

UBC REPORTS

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When the New University Comes to Town

UBC Okanagan opens its doors in September. BY BUD MORTENSON

The creation of a UBC campus in Kelowna is helping define an exciting future for the Okanagan Valley's largest city and for the entire region.

"I don't think there's a better employer we could have sought to help the Okanagan grow in a sustainable manner," says Brad Bennett, Chair of the UBC Board of Governors and an active Okanagan business and community leader.

"This gives us so many value-added propositions, from wage scales and employment opportunities, to commercial spin-offs, medical training, and what we can do in partnership with Kelowna General Hospital and other hospitals in the region — that is all value-added. And it's all clean industry. For the Okanagan, we could not have found better."

Bennett says UBC Okanagan means people pursuing a UBC degree can do so without leaving the region. "To have this calibre of university right in the middle of our region is a tremendous opportunity for people," he says.

"This was definitely the right thing to do — and totally necessary — to help the region meet its potential. And we haven't even begun to tap that potential. The future is extremely bright because of this."

Kelowna marked its centennial this year. With a population nearing 100,000 (contributing to the Central Okanagan's regional population of 150,000), the city has grown and

Welcome to Kelowna: Kelowna Mayor Walter Gray (l) and UBC Okanagan Deputy Vice-Chancellor Barry McBride.



changed a great deal over the past quarter century, says Mayor Walter Gray. But even as he considers the grand scale of what UBC Okanagan's debut means, Gray still recalls an earlier, smaller, standout event.

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UBC OKANAGAN OPENING EVENTS

Thursday, Sept. 1

Okanagan Nation Alliance Welcome Ceremony

Tuesday, Sept. 6

Orientation for Returning Students

Wednesday, Sept. 7

Orientation for First Year Students

Thursday, Sept. 8

11:30 a.m. – 2:30 p.m. Campus Life Showcase

12:30 – 1:30 p.m. Opening Ceremony

3 – 5 p.m. Academic Colloquium with Presidents of Four International Universities

7:30 p.m. Free Music Concert

For details visit: www.ubc.ca/okanagan/opening

Chew on This

Unique robotic jaw will advance speech research. BY BRIAN LIN



UBC Robotics engineer Edgar Flores has built a unique mechanical jaw with potential applications in dentistry, orthodontics and speech research.

Two UBC researchers have developed a unique robotic jaw to help them better understand the role jaw movements play in perceiving and understanding face-to-face conversation.

The model is the first anthropomorphic robotic jaw to be built with six degrees of freedom — roll, pitch, and yaw rotations, as well as verti-

cal, horizontal and lateral translations. It is not only capable of accurately reproducing the complex motions of the human jaw, but has the ability to extend normal motions up to three times, literally creating jaw-dropping effects.

"The extent to which the mechanical jaw can simulate both normal and exaggerated human jaw motions

makes it a great tool in speech therapy and research," says Sid Fels, an associate professor in electrical and computer engineering and director of the UBC Media and Graphics Interdisciplinary Centre (MAGIC).

In fact, Japan's Advanced Telecommunication Research Laboratory (ATR), an independent research and development

corporation, has been closely following the development of the robotic model in order to adopt part of the design for its Infanoid, an upper-torso humanoid the size of a three-year-old child. With expressive eyes, lips and hands, the Infanoid has been helping researchers from around the world learn how young children communicate with others.

"Without an animated jaw, however, the Infanoid lacks some of the most important visual cues in non-verbal communication," says Edgar Flores, a robot engineer who designed and built the robotic jaw from scratch. "This deficiency hampers the child-to-humanoid social interaction."

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Retiring Within 5 Years?



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IN THE NEWS

Highlights of UBC Media Coverage in July 2005. COMPILED BY AI LIN CHOO



PHOTO: MARTIN DEE

UBC's Jaymie Matthews is the mission scientist for MOST, Canada's first space telescope.

NEW TEST FOR PSYCHOPATHIC BOSSES

Many corporate power brokers exhibit the same megalomaniac, manipulative and remorseless tendencies as hard-core criminals, says **Robert Hare**, UBC professor emeritus of psychology.

Hare, who created the Psychopathy Checklist used by law enforcement agencies around the world, has come up with a new personality test that companies can use when hiring, reports *The Dallas Morning News*.

The B-Scan quiz, which Hare developed with New York industrial psychologist Paul Babiak, is coming to market this summer.

KOREA SHOULD BOOST INVESTMENT

UBC professor **Ross King** is calling for more national investment in Korean language and Korean

studies programs that foster Korean specialists.

"I think everybody in Korea is absolutely crazy about learning English," said King, associate professor of Korean Language and Literature, in an interview with *The Korea Times*. "What happens in the process is that they forget who they are. They also forget about their own language. This is a great shame."

The professor, who was visiting Korea to attend seminars on Korean language and Korean studies at Kangnam and Korea University, is dean of Supsoqui Hosu (Lake of the Woods), a Korean immersion village in Minnesota.

ROBOTS IN SPACE

International space explorers gathered at the University of British Columbia in association with the International Space University's summer session program this past month to discuss whether humans are more efficient than robots in exploring the solar system.

"Human exploration is felt by some as too expensive just to do science," said U.S. astronaut Jeffrey Hoffman in an interview with *The Globe and Mail*. "Science is part of exploration but not the whole story. . . . We must remember that human space exploration has assumed an important role in our cultural identity."

LUNG CANCER RISK TIED TO LUNG FUNCTION

Canadian researchers have found an association between reduced lung function and the risk of lung cancer.

"Even relatively small reductions in lung function, which are considered within the normal range, increased the

risk of lung cancer by 30 per cent to 60 per cent, especially among women,"

Dr. D. D. Sin told *Reuters Health*.

Sin and his research team from the University of British Columbia involved 204,990 subjects, of whom 6,185 had died from lung cancer; in their analysis and reviewed existing studies that have looked into the relationship between lung function and the risk of lung cancer.

JAPAN AWARDS PRIZE

UBC's Daniel Pauly has won the International Cosmos Prize, an annual award worth \$430,000, reports the CBC.

The prize awards research that has "achieved excellence and is recognized as contributing to a significant understanding of the relationships among living organisms, the interdependence of life and the global environment, and the common nature integrating these inter-relationships."

The award was presented by the Expo 90 Foundation in Japan.

SPACE TELESCOPE PROBES STARS

Canada's suitcase-sized MOST (Microvariability and Oscillations of Stars) telescope is probing the hidden internal structures of sunlike stars and pinning their ages down to a greater precision than ever before. MOST has also begun to provide information about planets that orbit some of those stars, even hinting at their weather patterns, reports *Science Magazine*.

"Not bad for a space telescope with a mirror the size of a pie plate and a price tag of \$10 million Canadian, eh?" says UBC astronomer **Jaymie Matthews**.

MOST blasted into space June 30, 2003. □

Science Dean John Hepburn has been appointed UBC Vice-President, Research.

Effective October 1, 2005

Science Dean **John Hepburn** succeeds Dr. Indira Samarasekera, who was selected as President of the University of Alberta last November.

"I am delighted that Dr. Hepburn is taking on this very important responsibility," says UBC President Martha Piper. "His international reputation as an outstanding researcher, coupled with his commitment to research at the undergraduate level, makes this an ideal appointment in an area of central importance."

Hepburn, who has been Dean of the Faculty of Science at UBC since 2003, is a keen proponent of interdiscipli-

nary research and conducts research on the interface between physics and chemistry. He studies molecular beams and laser chemistry, working in the area of advanced spectroscopy and imaging research, and was this month elected to the Royal Society of Canada. □



PHOTO: MARTIN DEE

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UBC Okanagan's campus is situated among pines, grasslands and rolling hills in the northern area of Kelowna, B.C.

When the New University Comes to Town

continued from page 1

"I fondly remember 25 years ago, when I was president of the Chamber of Commerce, people said Kelowna had really arrived. The first McDonald's had just been built," he says, laughing.

But times do change, and so does a community's perception of itself. "We are absolutely at a crossroad," says Gray. "UBC Okanagan sets a positive direction for the economic future. It brings a new level of stature and status to the community. It will motivate young people to be educated at home, and then stay at home to develop their careers."

It's a good-news story just waiting to be told.

"As exciting as this is, most people

community.

"The government's decision to separate university and college, with UBC Okanagan and Okanagan College, sets up the next chapter in the evolution of our valley's post-secondary system," Gray says.

"Kelowna is a community that really has arrived. We've come a long way in 25 years."

Others are just as excited about the future as the new UBC Okanagan campus prepares for its inaugural year of classes.

"This is one of the most significant economic events for the Okanagan in at least a decade. It's huge," says Lorraine McGrath, B.C. Interior Regional Vice-President for Prospera

The B.C. Ministry of Advanced Education has estimated that UBC Okanagan's economic impact on the provincial economy will be more than four times that of the former Okanagan University College, which was estimated at \$117 million last year.

Chief Robert Louie leads the Westbank First Nation, a short drive across the Okanagan Lake floating bridge from Kelowna. He looks forward to greater access to education with UBC Okanagan so close to home.

Louie notes that a growing number of people in the First Nation community are seeking graduate degrees, and UBC Okanagan will offer increased

"As exciting as this is, most people still don't realize the incredible opportunity our valley has."

still don't realize the incredible opportunity our valley has," he adds.

UBC Okanagan is situated in Kelowna's north end, near the Kelowna International Airport, on what was a campus of the former Okanagan University College. OUC is now Okanagan College, with four main campuses in Kelowna, Penticton, Vernon and Salmon Arm.

When the announcement of a UBC Okanagan campus was made in March 2004, Gray immediately saw just how important it would be for the region. "I believe it was one of the biggest announcements in recent history, and it's very, very exciting," he says. "As a result of the announcement, we can see a shift to the north in our development focus and interest from the development

Credit Union and former director of the B.C. Chamber of Commerce.

Like Gray, McGrath views the creation of UBC Okanagan as a major new economic driver for the region. As a member of the President's UBC Okanagan Advisory Council, she has seen the projections for direct economic activity as the institution is developed and operated — but she also looks forward to the day when long-term business partnerships and other benefits flow from UBC Okanagan research.

Consider the economic spin-offs — and not just from new professors and students coming to the Okanagan, she says. "There will be the benefits of business born of the research, plus we will see partnerships with business and education."

access to this level of education.

"This is going to be really significant," he says.

"Students can go to university here at home, and that's a tremendous advantage," he says. "I hope more students will go into undergraduate and graduate programs." □

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The Iona Building at Vancouver School of Theology on the UBC campus. Photo: Perry Danforth

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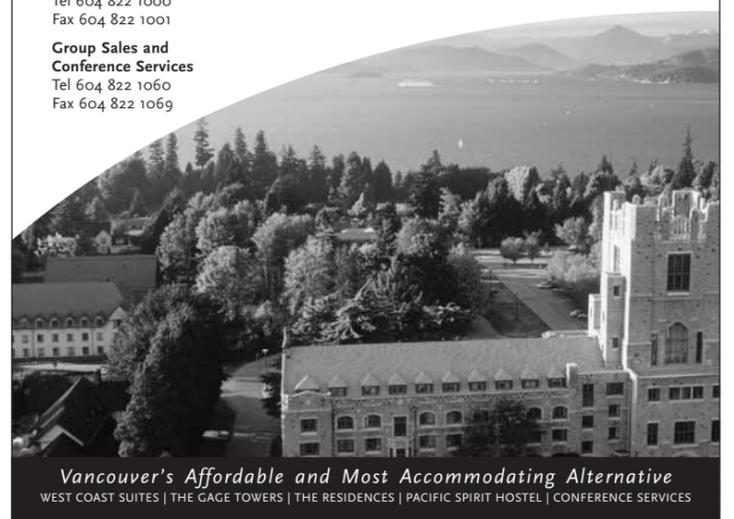
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New Stories to Sustain Earth

Trudeau Scholar challenges the notion that scientific data alone should guide the way we live. BY LORRAINE CHAN

Aliette Frank believes that stories shape our world. Individual stories and society's narratives all possess the power to create, unify or destroy.

And given the state of things on earth, says the UBC geography student, it's time we revamp the sustainability discourse.

Frank is one of this year's 15 Trudeau Scholars. The prestigious award of \$200,000 supports doctoral students in their research in areas

tropical ecology in Costa Rica, marine biology in Jamaica and ecotourism in New Zealand. Frank has reported on issues of water conservation and overpopulation while working at the National Geographic Society and for the National Wildlife Federation.

Her book-in-progress, *Light in Place of Darkness*, examines the complex and often tragic interplay between humans and nature.

experiencing the natural world."

"Right now sustainability is pretty much a discourse dominated by science and numbers," adds Frank, who holds a degree in environmental and evolutionary biology from Dartmouth College.

"If you can't quantify it, if it can't be certified, if it can't be proven by science, if it can't be seen as yes this is true with a capital 'T', then it doesn't count," says the 27-year-old

has its own story, that each and every thing has its own story behind what we see," she explains.

Frank says cultures holding this worldview believe the external reflects the internal and all life flows from a continuous, connected whole.

"When we're cutting down trees, we're cutting down parts of ourselves. When we're warring with each other, we're warring inside."

replenish their food, did not return. Heavy rains had caused landslides. Frank also got word Rwandan rebels were killing locals and tourists nearby. If she was to survive, she had to stay alone in the forest and fend for herself.

"I was trapped alone for two weeks without any food," recounts Frank, who at one point resorted to eating ants.

"I wrote a goodbye letter to my

"I knew I was going to study gorillas. I knew I was going to come here to Vancouver. I had this dream, booked a plane ticket, got off, and said, yep, this is it. I'm here."

of social justice, human rights, citizenship or the environment.

As someone who has worked extensively in the field doing hands-on conservation work in seven different countries, Frank has impeccable credentials to mount that challenge.

In the late '90s, Frank researched endangered primates in the jungles of Uganda. On the barren Juneau Ice-field of Alaska, she studied climate change. Crisscrossing the globe, Frank has also investigated

Drawing from her eyewitness accounts in Africa and elsewhere in the world, Frank's searing account has sparked interest from publishers at Random House.

"Storytelling is our chief moral compass," says Frank. "I'm interested in the interface of storytelling and science — how each can maintain its own integrity and work with the other. Storytelling can bring into sustainability different kinds of knowledge, different ways of knowing, different ways of

Utah native.

At UBC, Frank will research how storytelling can communicate different ways of knowing and connecting to nature. She will chart how storyteller and audience construct meaning, and she is especially interested in mystical and intuitive ways of knowing.

"From my experiences with storytelling in the community and in academic field research, I've encountered many who believe that nature is imbued with spirit, that it

Frank says this is perhaps what Western civilization sorely needs, "steeped as it is in the Cartesian mind-body split."

But welcoming plural forms of knowledge and expression can free us from that duality, insists Frank.

brother. I was sure I was going to die," she says matter of factly. "It was interesting because at that moment I felt more at peace and happier than I've been in my entire life. I felt feelings of oneness and I wasn't afraid."



PHOTOS COURTESY OF ALIETTE FRANK



"Let's say, for example, the Greater Vancouver Regional District needs to decide about future land use. In the world I envision, a First Nations community could authoritatively and compellingly bring their knowledge and values into that debate through the process of storytelling — whether it's oral tradition, dance or song."

But Frank admits that good storytelling requires alchemy between speaker and listener. She mulls over the question: how will people accustomed to measuring reality in facts and numbers shift to other modes of knowledge?

She pauses in her exuberant and rapid-fire delivery, replying, "It's happening. It's here. It's just being aware of it." In many ways, she says, her own life demonstrates a merging of both rational and intuitive faculties.

"Since I was five, I've always had clairvoyant dreams. Always. I knew I was going to Africa. I knew I was going to study gorillas. I knew I was going to come here to Vancouver. I had this dream, booked a plane ticket, got off, and said, yep, this is it. I'm here. This is where I'm supposed to be. I'm home."

Two life-changing experiences further opened Frank's heart, mind and senses. The first time was during a research expedition to Uganda's Bwindi-Impenetrable Forest. At age 18, she had accompanied her anthropology professor to study endangered mountain gorillas and chimpanzees.

Things grew dire when Frank's professor, who had left camp to

Eventually, Frank's professor met up again with her and they returned home. But the trauma of that trip surfaced in Frank's life several years later.

In 2002, Frank was diagnosed with terminal illness.

"I had fungal infections and everything I ate except spinach and quinoa sent my body into near anaphylactic shock. The doctors found that my white blood cell count was lower than most cancer patients."

But through good fortune and fate, Frank says she encountered a Montreal group that helped her heal through techniques using "Aboriginal dream-time."

"Through that process I was able to face up to the lost memories of what happened in Africa. They were buried in my body and were manifesting as illness."

"Just like that," says Frank snapping her fingers, "in a week I healed myself from things that in no way technically or by any scientific means should you be able to."

Finding that she herself can bridge the rational and intuitive, Frank says she has complete faith "the science part is coming." She says her dreams have directed her to these very crossroads at UBC.

"I want to work on sustainability issues at UBC because I feel I'm most connected here. People are very, very willing and open."

And when the task she has before her seems daunting, Frank says she reminds herself, "I've been fortunate to be able to do this. It's my path, it's my role. The support will come if I just keep my eyes focused." □

Aliette Frank studied endangered mountain gorillas in Uganda's Bwindi-Impenetrable forest.



Eight-year-old Dena Tabyanian and UBC Professor Ken Reeder marvel at how the electronic tutor provides one-on-one customized reading support.

PHOTO: MARTIN DEE

A Magic Reading Box

New literacy software delivers “amazing” results among Vancouver grade schoolers who speak English as a second language. BY LORRAINE CHAN

Most kids would find the *Reading Tutor* a pretty cool classroom buddy. The computer program listens patiently, never laughs at your mistakes, reads out loud with you and sounds out words you don't know or stumble over.

These are the kinds of four-star reviews that UBC education professor Ken Reeder has been receiving from Vancouver's Downtown Eastside grade schoolers and teachers as he test drives a state-of-the-art electronic tutor equipped with speech recognition and artificial intelligence.

Since 2003, Reeder has been collaborating with the *Reading Tutor's* inventor, Jack Mostow, at Pittsburgh's Carnegie Mellon University (CMU), famed for pioneering computerized speech recognition.

UBC conducted the first trials of the innovative software with English as second language learners as opposed to native English speakers or bilingual students, explains Reeder.

An applied linguist, Reeder is impassioned about helping students acquire knowledge and language. He admits he gets some ribbing about the coincidence of his last name. “People usually expect Reeder to be spelled with an ‘ea’,” he laughs.

His kind smile broadens as he proudly demonstrates the *Reading Tutor* software. “This is one of the really promising uses of technology in promoting literacy, especially with ESL learners.”

“This is pretty amazing stuff! This is simply the most advanced speech recognition available on the planet. The nice thing about this is that we've got it and Vancouver children are benefiting. Schools are clamoring to get on board.”

Mostow, a research professor at CMU's Robotics Institute, says that he first conceived the idea of using computers to increase literacy in 1990.

“I started by asking myself, what if there were a magic box that could

listen to children read aloud, what actions would it take?”

It was from there that Mostow and an interdisciplinary CMU team developed the *Reading Tutor*. This software can be installed on any ordinary personal computer that has at least Microsoft Windows 2000 and at least 128 megabytes of memory.

Reeder got wind of Mostow's impressive study results: children were able to gain a year's worth of reading improvement in three months. However, Reeder pressed Mostow to expand the magic of his reading box.

“We challenged them to work with a more representative cross-section of schoolchildren,” says Reeder. “Up to this point, the *Reading Tutor* had been piloted mostly in Pittsburgh with suburban, native-English speakers.”

“The name of the game in schools today is diverse populations and so the one size fits all reading solution is clearly going to miss many, many children,” he adds.

During spring 2004, Reeder and his research team conducted a 10-week trial of the *Reading Tutor* at five Downtown Eastside elementary schools. These classrooms, like most elementary schools in large Canadian cities, have up to 50 per cent of the students learning English as a second language.

During a 20-minute session with the *Reading Tutor*, the child dons headphones and reads stories displayed on the computer screen. The child starts off by choosing a story from the menu. The *Reading Tutor* then gets to select the second story, and then they alternate as the session progresses.

“That way the artificial intelligence in the program will adjust the difficulty of the stories that it sets for the young reader,” Reeder points out. “It'll also gauge the performance of the child to keep them moving along just ahead at what they're performing at.”

As the student reads aloud, the program's speech recognition listens. The *Reading Tutor* analyzes the student's oral reading and will offer help to pronounce a word, read along with the child or just signal with colored text the word, phrase or sentence that it would like the child to read again.

When the child asks for certain words to be pronounced, a mini-video clip will pop up, superimposed over that word, and show a child's mouth pronouncing the word.

“That's the beauty of this tool,” enthuses Reeder. “It offers individualized and customized reading practice for young readers. It's one on one — the child has the exclusive attention of the *Reading Tutor*.”

Reeder cites a 2003 B.C. education study which showed that out of 42,000 Grade 4 students, 32 per cent of ESL and 19 per cent of non-ESL students were reading at levels “below expectations.”

“I know teachers would love nothing more than to sit down and

work 20 minutes intensively with a child, but it's not physically possible. This technology comes into their classroom and works alongside them and helps children who need a boost in the reading experience.”

Reeder says his research team has almost finished crunching the copious data gathered from the 2004 spring trials. He says the results look good: all four home-language groups and all three English-language groups made gains in their reading abilities.

“We had wonderful results across the board. All of the language groups benefited. We've seen amazing improvements among school children whose home languages are Hindi, Mandarin and Spanish.”

“Our best result,” says Reeder, “is the fact that the group of children with the lowest level of English coming into the study benefited the greatest. Their curve was very, very steep over just a 10-week period.”

Starting this September, Reeder will install the *Reading Tutor* at three Eastside Vancouver schools for an entire school year.

“For the 2005 study, we're including some Aboriginal learners, not that they're learning English as a second language, but because we know that a large percentage of Aboriginal learners are at risk for success in literacy in school,” he explains.

Although Mostow didn't design the software for ESL reading support, he says he greatly values UBC's third-party, independent study.

“ESL students are like other kids but only more so; they need more support with vocabulary.”

As well, Vancouver teachers have given detailed recommendations, among them pre-reading vocabulary reviews and related activities for students.

“In general when you're trying an education invention, it's not enough to test it in one place,” observes Mostow. “If you get something that stubbornly works under different conditions and settings and different populations, then you've really got something.” □

Chew on This continued from page 1

“Research has shown that the jaw is a vital part of non-verbal communication,” says Fels, who is exploring how the jaw supports or negates verbal communication in adults.

“For example, if the jaw isn't moving naturally during speech, regardless of how subtle the inconsistency, at one point the listener begins to lose confidence in

what the speaker is saying,” says Fels. “If the inconsistency continues or worsens, the listener would eventually shut out nonverbal cues altogether and their ears take over again.”

Flores, who designed 3D simulation software that controls and monitors the robotic jaw's every move — down to the cogwheel — says he and Fels discovered other potential applications of the model after they showed it off at conferences for acoustic professionals.

“We've been told that the model may serve as an improvement to current tools for studying chewing cycles, denture fitting and other orthodontics work,” says Flores. “It also has great potential in entertainment, linguistics, psychology, and human-computer interaction.” □

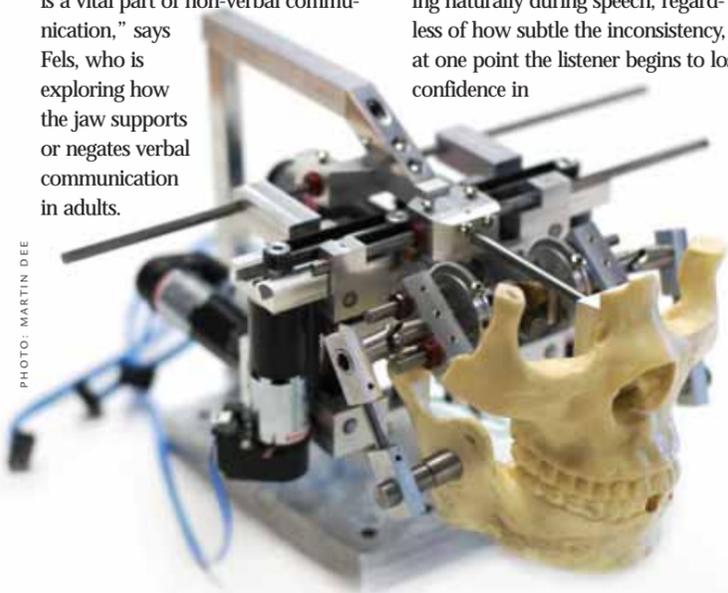


PHOTO: MARTIN DEE

UBC Okanagan: Planning a Community of Excellence

BY BUD MORTENSON

UBC Okanagan's bold new academic plan emphasizes "excellence at all times and in all things" and makes integrated research, interdisciplinary learning, and fun (yes, fun) very intentional parts of a distinctive UBC Okanagan experience.

Moura Quayle, seconded from UBC in June to serve as B.C.'s new Deputy Minister of Advanced Education, was at the helm of the UBC Okanagan academic planning process. "One of the hallmarks of UBC — all of UBC — is the idea of excellence," says Quayle. "We spent a lot of time thinking about what excellence means at UBC Okanagan."

As deputy minister, Quayle has had to step away from the project and her former role as Dean of UBC's Faculty of Land and Food Systems. However, she remains an enthusiastic supporter of the plan she helped prepare, and the consultative process behind it.

"I like to think one of the successes of this plan is it really did try to step up and look at the big picture," she says.

That scope is evident in the plan's long list of priority action items, calling for the creation of a campus life council, a community engagement office, a global citizenship implementation task force, and a common undergraduate experience. Other initiatives will cover graduate student assistance, research services, sustainability and equity issues, and much more.

UBC Okanagan Deputy Vice-Chancellor Barry McBride says he is impressed by the quality of the work and the speed with which the plan was prepared.

"Staff, faculty and students rallied and put together an imaginative, creative plan in record time," McBride says.

The plan, now ready for UBC Okanagan Senate consideration in November, began to take shape in spring 2004 when McBride and Quayle went on the road to consult with community groups throughout B.C.'s southern interior.

Community roundtable meetings and more than 50 "university circle" meetings were held with students, faculty and staff of the former Okanagan University College (its North Kelowna site became the UBC Okanagan campus on July 1). The meetings helped an Academic Plan Working Group gather ideas that were explored in a series of mini-projects, many summarized in the final plan.

The result is a comprehensive document that goes beyond traditional academics by calling for a rich campus life with many social and cultural connections that will become central to the UBC Okanagan experience.

The plan is aimed squarely at achieving excellence, building global citizenship and supporting the vision of UBC's Trek 2010 strategic plan. It's built on four imperative statements calling for:

- An intimate learning community
- An integrated research community
- A locally responsive, globally conscious community
- A flexible, adaptable and sustainable community

"What excites me about the plan is the way the imperatives all connect to one another," Quayle notes.

The campus is described as small and light on its feet, attributes Quayle says create the intimate learning environment called for in the plan.

"Students will have direct contact with professors and high-quality research at UBC Okanagan. It's a relationship that's harder to come by at a larger university," she says.

"Creating an intimate learning environment is also about the relationship students have with each other and breaking down large classes with the idea of engaging students in their own learning processes.

"A campus that is light on its feet allows us to experiment — if someone asks, 'what if we tried to do this particular cross-disciplinary class this year?' We can give it a try." Many universities could take this approach, but with a smaller campus and a great deal of integration, "it's just easier to make it happen," says Quayle.

McBride is confident the plan will make UBC Okanagan a campus full of creativity and innovation, providing an environment where students have an opportunity to build programs on an interdisciplinary basis. Take, for exam-

ple, the new Faculty of Creative and Critical Studies, where students will be encouraged to study across traditional subject boundaries.

Then there's the fun factor. The plan highlights fun as an important, not frivolous, component of the university experience.

"University life also includes more than just academic rigor," the plan states. "For most young students, it marks a period of emancipation, liberation, exhilaration and, it has to be said, fun. We ought not rely on that happening by accident — for students, faculty or staff."

Fun, in the UBC Okanagan context, "is a feeling of excitement about the learning environment you're in," says McBride. "You can be serious and have fun."

To view the UBC Okanagan Academic Plan, go to www.ubc.ca/okanagan and select Academic Planning Process in the QuickFind section. □

Moura Quayle, now serving as B.C.'s Deputy Minister of Advanced Education, led the team preparing UBC Okanagan's new academic plan.



PHOTO: PAUL JOSEPH

English Meets Art History

Outside-the-box thinking behind new faculty. BY BUD MORTENSON



PHOTO: TIM SWANKY

Blurring subject boundaries is an important facet of the new faculty at UBC Okanagan headed by Robert Belton.

A different school of thought is taking shape at UBC Okanagan. Robert Belton, dean of the brand-new Faculty of Creative and Critical Studies, is an art historian with a plan to blur the lines between language, literature, and visual and performing arts this year.

The idea of an overtly interdisciplinary faculty began to take shape in 2004, while Belton was Dean of Arts at the former Okanagan University College and a member of the UBC Okanagan academic planning team.

"It was during the development of the academic plan that the penny dropped for me," he recalls. "We kept saying we want to do things that are different. I

said, let's do it."

As a result, this September courses in English, modern languages and other literary studies won't be offered through the new Irving K. Barber School of Arts and Sciences. Instead, they will be offered alongside visual arts and art history in the Faculty of Creative and Critical Studies.

Next year, the traditional majors in English, French, Spanish and Fine Arts will be joined by new offerings in creative writing, theatre, film and media studies, and cultural studies — with music, musicology and possibly other areas to follow in September 2007.

It's a new approach, "but I

think people will get on board quickly," say Belton. "Something is happening that's value-added without additional expense. This opens up a smorgasbord of possibilities."

The vision he has is for an environment that provides students with both the traditional majors and the opportunity to mix it up — for example, to study creative writing and theatre history together. "Or acting and painting," he adds. "You don't really find that right now."

Visual arts students at the former Okanagan University College participated in a visual forum as part of their program. Belton would like to see that kind of forum for all students in

creative and critical studies courses.

"Visual arts students have done it for 15 years. But if you're an English major, why not take the opportunity to be exposed to art history at the same time? These are things that build and set off fires of interest in students."

Belton, who earned a PhD from the University of Toronto in 1988, has a background in the history, theory, and criticism of modern and contemporary European and North American art and architecture. And he's adept at making connections that cross over traditional subject bounds.

Author of several books on art and art history, his recent publication *Sights of Resistance* (University of Calgary Press, 2001) was once described as "an anti-textbook," he says, explaining how each feature in the book was accompanied by a list of key terms and pointers to other concepts — some without obvious connection to the topic at hand. It was designed to make readers aware of ideas they might not otherwise experience.

"I like to let others achieve what they want to," says Belton. "I get a reward from helping them see how to do that and then getting out of their way."

The cross-discipline model Belton and his faculty are designing may be a new idea, but he's confident it will provide UBC Okanagan students with the distinctive educational experience called for in the academic plan.

"This is about getting students excited and prepared for new challenges and finding a way to embrace the unexpected," he explains.

"Imagine fine arts students working with social work students on the psychology of creativity, or engineering and sculpture students working together on projects," Belton says.

"I can hardly wait to start developing this vision." □



Andrew Labun brings his applied science expertise to UBC Okanagan's engineering classes this year.

PHOTO: TIM SWANKY

Okanagan Perfect Fit for Microchip Engineer

BY BUD MORTENSON

Imagine more than 15 million transistors packed onto a wafer the size of a thumbnail. Andrew Labun can tell you precisely how warm one of those transistors is. And that's pretty cool.

An avid science fiction reader as a kid, Manitoba-born Labun saw engineering as a way to explore new technologies — to build things and make some of the fiction a science reality. He followed his interests and earned an engineering degree from UBC, and a PhD in electrical engineering from the University of Alberta while working on high-power gas lasers big enough to fill a transport trail-

specialized knowledge of micro-processor modeling.

It's the kind of extensive and rare industrial experience to which UBC Okanagan students will have access when Labun begins teaching as associate professor of engineering this September.

"I want to convey some of the excitement of engineering to the students," he says. "And I plan to work on research in modeling technology — there's no doubt the world is full of opportunity for this kind of research."

Using virtual models and sophisticated computer-aided design tools he developed, Labun can predict

says he is intrigued not by the electronics but by the physics and other science that goes into the technology.

"I always hated electronics," he says, grinning a little. It's a curious disclosure from someone who happily shows off examples of tiny processors he "and a team of thousands" helped create.

Souvenirs from painstaking development projects, each chip is encased in plastic and each held distinction as the world's fastest microprocessor at one time or another — some for several years. Holding in the palm of his hand four generations of these chips,

After working in Massachusetts as a senior engineer for Intel, Compaq and Digital Equipment Corporation, Labun wanted to bring his family to Canada.

er. It was fitting research for a sci-fi fan.

Chemically reacting plasmas involved in laser research are similar to those in which semiconductor integrated circuits are manufactured. That parallel took Labun light years away from the laser lab.

For the past 13 years, he has been in the U.S. delving into the inner world of microelectronics — bits of silicon and other matter organized into electrical gateways and conducting structures.

Labun's area of specialization is in modeling electronic structures that make up the microscopic circuits of computer chips. There's irony in the way he holds his thumb and forefinger slightly apart and explains, "These structures are as big as a micron across." Not very big at all — line up 10,000 of them and they'd stretch out for a centimetre.

After working in Massachusetts as a senior engineer for Intel, Compaq and Digital Equipment Corporation, Labun wanted to bring his family to Canada, and he wanted an opportunity to share his

exactly where circuits get hot, how much power they'll use, and their capacitance — how the tiny wires interact electrically with each other. All without having to build a chip. In fact, he says, there's no sense building a chip to get these readings. "These chips are so complex, measurement is all but impossible," he says. "Modeling is the only way."

His research is changing how computer chips are modeled. A common technique called Finite Element Modeling has its place, but tools Labun has developed are faster and handle big chip designs better. The latest of his published techniques is called Chip-Level Intertwined Metal and Active Temperature Estimator, or CLIMATE. Using this new technique, "what would take four hours to simulate with a finite element model — still a very useful tool — takes just a fraction of a second. Of course, multiply the sample by a billion and it takes a bit more time."

Despite a career immersed in microprocessor technology, Labun

dubbed "Alpha" by maker Digital Equipment, Labun details the magnificent science behind each.

The Alpha EV6 chip, for example, was the first to handle out-of-order instruction processing. "This thing could predict what a more efficient sequence would be — it's fiendishly complex microprocessor technology."

The semiconductor industry is well known for jealously guarding its secrets. Labun came to realize that the sharing of knowledge — and being able to pursue interesting research not strictly tied to a corporate mandate — was very important to him.

"Teaching is a great opportunity, and Kelowna is a good fit for me," Labun says, explaining that he chose UBC Okanagan because he has family in the community, and because he saw a chance to put his experience and interests to work.

"I like to talk to people about the science," he says. "The academic environment is ideal for that. I see lots of scope for collaborative research with other academics and industry partners." □



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Campus to Integrate History, Culture, Sustainability

First Nations inspired Gathering Place proposed at entrance.

BY AI LIN CHOO

Picture standing in a glass-walled atrium surrounded by panoramic snapshots of expansive grassland, pine forest and red brick buildings — infused with a sense of local history and culture.

This is the vision guiding design principles and planning at UBC's new Okanagan campus.

As the university gears up to welcome its first class in September and meet projections that will see it triple in size and serve more than 7,500 students by 2010, administrators from both the Vancouver and Okanagan campuses have been working non-stop to put together an ambitious plan that will transform the existing campus into a cultural and sustainable landscape.

"This campus master plan has a rather unusual mandate in that we're trying to achieve all these goals over the next five years. New buildings and facilities are going to have to be constructed and expand rather quickly in order to cater to our growing student body," says Aidan Kiernan, UBC Okanagan Associate Vice-President Operations.

The school emerges as one of two new post-secondary institutions in the region. In early July, Okanagan University College (OUC) turned over its grounds to make way for UBC Okanagan at its former North Kelowna campus, and Okanagan College in Kelowna, Penticton, Vernon and Salmon Arm.

The landscape and design plan detail the construction of new

research, recreational and cultural facilities at the new university. Kiernan explains that development will build on existing cleared areas of the campus to preserve non-developed pristine land.

New buildings will also feature spectacular views of the Okanagan hillsides, and reflect First Nations' land use.

"We want people to have no question in their minds that they are in the Okanagan," he says. "The idea is to bring the outdoors in and create an intimate learning environment for students while establishing a world-class university that is distinctive in academic programs, responsive to the needs of the Okanagan, and yet complementary with UBC Vancouver."

The campus master plan was developed following extensive consultation with the City of Kelowna, First Nations groups, and student and academic groups in the Okanagan. Its principles are guided by the university's academic plan (see page 6), which envisions a campus that emphasizes four major research themes — indigenous studies, sustainability, health and wellness and creativity, and culture and community.

Details are now in their final stages, and the plan is expected to go before the UBC Board of Governors for approval late September.

The first proposed feature that visitors will see as they pass through the main gates is a circular, open-air



structure called the Gathering Place, says Marta Farevaag of Vancouver-based Phillips Farevaag Smallenberg, the primary consulting firm on the project.

The idea for a Gathering Place arose out of consultation with First Nations groups as a way of reflecting traditional Okanagan Nation symbols such as the circle.

The large structure, which will be available for special events and student use, is a huge opportunity for a greater understanding of indigenous cultures and peoples, says Westbank First Nations Chief Robert Louie.

"That's missing right now in the valley," he says. "We are anticipating it will become a focal point. Access to education about our culture is extremely important. It's important for people to know about the land and how we came to have a society here."

In July 2004, the Board of Governors approved an approximate \$20 million construction plan, funded by the B.C. government to expand OUC's research and learning facilities. Expansion to existing arts and science buildings will be completed before the school's first cohort arrives this September, and construction of two new 180-bed residences has already begun.

Additionally, the new campus

UBC's new campus will feature panoramic views of the Okanagan landscape, says Aidan Kiernan, UBC Okanagan Assoc. Vice-President Operations.

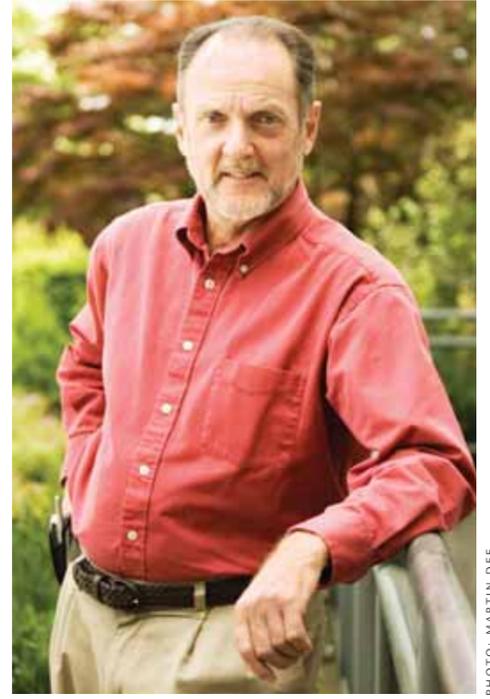


PHOTO: MARTIN DEE

will rely on geothermal sources to heat and cool the campus, and optimize solar opportunities and natural ventilation.

Buildings will also be LEED certified — a rating system that evaluates buildings that incorporate design, construction and operations to reduce environmental impact in categories such as transit access, water efficiency, energy efficiency, resource efficiency and indoor environmental quality.

"The idea is to create a showpiece of urban sustainability," says Farevaag. "The Okanagan landscape has become stressed and fragile over the years. What we found important was to create a cohesive campus that would have a sense of place, while ensuring development is compact and engaging."

Farevaag's award winning planning, urban design and landscape

architectural firm has been working in the Okanagan for many years, and recently won a nation-wide competition to design and construct a memorial in honour of Canada's military veterans on the grounds of the Ontario Legislature.

Kiernan says the main goal of the plan is to establish a student-oriented campus that will build on the existing community and create a distinctive feel and sense of belonging.

"Ultimately, what we're trying to accomplish is a campus that attracts people from all over the world, that encourages people to live on campus, and that offers the kinds of campus experiences that make for a world-class university," says Kiernan.

"What we're saying is that if you want to strive for excellence, you have to provide an environment that embodies excellence as well." □

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