAIRS.UBC.CA/NEWS  
Visit our online UBC News Room for the latest updates on research and learning. On this site you'll find our news releases, advisories, news extras, as well as a daily media summary and a real-time UBCNEWS twitter feed. You can also find resources including access to more than 500 faculty experts and information about UBC's radio and TV studios.

Website: www.ubc.ca/news  
Tel: 604.822.NEWS (6397)  
E-mail: publicaffairs@ubc.ca  
Twitter: @ubcnews

Publication mail agreement no. 40775044.  
Return undeliverable Canadian addresses to circulation department.  
310 - 6251 Cecil Green Park Road, Vancouver, BC Canada V6T 1Z1

On page four of this edition, UBC Reports launches the first of a series of articles meant to help convey the scope and nature of research involving animals, in support of transparency and dialogue at UBC.

This year, a group of graduate students and their professor also tackled this topic by organizing the Green College Interdisciplinary Series *Bringing the Collective Together: Nonhuman Animals, Humans and Practice at the University*. Convenors approached UBC Reports to express concern that their panel series was inappropriately referenced in our publication of faculty opinions (UBC Reports, Feb. 1, *Animals in Research*). We have invited them to share in their own voice the results of the series. This is published below.

UBC Reports welcomes further comment by students, faculty and staff on this important topic as part of respectful dialogue at: [www.letters.publicaffairs.ubc.ca](http://www.letters.publicaffairs.ubc.ca).

### Series convenors question use of animals

This year at UBC, Green College hosted a speaker series on the university's use of animal lives (*Bringing the Collective Together: Nonhuman Animals, Humans and Practice at the University*). As the faculty/student convenors of the series, we reflect here upon its achievements.

The segmented nature of academic disciplines discourages cross-disciplinary engagement. Against this grain of business as usual, *the panel discussions brought together diverse scholars*—from law, animal science, philosophy, zoology, political science, sociology, applied ethics, genetics, philosophy, anthropology, history, biology, psychology. Faculty and students explored critical perspectives, including on how our university should govern itself.

The series demonstrates that the use of animal lives at the university poses substantial scholarly concerns that are pressing across the disciplines: How have property and criminal law in Canada left animals largely unprotected by legislation? What ethical codes are in play, how robust are they, and what do alternative ethical codes suggest about current practice? How well does current governance of animals resonate with democratic values? Does Canada's system for funding research channel researchers toward the use of animals, including for reasons other than social benefit? Does the system encourage development of non-animal methods? What are the social and individual benefits and costs of current research on animals? What exactly do the 200,000 animals who get used yearly at UBC experience? Do we—can we—fully know? In what ways does Canadian governance of laboratory animals lag behind approaches in other liberal-democratic countries such as Sweden and New Zealand? What of India's new legislation that bans dissections and live animal experiments in biomedical education and research, requiring non-animal approaches, except in new molecular research? What does it mean that Canada, unlike other countries, lacks systematic review to prevent unnecessary repetition of research projects on animals? Why does Canada, unlike other countries, lack an independent public body that studies the welfare of animals in laboratories? In Canada, the experts who assess proposed research on animals are peer researchers who themselves use animals: in institutionalizing actors as the judge of their own cause, are the checks and balances of legitimate government not corrupted?

While UBC's Vice President of Research [John Hepburn] commends "ongoing academic dialogue" (UBC Reports, 1 Feb. 2012, *Animals in Research*), he simultaneously endorses current "animal research" as something UBC does "ethically, humanely, and in full compliance with the law." This blanket endorsement of the status quo disregards the questions being posed by UBC researchers about institutional governance, about the often impoverished standing ethical justifications, and about tensions between existing law and principles of justice. (Law and ethical justifications have been used time and again to enslave and to subjugate; their specific content must be interrogated.) Vice President Hepburn praises the "courageous and dedicated" researchers at UBC (Vancouver Sun, 11 Mar. 2012 op ed, *Animal Research at a Crossroads*), but surely this praise should not stop at UBC's scientists who use animals, and should extend to all hard-thinking researchers at UBC.

Across the sciences, social sciences and humanities, UBC boasts enormous capacity for innovation and ethical leadership. The Green College series presses UBC to consider available alternative codes of ethics that may be more defensible than current guidelines; to include in the assessment of UBC research projects voices that represent more diverse concern, expertise and knowledge; and to carry such innovative thinking onto the national stage to improve the Canadian system.

#### Series convenors:

Afsoun Afsahi, Darren Chang, Aylon Cohen, Viara Gioreva, Dalaina Heiberg, Prof. Laura Janara, Manjot Parhar, Shirin Shushtarian, Kaitlin Wood

# Blame it on chemo brain

Can exercise reduce the forgetfulness caused by anti-cancer drugs?

Brian Kladko



Martin Dee Photograph

**Scenery Slater went to pick up her mail in the lobby of her West Vancouver apartment building one day, but when she got back into the elevator, she forgot what floor she lived on.**

She would try to turn off lamps in her home with a wall switch, only to realize that she had to use the lamp switch.

She would make Yorkshire pudding for herself and her father, determined to halve the recipe, and wind up doubling it instead.

At first, Slater didn't think any of this had anything to do with her chemotherapy for breast cancer. Then she heard about "chemo brain"—a decline in cognitive function experienced while receiving a powerful cocktail of anti-cancer drugs.

"You don't hear about chemo brain before starting treatment," says Slater, 49, who is on leave from her job as an officer with the Canada Border Services

**Kristin Campbell** (left), an assistant professor, is investigating whether exercise can ameliorate the cognitive decline experienced by cancer patients such as **Scenery Slater** (right).

Agency. "You get all this information about the drugs you'll be taking and the possible side effects, and no one mentions that. But when I talk to people who have had chemotherapy, I've only come across one who hasn't experienced some sort of cognitive interruption to some degree or another."

Now a UBC researcher is trying to determine if there might be a simple remedy—exercise.

Kristin Campbell, an assistant professor in the Department of Physical Therapy, is seeking breast cancer patients for a first-of-its-kind experiment: one group of randomly chosen women engage in a cardiovascular workout four times per week for six months, while another group of women maintain their usual lifestyle.

At the beginning and at the end of their participation, the women take tests of working memory, learning and problem-solving. While they perform simple tasks, they also have their brain function assessed using functional magnetic resonance imaging and electroencephalograms. The study is receiving support from the Canadian Breast Cancer Foundation BC/Yukon chapter.

A growing body of research, some of it by Campbell's colleague in Physical Therapy, Assistant Professor Teresa Liu-Ambrose, has demonstrated that exercise can improve cognitive function in older adults.

"Exercise and cognition is an emerging field," Campbell says. "There's a consensus that there's something there. But why, and what type of exercise is

most important, hasn't been answered." The chemo brain phenomenon gained attention in the 1990s as a result of advocacy by cancer survivors, says Tim Ahles, a behavioural psychologist at Memorial Sloan-Kettering Cancer Center in New York.

"The survivors kept telling us, 'This is a real problem. It's not just depression,' Ahles says. 'It can affect the ability to return to work or to school, the quality of life, and activities of daily living.'"

Some people improve after months or a year, Ahles says. Others never fully regain their cognitive abilities.

Slater, who completed her chemotherapy in the fall of 2010, is still grappling with what she perceives to be diminished mental acuity. Although she doesn't know how she fared on the

tests, she is confronted almost daily by a situation or question that temporarily stumps her. Before cancer and her treatment, she could plow through a novel on a day off; now she has trouble concentrating on anything longer than a paragraph.

But the study led her to discover other benefits of exercise. She is more energetic and sleeping better. Long after her participation ended, she continues to work out on the treadmill in her apartment building, three times a week.

**Anyone interested in participating in the study should contact research coordinator Tiffany Moore at [td.moore@ubc.ca](mailto:td.moore@ubc.ca) or 604-827-1914. More information on the study can be found at <http://cepl.rehab.med.ubc.ca>**

# Creatures great and small

Animals and basic science research

Brian Lin

**As the home to a world-leading community of biologists, zoologists and genome scientists—and Western Canada's largest medical school—you might expect animals to play an important role in UBC's research efforts. In fact, you would be hard pressed to name a leading university anywhere in the world where animals do not play a critical role in life sciences research.**

Yet for most people, the definition of animal research begins and ends with laboratory science.

At UBC, this definition is much broader and more interdisciplinary. Research with (and on behalf of) animals contributes to improvements in human health and animal welfare, a greater appreciation of the ethics of animals in society, species conservation and biodiversity, and a better understanding of our relationships with animals.

What isn't always apparent is how these avenues of research serve the interests of both humans and animals.

UBC President Stephen Toope and Vice President, Research & International John Hepburn have committed to advancing greater transparency around animal research and to enabling a respectful dialogue among members of the UBC community. Solid information is essential to both these goals, and in this spirit UBC has published initial statistics on its animal research web site ([www.animalresearch.ubc.ca](http://www.animalresearch.ubc.ca)), revealing that 97 per cent of research animals at UBC are rodents, fish, reptiles and birds.

But it's not just about the numbers or the species involved—it's about the context, the goals, the results, and the impacts of the research.

With this issue, UBC Reports embarks on an in-depth, multi-part series to better understand basic and applied animal research on our campuses. In our July issue, we will address medical research involving animals, and later, we will explore how animal research is governed in Canada and at UBC.

We begin the series here, with a sample of scientific studies that involve animals. Basic or curiosity-driven research accounts for two-thirds of the rodents, fish, reptiles and birds used at UBC each year—in the wild, in labs, and on farms. Here are four such projects that are helping us to better understand ourselves and the world around us. ●



MNehring/iStockphoto Photograph

Populations of the Steller sea lion have declined by 85 per cent.

## Hazy to the rescue

**If Steller sea lions had super heroes, Hazy would be one of them. Along with marine biologist Andrew Trites, she's helping save her species from extinction.**

Hazy and other Stellers work with UBC researchers and Vancouver Aquarium trainers to investigate the unexplained decline of their counterparts in the wild brethren. "Populations in the Gulf of Alaska and the Aleutian Islands have declined by 85 per cent. That's more than 200,000 sea lions that have disappeared under our watch," says Trites, whose team has been meticulously documenting Hazy's foraging behaviour and food consumption for 15 years, since she

was a pup.

Now, outfitted with a harness carrying a camera and tracking equipment, Hazy regularly travels on the Steller Shuttle boat to the open and frigid waters near Indian Arm, a glacial fjord in southwestern B.C. There, she dives to catch fish at different depths while the research team monitors her heart rate, breathing patterns and other vital signs.

"Contrary to popular belief, we've learned that Steller sea lions actually expend more energy when foraging near the surface," says Trites. "So it's not a matter of having to dive deeper to find fish that's killing them."

As it turns out, a low-calorie diet does not a happy sea lion make.

"Sea lions require oil-rich fish, such as salmon and herring, to meet their caloric needs," says Trites. "Instead they're eating primarily low energy fish such as pollock, and their stomachs are full before getting enough calories."

"It's like you or me surviving on a diet of popcorn or celery," says Trites, who adds that the results from the project will help build smart fisheries management strategies to effectively help the species recover. ●

## High altitude flying wonders

**They may look unremarkable to the untrained eye, but bar-headed geese have long caught the attention of scientists with their ability to fly over the Himalayas with apparent ease.**

Although they can be bred in captivity, wild bar-headed geese migrate annually between India and the plateaus in China and Mongolia, flying over the world's highest mountains on their way—the human equivalent of running a marathon as high as 5,000 to 9,000 metres above sea level.

"Flying requires up to 20 times more energy—and an equal increase in oxygen consumption," says Zoology Prof. Bill Milsom. "And the bar-headed goose can do it at altitudes where there is as little as one-third of the oxygen at sea-level. How they do this is a great mystery that baffles us."

Compared to low-altitude waterfowl, bar-headed geese have larger lungs and approximately six- to 10-per-cent more aerobic muscle fibres. Each fibre also has more blood vessels surrounding it to provide it with oxygen-rich blood cells—and these blood cells pick up oxygen more readily from the environment.

Among unanswered questions, says Milsom, is whether these finely tuned physiological features, adapted over millions of years, will be affected by climate change.

"To conserve the wild population, we need to understand how the warming climate would impact high-altitude performance of these birds and their ability to migrate," says Milsom. "This species suffered greatly from the avian flu outbreak in China in 2008, and understanding how their physiology dictates migratory routes will also give us a better handle on the spread of the flu along those routes."

To get a closer look at how oxygen is utilized during flight, a small number of geese raised by a postdoctoral fellow in Milsom's lab have been trained to wear tailor-made oxygen masks and tiny "backpacks" to monitor their temperature, heart rate, oxygen usage, and blood oxygen levels while flying in UBC's wind tunnel.

"It's like monitoring an Olympic runner on a treadmill," says Milsom. "Except the geese are just doing what they do naturally—with a little encouragement from their human 'mother.'"

Understanding how the geese can soar so high without suffering hypoxia could also help develop better strategies to curb the permanent damaging effects of stroke and heart attacks, characterized by the lack of oxygen delivery to vital organs. ●

## Of mice and men

**Rodents and humans have more in common than you'd think, just ask neuropsychologist Catharine Winstanley.**

In 2009, she developed the world's first rat experiment to successfully model human gambling—and assess drugs to moderate the addictive behaviour. In the experiment, rats had a limited amount of time to "gamble" for sugar pellets. High-risk options offered more rewards and the greater probability of longer "timeout" periods where no reward is earned. In order to maximize rewards, rats must learn to avoid risky options.

Winstanley then tested the effects of drugs currently being explored as treatment options for gambling addiction.

The study, published in the high-impact Nature journal *Neuropsychopharmacology*, found that rodents treated with drugs that reduced serotonin levels—a naturally occurring chemical associated with impulse control in humans—could no longer "play the odds." Meanwhile those treated with drugs that reduced their dopamine levels—a chemical associated with pleasure in humans—exercised better judgment.

The results, consistent with human clinical trials, further validated the technique as a viable model for studying the neurological aspects of human gambling behaviours and treatment.

But Winstanley wasn't surprised. "Rodents and humans share a similar brain anatomy and use the same neurotransmitters and receptors," she says. "More importantly, we share the same mechanism that builds neurological pathways that ultimately lead to decision-making and impulse control."

The Canadian Centre on Substance Abuse estimates that 680,000, or two per cent of Canadians, suffer from gambling problems. Better understanding the neurological underpinnings of gambling addiction could impact millions more.

"The inclination of pathological gamblers to make risky decisions has been observed in substance abusers and those with frontal brain damage," says Winstanley. "Similar impaired judgment has also been documented in people suffering from schizophrenia, personality disorders and obsessive-compulsive disorder."

One in five Canadians suffer from a mental health problem or illness, costing our economy \$50 billion a year, according to a report released last month by the Mental Health Commission of Canada.

One of Winstanley's latest studies, also published in *Neuropsychopharmacology*, shows that rats, like humans, have natural inclinations to be keeners or

slackers—and that stimulants affect them differently.

"The study shows that mental attention—a cognitive process also governed by chemistry in the brain—may be a factor in how stimulants affect brain chemistry," says Winstanley, adding that stimulants are often used by patients with brain injuries and attention deficit hyperactivity Disorder (ADHD) to combat drowsiness and fatigue.

"And this points to greater need for personalized treatment and monitoring." ●

## A race against time on the Fraser

**Fraser River sockeye productivity has been in decline since the mid-1990s, with the 2009 return of 1.4 million being the lowest return in more than 50 years. Scientists and fisheries managers, were mystified in the following year, when 34 million made their way up the Fraser, marking one of the highest returns on record.**

In addition to providing food and ceremonial values to First Nations communities, the five species of Pacific salmon generate more than \$1 billion annually for the economy, supporting more than 10,000 jobs in communities throughout the province.

By linking large-scale telemetry observations with physiological and genomic assays on thousands of migrants, and by conducting lab swimming performance and thermal tolerance experiments, Scott Hinch and Tony Farrell are identifying key factors to inform conservation and fisheries management.

In one study, published in the journal *Science*, researchers biopsied tissues and implanted telemetry tags into salmon in the ocean and in the Fraser.

"We were able to predict survivorship of salmon based on a gene expression recorded more than 200 kilometres before they enter the Fraser River," says Hinch, Director of the Pacific Salmon Ecology and Conservation Laboratory and a professor in the Department of Forest Sciences.

"This gene expression profile is consistent with an immune response known to be associated with exposure to pathogens and viruses," says Farrell, a professor in the Department of Zoology and Canada Research Chair in Fish Physiology, Culture and Conservation. "This tells us that disease can be a very important factor limiting successful spawning."

In another study, featured on the cover of *Science*, researchers measured the swimming ability of adults from eight populations by monitoring metabolic and heart rates as they swam in an experimental "fish treadmill"—a

tunnel capable of producing various water speeds and temperatures.

They found that populations with the longest and most arduous migrations, were more athletic, displaying superior swimming ability and specialized heart adaptations than coastal populations.

They also found that the optimal water temperature for a population—the temperature at which the fish performed the best in the treadmill—matched the historical river temperatures encountered by each population on its migration routes. In water temperatures above their optimal, the salmon's swimming ability declined. Some populations, like those that spawn at Chilko Lake, were very resilient to high temperatures whereas others were less able to cope.

"This gives us critical knowledge to prioritize populations that require the most urgent protective measures," says Hinch.

"The Fraser has experienced two degrees Celsius summer warming compared to 60 years ago—with nearly half of that warming occurring since the early 1990s—and water temperatures in 13 of the past 20 summers have been the warmest on record," says Hinch.

"Currently, the Fraser River's peak river temperatures during the summer months exceed the optimal temperatures for every population studied and cardiovascular collapse is clearly one explanation for migration mortality at high temperatures." ●

## UBC Reports invites your letters online

**Throughout the month of June we encourage an ongoing dialogue on the use of animals in science by inviting feedback from students, faculty and staff. To make your contribution, visit: [www.letters.publicaffairs.ubc.ca](http://www.letters.publicaffairs.ubc.ca)**

# Copies Plus

COPY IMAGING CENTRE

DISCOVER THE FRIENDLY COMPETITION  
QUALITY • SERVICE • VALUE

Professional Digital Printing and Copying Service

• Scientific Posters • Architectural & Engineering Drawings • Reports • Newsletters  
• Powerpoint Handouts • Flyers • Booklets • Training Manuals • Resumes  
• Sell Sheets • Overhead Transparencies • Presentation Folders • Plus more  
• Email your files or ftp your large files to us

Over 24 years of Excellence [www.copiesplus.ca](http://www.copiesplus.ca)  
1950 West Broadway 604-731-7868  
Open 7 Days Mon-Fri 8am-9pm Sat-Sun 10am-6pm



**Berkowitz & Associates  
Consulting Inc.**

Statistical Consulting

Research Design • Data Analysis • Survey Sampling • Statistical Education

Jonathan Berkowitz, Ph.D. 4160 Staulo Crescent, Vancouver, B.C. V6N 3S2  
Office: 604-263-1508 • Fax: 604-263-1708  
Email: witz1@interchange.ubc.ca

## Cabin for Rent

On Beautiful Mayne Island

Perfect for those requiring peace and quiet  
480 sq. ft., one room plus bathroom  
150 m from beaches | Wonderful view of Piggott Bay  
All new interior and furnishings | Bright and cheery  
Non smokers | Available immediately  
Long term lease preferred | \$850 per month incl. hydro  
Contact [sid.katz@ubc.ca](mailto:sid.katz@ubc.ca) or Tel. 604-263-5109

Promotional Products & Apparel For Any Event!  
All UBC orders receive a 10% Discount

**IMAGEN**  
GREEN PROMD PRODUCTS  
Specialists in Environmentally Conscious Options!

**Happy Customers include...**  
UBC Conferences & Accommodations  
UBC Faculty Of Dentistry  
Sauder School Of Business... and More!

[info@imagengreen.com](mailto:info@imagengreen.com) 604-731-2025

[www.imagengreen.com](http://www.imagengreen.com) | [www.imagenpromo.com](http://www.imagenpromo.com)

## Your Conference Planning Partner at UBC



Hosting a conference at UBC? We can make it easy.

We offer full management and registration services and have experienced and knowledgeable staff. Let us help you customize a program to suit your needs and budget.

With UBC's unique venues and state-of-the-art facilities, your meeting at UBC will no doubt be a memorable success!

**UBC**  
VANCOUVER  
T 604 822 1060  
E [conferences@housing.ubc.ca](mailto:conferences@housing.ubc.ca)  
[ubcconferences.com](http://ubcconferences.com)

**OKANAGAN**  
T 250 807 8050  
E [conferences.ubco@ubc.ca](mailto:conferences.ubco@ubc.ca)  
[okanagan.ubcconferences.com](http://okanagan.ubcconferences.com)



Jared Singh sees sustainable agriculture as a way to steward family land while contributing directly to food security.

## Growing growers at UBC Farm

Lorraine Chan

**Growing up on a 220-acre farm in Delta, Jared Singh knows good soil from bad. But less familiar is the notion of towing mobile henhouses from field to field as part of crop rotation to enrich the soil.**

"I'm learning that animal manure can be used to create valuable, high quality compost," says Singh, who since March has been involved with the Centre for Sustainable Food Systems at UBC Farm.

Singh is one of 10 students in the Sustainable Agriculture Practicum Program that provides hands-on experience, from natural pest control to cleaning produce for food safety. They grow vegetables on a small personal plot of land and cultivate the larger UBC Farm fields. During the eight-month program, they also delve into business aspects such as different distribution models and networks.

"That's why I came to UBC. I want to figure out how to make a living while doing it sustainably," says Singh, whose family owns Hakim and Sons Farm Ltd. along the Fraser River.

Singh says the family's agricultural roots go back four generations to the early 1900s, when his great-grandfather emigrated to B.C. from India and worked as a farm labourer. His grandfather started a dairy farm but subsequent generations sold off the herd and focused instead on growing vegetables. Singh's father, now retired, specialized in potato production.

Singh, 24, took some time to decide to become a "career farmer." After high school, he worked briefly in construction and took some horticulture classes at a nearby college. However, the appeal of increasing food security and land stewardship has grown exponentially, he says. "Farming makes sense since I have the acreage. Besides, growing food is such a direct way of giving back to society. Both my parents are really excited and want to help out."

With his first growing season in 2013, Singh plans on starting small with a few acres of carrots, lettuce, spinach and broccoli. His long-term goal is to obtain organic certification while testing out various distribution channels, such as farmers' markets and community supported agriculture (CSA)—where customers subscribe for regular deliveries of just-picked produce.

"Delta is a very small community where we all know each other, so I think community-supported agriculture might work really well here."

Piloted in 2004 and officially launched in 2008, UBC's Sustainable Agriculture Practicum Program has graduated four cohorts—a total of 35 students. More than half have gone on to start their own farms. For example, Sarah McMillan and Simone MacIsaac hit it off while doing their practicum in 2008. A year later, they set up Rooddown Organic Farm, a two-acre property near Pemberton.

"That first year was really scary," recalls McMillan. "We discovered that the soil hadn't been farmed before and lacked a lot of nutrients. Another surprise was dealing with the pests in the region like the flea beetle which was devouring our brassica (cabbage family) plants."

A piece of advice she gives practicum students is to take a notebook into the UBC Farm fields and write everything down. "My notes helped me a lot. I was constantly referring to them."

Now entering their fourth growing season, Rooddown is more solid, says McMillan, with two apprentices and innovations like the "pig share" program. McMillan and MacIsaac are raising 16 Tamworth pigs, a breed known for its high quality meat. For a \$150 deposit, customers invest in half or a whole pig which will be raised and then slaughtered in the fall.

"I sent an email to our regular customers and within 24 hours, the pig shares were sold out. I never imagined it would be so popular." ●

For more information, visit:  
<http://ubcfarm.ubc.ca/teaching-learning/practicum>

## UBC gets personal

A new service model for students

Heather Amos



Brian Teghtsoonian (left) and Ly Dich are part of a team of 19 new enrolment services professionals.

**Dealing with big organizations can leave you feeling like you're in a pinball machine—bounced around from one office to another, unheard, uncared for, frustrated and lost.**

UBC wants its students to lose that pinball feeling.

This spring, the university is turning its enrolment model inside out and hiring a team of 19 Enrolment Services Professionals (ESP) to help students navigate the system.

Every new undergraduate to the Vancouver campus will be assigned an ESP to work with from the beginning to the end of their time at UBC.

This go-to specialist will support students in everything from registering for courses and switching programs to applying for scholarships. The ESPs will also work in close partnership with academic advisors and student development professionals to address any problem along the way.

Ly Dich has been a UBC admission

coordinator since 2010 and is now part of the new ESP team. He contrasts past and present models for a student who is experiencing financial problems, hasn't paid tuition and cannot register for classes.

"First I'd send them over to financial services where someone could help them apply for a bursary or access emergency funding. When they came back to my office, then I would have to reopen registration for them," he said. "Now I can handle all that myself without having to get the student to shuffle back and forth."

For Dich, the other advantage will be the continuity of the relationship. "In the past I might see 100 students each day. But I didn't see the same students the next day, so I couldn't make sure they received the service they required. Now I can follow up and make sure they get what they need."

Training for the new ESPs began May 14 with a focus on course registration,

financial awards and university policies and procedures. They'll be ready in time for first-year students to register for classes in June.

"I've wanted this job for twenty years," said Brian Teghtsoonian, who has been at UBC since the 1980s and remembers a registrar who dreamed of the "super clerk" to answer all student enquiries. "We thought it wasn't possible because UBC is too big and too diffuse. But I always thought that would be a fabulous thing to do."

Now, Teghtsoonian is joining the ESP team from the Sauder School of Business, where he handled admissions and recruitment. He will offer students a personal touch, tailoring his advice to each situation.

"We're going to get the opportunity to be one-on-one with students to talk about their strengths, weaknesses, and direction," Teghtsoonian said.

By June 2013, the ESP program will be extended to include all undergraduate

students at the Vancouver campus. An estimated 60 ESPs will be needed to cover the campus; each will have a caseload of several hundred students.

"UBC's new service model is a key piece of the foundation that supports students to achieve success in their UBC endeavours," said Maggie Hartley, director and associate registrar for Enrolment Services. "It is about treating students as individuals and welcoming them into the UBC community."

The changes to Enrolment Services are part of a broader initiative to enhance student experience. The University admission process now includes consideration of personal profiles to complement students' grades. UBC is also planning to expand what it calls the learning plan strategy, where students are encouraged to identify academic goals and seize all the opportunities available so they get the most out of their university experience. ●

# Forestry: the new high-tech frontier

Genes may hold the secret to forest survival

Heather Amos



Martin Dee Photograph

# UBC's three other large-scale forest genomics projects

## Fighting fungus

**Richard Hamelin, a professor in the Department of Forest Sciences, is applying modern techniques common in health sciences to forest health issues in an effort to protect B.C.'s trees from some of the most common fungal pathogens.**

Working in partnership with researchers at the Michael Smith Genome Sciences Centre, Hamelin is sequencing the genomes of 20 fungal species, identifying the genes that make trees sick and looking for variation in these genes. He will then map the spread of disease using this information, in a sense studying tree epidemiology and using this to predict how the pathogen will spread.

Hamelin and his team will then develop DNA-based diagnostic tools that can be used for the treatment of these pathogens. Right now, trees infected with disease must be identified visually, which can be misleading or problematic if the tree is asymptomatic for a number of years. "Using these technologies from the medical field to generate actionable assays is a powerful approach," said Hamelin.

## Biofuel from poplar trees

**In the ongoing pursuit to develop new products from forests, biofuel is an attractive option. UBC researchers Carl Douglas and Shawn Mansfield are identifying gene variations in the fast-growing poplar tree to select varieties with optimal characteristics for biofuel production. Their hope is to breed poplars with denser wood and higher cellulose content—the molecule that gets broken down into ethanol for biofuel. They're also hoping to breed poplars with less lignin—a molecule that makes it difficult to convert cellulose into ethanol.**

"We're not just interested in how much trees grow but also in the chemistry and morphology of the wood," said Douglas, a professor in the Department of Botany. He and Mansfield, a professor in the Department of Wood Science, will sequence the genomes of 700 trees—each tree has about 40,000 genes.

"We'll have a catalogue of total genetic variation and also of trait variation in these trees so we can do a better job at identifying genetic variants that underlie differences in important wood and growth traits," said Douglas.

## Sustainable spruce forests

**Joerg Bohlmann, a researcher at the Michael Smith Laboratories at UBC and a professor of Botany and Forest Sciences, and Laval University professor John MacKay, are working with a team of world-class co-investigators and end-users to develop applications from genomics research in spruce trees. Spruce trees account for more than half of all the tree seedlings planted each year in Canada. The researchers aim to improve the yield and value of spruce forests.**

The project, called SMarTForests, is sequencing the genome of white spruce and is using genomics to develop markers for improved insect resistance, growth, wood properties, and adaptation to climate. SMarTForests is part of an international consortium that will also be among the first in the world to sequence a conifer genome.

"Until recently, nobody would have been able to develop a decent genome sequence assembly for a conifer tree," said Bohlmann. "These genomes are larger and more complex than anything that has ever been sequenced. Thanks to our collaboration with Dr. Steven Jones at the Michael Smith Genome Sciences Centre we are in an ideal position to take on this enormous challenge."

**Sally Aiken** will be analyzing genes from more than 15,000 lodgepole pine and interior spruce seedlings.

**Zoom in—way in—from the macro view of B.C.'s vast forests, right down to the micro level where researchers are looking into genes that could lead to improved forest health, productivity and economic opportunities.**

UBC researchers are leading four massive projects to sequence the genes of thousands of trees. With co-funding from Genome BC as a result of Genome Canada's 2010 Large-Scale Applied Research Project Competition, the results sought are to tackle emerging challenges such as climate change, fuel shortages and declining natural resources.

Sally Aiken, a professor in the Department of Forest Sciences and University of Alberta colleague Andreas Hamann are collaborating on a project

to better understand how trees adapt to local climatic conditions.

As climate change alters forest environments, trees that have adapted to the climate in one geographic area may not be well suited to thrive there in 30 or 40 years—a serious concern for an industry that plants 230 million trees in British Columbia every year.

Aitken's team is looking for genetic variation in trees across Western Canada and comparing this to geographic information and differences in temperature, moisture and day length. Using climate change models, the team hopes to predict where trees with specific adaptations can thrive in the future.

"Ultimately we want to know where to find the seeds that are best adapted

for the future climatic conditions of a region," says Aitken.

Her team is working with the two most planted and economically important species in Western Canada: lodgepole pine and interior spruce. Because these trees are so abundant, they also play a key role in shaping forest habitat, affecting the carbon cycle, water flows, and snow melt.

In total, Aitken's team will be sequencing and analyzing genes from more than 15,000 seedlings, mostly grown in a range of simulated climates in growth chambers in the basement of the Forest Sciences Centre.

"Research like this involves experts who have very different skill sets, knowledge and backgrounds. We don't have enough resources to do this for

every species so we're hoping to find better ways to tackle the same questions in other trees," she says.

Since 2001, UBC scientists have been awarded more than \$65 million by Genome BC and Genome Canada for research in the forestry and bioenergy sectors.

In 2001, the "Treenomix" project became the first forestry genomics research project funded in Canada with an \$11 million award from Genome BC and Genome Canada. It remains among the largest funding contracts awarded to any genomics research team in the province. Led by a team of UBC researchers including Joerg Bohlmann, Kermit Ritland, Brian Ellis, and Carl Douglas, the Treenomix project has set the groundwork for the success of

forestry genomics in British Columbia.

"Forestry has been changing over the past 20 years, but the speed of change is accelerating," said John Innes, dean of UBC's Faculty of Forestry. "Increasingly, forest science is being recognized as a high-tech subject, using state-of-the-art equipment to unravel complex environmental problems. Genome BC has played a major part in encouraging this change by providing funding for advanced forest research." ●

**Genome BC** In funding research, Genome BC and Genome Canada take a unique approach. Instead of issuing research grants, the organizations provide research contracts known as Collaborative Research Agreements that enable translatable research with socio-economic benefits. When a proposal is approved, Genome BC plays an integral role in the research process through milestone development and achievement, financial monitoring and facilitating follow up with potential end-users.

"Genome BC acts as a catalyst between government, academia and industry. Our goal is to translate outstanding research carried out in universities into applications for users in industry, such as the Ministry of Forests," said Dr. Alan Winter, President & CEO of Genome BC.

## SAGE BISTRO & CATERING

Fresh / Local / Sustainable / Simple

Lunch  
Monday to Friday  
11:30am - 2:00pm



SAGE  
of the University Centre  
sage.ubc.ca

Reservations: 604-822-0968  
6331 Crescent Road, Vancouver

# Nursing students learn from African colleagues

Jody Jacob



Fallon Smith Photographs

UBC's Okanagan campus School of Nursing Students **Sam Third, Joel Williamson** and **Fallon Smith** arrive at Lewanika General Hospital in Zambia for their first day of work.

### Working with colleagues in Zambia and Ghana, nursing students from UBC's Okanagan campus often find what they experience changes their understanding of what it means to be a nurse.

"Many of our fourth-year nurses go over to Africa expecting to change the world, but it is their view of the world that changes the most," says Fay Karp, associate professor of nursing.

"Students develop advanced levels of cultural sensitivity. They also discover what words like 'global citizen' and 'advocacy' truly mean."

Each year, a group of fourth-year nursing students at UBC's Okanagan campus travel to Ghana or Zambia for six weeks, consolidating four years of nursing theory and practice into one practicum. They work in a variety of clinical settings, including medical and surgical units, pediatrics and maternity, HIV clinics and community health outreach in remote villages.

"One of the most important aspects of this experience is the community development model we embrace—we are not there to fix problems or tell the Zambians or Ghanaians what they need," says Muriel Kranabetter, associate professor of nursing. "We assist as colleagues and follow their lead as to what

### "We assist as colleagues and follow their lead as to what supports them in their needs and objectives."

supports them in their needs and objectives."

Fallon Smith, who graduates this month from the School of Nursing at UBC's Okanagan campus, was one of 24 students who travelled to Zambia last spring. Eighteen others went to Ghana.

During her practicum, Smith worked in the Lewanika General Hospital in a variety of areas, including the HIV clinic. Alongside two Zambian nurses and a few Zambian clinicians, she attended to 150-200 HIV patients a day. Smith also worked in the villages of Chunga and Mukambi.

"Working with the Zambian nurses has allowed me insight into what nursing looks like in an undeveloped country," says Smith.

"Their strenuous work hours, tough working conditions and lack of supplies has left me with a new appreciation for our own medical system, resources, and working conditions as a nurse. I also learned a lot about accepting, respecting, and coordinating the balance between compromising and maintaining my nursing practice standards and ways, while collaborating with other nurses who have a different set of standards and practices."

One of their Zambian partners says what the UBC nurses lack in familiarity with local conditions is more than offset by their knowledge in other areas and ability to respond quickly to changing situations.

"The collaboration with Canadians has helped to improve nursing care by providing



**Fallon Smith**, a fourth-year student at UBC's Okanagan campus School of Nursing, comforts a young Zambian patient whose hand was bitten by a cobra.

audit and quality assurance in areas such as patient monitoring, critical-care nursing and neonatal resuscitation," says Dr. Seke Kazuma, a medical officer from Lewanika General Hospital in Mongu.

"One thing I like about Canadian nurses is they are sharp and know how to respond to emergencies. They may not have a lot of experience with tropical diseases and infectious conditions, but they are well trained."

One of the most difficult parts of Smith's practicum was performing procedures without pain medication on children, and seeing children die who may have lived if treated in Canada.

"I had never seen a child die before Zambia, and it is a haunting image and helpless feeling I don't think I will ever forget," she says.

One of Smith's most profound lessons was learned from a woman on her deathbed. Smith bathed her, changed her clothes and sheets and made her comfortable. Next morning, the woman's bed was empty.

"I advocated for my patient to have her right to a humane death," says Smith. "This is my most significant memory of nursing in Zambia, because it is never far from my mind when I am in practice here in Canada."

Smith notes both the ups and the downs made the experience rewarding.

"I learned a lot about myself, my strengths and my abilities. My critical thinking and problem-solving abilities grew tremendously. My ability to step back and take in the bigger picture improved. I found strengths that I

didn't know I had, such as being able to remain calm during emergency situations, and making decisions under extreme stress."

Students accepted into the practicum in Ghana and Zambia cover their own \$5,000 travel expenses, but they can apply for a \$1,000 grant through UBC's Go Global program. In addition, nursing students fundraise approximately \$10,000 annually to support health care in Africa.

Among the biggest challenges is finding funding, says Karp. Committed financing would ensure that fourth-year nursing students get the international experience, and allow the School of Nursing to continue supporting the work of colleagues and partners within Zambia and Ghana.

The School of Nursing plans to increase practicum placements through local connections and partnerships in Africa, develop potential student and faculty exchanges with the University of Zambia, and create additional collaborative research initiatives in health areas identified as priorities by Zambians and Ghanaians.

"Our academic partnerships with colleagues and communities in Africa provide UBC's Okanagan nursing faculty and students with invaluable opportunities to develop and contribute as global citizens," says Patricia Marck, director for the School of Nursing and associate dean for the Faculty of Health & Social Development's international partnerships. ●

### WEST COAST SUITES

Deluxe Hotel Suites, West Coast Style

**EVERYONE CAN STAY WITH US ALL YEAR ROUND**

Upscale accommodation for faculty, business travellers, and visitors who want to enjoy the spectacular natural setting.

- Centrally located on campus
- Fully-equipped kitchen and complimentary wireless internet
- Ideal for short or long term stays

UBC Conferences & Accommodation Vancouver

T 604 822 1000  
E reservations@housing.ubc.ca  
Book online  
www.ubconferences.com

### the point grill

Licensed Patio | Local Foods

Summer Menu featuring  
UBC Farm Produce, Free Range  
Poultry & Ocean Wise™ Seafood

**BRUNCH**  
SAT & SUN, 11AM TO 3PM

Limited FREE parking available.  
11am to 10pm daily

www.food.ubc.ca

PH: 604-822-9503 | Building #4 2205 Lower Mall | (Marine Drive Residence)

FRESH LOCAL SUSTAINABLE

# Uncertain times on the 'roof of the world'

A conversation with leading Tibet scholar Tsering Shakya

Basil Waugh and Gudrun Jnnsdottir



Martin Dee Photograph

supported by the Dalai Lama. But much of this results from the lack of proper channels in China for people to voice their grievances to the authorities, without fearing for their safety. We have recently seen self-immolation elsewhere, in places such as in India, Tunisia and Greece, so this new style of protest is a global trend.”

#### What is at stake in the Dalai Lama's succession?

“The succession of the Dalai Lama, who is 76, will be a major issue between China and Tibet. This is a question of power for China. It wishes to demonstrate its authority over Tibet by choosing the next Dalai Lama. However, the Tibetan Buddhists will reject China's selection as illegitimate. Tibetans will choose their candidate, but this individual will almost certainly live in exile.

“This would not be the first dispute over a high-ranking lama. For example, the Chinese government and Tibetans disagreed over the selection of the Panchen Lama, the second highest ranking lama in Tibetan Buddhism. In fact, the succession process can typically take up to four years as Tibetans seek out their next ‘chosen one.’ However, in the present situation, China will be very reluctant to have the search go on for long. They will likely appoint someone shortly after the death of the Dalai Lama in an attempt to end the issue.”

#### Will the incoming Chinese leaders change the country's approach to Tibet?

“In my view, China's incoming leaders will essentially take the same approach to Tibet. No politician in the Communist Party would risk his political position in the system by taking up the issue of Tibet. In the short term, I see very little chance of Tibet concerns—freedom of religion and culture, the independence movement—being resolved.

“However, the unprecedented economic growth in China has created great inequality and increasing levels of social unrest, and China's leaders are aware they must address these issues. If they take a more liberal approach to the relationship between citizen and state, where there is the rule of law and people can legitimately raise their grievances, I think the situation will definitely improve.”

#### Where can different voices be heard on the Tibet debate?

“The internet and social media are playing an important role to aggregate and translate news, blogs, twitter feeds and political cartoons about Tibet and China. In the past, Tibetan bloggers would post about arrests, but very few people outside Tibet understood that language. New media give journalists, activists and the public access to much more information. Good examples include the China Digital Times ([chinadigitaltimes.net](http://chinadigitaltimes.net)), which is maintained by the University of California Berkeley's School of Journalism, and High Peaks Pure Earth ([highpeakspureearth.com](http://highpeakspureearth.com)), a blog that I co-edit.

#### Ongoing issues: Surveillance, culture, and the economy

“China's other major issue is economic development. The level of state expenditure in Tibet and Western China is enormous: 90 per cent of all expenditures currently come from government sources. So there is huge interest in developing the local indigenous economy to make the region more sustainable in the future.

“Similarly, there remains a strong sentiment for independence in Tibet. There has been economic growth, but to most Tibetans, it comes at the expense of cultural autonomy, freedom of religion and language as Chinese culture assimilates the region. They see their culture and identity as vulnerable, and with little hope for recourse, this is producing an increasing level of more extreme resistance, particular within the Buddhist community.” ●

Learn more about UBC's Institute of Asian Research at [www.iaar.ubc.ca](http://www.iaar.ubc.ca).

Tsering Shakya, UBC Institute of Asian Research, says Tibetan protests are becoming more extreme.

**The Dalai Lama's short visit to Canada this spring highlighted again the difficult situation he and his Tibetan followers face. Living in exile in India since 1959 and facing persistent condemnation from China, the Dalai Lama must witness his homeland's troubles from afar.**

Tibetan activists say resentment has turned to desperation as Tibetans witness massive changes brought on by China's economic and political policies in the area. Adding to the tensions is the fear that Chinese authorities will try to anoint their own successor once the Dalai Lama passes away. UBC's Tsering Shakya discusses the situation with UBC Reports.

#### Why are monks and nuns turning to self-immolation?

“In the past year, more than 36 Tibetan monks and nuns have burned themselves to death to protest Chinese rule. Not only is this a more extreme form of protest, it is a major new challenge for China. By its very nature, this kind of act is much harder to control or punish than mass demonstrations. How do you stop someone from lighting themselves on fire?”

“China will view this as a Tibetan escalation of this situation,

# All in the family: passing it on to the next generation

Lorraine Chan



Family Enterprise Advisor Program grad Nora Jones—ranked RBC's top private banker.

private banker in Canada.

“I was curious to see how one could systematically study this complex labyrinth of family influences and determine how it impacts the business,” says Jones, who acts as a “personal chief financial officer” to high net worth RBC clients and their families, delivering sophisticated banking, investment and credit solutions.

“I have already started to talk to clients in a more meaningful way about dynamics in their businesses. Interestingly, many clients are surprised that anyone outside of the family recognizes the complexity and inherent conflicts that they face on a daily basis, due to the ‘family’ aspect of their business.”

Jones holds an MBA in finance and accounting along with designations that include chartered accountant, chartered financial analyst, trust and estate practitioner and certified financial planner. She has found in her two decades of doing tax work and her current role as a private banker that business owners are “profoundly affected by decisions that were made by their parents, decisions that they are making now for their own children and by relationships—often with legacy issues—with other family members.”

Identifying the conflicts and synergies among and between family members is a challenging exercise, says Jones. However, FEAP curriculum has helped to fill those knowledge gaps.

“The main skill that I acquired through the program was the ability to identify the different ‘buckets’ or circles into which business family members belong—first as members of a family, second as owners of a business and, lastly, as management decision-makers for the business. This course has shown me that this type of analysis is not only possible but can be an incredibly rewarding process for family members.” ●

For more information, visit: [www.sauder.ubc.ca/bfc/](http://www.sauder.ubc.ca/bfc/)

#### Family dynamics can be tough. Even tougher is running a business with mom, dad or siblings.

Clashes over who's the boss, sharing profits and setting growth targets have toppled many a successful family enterprise. In fact, only 30 per cent of family businesses survive into the second generation—a sobering fact, given 80 per cent of businesses in Canada are owned or operated by families.

To improve the odds, the Sauder School of Business established the Business Families Centre (BFC) in 2001 with the involvement of more than 30 founding families, including those of Brandt Louie, Gordon and Leslie Diamond and Peter Bentley. BFC integrates services, education and research to address issues including

governance, relationships, wealth preservation and succession.

The Road Map seminars, provide family members with practical tools to chart a course for multi-generational success. Last fall, BFC unveiled Canada's first national database to foster family business research and innovation. In addition, BFC pioneered the 10-month Family Enterprise Advisor Program (FEAP), now in its fourth year. Designed for lawyers, accountants, bankers, therapists and other family advisors, FEAP builds on their technical skills with strategies specific to the family enterprise.

This spring, FEAP graduated two groups of 30 students each in Toronto and Vancouver. One of the Toronto grads is Nora Jones—ranked RBC's top

# Mysteries of unconsciousness

The Ouija board as a window into our “second intelligence”

Basil Waugh



UBC psychologist **Hélène Gauchou** is using novel techniques to investigate our unconsciousness.

**Ouija boards and magic tricks may sound like unconventional science, but a pioneering team of UBC psychologists are using these tools to unlock the mysteries of the human mind.**

“Most people think they have complete control of their minds, but they are wrong,” says Ron Rensink, an associate professor of computer science and psychology. “The truth is, we perform thousands of unconscious mental and physical tasks every day.”

These “mindless” acts range from such basics as breathing and dreaming to others with life or death implications, says Rensink, who joined UBC in 2000 after conducting post-doctoral research at Harvard’s Vision Sciences Laboratory. “Driving is a perfect example,” he says. “In many cases, we are navigating through dangerous situations, thinking only about what we want for dinner. We get home and often remember very little about the trip.”

Rensink belongs to a team that recently received \$1.25 million from Boeing to design visualization systems to help people quickly analyze large amounts of data. His ultimate goal is to advance our knowledge of unconscious cognition and perception to help make planes, cars, homes and consumer

products safer and more intuitive to use.

But before that can happen, Rensink says researchers need more ways to study our unconscious processes. “As a field of research, the unconscious is still very much ‘terra incognita’—the iceberg largely beneath the surface,” he says. “One of the big challenges, I think, is that we need to develop more techniques for investigating it.”

With that in mind, Rensink and postdoctoral researcher Hélène Gauchou recently completed a study using Ouija boards. Their research, to be published in the June issue of *Consciousness and Cognition*, not only demonstrates the intellectual power lying beyond our consciousness, but also represents an important advance in identifying how to access and study people’s unconscious minds.

They found that, when asked to answer questions they think they don’t know, people give significantly better responses (65 per cent accuracy) when answering “yes” or “no” with a Ouija board compared to answering verbally (50 per cent accuracy). When participants believed they knew the answers, both types of response scored almost identically.

“These surprising findings suggest we have a powerful ‘second intelligence’ resting beyond our conscious minds that can be accessed under the right conditions,” says Gauchou, a native of France whose only previous exposure to Ouija boards was through American movies. “We may believe we don’t know an

**“Our findings suggest we have a powerful ‘second intelligence’ resting beyond our conscious minds.**

answer consciously, but actually have the answer right there in our subconscious. Maybe we heard it on the radio, but weren’t really paying attention.”

Study participants were paired with partners, blindfolded and instructed to simply follow the direction of the Ouija’s moving planchette. However, when questions were asked, their partners were instructed to remove their hands from the planchette, meaning that participants were playing alone.

According to Gauchou, the study triggered “ideomotor actions” in participants, movement unaccompanied by conscious thought—similar to driving or washing the dishes – which provides greater access to our unconsciousness. The research team, which also includes UBC Electrical and Computer Engineering Prof. Sid Fels, is now exploring how to improve upon the Ouija board by creating a computerized version.

In another study, recently published in *Perception* journal, Rensink and SFU researcher Jay Olson explored the psychology of card tricks to better understand unconscious thought processes. While people may think they have a free choice of any card, their study suggests otherwise.

For example, when asked to name a playing card, they found most people chose only one of four: the ace, queen or king of hearts, or the ace of spades. When asked to visualize a card, people are twice as likely to pick the ace of hearts, they found. “We hope these studies will help to give us a better understanding of memory, decision-making and awareness,” Rensink says. ●

**Learn more about UBC psychology research at [www.psych.ubc.ca](http://www.psych.ubc.ca).**

# Starting small, aiming big

Go Global student works for sustainable change

Maryse Zeidler

**In the haste to do good work, international development projects sometimes overlook the true needs and existing strengths of the communities they’re meant to assist. This summer, Trevor Hirsche will be serving a rural community in Bolivia, but not without first understanding local conditions.**

Hirsche is one of two students this year who received \$30,000 in special funding from the International Service Learning program of UBC’s Go Global office, which offers students opportunities to learn abroad. The funding, a one-time grant from a family foundation, helps students implement and learn from projects they have developed themselves, instead of programs that send students on already established ventures.

For 12 months, Hirsche—a recent graduate of UBC’s masters program in geological sciences—will be working with the COBAGUAL, a small Bolivian water and sanitation organization, to help a rural community in Eastern Bolivia improve sanitation, access to water and food security. Although Hirsche and COBAGUAL have a broad idea of local needs, their first step is to consult with the community and get to know their social structures, their survival strategies and the resources they already have at their disposal. According to Hirsche, this is not a top-down process. “At the end of the day we’re going to define what it looks like to work *with* the community.”

At the heart of this process lies the hope to create sustainable change to

**“You start to develop a different perspective about what’s important in life.”**

alleviate poverty. The project is based on a community development model, which empowers people to define and attain their own goals. Enabling individuals and groups to obtain the skills they need enables them to become more self-reliant in the long term and are a large part of the long-term success of the project.

Hirsche and COBAGUAL have been working together since 2006 when Hirsche co-founded the Canadian-Bolivian Clean Water Network. They have already introduced biosand water filters supplying clean drinking water in that community.

While COBAGUAL was spending time in rural villages installing the filters, community members began telling them about other needs, like sanitation, irrigation, and malnutrition. Hirsche and COBAGUAL decided it would be better to involve the community



**Trevor Hirsche** received special funding to work with a community in Bolivia to improve water sanitation, access to water and food security.

from the early planning stages of the project. “We started to see the value in making the planning process with the communities as participatory as possible,” explains Hirsche. They hypothesized that a participatory process based on mutual respect would ensure the sustainability of the work they would undertake.

Hirsche’s interest in community development stems from his passion for environmental protection. He has wondered if there are ways people can sustain their livelihoods with minimal impact on the ecosystem. He was inspired by the social movements that were spreading across Latin America in countries like Bolivia, where indigenous people were striving to take

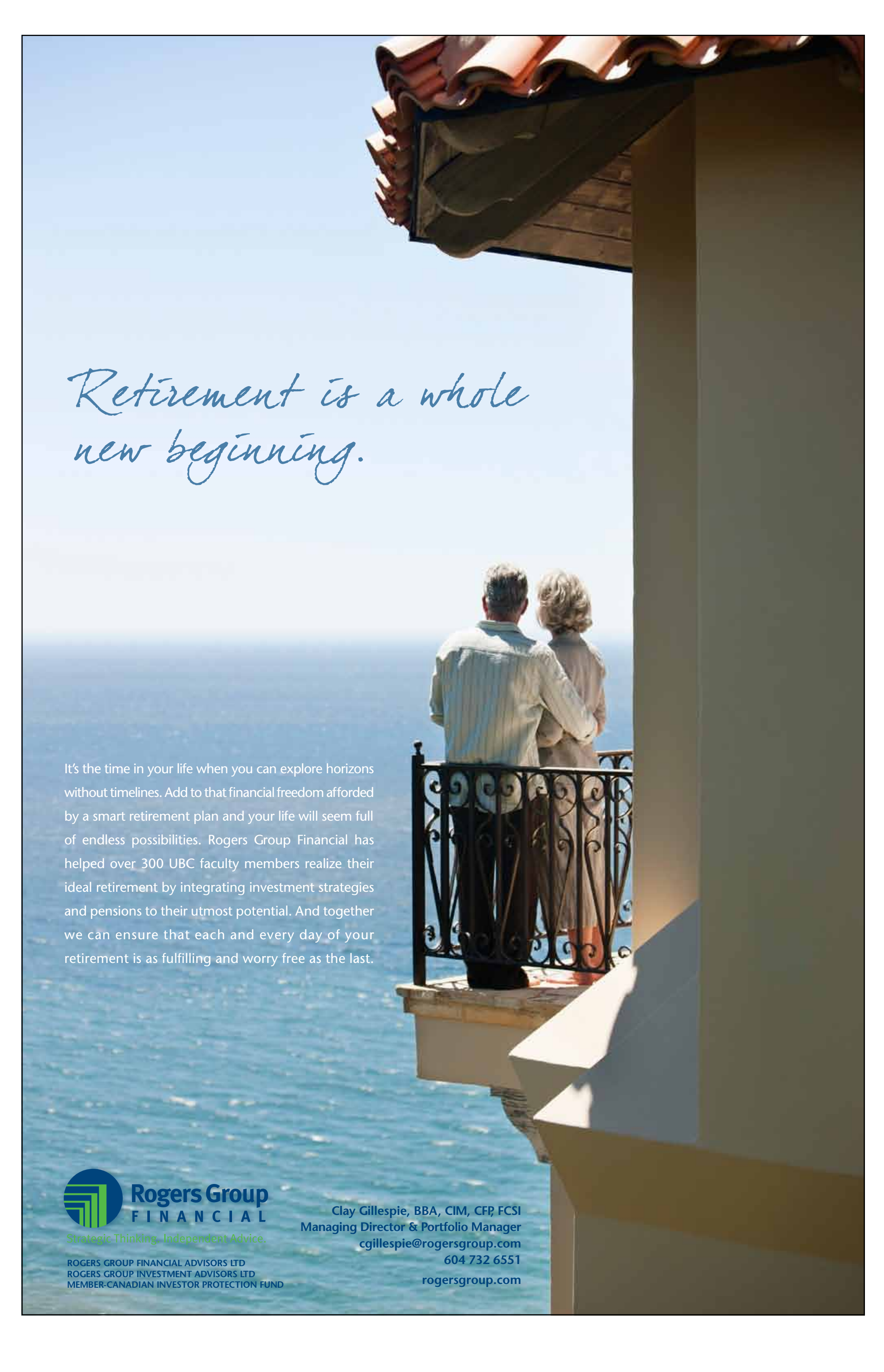
leadership on these issues. “I started to become really interested in the idea that changes could be made at the community level that could later be scaled up and form the basis of more sustainable ways of living.”

Hirsche is hoping to make a difference, but this is a two-way process. “I also am going to learn a lot from implementing the project. I’m already learning so much through this program.”

On a more personal note, he is interested in the kind of society that fosters happiness. “Being in rural communities that aren’t as tied into the mainstream consumerist economy and values, you start to develop a different perspective about what’s important in life.” ●

**For more information about the International Service Learning program, visit UBC’s Go Global website: [www.students.ubc.ca/global/learning-abroad/international-service-learning/](http://www.students.ubc.ca/global/learning-abroad/international-service-learning/)**



A photograph of an elderly couple standing on a balcony with a black wrought-iron railing, looking out over a vast blue ocean under a clear sky. The balcony is part of a building with a terracotta tiled roof. The scene is bright and sunny, suggesting a peaceful retirement lifestyle.

*Retirement is a whole  
new beginning.*

It's the time in your life when you can explore horizons without timelines. Add to that financial freedom afforded by a smart retirement plan and your life will seem full of endless possibilities. Rogers Group Financial has helped over 300 UBC faculty members realize their ideal retirement by integrating investment strategies and pensions to their utmost potential. And together we can ensure that each and every day of your retirement is as fulfilling and worry free as the last.



Strategic Thinking. Independent Advice.

ROGERS GROUP FINANCIAL ADVISORS LTD  
ROGERS GROUP INVESTMENT ADVISORS LTD  
MEMBER-CANADIAN INVESTOR PROTECTION FUND

Clay Gillespie, BBA, CIM, CFP, FCSI  
Managing Director & Portfolio Manager  
[cgillespie@rogersgroup.com](mailto:cgillespie@rogersgroup.com)

604 732 6551

[rogersgroup.com](http://rogersgroup.com)