

# UBC REPORTS

2 UBC in the News

3 Student Club Award

5 Critical Thinking

7 The Simple Worm

9 Tsunami One Year Later



PHOTO: DARIN DUECK

## UBC Archivist Leads World Effort to Preserve Digital Records

BY LORRAINE CHAN

Now that Grandma has learned to upload her digital photos and Dad has agreed to file his tax returns online,

to develop a national U.S. standard for record keeping.

"I woke up one morning and said to myself,

**"Now that we can generate and keep the perfect digital record, how do we preserve it in the long term if technology is changing so fast that three years later we can no longer read it?"**

we're all collectively wondering how cyber records will stand the test of time.

With the right start, all electronic records can be preserved, says Luciana Duranti, professor and chair of archival studies at the School of Library, Archival and Information Studies (SLAIS).

Duranti is leading the world's largest effort to devise clear methods and guidelines for preserving digital records that remain accurate, authentic and accessible decades after their creation.

As Director of the InterPARES (International Research on Permanent Authentic Records in Electronic Systems) Project, Duranti has set up an international network of scholars from 20 countries, which include China, Australia, Netherlands, Italy, Botswana, the U.S. and U.K. Based at SLAIS, InterPARES confers with scientists and artists, archival experts, government and private industry.

Duranti conceived this brainchild in 1998 after she assisted the U.S. Pentagon

"now that we can generate and keep the perfect digital record, how do we preserve it in the long term if technology is changing so fast that three years later we can no longer read it?"

Duranti asked the right question. Under her guidance, the InterPARES Project has twice won support from the Social Sciences and Humanities Research Council of Canada's Major Collaborative Research Initiatives (SSHRC-MCRI) and the National Historical Publications and Records Commission. Other funders include the National Science Foundation of the United States, and China, a country that has already adopted InterPARES authenticity requirements as law.

One of the basic conundrums we face, says Duranti, is that it's impossible to preserve digital material or electronic transactions.

"The only thing we can do is maintain our capacity of continually reproducing digital records and re-creating digital works in such a way that we can prove they're authentic copies."

*continued on page 3*

*Luciana Duranti heads the world's largest project to establish clear guidelines for preserving electronic records.*

## Africa's Top Health Challenges

Nursing students learn on front lines. BY HILARY THOMSON

Impromptu ukulele concerts and munching mangoes by moonlight may seem like scenes from a carefree holiday. In fact, they represent the work experiences of UBC School of Nursing students who have created clinical practicums in Africa.

As part of a fourth-year clinical course called Exploring Avenues of Nursing Practice, Nash Dhalla and Sarah Rohde have just headed to South Africa to spend six weeks at urban hospitals and rural clinics.

The clinical experiences can focus on various avenues of practice such as mental health and pain management. Dhalla and Rohde have organized a clinical rotation that explores prevention and care for people living with HIV/AIDS in

the Eastern Cape, one of South Africa's poorest provinces, where more than 20 per cent of the population has HIV.

"The huge incidence of the disease can seem overwhelming, but I believe it's possible to make a difference," says 39-year-old Dhalla, who worked for nine years as a TB outreach worker in Vancouver's Downtown Eastside where many patients also had HIV/AIDS. "My experience has shown me that supportive health care — literally bringing health-care services to people on the street — can work."

Both students have an international perspective.

Dhalla, who was born in Uganda, holds an undergraduate degree in inter-

*continued on page 11*



*UBC nursing grad Chloe Lemire-Elmore treats a young Ghanaian patient as part of fourth-year coursework.*

## The Next Big Thing

*UBC Experts Give us a Peek at Our Future*

For many, New Year's marks a time to reflect on new possibility. In this spirit, UBC Reports asked a range of UBC experts to tell us about the Next Big Thing that will have an impact on our lives. You'll be fascinated by their forecasts. From "conscious" robotic cars, to the discovery of a

planet capable of life, to eliminating the need for blood donors — the novel, the progressive and the previously inconceivable are already on our doorstep, according to these leading minds. Here is a summary of their comments.

To read the full text, visit [www.ubc.ca/nextbigthing](http://www.ubc.ca/nextbigthing)

*continued on page 8*

# Student Club First to Earn Canadian International Education Award

BY BASIL WAUGH

A group of UBC political junkies are attracting the attention of international diplomats with a series of innovative programs that are giving students a voice in global policy discussions,

engagement and global citizenship, I think this shows that our members are really walking the talk."

One of the highlights of IRSA's programming is its Night of a Thousand Dinners, which is the

**"By reaching out to countries — including the U.S., which has still not signed the Ottawa landmine treaty — we are showing how students can keep an issue on government agendas."**

and extending learning beyond the classroom.

UBC's 235-member International Relations Student Association (IRSA) is engaging students, government officials, and international policy experts in cutting-edge negotiation simulations, foreign policy discussions and fundraising events.

This fall, IRSA became the first student-run organization to be recognized as most outstanding university program in international education by the Canadian Bureau for International Education (CBIE), which represents 200 educational institutions around Canada. The award recognizes IRSA's leadership in promoting international learning, and cites it as a model of best practices.

"To be recognized as most outstanding program in Canada is an enormous honour, especially as a student organization," says IRSA president and fourth-year international relations student Fernando de la Mora. "When it comes to civic

largest student-organized fundraiser in the world for landmine awareness. This year the group presented the dinner at Vancouver's Westin Bayshore Resort and Marina in partnership with Mines Action Canada and the governments of Canada, U.S., Britain, and Costa Rica.

"By reaching out to countries — including the U.S., which has still not signed the Ottawa landmine treaty — we are showing how students can keep an issue on government agendas," says de la Mora. "It used to be considered unthinkable that innocent lives would stop being lost to landmines, but with hard work, I believe that we'll see it in our lifetime."

IRSA has also been particularly innovative in model negotiations. It has been voted best delegation five years running at the National Model NATO in Washington, DC, competing against major military institutions such as West Point Academy. It also hosts the largest Model United



PHOTO: MARTIN DEE

*Fernando de la Mora and the International Relations Students Association are giving UBC students a voice in global policy discussions.*

Nations in Western Canada, and, in January 2005, worked closely with the Canadian Department of Foreign Affairs to perform the first and only simulation of the then upcoming Human Security Network Ministerial Meeting, which negotiates policy in advance of the United Nations General Assembly.

"Working with policy-makers is enriching our educational experience exponentially," says de la Mora. "And to our surprise, the diplomatic community has been very interested in what students have to say on global issues."

Andrew Caddell, senior policy advisor, Foreign Affairs Canada, says

that IRSA's negotiation simulations are a helpful resource in preparing governments and external organizations for negotiations.

"IRSA's models are very close to the actual experience due to their attention to detail and research. Being able to see how negotiations unfold in the academic setting is tremendously valuable to me as an observer."

On the strength of this simulation, Foreign Affairs invited IRSA members to attend the actual sitting of the 14-nation Human Security Network Ministerial Meeting in Ottawa.

De la Mora says, "It was incredible to see the similarities between our event and the real thing. Watching

many of the same recommendations that we made move up the policy ladder was really satisfying."

After graduation, de la Mora intends to return to his native Mexico to work as a diplomatic attaché, with the goal of becoming an ambassador. In joining the diplomatic community, he would join, among others, former club president Jeff Reynolds who works at NATO; alumnus Gary Lee who is engaged in softwood lumber negotiations with International Trade Canada, and former vice-president Brendon Miller who is working on the democratization process of Iraq at the Research Triangle Institute in Washington, D.C. □

## Preserving Digital Records

continued from page 1

Further, she adds, these copies must be as accurate and reliable as the originals were for the very short time of their existence.

"See these floppy disks?" asks Duranti. "You can't read these anymore. To preserve something, you have to transfer it to new technology. But then when you change it, you then must ask whether it's still authentic. Does it still have the same identity? How much have we lost of its integrity?"

InterPARES recommends that data should be "mass migrated" or transferred to new technologies every three to five years. However, Duranti says one of the largest problems is that it's impossible to migrate records unless they're created correctly from the start. For example, documents containing a digital signature could cause major hiccups.

"That signature is encrypted information so it would travel on a different computer pathway from the rest of the text," she explains. "To make sure you can migrate that document, the signature must be detached."

She says artists thrive on living in the moment, but unless they think long term, they will lose their creations to time. "When a musician writes a score on paper, we've got it hundreds of years later."

"But if it's an interactive per-



PHOTO: DARIN DUECK

formance between a musical instrument and computer software, the interaction has to be documented and preserved if that music is ever going to be recreated when the computer programs are migrated."

When it comes to science, Duranti believes that accurate, authentic records can mean life or death. "We're talking about medical records, chemical waste records, anything that can affect the health of people or their survival."

She points to live and active digital information as an especially thorny area. While organizations welcome the torrents of digital data as vital lifeblood, methods to preserve these records are in their infancy. Duranti describes

one case study where municipal employees depend on a web-based city map to make decisions that range from garbage pick up to granting new building permits. The map continually reconfigures itself whenever a municipal

department inputs new data.

"But because the data on the map are continually overwritten," she says, "there's no record of them at any given time, nor legal or historical accountability for the city employees' decisions."

InterPARES is currently collaborating with that municipality to develop a prototype for preserving records that are long term, accurate and authentic while providing city workers a fluid stream of active data. □

## Memory of the World

The InterPARES Project is sharing its findings with Caribbean and Latin American scholars through funding from the UNESCO Memory of the World Programme.

In 1992, UNESCO launched the program to improve the protection and accessibility of humanity's documented heritage. The program is supporting close to 70 projects throughout the world, from Armenia to Uzbekistan.

Last fall, InterPARES Director Luciana Duranti hosted at UBC five archival scholars from Argentina, Brazil, Cuba, Mexico and Peru. Naming themselves the CLAUD (Caribbean and Latin America InterPARES Dissemination) team, the participants delved into case studies and sifted through InterPARES research methodology, products and findings.

"UNESCO is concerned about developing countries which are generating and receiving digital materials, but have no knowledge or resources to maintain their archival holdings or library collections," says Duranti.

Rosely Rondinelli, Head, Archival Services at Brazil's Museu do Índio, says she found the face-to-face meetings invaluable. "We've read Luciana's work and studied her InterPARES theories, but here I could clarify many points with her," says Rondinelli.

In February, the CLAUD team will return to UBC for another three weeks to further its knowledge and to adapt InterPARES findings to the requirements of the countries involved. The team will also take part in the InterPARES plenary research workshop, an event that will bring 60 international delegates to Vancouver. The CLAUD team will discuss how they plan to disseminate the InterPARES knowledge over the next year.

Arien Gonzalez Crespo heads the Research Department of Library and Archives at Casa de las Américas. This Cuban institution has the mandate to promote, collect and preserve Latin American history.

"I like Luciana's emphasis of applying traditional archival methods to our contemporary electronic records," says Crespo, "how we can draw a line between the past and present in our ideas and thinking."

Duranti credits this approach for the success of InterPARES and the trust the Project elicits from older cultures.

"Before, with digital preservation, people never looked at what came before to understand the products of new complex technologies. They always treated the digital world as an entirely new world."

"My fundamental hypothesis is there is nothing entirely new. Human records may have changed their support from tablets, to parchment to hard drives, but the principles are the same."

Duranti, who was educated in her native Italy and reads Latin, Greek and Sanskrit, is used to handling records and documents that span millennia. She aims at balancing past and present, high tech and ancient ways in her approach to cyber records. Duranti says that while developing countries may not be so skilled technologically, they boast millennia of knowledge that is extremely useful for the understanding and control of digital material.

"Latin American cultures can refer to Aztec and Mayan records," says Duranti, "China, Egypt, Babylon and Rome all have maintained records through the centuries."

She adds, "And younger cultures like the U.S. have the technology so it all evens out. That's why the InterPARES Project works, everybody is contributing to the solutions." □