THE UNIVERSITY OF BRITISH COLUMBIA VOL 55 | NO 4 | APRIL 2, 2009

UBC REPORTS

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Too many Canadians without safe water: $5.2M to help

By BRIAN LIN

For six million Canadians, quenching their thirst isn't a matter of simply turning on the kitchen faucet.

"Water quality in 1,700 small and rural communities across Canada – some as close as half an hour drive from a major metropolitan area such as Vancouver – can be as bad or worse than that in developing countries," says Madjid Mohseni, an associate professor in chemical and biological engineering. "For example, nearly 100 First Nations communities live under permanent boil water advisories."

Now with the help of a $5.2-million Strategic Network Grant from the Natural Sciences and Engineering Research Council of Canada (NSERC), Mohseni, as principal investigator, is joining forces with 14 researchers from seven universities to make technology available that ensures clean water for all Canadians. The grant establishes a national network of scientists called RES'EAU-WaterNet to address the social, economic and technological challenges faced by small and rural communities.

PHOTO: MARTIN DEE

Prof. Madjid Mohseni says unsafe drinking water is the cause of an estimated 90,000 illnesses every year.

"When we talk about poor water quality we think of major cases such as North Battleford, the Kashechewan First Nations Reserve, and Walkerton, Ont., where seven people died and more than 2,000 residents got ill as a result of an E. coli outbreak that contaminated the town's water supply in May 2000," says Mohseni, an expert in water purification systems. "The truth is, Health Canada estimates that unsafe drinking water is the cause of 90,000 illnesses and 90 deaths every year. That's the equivalent of 13 Walkerton tragedies."

In 2001, a compromised water system in North Battleford, Sask., led to the infection of more than 6,000 people with cryptosporidiosis. In 2005, 800 members of the Kashechewan First Nation in Northern Ontario were evacuated after E. coli bacteria were discovered in their water supply system.

Vancouverites only need to go as far back as November 2006 to recall the health concerns and inconvenience of a temporary boil water advisory. Severe storms raised the turbidity level of the water supply. As a precaution, residents of the Lower Mainland were advised to boil their drinking water for two weeks.

"The city of Vancouver has one of the highest-quality water supplies in Canada because its North Shore watersheds belong to the Greater Vancouver Regional District and the city has a system that includes skilled operators who monitor the treatment and distribution systems 24-7," says Mohseni. "For many smaller communities, where water supply routes span several jurisdictions and infrastructure funding is lacking, safeguarding water quality becomes much more complicated."

Eighteen research projects will be carried out over the next five years and involve 33 industry and government partners to ensure new knowledge is immediately applied. Since more than 75 per cent of water treatment facilities in Canada are located in small and rural communities, advances made by RES'EAU-WaterNet collaborations could not only

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Chicago uses UBC technology to plan city's future

By BASIL WAUGH

How do you want your city to look in 100 years?

A technology created at the University of British Columbia is giving communities around the globe a peek at how today's decisions can rewrite tomorrow's cities.

Like a Web 2.0 crystal ball, the software dramatically illustrates the future impacts of city planning proposals, helping to steer stakeholders away from pitfalls such as urban sprawl, gridlock and decay.

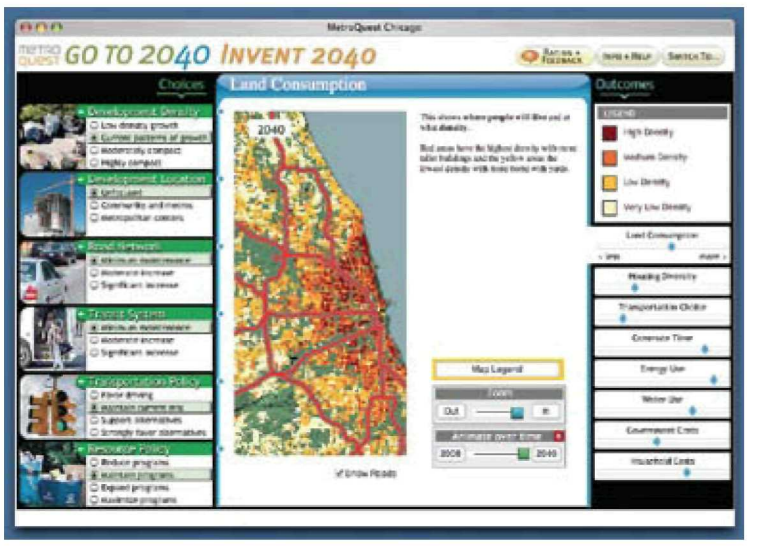
MetroQuest – the Vancouver company and its eponymous software – has worked with dozens of communities from Beijing to Denver. Its ability to get everyday people excited about planning and help citizens rally around plans for healthy, sustainable cities is getting noticed.

The Chicago Metropolitan Agency for Planning (CMAP) has chosen MetroQuest (formerly Quest) to help northeastern Illinois accommodate an anticipated additional 2.8 million residents over the next three decades. The plan will cover 273 municipalities and a population that is expected to jump from eight million to nearly 11 million by 2040.

In an attempt to give Chicagoans an unprecedented amount of input into the direction of their region, MetroQuest will be rolling out interactive kiosks as the city celebrates the 100th anniversary of Chicago's iconic Burnham Plan in July. Created in 1909 by Daniel Burnham and Edward Bennett, it is among the world's most famous city plans.

"MetroQuest is like a real-life version of SimCity," says Dave Biggs, a former UBC researcher who created the technology with UBC Prof. John Robinson and UBC alumnus Mike Walsh at UBC's Sustainable Development Research Institute in 1997. Biggs' comparison to the video game is apt; SimCity's creators were early advisors to the project.

"When we first saw SimCity, we thought: 'If we could portray real cities with real data, this could be a powerful tool for making complex decisions,'" says Biggs. "It allows communities to play games with their own



MetroQuest functions like a real-life version of the video game SimCity.

future, see the consequences and choose – collectively – what is most important to them."

In the first phase of a project, MetroQuest works with cities to upload regional data. "Ninety-five

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Highlights of UBC media coverage in March 2009. COMPILED BY SEAN SULLIVAN

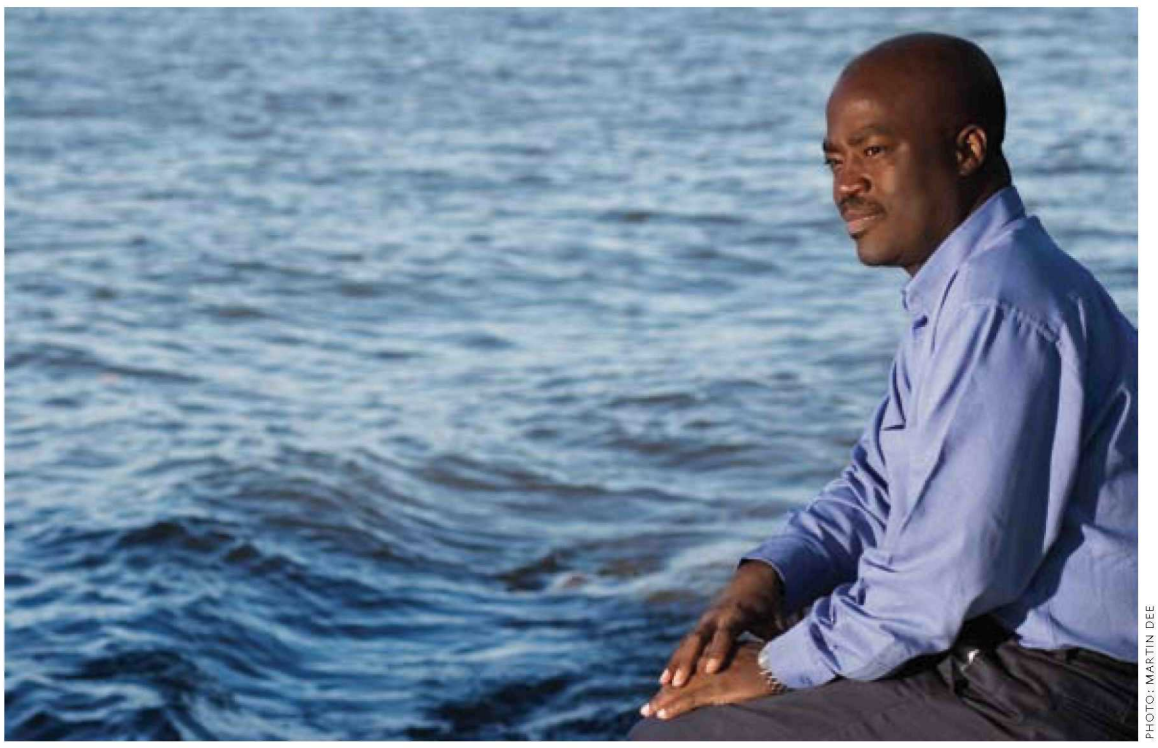

PHOTO: MARTIN DEE

Rashid Sumaila of the UBC Fisheries Centre says the benefits of eating fish have been grossly overstated.

Health claims 'fishy'

The health benefits of eating fish have been over-dramatized and have put increased pressure on the world's rapidly depleting stocks of wild fish, say researchers from UBC's Fisheries Centre.

The researchers, who teamed up with medical scientists from St. Michael's Hospital and the University of Toronto, as well as acclaimed Canadian author Farley Mowat, challenged the popular notion that fish are beneficial to human health.

As it turns out, the jury is still out. Researchers found that people who do not eat fish, such as vegetarians, are not at increased risk of illness.

"Governments and industry tell consumers to eat more fish because it is healthy," explains **Rashid Sumaila**, director of the Fisheries Economics Research Unit at UBC Fisheries Centre and study co-author. "But where do we get these fish? They are increasingly coming from the waters around Africa and other places where food security is a problem."

The research was published in the *Canadian Medical Association Journal* and reported by the *Times of India, The Canadian Press, the Globe and Mail, Ottawa Citizen,* and the *CBC*.

Oranges may prevent gout

UBC researchers say men with a higher intake of vitamin C from food or supplements have a lower risk of developing gout, a form of arthritis from uric acid build-up that causes inflamed joints.

The researchers, led by **Hyon Choi**, believe their study shows that vitamin C lowers levels of uric acid in the blood and may provide a great way to prevent the painful condition.

Gout can lead to permanent joint damage and is linked to alcohol abuse, obesity, high blood pressure and a diet heavy in meat and cheese. It is increasingly common and afflicts three million people in the United States.

The paper, published in the *Archives of Internal Medicine*, was reported on by *Reuters, CTV, The Telegraph, the BBC, ABC, Forbes*, and others.

Here comes the sun

Technology invented by UBC physics Prof. **Lorne Whitehead** could eventually allow builders to harness the sun's rays in order to illuminate the insides of office buildings.

Physicists at UBC have begun rolling out a "solar canopy" that uses mirrors to redirect sunlight deep inside commercial office towers, reported the *Vancouver Sun*.

On a sunny day, it can light up an entire office floor without any electric power at all.

"This is the first such system to be practical for widespread adoption in standard office buildings," says Whitehead. "The system will not only bring natural light into workplaces but could reduce greenhouse gas emissions from lighting in commercial buildings by ten to 25 per cent."

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What lies behind the online words?

By RAINA DUCKLOW and BUD MORTENSON

In the digital world, it's easier to tell a lie and get away with it. That's good news for liars, but not so good for anyone being deceived.

Michael Woodworth, a forensic psychologist at UBC Okanagan studying deception in computer-mediated environments, says offering up a fib in person might make you provide certain signals that you're trying to deceive, but lying online avoids the physical cues that can give you away.

"When people are interacting face to face, there is something called the 'motivational impairment effect,' where your body will give off some cues as you become more nervous and there's more at stake with your lie," says Woodworth. "In a computer-mediated environment, the exact opposite occurs."

The motivational enhancement effect – a term coined by Woodworth and colleague Jeff Hancock from Cornell University – describes how people motivated to lie in a computer-mediated environment are not only less likely to be detected, they are also actually better at being deceptive than people who are less motivated.

When telling a lie face-to-face, the higher the stakes of your deception, the more cues you may give out that you're lying. So, what isn't in a text message may have advantages for a would-be deceiver: text doesn't transmit non-verbal cues such as vocal properties, physical gestures, and facial expressions.

Woodworth's research, supported by a grant of $87,055 from the Social Sciences and Humanities Research Council, is very timely as technology and deceptive practices converge.

"Deception is one of the most significant and pervasive social phenomena of our age," says Woodworth. "On average, people tell one to two lies a day, and these lies range from the trivial to the more serious. Deception lies in communication between friends, family, colleagues and in power and politics."

Woodworth began his exploration by looking at how to detect deception in face-to-face environments. But he soon recognized the invasion of information and communication technologies into nearly all aspects of our lives was an opportunity to study how technology affects "digital deception" – defined as any type of technologically mediated message transmitted to create a false belief in the receiver of the message.

"Given the prevalence of both deception and communication technology in our personal and professional lives, an important set of concerns have emerged about how technology affects digital deception," says Woodworth. He points out a growing number of individuals are falling prey to deceptive practices and information received through computer mediated contexts such as the Internet

"By learning more about how various factors affect detecting deceit in online communication, our research will certainly have important implications in organizational contexts, both legal and illegal, in the political domain, and in family life as more and more children go online." R

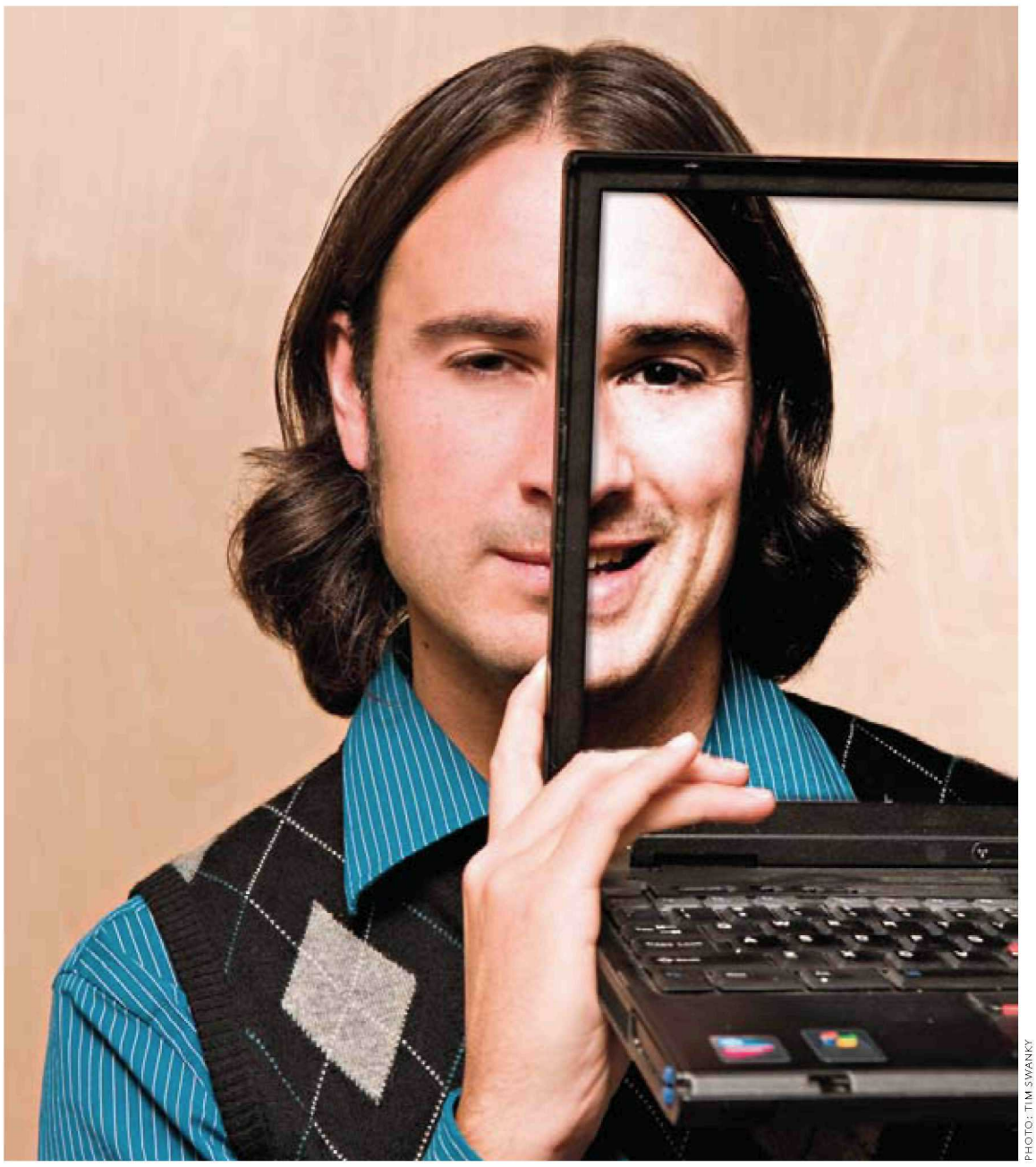

PHOTO: TIM SWANKY

Michael Woodworth, associate professor of psychology at UBC Okanagan, is developing new ideas about why people are better at lying online than telling a lie face-to-face.

Killer language

Common threads detected in psychopath texts

Michael Woodworth's research at UBC Okanagan goes beyond deception. He also studies the personality disorder of psychopathy, looking at what secrets can be gleaned from the language used by psychopaths who have killed.

After interviewing dozens of psychopaths and non-psychopaths convicted of murder, Woodworth and colleagues used electronic linguistics analysis to automatically process the interview transcripts, paying attention to the appearance of certain words, parts of speech (verbs, adjectives, nouns), and semantics – for example, looking at how often certain topics came up.

The results were revealing.

"In the transcripts of psychopathic offenders, we found twice as many terms related to eating, and 58 per cent more references to money," says Woodworth. "And the psychopaths were significantly more likely to discuss both clothing and drinking while discussing their homicide, compared to non-psychopathic offenders."

Woodworth has now teamed with noted forensic psychologist and deception researcher Stephen Porter, who joined UBC Okanagan from Dalhousie University last summer, and fellow forensic psychologist Jan Cioe to build a multi-disciplinary forensic science graduate program and research centre at UBC Okanagan.

Bringing together prominent forensic psychologists will benefit both the academic and wider communities, says Woodworth.

"In the back of my mind I'm always thinking 'how is this going to potentially have some applied value?' whether it be the community in general, or specifically for law enforcement, or by furthering our knowledge within a certain area," he says. "All of these applications ultimately assist with both assessment and treatment."

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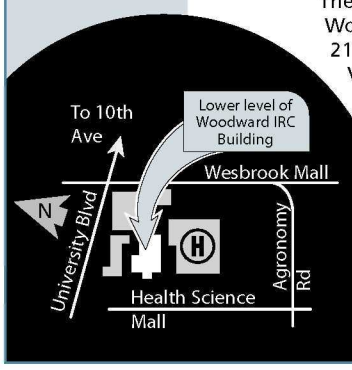

UBC Media Group

Can brain science manipulate consumers?

By CATHERINE LOIACONO

Ever question the ethics or science behind advertising? Well, Prof. Judy Illes does.

In fact, Illes, Director of the National Core of Neuroethics at UBC, is exploring the ethical issues around neuromarketing, an emerging field of marketing that uses neuroscience to get you hooked on the latest fad.

Illes and her colleagues believe that companies using neuromarketing techniques should adopt a code of ethics to ensure beneficent use of the technology.

"The field of neuroscience is evolving at a rapid rate," says Illes, who is also a Canada Research Chair in Neuroethics. "Advances in scientific technologies can give us intimate details about the inner workings of our brain. Neuroethics considers the social, cultural, personal and religious implications of these advances in neuroscience."

Neuromarketing uses neuroscience to study the brain's responses to marketing stimuli. It aims to understand a consumer's decision and the part of the brain that influences that decision.

Researchers use technologies such as functional Medical Resonance Imaging (fMRI) or EEG to measure the changes in activity in various parts of the brain based on a subject's response to specific products, packaging, advertising, and logos.

PHOTO: MARTIN DEE

Prof. Judy Illes believes that a code of ethics should be adopted for neuromarketing techniques.

"Neuromarketing is a still a relatively new field," says Illes, who is also a member of the Brain Research Centre at UBC and Vancouver Coastal Health Research Institute. "The premise is that directly peering into a consumer's brain while viewing products or brands is a much better predictor of consumer behaviour."

The brain responses to fMRI and EEG may be more revealing than traditional marketing studies such as surveys or focus groups because measured reactions come directly from brain signals.

"Neuroscience can be used as a powerful tool to advance commercial interests," says Illes. "But the use of technology that probes the inner workings of the human brain, especially beyond what one might knowingly divulge in traditional behavioral testing, raises substantial ethical issues."

"There are three major ethical issues for consideration," says Illes. "First, we must protect parties who may be harmed or exploited by neuromarketing. Second, we must protect consumer autonomy if neuromarketing reaches a critical level of effectiveness and third, we must protect scientific integrity."

According to Illes, neuromarketing has the potential to harm vulnerable persons including persons with neurological disease, psychological disorders and children. An example would be marketing fatty foods to morbidly obese people, drugs for educationally challenged youth, cigarettes to smokers or alcohol to alcoholics. She suggests a special ethics review should be a minimum standard for neuromarketing research.

In academic and medical research centres, subjects volunteering to participate in neuroimaging-based studies are protected by Institutional Review Board guidelines, which can include strict experimental guidelines. However, when moved into private enterprise, such subject protections may not be present.

"The particularly loose restrictions surrounding studies for marketing purposes outside the academic sector are especially worrying," says Illes. "Moreover, if new technologies are developed that fall outside the purview of regulatory authorities, even these protections may be lost. Subject protections should be equal to those required by academic and medical research centres."

The most vexing of the issues for Illes is in the realm of autonomy. Of most concern is whether future neuromarketing tools will provide sufficient insight to allow manipulation of brain function of which the consumer is unaware, and results in a desired behaviour.

"Insights from advanced technology in the neurosciences might allow corporations, governments and others to influence decisions and actions regarding brand preference without the individual being aware of the subterfuge," says Illes. "Such stealth neuromarketing is not possible with current technology, but if developed would represent a major incursion on individual autonomy."

Scientific integrity can also be compromised because current neuromarketing research is not subject to the high standards of peer-reviewed journals.

Illes sites an example in an op-ed piece in the New York Times where a group of academics and neuromarketers presented a small body of unpublished data on the results of an fMRI study of political preferences of swing voters. The study mentioned in the op-ed did not contain the qualifications that would accompany a scholarly article in a peer-reviewed journal. For several days after its publication, the article topped the rankings of those most frequently emailed by readers. Academic colleagues responded with considerable outrage in letters to the editor because of over-interpretation of fMRI data.

"Such misrepresentation can do considerable damage to the public trust of science," says Illes. "Not only would adoption of a code of ethics generated in collaboration with the neuroscience community, neuroethicists and marketing companies be justified on moral grounds but it would also serve to insulate this young and dynamic industry from accusations of irresponsible behavior." R

Inside buyers' brains

In a recent book called *Buyology*, Brand Consultant Martin Lindstrom presented the findings from his four-year neuromarketing study that peered inside the brains of 2,000 volunteers from around the world as they viewed commercials, brands and products.

The study revealed that images of dominant brands, such as the iPod, stimulated the same part of the brain activated by religious symbols. It also found that warning labels on cigarette packages stimulate activity in a brain area associated with craving – despite the fact that subjects said they thought the warnings were effective. The study also found that product placement in movies and television rarely worked and the Nokia tune turns people off.

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Applications/nominations are invited for the position of Associate Dean, Admissions for the UBC MD Undergraduate Program. This is a part-time appointment in the Dean's Office, Faculty of Medicine which is expected to be filled by an internal candidate. The position is available October 1, 2009.

The UBC MD undergraduate program is delivered across three (soon to be four) academic campuses and over 15 clinical academic campuses across the province. Admission to the program is highly competitive with usually over 1700 applications annually for 256 first year places. The Associate Dean oversees the admissions process from applications received through an automated online application system, to the state of the art interview process using MMI (multiple mini interviews), to the letters of offer for the Vancouver Fraser Medical Program, the Island Medical Program and the Northern Medical Program. The Associate Dean also plays a key role on the Council of Undergraduate Associate Deans in managing the overall program. Reporting to the Executive Associate Dean, Education, the Associate Dean, Admissions chairs the admissions policy and selection committees, as well as undertaking other related administrative activities.

A more detailed position description is available in the Dean's Office for those who wish to review it.

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Generations come together to tell head tax stories

By GLENN DREXHAGE

A new UBC initiative will bring generations together to tell the oft-untold stories of Chinese-Canadians who endured some of this country's darker days.

The federal government's Community Historical Recognition Program (CHRP) is giving $50,000 to support a UBC project that involves students interviewing elders from B.C. communities. The idea is to preserve and archive Chinese-Canadian experiences from 1885 to 1947, during the times of the restrictive Chinese Head Tax and Chinese Immigration Act.

"This project is extremely important for understanding the history of Chinese-Canadians as well as Canadian national history," says Angela Wong, a 24-year-old UBC student participating in the effort. "Growing up in an education system that often portrayed Chinese-Canadians as simply railway workers in Canadian history, I felt there was an imbalance in our historical narrative."

Wong will help coordinate and run interviews for the project, and teach other research assistants about the art of effective interviewing. She completed the history honours program last year, and begins her master of Arts in Asia Pacific Policy Studies next September, also at UBC.

Sid Chow Tan, the grandson of a head tax payer who is helping select interviewees for the project, echoes Wong's views. "I recall that my high school and university courses in the history of Canada had little or nothing on the Chinese contribution to the building of Canada," he says. "It will be good for all Canadians, particularly students and those of Chinese descent, to know about the foundation laid by the lo wah kiu – the old overseas Chinese."

The three-year project is the brainchild of Henry Yu, an associate professor in UBC's Department of History. "I think this is utterly important because we need to begin to produce an archive for the future," says Yu, also the Director of the Initiative for Student Teaching and Research in Chinese-Canadian studies (INSTRCC). That group, launched by UBC in 2007, is part of an effort focusing on the Asian-Canadian role in the development of Pacific Canada (more can be found at www.instrcc.ubc.ca).

The CHRP-funded project gets underway this month and will involve three to five students annually, selected by Yu and Allan Cho, Program Services Librarian at the Irving K. Barber Learning Centre. The students will receive training in community-based research and then embark on interviews in the Lower Mainland, Victoria, Nanaimo and the Okanagan.

Completed interviews will be archived online, thanks to server space and technical support from UBC Library. In addition, follow-up workshops, lectures and public events will be held at the Learning Centre.

Yu and Peter Ward – the university librarian pro tem and a history scholar and professor – recently completed a comprehensive digitization project that features more than 96,000 entries to the Chinese Head Tax Register. Students will also be trained in the use of this database for the UBC project.

Ultimately, the goal is that all participants, from young scholars to elderly interviewees, will gain from the experience. "This is not about one set of people (the researchers) doing the learning," asserts Yu. "It's a broad learning process for everybody involved. ■

PHOTO: MARTIN DEE

UBC student Angela Wong holds a genuine head tax certificate hailing from the Chung Collection, located in the Irving K. Barber Learning Centre (Rare Books and Special Collections).

Video search helps tell stories

The UBC project to preserve and archive Chinese-Canadian experiences will involve the use of interactive video/transcript viewer (IVT) technology, developed as part of UBC's First Nations Studies Program. This application makes it possible to search a video interview using a transcription of the dialogue, making the overall process more accessible and useful. "It's a powerful tool that allows researchers to find key words about what they're interested in," says Allan Cho, Program Services Librarian at the Irving K. Barber Learning Centre.

CHICAGO

continued from page 1

per cent of this information is publically available, such as census numbers and emissions and transportation data," says Biggs. "Then we interview staff and community members for the remaining information."

Once a city is "digitized," citizens can alter key aspects of their city, including population, housing, transportation, density and amenities, much as the original game did. With a click of the mouse, participants can see the effects of their decisions decades into the future, both on a satellite-view map and in a graphical display.

"For example, you can see what a neighborhood might look like with low, medium or high density," says Biggs. "You can then see how different housing patterns impact your needs for transportation, schools, utilities and other amenities."

Biggs and his team lead public engagement sessions, or train clients on MetroQuest technology and processes. Sessions are projected on large screens, town-hall style, and participants give constant feedback with interactive clickers.

The end result? According to Biggs, the participatory approach produces better decisions, an engaged citizenry and most importantly, built-in buy-in to the final design. "It gives stakeholders an understanding and sense of ownership over the result, a huge advantage over the conventional 'design and defend' method."

This was not lost on Chicago planners who wanted something that the public could learn to use in 15 seconds, and select policies and see outcomes immediately.

"After a review of the tools available, it became clear that MetroQuest was the only tool that could support the public involvement phase in the way that we wanted," says Bob Dean, Principal Regional Planner, CMAP.

MetroQuest will return to the campus where it was conceived, with the 2011 opening of one of the greenest buildings on the planet, the UBC Centre for Interactive Research on Sustainability (CIRS). A theatre in CIRS with MetroQuest technology will be available to students, researchers, politicians and community members to illustrate the impacts of climate change. ■

For more information on MetroQuest's Chicago project, visit:
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PHOTO: COURTESY JULIET TEMBE

Juliet Tembe, a UBC Education PhD graduate, introduces computers to teachers in rural Uganda.

Ugandan students advance digital literacy

By SEAN SULLIVAN

In 2008, Sam Andema made a difficult decision: Saying goodbye to his wife and two young children, he left his native Uganda for a master's program at UBC that he hopes will allow him to help revolutionize digital literacy in East Africa.

He's now part of an ambitious project in the Faculty of Education that's helping spread technological training in East Africa while developing new strategies for Canadian educators.

"Uganda is on the move to development," said Andema. "The country has articulated its vision and mission to become a knowledge-based society, and one of the tools to achieve that is modern technology."

Professors Bonny Norton and Maureen Kendrick of the UBC Department of Language and Literacy Education have undertaken research in Uganda over the past six years.

One of the goals of their program is to train highly qualified people in East African countries, leading to a new generation with the skills to access, understand, evaluate and create information using digital technology.

"We don't just parachute into places, take a few pictures, do a few interviews and leave," Norton said. "We've established a very strong network because people see we want sustainability." This network includes a virtual network, with UBC PhD student Lauryn Oates as webmaster, available online at www.renafrica.org.

"In conversations with teacher educators, we ask: What challenges do they face? How can we help them overcome their challenges? That becomes a foundation for our work," Kendrick said.

The research program pairs theoretical work in learning, development and education with hands-on work in rural communities. From the researchers, one message is clear: understanding technology is key to literacy in the 21st century.

"Definitions of literacy are rapidly changing globally," Kendrick said. "What it means to be literate now has everything to do with digital technology. Whether you're in rural Uganda or whether you're in Vancouver, there's a global conversation that people want to be a part of."

The eGranary Digital Library is one important example. Hard drives stocked with tens of thousands of books, journals and reference websites such as Wikipedia connect to a local area network and provide a self-contained "Internet in a box" in areas without web access. It's an effort to "democraticize learning," said Norton.

"People are learning the skills of searching and browsing, developing those initial talents so as technology becomes more accessible, the transition to that knowledge-based economy is easier," she said.

Another project, conducted last month by UBC Education PhD graduate Juliet Tembe, will train rural teachers – some of whom have never seen a computer – in the basics of using a computer and analyzing information from online resources. Like Andema, Tembe is a Ugandan who studied at UBC.

The projects are part of helping Uganda in its goal to become a regional leader in digital literacy.

The projects are all part of helping Uganda in its goal to become a regional leader in digital literacy, Andema said.

"The trickledown effect allows the students to leave school with the ability to access information, to process information and to articulate their own ideas and knowledge," he said.

The partnerships also allow B.C. educators to link with classrooms in East Africa and learn from post-graduate students like Andema.

As the number of refugee students from places like Rwanda, Somalia, and Afghanistan grows, Canadian teachers want to learn methods that are familiar to the students, said Prof. Margaret Early, who recently joined the research team.

"It's not a one-way street," she said. "Teachers here are really desperate to adapt their teaching strategies. We can't take Western notions and expect them to just work. We have to collaborate with teachers to develop new pedagogies."

The East African program is still facing many challenges: a country's poverty, frequent power outages and limited Internet access can pose problems for the most basic training. As well, cultural and social traditions mean teachers, mostly women, have limited time to pursue outside training.

"Many don't have time to concentrate on professional projects because they have to make ends meet," Andema said. "They have to survive."

With plans to spend the upcoming summer at home with family, Andema sees his graduate studies at UBC as his chance to help lead the development of digital literacy in his home country.

"When the opportunity came, I couldn't just let it pass by," he said. "It was the opportunity I had been yearning for." R

WATER
continued from page 1

improve water quality but potentially generate economic and humanitarian benefits.

Mohseni and four other UBC researchers – Pierre Bérubé, David Wilkinson, Elod Gyenge and Rehan Sadiq – will investigate the feasibility of new and existing technologies to be used in rural areas.

Ultraviolet light photocatalysis – the use of UV light to eliminate contaminants – for example, has been explored as an effective option for water treatment but remains too costly for large communities. Smaller-scale versions that incorporate new technologies, however, could deliver desired results for small, rural communities. Mohseni and colleagues will be looking at ways to utilize sunlight, LEDs and special coatings for photoreactors to overcome some of the biggest obstacles in advancing this technology.

"We plan to bring the technologies past not only the initial proof of concept, but also the on-site validation stage," says Mohseni, "That is, we will evaluate the technologies on-site using real water and operating conditions. This would make the technologies ready for adoption and implementation by industry and small communities."

In addition to technological challenges, small and rural communities also face unique social, economical and governance barriers, Mohseni adds. "With RES'EAU, we're bringing together a multidisciplinary team of experts who have already earned a reputation throughout the water research community for putting small rural communities first."

"We simply cannot afford to allow the existing challenges to exclude millions of our citizens from access to a vital requirement for their survival and advancement," says Mohseni. "All Canadians have the right to easily access clean water, regardless of where they live." R

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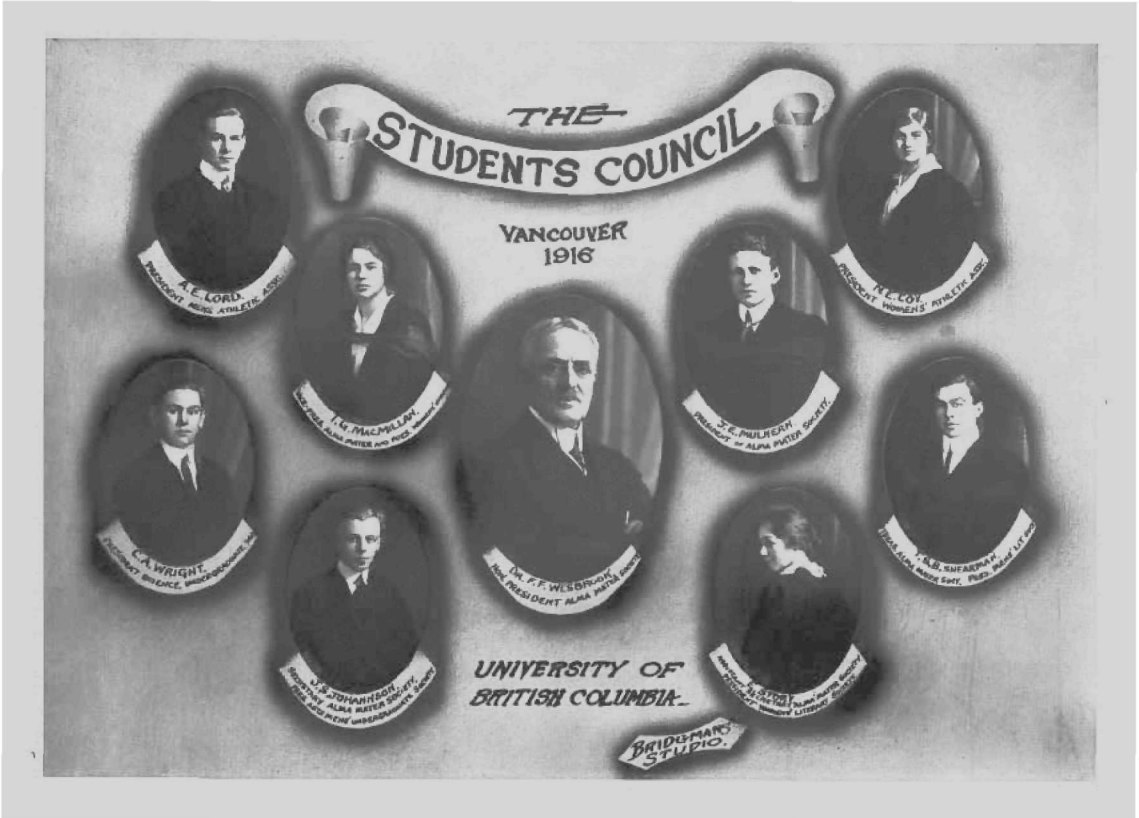

PHOTO: COURTESY UBC ARCHIVES

Historical student yearbook collection available online

UBC Archives, in partnership with Alumni Affairs and the Alma Mater Society, has digitized and now provides online access to approximately 11,500 pages of the university's student yearbook from 1916 to 1966.

Published initially as the *Annual* (1915-1928) and then *Totem* (1929-1966), the yearbook provides an important historical resource featuring photographs and information about graduating students, sports teams, student clubs and organizations, social events, governance bodies and fraternities and sororities.

Unfortunately, as the university's student population grew so too did the size of the publication, and the associated production costs and demand for the yearbook decreased until it ceased publication after the 1966 edition. Some individual faculties continue to produce separate student yearbooks.

Project coordinator and university archivist Chris Hives said, "The development of this digital resource will support general UBC historical research and, more particularly, provide a unique student perspective on the evolution of the institution. "These publications may also help older UBC alumni reconnect with the institution they knew and the colleagues they remember."

This project is part of the Archives' ongoing objective to digitize and provide access to a variety of key sources of historical information about the university.

This new electronic resource can be accessed at: cowichan.library.ubc.ca/archives/?db=yearbooks ■

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The successful candidate will report to the Senior Associate Dean, Faculty Affairs and the Dean of Medicine and through the Dean is accountable to the Faculty Executive Committee, the Committee of Department Heads and School Directors, and the Faculty. The successful candidate will assist in the creation of a respectful and positive working and learning environment and will give advice and present educational programs in an objective, impartial, empathetic and confidential manner to undergraduate students, graduate students and postgraduate trainees as well as to faculty in the UBC Faculty of Medicine. Issues include discrimination, harassment, intimidation, uprofessional behaviour as well as gender and equity issues.

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Application letters, accompanied by detailed curriculum vitae and names of three references, should be directed by April 30, 2009 to:

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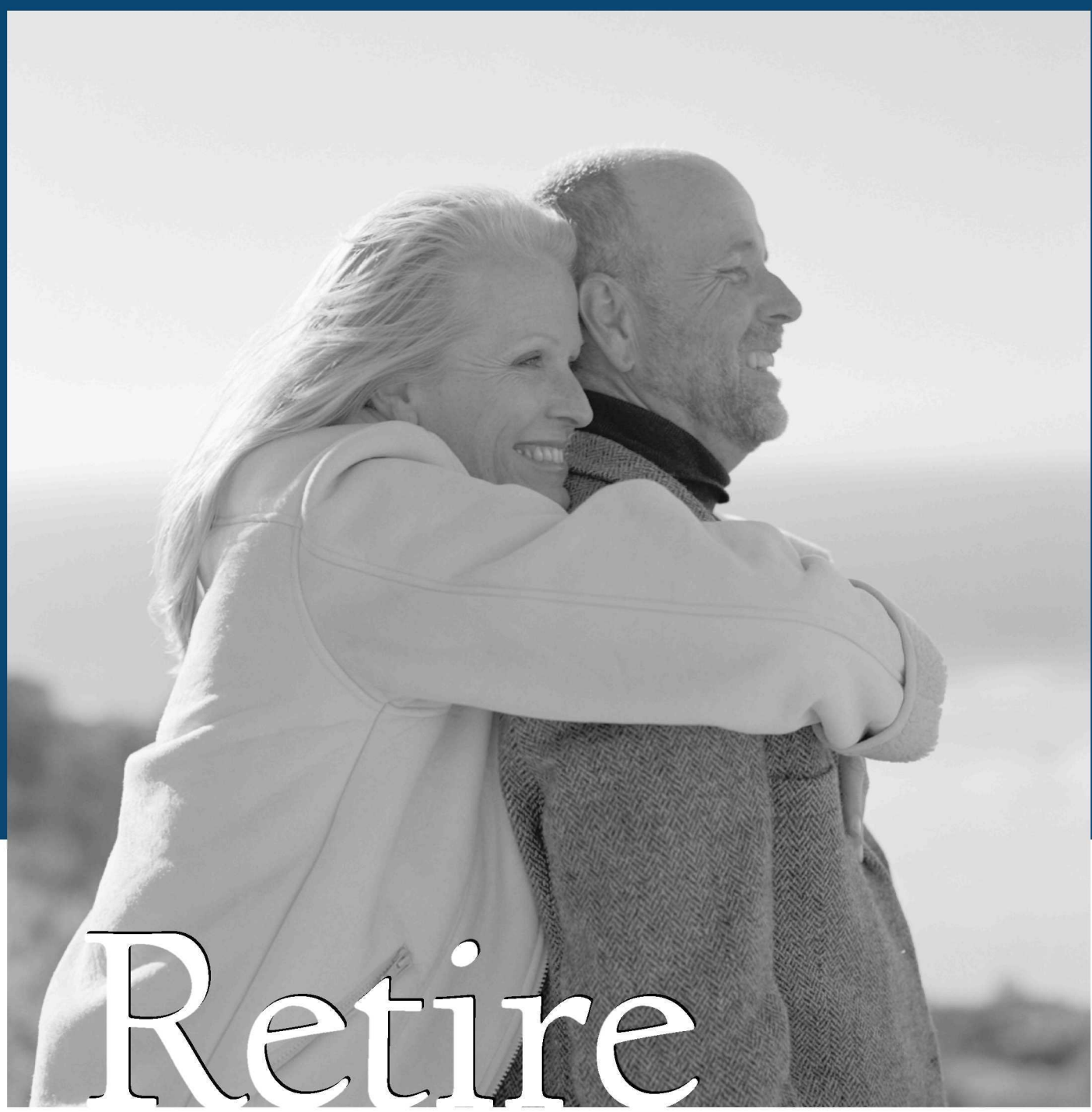

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