

# UBC REPORTS



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## Winds of Classroom Change: Prof. Roland Stull finds a sense of excitement in his revamped large class on natural disasters

By Brian Lin

When Prof. Roland Stull designed his first-year course in Earth and Ocean Sciences, *The Catastrophic Earth: Natural Disasters*, he assembled a team of experts so that students could learn the science behind storms, volcanoes, earthquakes, tsunami and landslides – and their social ramifications – from top researchers at UBC.

For more than half a decade, the popular course has received rave reviews from students, so much so that two-thirds of its enrolment – averaging 500 per term – come from outside the Faculty of Science.

So why have Stull, a world-renowned meteorologist, and his co-instructors been revamping the course since the summer?

“We saw an opportunity to make the course more effective,” says Stull, referring to new resources available through UBC’s Carl Wieman Science Education Initiative (CWSEI).

Led by Nobel laureate Carl Wieman, who joined UBC to launch the \$12 million initiative last January, the CWSEI is working with eight science departments to scientifically measure and systematically improve undergraduate education.

Based on each department’s proposal, the CWSEI funds full-time Science Teaching and Learning Fellows (STLFs) – young scholars knowledgeable about research on learning and with expertise in both educational methodology and their respective disciplines. Often experienced teachers themselves, the STLFs assist faculty members to adopt proven best practices in teaching and assessment so students can better achieve carefully designed learning goals.



Earth and Ocean Sciences Prof. Roland Stull is using interactive activities to help his students better grasp scientific concepts behind storms.

Stull’s *Natural Disasters* is one of three courses targeted for improvement by the Department of Earth and Ocean Sciences this term. Many more courses will be addressed over the next four years.

A growing body of research shows that conventional, lecture-centred science courses often leave students less interested in science than when they started.

Exercises that guide students to think through a problem “like a scientist,” on the other hand, significantly increases student engagement and are proven to double their grasp of new concepts, says Wieman.

With the help of the department’s STLFs Francis Jones and Brett Gilley, Stull scaled down the amount of content delivered in the classroom to make room for more

small-group discussions and debates designed to challenge students’ assumptions and develop their reasoning and creative thinking skills.

“I’m guiding them to experience first-hand how scientists brainstorm and work through a problem, and how they incorporate knowledge and apply it,” says Stull, who notes that students are now

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## The Science of Teaching Science



Prof. Carl Wieman

It would take nothing less than science itself to convince scientists to change the way they teach science, according to Carl Wieman. To that end, he is applying his Nobel Prize-winning research rigour to *show them the data*.

This fall, UBC science departments and the CWSEI are asking more than 3,000 students in 18 courses how they feel about science before and after a course, and

comparing how different teaching methods affect their understanding – and interest. The collaboration with the University of Colorado marks the first time a survey of this scale has been conducted on university students’ attitudes toward learning science.

“As with any scientific research, we have to establish a baseline in order to observe change,” says Wieman. The quantitative data being collected this fall, coupled with focus groups carried out last spring with first- and fourth-year science students, will paint a holistic picture of what is important to students.

A key factor identified by the focus groups is the instructor’s attitude towards student learning. “Namely, students value teachers who show an active interest in their learning and who make the connection between what’s being taught to its real-world applications,” says Wieman. “This leads to better engagement and in turn leads to better learning outcomes.”

Brendon Goodmurphy, Vice-President of Academic and University Affairs at the Alma Mater Society, echoes the finding. “What it comes down to is the instructor’s dedication to a student’s academic experience,” he says. “We want them to clearly communicate the goals of the course, what material we must learn, and that they are willing to do whatever it takes to support us.”

“I think a lot of profs worry that students are looking for someone funny who delivers amazing speeches, but it’s not about that,” says Goodmurphy.

The Science Centre for Learning and Teaching (Skylight), established by the Dean Office seven years ago to provide teaching resources and support, takes a similar approach to the CWSEI, but focuses on one course at a time, usually in the form of pedagogical research projects. Leah Macfadyen, a research associate with Skylight and a member of the CWSEI Working Group, says CWSEI’s scale and infusion of funding is what’s needed to take these improvements to the next level.


“Simply by its presence, the CWSEI has brought the notion of teaching science as a form of science to the fore,” says Macfadyen. “And it appeals to the scientists’ instincts.”

There has been a lot of “buzz” among students surrounding CWSEI, according to Goodmurphy. While students are eager to see “tangible results,” he says they understand that change needs time.

“The most definite impact is the commitment to teaching and learning that CWSEI makes to UBC and the greater community,” he says. “There will be growing pains but it’s bold and brave and it’s worthy trying, especially for a leading-edge institute like UBC.”

“This is what we need to be doing to be a leader in education.”

For more information on the CWSEI and departmental updates, visit [www.cwsei.ubc.ca](http://www.cwsei.ubc.ca).



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## IN THE NEWS

Highlights of UBC media coverage in October 2007. COMPILED BY BASIL WAUGH

### UBC Student Behind Burma Facebook Group

Alex Bookbinder, a first-year arts student at UBC, has learnt more about international relations, politics and media in the past weeks than many people will learn in a lifetime.

Bookbinder is the Canadian student responsible for creating the Facebook group *Support the Monks' Protest in Burma* that has helped focus public support and media attention on the crackdown by the Burmese military regime on peaceful demonstrations.

Bookbinder, 19, has become somewhat of an unofficial figurehead for Canadian support of Burma. He has been flown to Ottawa, interviewed by *BBC*, *CBC*, *Global TV* and the *Toronto Star* and has been approached by *CNN*.

“People needed a way to express their support,” Bookbinder said of the 340,000-member Facebook group. “Many people wanted to take action and some were seeking to share information, even people from Rangoon were posting news prior to the Internet shutdown.”

### UBC Alum Pitches Colorado Rockies to World Series

Former UBC pitcher Jeff Francis, 26, has helped to lead the Colorado Rockies to the Major League Baseball's World Series.

Francis, who majored in physics and astronomy at UBC, has featured prominently in international media coverage of the playoffs. According to *New York Times'* sports columnist Ben Shpigel, the third-year pro is “the best pitcher on what is right now the best team in baseball.”

Terry McKaig, Francis' coach at UBC, said in an interview with the *Globe and Mail*: “Jeff has shown Canadian kids that you can come to UBC, play baseball here, get your Canadian education and if you're good



In October, former T-Bird Jeff Francis became the first Canadian to pitch in Game 1 of the World Series in 32 years.

enough to play pro ball it's not going to hurt you.”

By UBC Reports' print deadline, the Rockies had won 21 of their last 22 games, sweeping the Arizona Diamondbacks to win their first-ever National League championship. The wild-card club began the best-of-seven-game Fall Classic against the Boston Red Sox on Oct. 24.

### Pollution Killing Up To 25,000 Canadians Annually: Study

Pollution could be causing up to 25,000 premature deaths in Canada each year and burdening the health care system with up to \$9.1-billion annually in extra costs, according to new research by UBC Trudeau Scholar David Boyd.

News media across Canada,

including *Globe and Mail*, *National Post*, *CTV* and *CBC*, reported Boyd's study, which is the first to measure the largely preventable health toll caused by the widespread exposure to air pollution, hazardous chemicals and pesticides in Canada.

“In our cultural DNA, we think of Canada as a pristine nation, but this is at odds with our track record on the environment,” said Boyd, a PhD candidate at UBC's Institute for Resources, the Environment and Sustainability.

Boyd identified more than 50 different chemical ingredients present in pesticides alone that are banned in other countries. He recommends that Canada develop a comprehensive national environmental strategy. **R**

## UBC REPORTS

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# The Lost Forests of Afghanistan

*UBC profs use science and sociology to help restore world's forests*

BY LORRAINE CHAN

**This month**, Assoc. Prof. Gary Bull from UBC's Faculty of Forestry is spending time in Kabul training an Afghan field crew. He is joining forces with the New-York based Wildlife Conservation Society (WCS) in a United States Agency for International Development (USAID) funded project. Bull and UBC Forestry PhD student KiJoo Han are leading an effort to help protect and restore Afghanistan's remaining forest in the north east province of Nuristan.

Over the past 20 years, in some provinces, Afghani farmers have participated in deforestation rates of up to 70 per cent. Currently, the country has 1.3 per cent forest cover, one of the lowest in the world.

"If you're poor enough, you'll cut down and burn every last tree," Bull says. "Some of Afghanistan's national parks are largely denuded and people are going after the remaining scraps for fuel."

Bull's job will be to deploy Afghani enumerators to conduct 350 surveys among Nuristan villagers. Bordering Pakistan, Nuristan is a remote and rugged region that has seen much conflict, and more recently insurgent ambushes.

While an outsider would face great danger, Bull says locals can do the job in greater safety. The enumerators will gather data on forest uses, household behaviour, income and education levels, taking into account the region's caste system in which the population is divided into livestock grazers, wood carvers and the landless. Bull says each caste would need a different financial incentive structure to help both restore and protect forests.

"If you don't understand what motivates people, you'll never help them rebuild," says Bull, noting that environmental protocols and standards to combat climate change can severely impact the poor. About 75 per cent of Afghan people live in rural areas.

"We examine the appropriate public policy responses because if you ignore the



*You can't save the trees unless you understand the people, says Forestry Assoc. Prof. Gary Bull.*

people, especially the rural populations, it'll end up in disaster," says Bull, who specializes in forestry, economics and policy.

To avoid these pitfalls, UBC has pioneered a multi-faceted approach to sustainable forest management. The Faculty of Forestry

assembles interdisciplinary teams that encompass sociologists, foresters, biologists, engineers, chemists and biometricians.

The Faculty of Forestry is providing its expertise to China, where the government is planting 13 million hectares of new forest

– an area about half the size of B.C.'s productive forests – and to Mozambique, where non-profit organizations are investing in agro-forestry, which pays farmers to plant trees between their crops. **R**

## Funding Reforestation Through Carbon Offsetting

**Pay people** to plant trees rather than destroy forests, and fund these alternatives through carbon offsetting programs.

This two-pronged attack will help alleviate poverty and sustain the world's forests," says Gary Bull, an associate professor at the Faculty of Forestry.

Bull says that UBC has produced some of the world's most sophisticated tools to evaluate ecosystems and the services they provide, which include carbon storage, biodiversity and water.

"UBC leads because we've been doing this kind of modeling over the past 20 years, given that Canada's ecosystems are quite complex," says Bull.

For example, Forestry Profs. John Nelson and Hamish Kimmins have developed impressive large- and small-scale modeling tools that can track nutrients and carbon within dynamic ecosystems and landscapes. These models compile data from ecosystem processes and human activity that influence carbon storage in everything from the soil and fallen leaves to stems and branches.

In fact, Bull says credible scientific data will make the entire process of carbon offsetting, more accountable and attractive.

"If you have reliable systems to measure, manage and monitor carbon, you increase the effectiveness of how you disperse money to reach your goals.

"As well, you can hold the sellers to account for what they promised to deliver in terms of carbon offsetting." **R**

## UBC Climate Change Experts Help Create First Carbon Neutral Airline

BY BASIL WAUGH

**Offsetters Climate Neutral Society**, founded by two UBC professors, is helping the airline industry to reduce its impact on the environment through carbon offsets, a method for mitigating greenhouse gas (GHG) emissions.

Harbour Air, the world's largest all-seaplane airline, recently partnered with Offsetters to become the first carbon neutral air carrier in North America.

To mitigate its environmental impact, on Oct. 1, 2007, Harbour Air introduced a surcharge on all flight services. Offsetters will invest the funds into renewable energy and energy efficiency

projects on the airline's behalf.

Founded by Hadi Dowlatabadi, a Canada Research Chair in UBC's Institute for Resources, Environment and Sustainability, and James Tansey of UBC's Centre for Applied Ethics and Sauder School of Business, Offsetters has been helping individuals and organizations to reduce their carbon footprint since 2005.

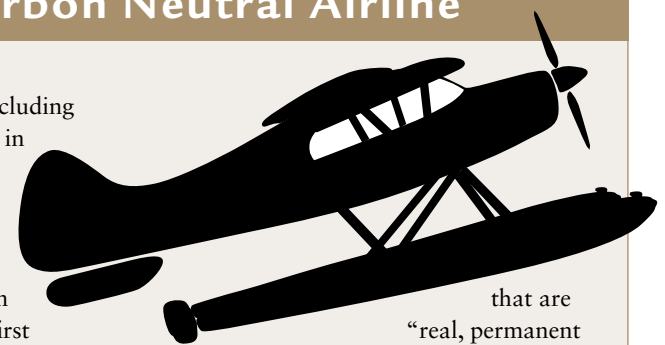
In addition to the Harbour Air initiative, Offsetters has partnerships with financial institutions, utilities, apparel companies, travel agencies and other airlines such as Westjet, that enable individuals and companies to calculate, reduce and mitigate the environmental impact of their activities.

Offsetters has funded a number of

international green projects, including efficient lighting in households in South Africa, biogas digesters to save a tiger habitat in India, and efficient cooking stoves in Honduras and Madagascar.

The non-profit company is in the process of establishing its first heat recovery projects in North America. According to Tansey, ground-source heat pump systems and greywater heat recovery technologies are a cost-effective means to achieve dramatic reductions in building and district level GHG emissions.

All Offsetters-funded projects are monitored by a third party to confirm they are producing emissions reductions



that are "real, permanent and additional – meaning that they wouldn't have taken place without Offsetters' involvement," says Tansey. "So our users know their contributions result in tangible climate benefits."

For more information, visit [www.offsetters.ca](http://www.offsetters.ca). **R**

### WINDS OF CHANGE *continued from page 1*

asked to learn some content on their own but expected to use it actively in class activities.

Stull says he enjoys immensely his new role as a thought provoker rather than simply someone who delivers content. "Our students are sophisticated, bright and caring," says Stull. "It's incredible to see a 250-student lecture hall filled with excitement about what I'm teaching.

"The traditional lecturing method is efficient for covering a large amount of course material, if little else. Now I'm teaching efficiently *and* effectively," says

Stull.

"By working with professors to optimize their courses, we change the dynamics of a classroom from a 'hand-out' of knowledge to intelligent, thoughtful discourse," Jones says. "In other words, instead of passively hearing about science, they are *doing* science.

"In Roland's case, he put himself out on a limb, took the risk and is now very excited about the results," says Jones. "When the transformation is so visible and palpable in the classroom, learning becomes exciting for students, fun for the

teachers, and more effective."

Jones and Gilley are now helping Stull design assessment questions that require students to evaluate scientific information, reason and arrive at logical conclusions. "This makes assessment an extension of the active learning process," says Gilley, "and enables student evaluation to more accurately reflect the types of learning they have done during the term."

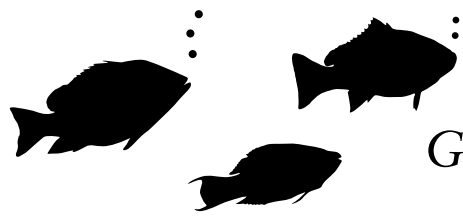
Stull, Jones and Gilley are also evaluating their own efforts by devising ways to measure how students respond to different teaching and learning methods

– and adjusting their strategy accordingly as the semester goes on.

The "evidence-based" approach is appealing to them as scientists.

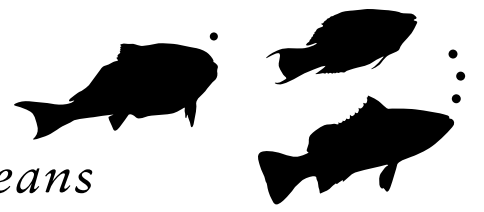
"We're tackling teaching as a science," says Jones. "And that means seeing and recognizing the challenges, looking for precedents and potential solutions, then measuring and assessing how useful the solutions are.

"This involves pushing the pedagogic envelope, and such innovation is exciting and rewarding." **R**



# Fishing for Trouble

## Governments subsidize plundering of oceans



BY LORRAINE CHAN

### Can the World Trade

**Organization** (WTO) put a stop to harmful fishing practices largely driven by government subsidies that top US\$35 billion each year?

That's the question UBC Fisheries Centre researcher Rashid Sumaila has put before the WTO. The 151-member organization is hammering out trade rules during its current Doha Trade Round of Negotiations, and by early 2008 will decide whether it will issue a multilateral ban on subsidies that drive overfishing.

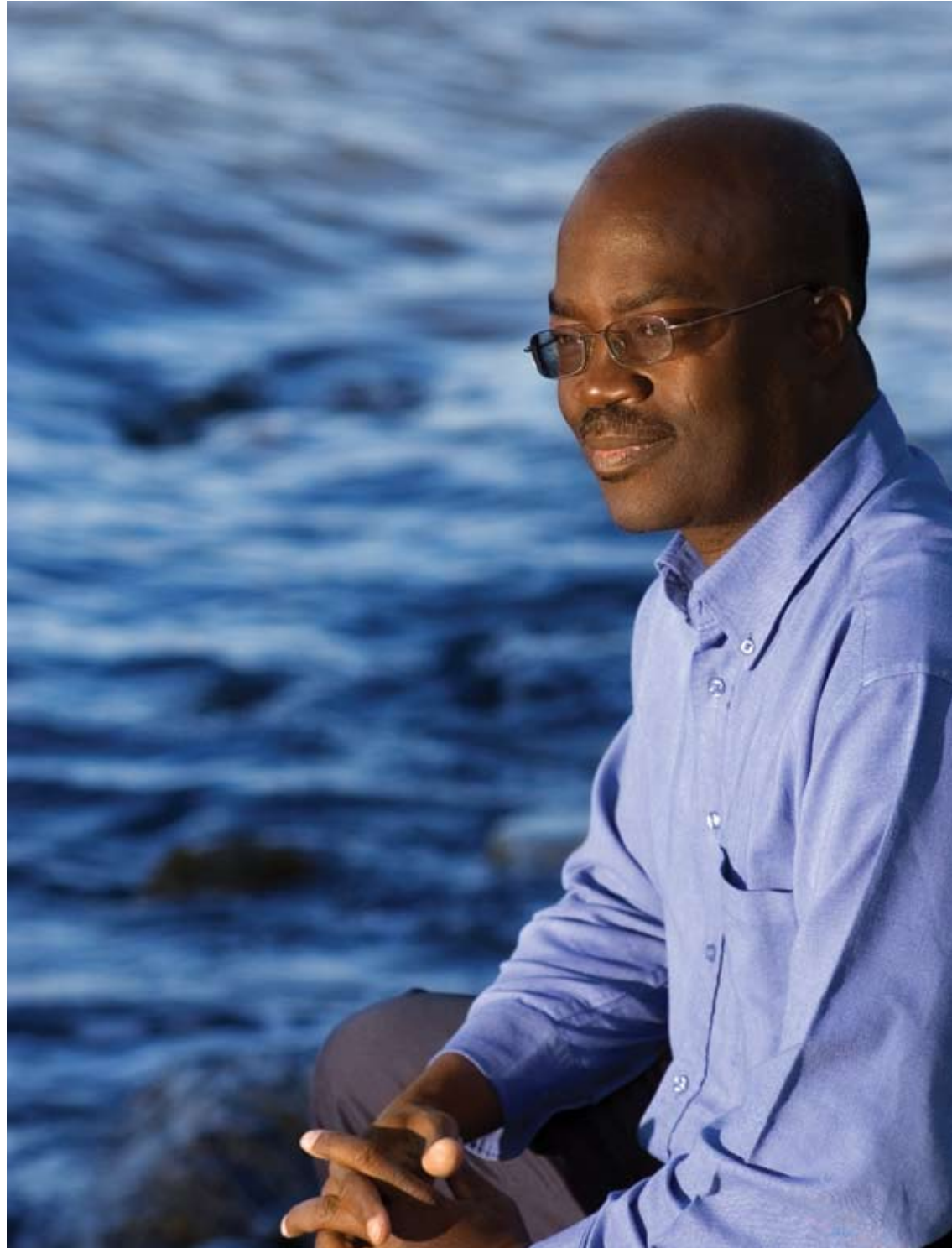
"The WTO is the only global institution that has the mandate to enforce its agreements and therefore could contribute to healthy global fisheries," says Assoc. Prof. Sumaila.

He adds that perhaps the WTO can accomplish what the United Nations failed to do. Last fall, Sumaila presented a study that he and Prof. Daniel Pauly co-authored, calling for a moratorium on global subsidies of US\$152 million which "strip-mine" vulnerable fishery resources and ocean ecosystems.

However, last November, the UN General Assembly defeated a proposal to ban environmentally harmful deep-sea bottom-trawl fishing.

Putting forward another economic argument for sustainable fisheries, the most recent study by Sumaila and UBC researchers shows that between US\$20 and US\$26 billion annually contribute directly to overfishing.

Governments invest money to keep their fishing fleets competitive and as a result there are more than twice the number of boats than oceans can sustainably support. Currently, global fisheries catch between 80-90,000 tonnes of fish each



Fisheries economist Rashid Sumaila categorizes subsidies as "the good, the bad and the ugly."

year, earning total gross revenues of about \$80 billion.

"The resource base is now too small for all fishing boats to make a profit, with too many stocks being fully or overexploited, says Sumaila, Director of the Fisheries

Economics Research Unit.

He says ecologists predict that world fisheries and seafood populations will collapse by 2048 if current trends in overfishing and habitat destruction continue. About one-fifth of the world's

population depends on fish as its main source of animal protein.

This spring in Geneva, Sumaila presented these findings to WTO Director General Pascal Lamy and delegations that included Australia, Japan, China, Canada,

the European Union, the U.S. and Pakistan.

"We've categorized government subsidies into the good, the bad and the ugly."

The study argues that while good subsidies help to monitor and rebuild fish stocks, bad subsidies don't make ecological or business sense. Governments increase the capacity of commercial fisheries by giving them money to buy new boats or via fuel subsidies that support destructive practices such as bottom trawling.

"Ugly" subsidies are less clear and could lead to a decline or increase in fishing effort depending on the program is designed and implemented. For example, a buy-back program to reduce the number of fishing vessels could backfire.

"If it's not done well, fishers could sell one boat and simply use that money to enhance the capacity of a second boat," explains Sumaila, "or increase their fleet if they find out beforehand there will be a buy-back program sometime in the future."

Sumaila estimates that Canada's annual "good," "bad," and "ugly" subsidies total US\$203, \$163 and \$267 million, respectively. He adds that so far, Canada appears to support a WTO ban on harmful subsidies.

He says that subsidies are a contentious issue because fish are a commonly held resource, swimming freely across human made borders. Thus, no nation wants to act unilaterally.

"A country doesn't want to give advantage to competing nations, thinking, 'The fish I leave, you catch.' And this is why we need multilateral action."

To date, two coalitions have emerged over the question of banning bad subsidies. Some countries such as the U.S. and New Zealand advocate a "top down" approach that essentially eliminates all government subsidies.

Others including the EU, Japan, Korea and Taiwan favour a "bottom up" approach that bans only specific subsidies such as money for modifying or purchasing boats. This camp wants to continue supporting vessel buyback programs and access agreements that richer nations pay developing countries to fish in their waters. ■

THE UNIVERSITY OF  BRITISH COLUMBIA

### FACULTY OF ARTS UBC KILLAM TEACHING PRIZES

Once again the University is recognizing excellence in teaching through the awarding of prizes to faculty members. Up to six (6) prize winners will be selected in the Faculty of Arts for 2008.

**Eligibility:** Eligibility is open to faculty who have three or more years of teaching at UBC. The three years include 2007 – 2008.

**Criteria:** The awards will recognize distinguished teaching at all levels; introductory, advanced, graduate courses, graduate supervision, and any combination of levels.

**Nomination Process:** Members of faculty, students, or alumni may suggest candidates to the Head of the Department, the Director of the School, or Chair of the Program in which the nominee teaches. These suggestions should be in writing and signed by one or more students, alumni or faculty, and they should include a very brief statement of the basis for the nomination. You may write a letter of nomination or pick up a form from the Office of the Dean, Faculty of Arts in Buchanan B130.

**Deadline:** 4:00 p.m. on January 15, 2008. Submit nominations to the Department, School or Program Office in which the nominee teaches.

Winners will be announced in the Spring, and they will be identified during Spring convocation in May.

For further information about these awards contact either your Department, School or Program office, or Dr. Dominic McIver Lopes, Associate Dean of Arts at (604) 822-6703.



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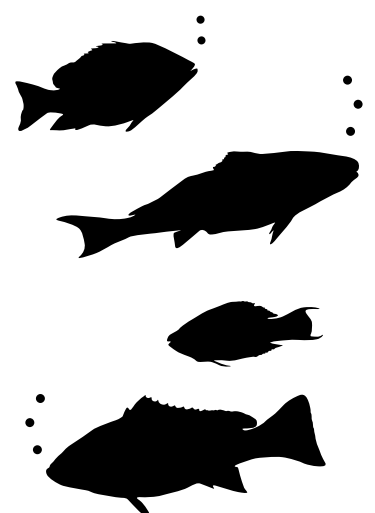
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# Let Your Fingers Do the Singing



PHOTO: MARTIN DEE

Prof. Bob Pritchard and Prof. Sidney Fels have created one of the few systems in the world that translates hand gestures to digitally synthesized speech and song.

**BY JULIE-ANN BACKHOUSE**

**Over 200 years ago** Wolfgang von Kempelen created a manually operated speech machine. It produced spoken words by pumping a bellows and shaping air through tubes into vowels and consonants. His 1770's talking device is considered the start of speech synthesis and inspired a line of successors curious about generating speech via artificial vocal tracts.

Now UBC researchers have created a new system that translates hand gestures to speech using a computerized glove. It is one of the few gesture-controlled systems in the world to create

digitally synthesized speech and song, with the wave of your hands.

The project, *Gesturally Realized Audio, Speech and Song Performance* (GRASSP), is lead by composer and music professor Bob Pritchard, of the UBC School of Music, and investigates how sound can be shaped and how speech or song can be produced using hand gestures and technology.

"As an artist I'm interested in fresh ways of expressing human emotion and how we understand the human condition," said Pritchard. "This gesture-controlled system is not unlike conducting an orchestra, adding elements and moving sound around."

Collaborating with Pritchard

is UBC Prof. Sidney Fels, Director of the Media and Graphics Interdisciplinary Centre (MAGIC). Fels is a UBC professor of computer and electrical engineering who first developed the gesture-controlled speech system called Glove-Talk.

With GRASSP musicians or performers use sensitized gloves to control and create speech, song, and electro-acoustic sounds via software that models the vocal tract. They can also control the processing of multi-channel sound from other acoustical and digital instruments through specific hand movements.

This gesture-based system gives musicians or performers

access to an unlimited range of sounds and words – not available with traditional text-to-speech synthesizers – in addition to facilitating greater pitch variation and integrating visuals within vocal expression.

It takes about 100 hours to learn to use the gloves and performers are then able to move all 10 fingers and a foot pedal to produce vowels, consonants, vocal sounds, pitch and volume.

"The tipping point comes when the vocalist, or musician, starts to get really expressive with it," notes Fels. "At that point it becomes integrated into the person, part of the performance, and is no longer only technology."

"A gesture-based system expands options for performers, allowing them to move sound around the stage, or to develop the performance for a specific site, or to activate moving and still images," says Pritchard. It is anticipated that this gesture-controlled system will soon include features to activate synthetic faces, kinetic sculptures, or moving robots, for interactive performances.

The researchers are currently refining GRASSP on many fronts: making the system portable; adding adaptive features to allow for unique expressive styles; working with a textile artist from the Emily Carr School of

*continued on page 7*

## Car Sharing Comes to UBC Students

*Service handy for groceries, daytrips... and dating*

**BY BASIL WAUGH**

**Steve Jones remembers the day he snapped.**

He was traveling to the outskirts of Vancouver, like so many other days, to purchase materials for engineering projects and transport them back to UBC.

"I was standing in the rain at a bus stop in Burnaby," says Jones, a fifth-year UBC engineering student. "I had these heavy 10-foot metal bars under one arm and sheets of fibreglass under the other."

"When the bus came I could hardly get on with all that stuff," Jones says. "It was ridiculous. I thought: 'There has to be a better way.'"

That's when Jones began taking advantage of car-sharing at UBC. He joined Zipcars, a car-sharing company that, since August 2007, has partnered with UBC to make a Toyota Yaris and Matrix available to students who sign up as members.

Now when the bus won't do,



PHOTO: MARTIN DEE

UBC's new car-sharing program puts UBC student Steve Jones behind the wheel of 126 vehicles around Vancouver.

Jones simply books one of UBC's two Zipcars online or using his cell phone. Then he walks

to Totem Park or Walter Gage student residence to pick up his car from its designated parking

spot, uses his key-like "Zipcard" and drives away.

Jones' \$30 annual membership

fee gives him a license to drive not only UBC's two Zipcars, but also the company's worldwide fleet, which includes 126 automobiles in Vancouver. He pays \$9.75 per hour for the time he uses the cars – up to \$69 per day – which includes gas, insurance, maintenance and reserved parking.

Cost and convenience makes car-sharing a good alternative to renting or owning a vehicle, says Jones. "It is cheaper than taxis or owning or renting a car, and it's a lot less work," he says. "It's nice not to worry about maintenance, things like brake jobs or tune ups."

Jones says that he and friends pile into a Zipcar for daytrips and to shop for groceries or big ticket items at Ikea and Home Depot. Zipcars also come in handy on the dating scene, Jones adds. "Let's just say renting a car for a date would be pretty weird. Somehow it's not so weird if you're car-sharing."

Car-sharing is part of an *continued on page 6*

PETER WALL INSTITUTE FOR ADVANCED STUDIES

## Application Deadlines

JANUARY 25, 2008

### 2008–2009 Early Career Scholars Program Assistant and Associate Professor Competitions

The Early Career Scholars program is oriented towards full-time UBC faculty at relatively early stages of their careers. The objective for the program is to bring outstanding early-career researchers together to share ideas and research approaches. Assistant Professors should be untenured and within two years of their initial appointment at UBC. **As of May 2007, Associate Professors should be within three (previously it was two) years of tenure having been awarded.** Each participant will receive an infrastructure budget of \$6,000 and has access to a Project Fund of up to \$1,000.

MARCH 1, 2008

### Exploratory Workshop Grant

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# A Crime Called Genocide

UBC Okanagan scholar seeks knowledge from the heart of darkness

BY BUD MORTENSON

Near a small town in Bosnia this summer, Adam Jones watched in the rain as a mass grave was exhumed, the remains of dozens of nameless people brought forth from the sodden earth. It was a solemn reminder of a terrible truth: "Genocide is woven inextricably into the fabric of modern history," he says.

"We're coming to a greater understanding of just how pervasive this phenomenon has been throughout history," says Jones, an Assoc. Prof. of Political Science who joined UBC Okanagan this year from Yale University.

Until 1943, it was called the "crime without a name." Today, genocide is a label judiciously applied to atrocities around the globe, as experts like Jones build new understanding about what motivates one group to seek the extermination of another.

"In studying genocide, I've come to appreciate how many societies have been vulnerable to it. When we talk about genocidal

prevention, we're coming to terms with the legacy of the past," he says. "Hopefully, that makes us more aware of the destructive processes when they arise today."

Jones has traveled the world to learn more about the places and people involved in genocide. From Bolivia to Bosnia, he has seen first-hand the horrific damage inflicted by one group against another.

The author of a new textbook, *Genocide: A Comprehensive Introduction* ([www.genocidetext.net](http://www.genocidetext.net)), Jones was drawn to UBC's Okanagan campus by an interdisciplinary approach to research, and an opportunity to delve ever deeper into what he calls "the heart of darkness" – genocide through history and around the world.

He's keenly interested in the role of gender in genocide. Examples of gender-selective atrocities – "gendercide" – are found in the witch hunts of Europe, colonial North America, and even modern-day Africa. Gendercide also permeates Africa's long history of conflict,

where invading forces cull battle-aged males from the population, thwarting any resistance. In one historical case, that of Shaka Zulu's imperial armies in the early 19th century, the oppressing army did the opposite, killing all the women and children, forcing the men into service as soldiers.

"The role of gender in atrocities is under-explored," Jones says. "I'm now looking at women and men as victims, perpetrators and bystanders in genocide. Understanding the role of gender helps us better understand the dynamics of genocide."

Jones has developed tools to expose and record genocide – so the crime, the perpetrators, and their victims are not nameless. Gendercide Watch, a non-profit organization he founded under the auspices of the Gender Issues Education Foundation, is one of these tools: collecting and publishing online a wide range of gendercide case studies, from Armenia during World War One to Rwanda in 1994, and more recent world media reports on

*continued on page 7*

### CAR SHARING *continued from page 5*

overall strategy to make UBC one of the world's greenest campuses, says Carole Jolly, Director of the UBC TREK program, which works to provide sustainable transportation options at UBC, including the U-Pass, a universal bus pass initiative that has increased transit ridership by 40 per cent since it was introduced in 2003.

"On average, shared cars replace 20 privately owned cars," says Jolly. "So by reducing the demand for parking, they leave more room for the important stuff such as

institutional buildings and greenspace."

Although the minimum age for Zipcar membership is usually 21, Jolly's office negotiated a reduction that makes UBC the only university in Canada where students as young as 18 can become members. "We wanted to make the Zipcars accessible to as many students as


possible," she says.

While Zipcar is the newest car-sharing initiative at UBC, it is not the only one. Six other shared cars are available to students, staff, faculty and campus residents through a partnership between UBC and the Cooperative Auto Network (CAN) that began in 1998.

UBC is also preparing to launch an innovative car-sharing pilot project with CAN for university departments, Jolly says. It is designed as an environmentally friendly, money-saving alternative to purchasing more vehicles.

UBC's Shared Vehicle Program (SVP) will be an opportunity for vehicle-owning administrative units to defray costs by maximizing the use of existing vehicles. It will provide departments with access to a variety of vehicles, whether or not they own one, at a reasonable rate.

"To my knowledge UBC is the only university in North America to take car-sharing this far," says Tanya Paz of CAN, which will manage the car-booking software and billing for SVP. "To date, only companies and municipalities have tried to maximize their fleets like this."

For more info on sustainable transportation options at UBC, visit [www.trek.ubc.ca](http://www.trek.ubc.ca). For more information car-sharing, visit [www.zipcar.com](http://www.zipcar.com) and [www.cooperativeauto.net](http://www.cooperativeauto.net). 

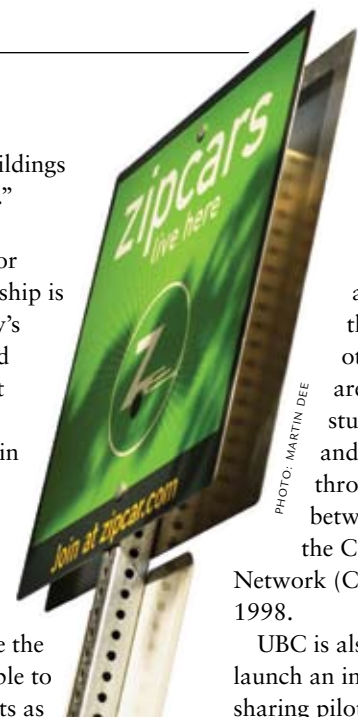


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Grieving women pass by the stone marker at the Potocari memorial site for victims of the 1995 Srebrenica massacre, in which 8,000 Bosnian Muslim men and boys were massacred by Serb forces.

gendercide. He has also published a comprehensive look at media

coverage and human-rights reports about gender-selective

killings in Darfur, Sudan.

Jones takes some comfort in knowing that against considerable cultural odds, great social victories have been won in the past – over slavery and in advancing women’s rights, for example. “Maybe there is a chance to engineer similar transformations when it comes to genocide,” he says.

Two years ago, his explorations took him to Potosí, Bolivia, and the Cerro Rico mountain, the richest silver mine in history. “For two centuries, this mine fueled the epic excess of the Spanish monarchs,” Jones writes on his genocidetext.net website. “Still today, it is excavated – mostly for other minerals – by a small army of poverty-stricken miners whom I had the honour of joining for a couple of hours deep in the humid bowels of the mountain.”

During the colonial period, at least one million forced labourers, and perhaps as many as eight million – mostly Aymara Indians, but including some African slaves – died in the mines of Cerro Rico.

“There are grounds for believing that the Cerro Rico is the world’s greatest single tomb,” says Jones. “Potosí reminds us that our journey into genocide is only beginning – and with it, our reckoning of our past and present barbarisms, and our potential to banish the scourge for good.”

PHOTO: ADAM JONES

SINGING FINGERS continued from page 5



Prof. Bob Pritchard

How does it work?

GRASSP uses several input devices including a Cyberglove from Immersion Corp. to shape vowel and some consonant sounds, a self made contact-sensitive glove to control stop sounds such as B, D and G, a Polhemus Fastrak™ to control vowel sounds and a foot pedal to control volume.

- [www.magic.ubc.ca/pmwiki.php](http://www.magic.ubc.ca/pmwiki.php)
- [www.music.ubc.ca](http://www.music.ubc.ca)
- [www.icics.ubc.ca](http://www.icics.ubc.ca)
- <http://hct.ece.ubc.ca/>
- [www.nime.org](http://www.nime.org)

Interactive links:

- » Fels original research with graduate student singing alphabet <http://hct.ece.ubc.ca/research/glovetalk2/index.html> (click on alphabet video)
- » Traditional text-to-speech synthesis <http://cepstral.com/> (type in sentences and hear them reproduced)

Art + Design to address aesthetic elements of the gloves; and collaborating with UBC linguistics professor Eric Vatikiotis-Bateson to analyze voice production.

The research team has plans to expand the system to facial gestures, allowing performers to produce digitized sound modeling throat and mouth movements.

“Music is about shaping sound, forming a continuous sonic wave, and science has tried to artificially reproduce sound for a long time – it’s the basis of modern communication,” says Fels. “This takes it a little further.”

Both Pritchard and Fels are members of the UBC Media and Graphics Interdisciplinary Centre (MAGIC) and the UBC Institute for Computing, Information & Cognitive Systems (ICICS).

This project received funding from Social Sciences and Humanities Research Council of Canada (SSHRC) and has recently secured joint funding from the Natural Sciences and Engineering Research Council (NSERC) and the Canada Council for the Arts.



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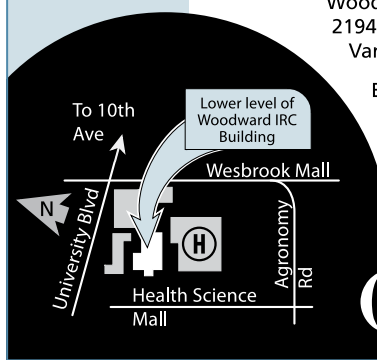
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