a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

UBC REPORTS

October 2011

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UBC REPORTS

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a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA
Public Affairs

Highlights of UBC media coverage in September 2011

Compiled by Heather Amos

CAMPUS NEWS

UBC Faculty of Law opens Allard Hall

The Vancouver Sun and others reported on the official opening of Allard Hall, a new $56-million building for UBC's Faculty of Law. Allard Hall is named after its major private benefactor **Peter A. Allard** who attended the school 40 years ago.

A couple of hundred guests, including Canada's Chief Justice, the Right Hon. **Beverley McLachlin**, a former UBC Law faculty member, and the Hon. **Steven L. Point**, Lieutenant Governor of B.C., an alumnus and former faculty member, were in attendance.

Back-to-school

With schools and universities heading back to school at the beginning of September, many news outlets did stories about new trends in education and preparing for the school year.

Maclean's, ***CBC***, the ***Canadian Press***, the ***Chronicle of Higher Education***, the ***Daily Courier*** and others covered stories about the size of this year's university class, student loans, copyright issues and licensing, orientation programs and new buildings. UBC faculty, staff, students and alumni provided insight on these topics and more.

"This year almost every direct-entry program at UBC Vancouver offered applicants the opportunity to submit a personal profile, and in total over 2,500 students were admitted on the strength of their personal profile, not on high school marks alone," said UBC's associate vice-president and registrar **James Ridge** in the ***Vancouver Sun***.

UBC RESEARCH

Aging not culprit in health cost: UBC studies

The Globe and Mail, ***Vancouver Sun***, ***Montreal Gazette*** and ***Global BC*** reported on two UBC studies that indicate that rising acute-care costs and more reliance on specialists and diagnostic tests are a far greater threat to Canada's health care system than the aging population.

"Population aging is not going to cause an inevitable crisis in health care," said health economist **Steve Morgan** and lead author of one study.

"The fact that populations are aging exerts only a small pressure on the system," wrote **Kimberlyn McGrail**, the lead author of the second study and an assistant professor and associate director of the UBC Centre for Health Services and Policy Research, in an op/ed in the ***Toronto Star***.

In a ***Vancouver Sun*** series on aging, **Bob Evans**, **Larry Frank** and **Kevin Milligan** provided commentary about health care costs, city design and the aging workforce respectively.

Deep-sea destruction

Two ***Washington Post*** articles and the ***Globe and Mail*** reported on a recent study that suggests that deep-sea commercial fishing should be banned.

Rashid Sumaila, a co-author of the study and the director of UBC's Fisheries Centre, said high-seas trawlers around the world receive roughly $162 million each year in government subsidies.

Daniel Pauly, a marine biologist at UBC,said the costs of deep-sea fishing far outweigh the benefits. "It's a waste of resources, it's a waste of biodiversity, it's a waste of everything."

AWARDS

Biologist named MacArthur "genius"

UBC researcher **Sarah Otto** has been awarded a $500,000 grant from the MacArthur Foundation — a prestigious award popularly known as a "genius grant," reported the ***New York Times***, ***CBC***, ***Toronto Star*** and many others.

Otto, a zoology professor and director of the Biodiversity Research Centre, is a theoretical biologist. Her research has focused on fundamental questions of population genetics and evolution, such as why some species reproduce sexually while others reproduce asexually.

"The MacArthur Fellowship gives people the freedom to be creative, giving them room to focus on what they do well," Otto said. "I am going to take that to heart and carve out more time for the math and science that I love doing."

UBC archeologist partners with coroner to solve cold cases

By Basil Waugh

Michael Richards a UBC archeologist, is helping Vancouver's coroner to investigate unsolved murders.

Martin Dee Photograph

From cold cases to cavemen, a UBC archeologist is solving buried mysteries using technologies that would make Indiana Jones trade in his trusty whip.

With lasers and powerful scientific techniques, UBC anthropology professor Michael Richards is pioneering the use of isotopes—proteins found in bones and hair—to determine the origins of archeological artifacts.

"Isotopes give us a direct measure of the key characteristics of an artifact," says Richards, also a researcher at the Max Plank Institute for Evolutionary Anthropology in Leipzig, Germany. "That allows us to assess objects faster and more accurately, eliminating much of the traditional guesswork."

This month, Richards will open a new $1-million lab as part of the UBC Museum of Anthropology's $55.5-million expansion project. It will be the only lab in Canada—and one of a handful around the globe—equipped for archeological research using isotopes.

For the past six years, Richards has been travelling the world, taking geologic samples for a global isotope mapping project that will help researchers to better understand the migration patterns and diets of early humans as they began moving around the planet tens of thousands of years ago.

While his methods have been applauded within the archeology community—Richards receives regular requests for testing from international colleagues—they are now attracting interest from City of Vancouver's Coroner Office.

In the first partnership of its kind in Canada, Richards and his students are testing the coldest of the cold cases—200 sets of unidentified B.C. human remains—with the goal of separating so-called forensic cases, or suspicious modern deaths, from "archeological" ones.

According to Coroner Stephen Fonseca, the partnership has ruled out a number of centuries-old remains, allowing his office to focus their efforts on recent cases. "He closed five cases for us today," Fonseca said in a recent interview at Richard's lab. "That's huge —five in one day."

Richards says several cases suspected of being archeological were in fact recent deaths, which require continued investigation. "We can immediately tell who was born after 1950, because isotopes in our bones and teeth possess a specific form of carbon that comes from when the nuclear bomb was tested in that era," he says. "Scary, but true."

For pre-Atomic specimens, Richards reads isotopes in teeth and jaws to determine eating patterns. "Our diet has changed dramatically over the past 100 years, so seeing the traditional marine diet of B.C.'s coastal peoples enables us to categorize those cases as historical," he says.

"If we find evidence of our modern diet, we obviously know what we're dealing with," Richards adds, noting that one case that has been returned to a Vancouver Island First Nation was more than 2,100 years old.

This year, Richards and his students will be expanding his isotope mapping project—which has focused on Europe and Asia so far—to B.C. and the rest of Canada. Knowing where the water and plants a body has consumed are, he says, will allow him to cross-reference these geologic imprints and improve his ability to determine geographic origins.

"Improving our ability to identify the geographic origins of species will dramatically increase our ability to solve these mysteries," Richards says. ●

Richards' lab was made possible with support from the Canada Foundation for Innovation. Learn more about the Dept. of Anthropology at: www.anth.ubc.ca.

Lessons on how we learn best

Ground curriculum in real life. The everyday holds keys to knowledge.

By Lorraine Chan

What sinks first, diet or regular cola? Science educator **Samson Nashton** shows this simple experiment to future teachers as a simple way to engage their students.

Martin Dee Photograph

The more real-life context and relevance a lesson has for the student, the more powerful, says UBC science educator Samson Nashon.

Nashon, associate professor of curriculum and pedagogy at the Faculty of Education, has found contextual learning to be transformative in his studies with high school students in B.C., Japan and East Africa.

"We don't learn in a social vacuum," says Nashon, a former high school teacher of mathematics and physics. "We construct new knowledge based on what we already know and experience. Kids will better understand universal principles if they can relate it to what's around them."

Take, for example, the physics of gravity. In the early 2000s, Nashon and Education Assoc. Prof. David Anderson worked with B.C. high school teachers to renew physics curriculum. One of their results is an annual contest held since 2003 where the best and brightest physics students vie for a spot at the PNE's Playland in Vancouver. Contestants analyze the "g-forces" of rides like the roller coaster or "Hellevator," where riders are shot up a 202-foot vertical tower at 75 kilometres per hour and then free fall back to earth.

These types of hands-on learning activities and critical thinking skills are increasingly the norm for successful teaching and learning, says Nashon. So is the principle of metacognition, he adds, which means thinking about thinking.

Nashon explains that metacognition is the opposite of rote learning since the goal is keen self awareness and the confidence to explore. "Students are empowered to monitor, acknowledge what works and what doesn't, and to direct their learning process so they can succeed."

Metacognition is the opposite of rote learning since the goal is keen self awareness and the confidence to explore.

In a recent study, Nashon assessed how contextual learning and metacognition principles increased the aptitude and enjoyment of high school students in Western Kenya. Students reported greater understanding of science when illustrated by activities in Kenya's rapidly evolving small-scale manufacturing and technology sector.

"Historically," says Nashon, "science education was very much about handing the student a package of information. And sometimes that information didn't always translate to a non-Western or post-colonial context."

To see science in action, the Grade 11 Kenyan students visited workshops such as those producing charcoal-burning stoves. About the size of a large soup pot, these stoves are used in most homes.

"Everyone is very familiar with the need to find the most efficient stove," says Nashon.

The students' assignment: explain the stove's design and construction, why the inside of metal stove is lined with a coating of clay and the outside is painted black.

"They get to unravel the science embedded in their experience and draw on science to ask questions that could advance the design."

In his teachers' training classes at UBC, Nashon likes to get his students honing their metacognition chops with a simple object lesson. The students—who all hold undergraduate or graduate science degrees—must predict which can of pop will sink to the bottom of a bowl filled with water: the diet Coke or Classic Coke? It's the Classic Coke that sinks.

Steeped in scientific procedure, the students realize that it has to do with density difference between sugar and artificial sweetener. But once in a while a student will say it's due to the calories.

"Well, calories are a thermal unit, not a measurement of mass," says Nashon. "That's why this exercise is helpful. It gets them thinking about how they'll convey and bridge knowledge once they're in the classroom." ●

Celebrate Learning Week
October 29 – November 6

Celebrate Learning Week turns the lens on those "aha" moments when theory becomes practice and ideas blossom into action. Now in its fourth year, the celebration highlights and honours the work of faculty, students and staff to create an exceptional learning environment at UBC's Vancouver campus. **www.celebratelearning.ubc.ca**

Celebration Warm-up

22

Beyond the Magic: Chemistry Open House
Chemistry Department 2036 Main Mall

UBC celebrates **International Year of Chemistry** with chemistry-based "magic" demonstrations and other hands-on activities such as creating slime, building marshmallow molecules and sampling liquid nitrogen ice cream. **www.chem.ubc.ca/about-chemistry/outreach**

24 – 28

Conference for Learning and Academic Student Success (CLASS)
UBC Vancouver campus

Organized by and for students, CLASS is all about the advice you would give your first-year self. Seasoned upper-year students share hard-won insights on how to achieve academic success and personal wellness with those new to UBC. The week-long conference includes subject-specific seminars ranging from chemistry to political science, a resource fair, keynote speaker and mentorship lunch. **www.class.ubc.ca**

Photograph courtesy of **CLASS**

1

8:30 AM – 4:00 PM
Dialogue on the History of Indian Residential Schools in Canada
First Nations Longhouse, Main Floor Atrium

Participants will reflect on the university's role in fostering a better understanding of the history of the residential school system and its impact on Aboriginal people. Register at: **www.celebratelearning.ubc.ca**

2

7:30 AM – 9:30 PM
Work, Family and Fun
Juliet's Café (to be confirmed), 905 Cornwall Ave.

Do married couples remain independent individuals or do they become an interdependent unit? Sponsored by the **Dept. of Occupational Science and Occupational Therapy, Sociology Assoc.** Prof. Carrie Yodanis will give a presentation and then lead a discussion on whether marriage has changed over time. Space is limited, register at: **osot.events@ubc.ca**

3

1:30 PM - 3:00 PM
Key Strengths of Learning Communities
UBC Learning Exchange
612 Main Street (at Keefer)

With the **UBC Centre for Intercultural Language Studies**, the **UBC Learning Exchange** has studied the key strengths of its ESL facilitator training program for local residents. Presenters will discuss findings on successful learning and community-university engagement.

31

12:00 PM – 1:00 PM
Teaching and Learning Enhancement Fund Showcase
Irving K. Barber Learning Centre, 4th floor, Golden Jubilee Room
1961 East Mall

The Teaching & Learning Enhancement Fund (TLEF) highlights successful projects that enrich and improve student learning. There will be a kick-off presentation and Q&A featuring the successful strategies of various TLEF projects, and a week-long poster display in the Learning Centre's main floor atrium.

3:00 PM
Students on community engagement
Irving K. Barber Learning Centre, #302 Dodson Room, 1961 East Mall

Transformative learning through community engagement is the focus for students who will have 20 seconds to present 20 slides, or video clips, about their **UBC-Community Learning Initiative** and **Go Global experiences**.

6:00 PM – 8:00 PM
Writing Across Borders
UBC Learning Exchange
612 Main Street (at Keefer)

Neighbourhood residents and UBC's creative writing students will read their works—many for the first time—as part of the annual **Heart of the City Festival**, an arts festival in the Downtown Eastside. Participants will talk about the joys and challenges of writing in a second language and making new connections. Fun group activities will allow visitors to try their hand at writing.

7:30 PM
David Suzuki, The Global Eco-crisis: Is it too late?
Chan Centre for the Performing Arts

David Suzuki, distinguished Canadian environmentalist and UBC professor emeritus, presents a public lecture at the Chan Centre for the Performing Arts. In an engaging, 60-minute lecture entitled "The Global Eco-crisis: Is it too late?", Suzuki will offer his insights on the state of the environment and whether there is hope for the future. **Tickets are $5 at www.ticketmaster.ca.**

5

10:00 AM - 4:15 PM
TedX Terry Talks
Life Science Institute, LSC2 lecture hall
2350 Health Sciences Mall

Eight of UBC's most fascinating and engaging students come together for a day, giving "the talk of their lives," sharing their ideas and discussing their visions for **UBC** and the world in a **TED**-like event. Ticket information at **www.tedxterrytalks.eventbrite.com**

"We'd like to encourage everyone to take advantage of this celebration to share innovative ideas and learn from each other so we can further enhance the educational experience," says Prof. Anna Kindler, vice provost and associate vice president academic affairs and resources.

UBC Science World lab promotes fun, learning and tolerance

By Basil Waugh

UBC Prof. **Andrew Baron** is making psychology research fun for families at Science World.

Martin Dee Photograph

"By understanding how social preferences emerge, we can develop strategies to improve tolerance and cooperation—ultimately to create more productive and harmonious schools, workplaces and communities."

An interactive new UBC psychology lab at Vancouver's Science World aims to make science fun for kids and parents, while improving our understanding of early child development.

The new $70,000 Living Lab provides researchers with a high-tech, interactive space to conduct daily experiments for Science World's annual 500,000 visitors, making it Canada's largest university outreach project focused on cognitive development.

Wearing brightly coloured t-shirts emblazoned with "ask me about early childhood cognitive development," researchers roam Science World recruiting participants for short studies that explore cognitive development and perceptual skills of children aged one to 18.

While the experiments are designed to be fun and engaging, the professor who directs the lab, Andrew Baron, UBC Dept. of Psychology, says the research explores some decidedly serious topics.

"One of the issues we explore is how children and adults develop unconscious prejudices that can lead to social conflicts," says Baron, who joined UBC in 2010 from Harvard University. "By understanding how social preferences emerge, we can develop strategies to improve tolerance and cooperation, and ultimately, create more productive and harmonious schools, workplaces and communities."

Studies range from how best to create positive interactions between children to the effects of competition, says Baron, 32. "Our research finds that many of the supposedly fun games that involve group competitions can actually exacerbate biases and conflicts for younger children."

Located on Science World's second floor, the 200-square-foot space is filled with technology designed to improve researchers' ability to measure kids' thoughts and cognitive processes. These include iPads, touchscreens, interactive animated video displays and high-definition cameras that measure facial and unconscious responses to stimuli by the millisecond.

Two soundproof rooms in the lab feature Skype-like computer systems, which enable children to interact with less distraction and timidity. "Many kids get shy when you put them together in a room for the first time, so this allows us to get them interacting faster and more comfortably. And the ability to record and replay conversations means we can better measure and interpret their behavior."

After families are briefed and consent to participate in a study, they get a crash course on child development and cognitive functions. "Parents are naturally fascinated with how their kids experience the world and their physical and psychological development, so they really enjoy watching them interact with researchers," Baron says.

Baron pioneered the living lab concept at the Boston Museum of Science while completing his PhD in psychology at Harvard. Convinced of its benefits, he flew to Vancouver a day early for his job interview at UBC to visit Science World to explore a potential partnership.

The answer was a resounding yes, says Bryan Tisdall, President and CEO, Science World. "Andrew's project really helps to demonstrate the importance of science and technology in everyday life, one of Science World's key goals," he says. "Research shows that engaging boys and girls in science at a young age increases the likelihood they will pursue university courses or a career in science—that is something we very much want to promote."

In addition to programming the Science World lab, Baron will take his community outreach a step further this year. He plans to bring his "living lab" concept of engaging kids through interactive research to B.C. elementary schools and Aboriginal communities, a population that is underrepresented in science and university.

Baron says expanding the scope of his research subject ultimately produces better science. "Going outside the university and into the broader community provide us with a larger, more representative pool of participants," he says. "And ultimately, that's what we want—findings that generalize as widely as possible."

To this end, Baron is piloting a stand-alone touch-screen kiosk at Science World where parents and children can learn about the science of cognitive development while participating in studies under their own direction. He plans to eventually place these kiosks, which look like ATMs, in public spaces across Canada.

Baron adds that his research team has conducted research with more than 7,000 children since setting up a temporary lobby workspace in Science World in June 2010. The new permanent space promises even more public interaction, he says.

"Science World is open rain or shine, seven day per week, so the pressure is definitely on to keep coming up with new, fun experiments," he says, laughing. ●

The UBC Science World Living Lab was established with support from the Canada Foundation for Innovation. For more information, visit: http://childdevelopment.psych.ubc.ca and www.scienceworld.ca/lab.

UBC students **Florence Yip** (left) and **Keely Johnson** explore the exacting science of cheese production.

Food science students survey industry, alumni

Overall, UBC is doing an outstanding job preparing food scientists. However, more hands-on, industry-related experience would greatly enhance the majors, according to a recent study conducted by the Faculty of Land and Food Systems (LFS).

Led by Food Science Prof. Chris Scaman, the study evaluated the effectiveness of two majors for a fast-changing industry. Between 2000 and 2010, LFS' food science and food and nutritional science programs graduated 194 and 79 students respectively.

Scaman and co-investigator Prof. Eunice Li-Chan engaged food science students Keely Johnston, Florence Yip and Chelsea Leung to carry out the study.

"We thought it would be a great way to enhance their academic experience through primary research, while gaining a fresh student perspective," says Scaman.

The student researchers designed and implemented surveys, conducted interviews and analyzed data. They presented a preliminary poster during last year's Celebrate Learning Week and their final results at the international Institute of Food Technologists conference in New Orleans this June.

"New Orleans was a definite highlight for us," says Leung, who graduated from UBC this May. "It was really exciting to represent UBC at the largest food science and technology event in the world."

The student researchers were able to connect with a little less than half of the alumni through electronic surveys. Study respondents reported feeling well prepared for employment and overall satisfaction with their UBC education. As well, they reported feeling confident about core competencies such as food safety, lab techniques and food microbiology.

Most of the alumni work in jobs dealing with food commodities such as fruit and vegetables, meat, soy, beverages, confectionary and seafood. The majority say they are pursuing life-long education to continually upgrade and update their technical skills.

In phone or face-to-face interviews with employers, the students repeatedly heard that food safety will be a key focus for the food industry over the next five to 10 years. Employers reported 100 per cent satisfaction with the performance of LFS alumni, agreeing that they excel in categories such as technical background, problem solving and knowledge.

The data reflects surveys with 33 employers from four sectors: 75 per cent in manufacturing; 13 per cent from distribution; nine per cent in the service industry; and three per cent from government.

Food Science Prof. Chris Scaman says the study—supported by UBC's Teaching and Learning Enhancement Fund—will spur the faculty to find more ways to provide program specialization and experiential learning.

"We're also looking at increasing industry involvement through an advisory board," says Scaman, who collaborated on the study with Food Science Prof. Eunice Li -Chan. ●

"Food safety will be a key focus for the food industry over the next five to 10 years."

Blessed are the cheesemakers

Educating food scientists.

By Lorraine Chan

Earlier this year, Angie Dueck, Keely Johnston, Victoria Gilbert and Florence Yip explored commercial cheese production at the Faculty of Land and Food Systems (LFS).

Their undergraduate project, dubbed **U**tterly **B**rilliant **C**heese, compared the making of Gouda to Brie.

They found that a luscious, creamy disk of Brie can take up to three weeks of daily turning and flipping plus three weeks or more of ripening. Gouda, however, "with less fussy curds" only needs a third of that daily handling. And as a hard cheese, Gouda has as a longer shelf life than Brie.

Under the watchful eye of Chris Scaman, their faculty advisor and associate professor of food science, the students worked through the entire process, from coagulation and fermentation to salting and ripening. They had to consider industry and food safety standards while also analyzing scalability for production, costs, suppliers, marketing and sales.

"Our results show that Gouda would be more feasible than Brie should anyone at UBC want to make and sell cheese," says Yip, in her fourth year of food science. "Gouda is a lot easier to produce and could sell for about $2 to $3 per 100 grams in places like Sprouts in the SUB or Agora café at MacMillan Building."

The **U**tterly **B**rilliant **C**heese experience typifies the type of hands-on learning that the capstone course FNH 425 provides, says course instructor and Food Science Prof. Eunice Li-Chan.

"Students study the theory and principles behind environmental listeria swabbing or pH testing in other courses, but here they have to apply that knowledge in a real-life situation," says Li-Chan.

FNH 425 students also conduct research on problems identified by industry sponsors in sectors as diverse as natural health products, chocolate, tofu and seafood.

That breadth of knowledge and skills helped Johnston land an internship at a Metro Vancouver dairy processing plant this spring.

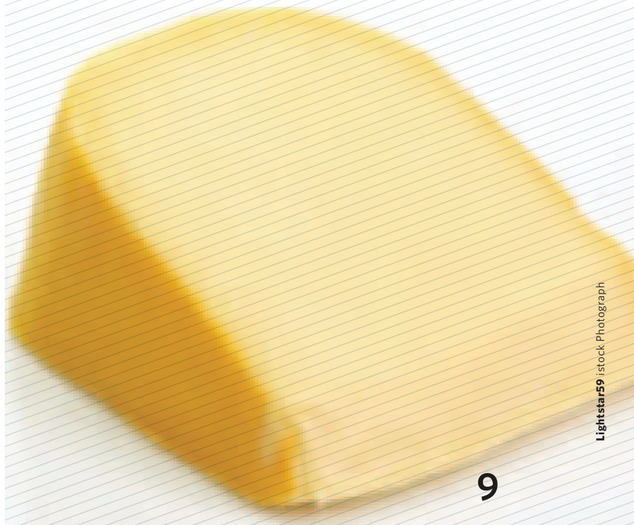
"I loved it. I got to work all over the plant and do so many different things," says Johnston, who's graduating this December. "I was applying the direct knowledge from my degree, whether it's pasteurization or analyzing the bacteria to ensure safe dairy products."

The food science program at UBC is accredited by the Institute of Food Technologists, which represents food science professionals from more than 100 countries. Students acquire core competencies and skills in key areas that include quality assurance; regulatory and nutrition labeling considerations; analysis of chemical, physical, nutritional or sensory properties; and microbiological assessment. ●

"Our results show that Gouda would be more feasible than Brie, should anyone at UBC want to make and sell cheese."

For more information about food, nutrition and health studies at the Faculty of Land and Food Systems, visit: http://bit.ly/rmtjtf

Martin Dee Photograph



Lightstar59 istock Photograph

Bring Your Meeting to Campus

Let us be your Conference Planning Partner

As a scientist, I found working with UBC Conference Services a true pleasure. Their skilled staff assumed the organizational details involved in putting on a conference of 800 and left me to the scientific programme; they even helped me with non-scientific programme particulars. I enjoyed working with them so much, I have organized two international chemistry conferences – the decision to take on the second was due to their excellence on the first.

— Chris Orvig, FRSC
ICBIC15 Conference Chair

2011 UNITED WAY

$700K GOAL

Oct 17 – Nov 30

Mark your calendar! The campaign will run during these dates.

1063
Employees who donated via payroll deductions in 2010.

51
Number of UBC employees who have worked as loan reps since 1988.*

#1

UBC has more Leadership Donors than any other organization in the Lower Mainland, including banks.**

2.3%

UBC raised $694,584.87 during the 2010 campaign; 2.3% of the $30-million raised in the Lower Mainland.

86¢
Of each dollar raised goes directly to services and programs.

$9.72
Cost per pay for a $365 donation (after tax). This allows 22 school-age children to attend violence prevention workshops and helps break the cycle of abuse, harassment, and bullying.

190
Non-profit organizations supported by the United Way of the Lower Mainland and United Way of the Central Okanagan.

62
Events held during last year's campaign.

1988
Year of first UBC United Way Campaign.

400

Staff and faculty volunteer for UBC's United Way Campaign.

*Loaned Reps are UBC employees seconded to the United Way to work on the campaign for four months.

**A Leadership Donor is an individual who donates $1,000 (before taxes).

Get ready for the 2011 UBC United Way Campaign

By Heather Amos

UBC's annual United Way Campaign kicks off October 17. After the success of the 2010 campaign, when UBC won the Quantum Leap Giving Award from the United Way of the Lower mainland for dramatically increasing its giving over the previous year, the stakes are high for 2011.

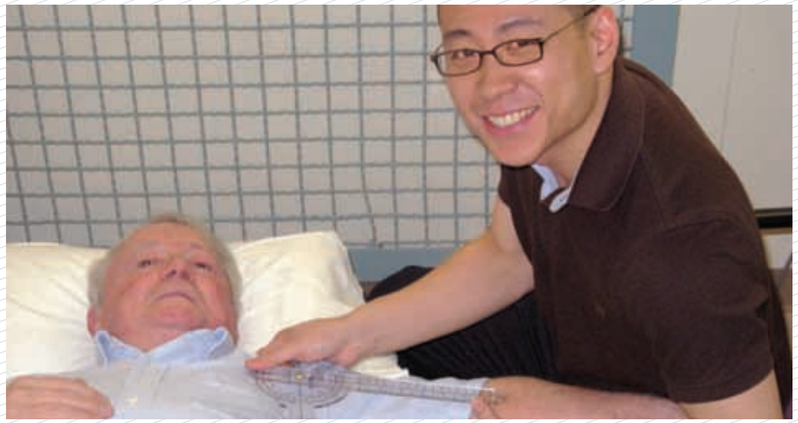
Every fall, UBC staff, faculty, and students join together to raise money for the United Way of the Lower Mainland and United Way of the Central Okanagan. Funds raised help support over 190 non-profit organizations all working to meet the health and social needs of Lower Mainland and Central Okanagan communities.

After raising $694,584.87 in 2010, this year's goal is to hit $700,000 between the Okanagan and Vancouver campuses. To hit that target, a number of awareness events—BBQs, jeans day, a spelling bee and more—are planned for both campuses. Faculty and staff are encouraged to donate through payroll deduction. A donation of even $10 per paycheque can make a difference. This donation gives 16 children and their parents access to community programming like story time, snack and lunch programs, and parenting sessions.

A clinic where students run the shop

Patients eager for rehab services

By Brian Kladko



Hyman Gee Photograph

"He's teaching me to think about how to make my body work again."

Patrice Kong, a physical therapy student, measures the shoulder range of patient **Jim Butterworth**.

After a career of guiding students through the thickets of political science at Douglas College, Marlene Hancock now finds herself on the receiving end of instruction.

And her instructor, appropriately enough, is a student. The subject, however, isn't politics. It's her own recovery.

Hancock stands between two parallel bars in a rehabilitation clinic at Royal Columbian Hospital in New Westminster, leaning against one rail with both hands, and sidestepping her way between the two—all while trying to keep her feet straight, her head up and her shoulders back. Standing next to her, watching every move and correcting every misstep, is Ryan Hik, a second-year UBC physical therapy student.

"You have to keep that foot nice and straight," he says. Aware that he is repeating the same thing over and over, he jokes, "I'm going to crack the whip on you."

Hancock, for her part, doesn't mind a bit.

"He's teaching me to think how to make my body work again," says Hancock, who was bedridden for five weeks during a coma brought on by kidney problems. "I was eager to have a student work with me. They tend to be very keen and interested in what they're doing."

Hik is one of scores of physical therapy and occupational therapy students who have been fortunate to land a placement at the Student Rehabilitation Outpatient Clinic, perhaps the first of its kind in Canada. Here, the students pretty much run the shop, and have helped hundreds of people in the Fraser Health region recuperate from or grapple with the effects of stroke, bone fractures, hip or knee replacements or other conditions that hinder their mobility.

Created two years ago, the clinic provides an authentic clinical experience for students pursuing two-year master's degree programs in either physical therapy, which focuses on helping people regain functional movement, or occupational therapy, which helps people regain independence with everyday tasks.

Typically, students in those programs are assigned to work with therapists in hospitals, either in wards or outpatient clinics, or in private clinics. In these one-to-one placements, students may be assigned certain patients but usually don't have much control over their caseload, and they often have little contact with other students or professionals.

Here, however, every patient is seen by a student, and often by students of both physical therapy and occupational therapy. The students are closely monitored by a clinical instructor in each field, who must approve the students' initial assessments and treatment plans, and who often assist in the early stages of treatment.

"As they're able to demonstrate that they're able to do more, we delegate more to them, until they're just checking with us and running things past us," says Corey Stock, the clinical instructor in occupational therapy.

During their six or so weeks in the clinic, students also get a feel for scheduling patients and managing caseloads—crucial skills they will need in a few months, when they are working professionals.

"It's liberating, actually," says Ewa Kowalska, a second-year occupational therapy student.

Also, by working in such close proximity to students from another discipline, often on the same patient at the same time, students gain a better appreciation for the goals, techniques and challenges of each others' fields—something not usually possible in a conventional placement.

The model of a student-run clinic, imported from Australia, is catching on. G.F. Strong Rehabilitation Hospital in Vancouver started its own in the spring, as an adjunct to its own professionally-run clinic. And the University of Alberta, after sending a delegation to observe the activity at Royal Columbian, has received approval to do the same in Edmonton.

The benefits to the students, meanwhile, are rivaled if not surpassed by the benefits to the patients. Before the clinic came along, residents of New Westminster had no outpatient rehabilitation services nearby, so they would have faced long waiting lists or overly restrictive eligibility criteria at the region's hospitals—or they would have had to pay out-of-pocket at a private clinic.

"My guess is 80 to 85 per cent of these people would not have been seen," says Hyman Gee, the clinical instructor in physical therapy. ●

For more information, visit: http://www.med.ubc.ca/media/Student_physiotherapy_clinic.htm

Stress, anxiety, depression: just another part of student life... right?

Resources and tools can help students build healthy minds, the first step toward academic success.

By Heather Amos

Stress and anxiety are as synonymous with university as midterms and essays.

But a growing body of research says that these feelings can make it harder for students to learn and to succeed in school.

In a 2009 National College Health Association survey, 40 per cent of UBC students reported that stress negatively affected their academic performance, 30 per cent were affected by anxiety, and 16 per cent by depression. The results led UBC to make student mental health a priority, with the ultimate goal of giving students the best chance at academic success.

"Studies have shown that students find it much easier to learn and hear about mental health from other students"

"There is a move towards integrating mental health promotion into practices across campus," says Patty Hambler, a student development officer who is helping to organize UBC's annual Thrive Week, a series of events that encourage healthy living.

Now in its third year, Thrive will highlight mental health as the central theme during outreach and activities taking place October 17-21. Thrive aims to teach the UBC community how to build resiliency and prevent mental health concerns. It will also provide information about the programs, supports and services in place at UBC to promote mental well-being.

Hambler says, "There is a growing motivation to talk about mental health on campus."

This is a trend that Michael Lee, a curriculum coordinator for UBC's Masters of Occupational Therapy Program, has noticed too. Five years ago, as part of a class assignment, he and a small group of students started holding information sessions about the prevalence of mental illness and its impact on student life. These sessions were limited to students studying occupational or physical therapy but interest grew quickly.

"Studies have shown that students find it much easier to learn and hear about mental health from other students," says Lee. "The stigma surrounding mental health makes it a difficult issue to talk about."

Last year, Lee's class project became the UBC Mental Health Awareness Club, a campus-wide AMS club with the mandate to raise awareness about mental health issues and decrease the stigma around mental illness.

The club now has more than 100 members and is run by co-presidents Victor Tang, a graduate student studying neuroscience, and Kevin Ly, a fourth year Arts student majoring in international relations and geography.

For Thrive, the Mental Health Awareness Club is hosting a movie event. "We're showing clips from movies that portray mental illness and then discussing the issues shown," says Ly.

Another initiative the club is working on this year is a campaign, called the "One in Five" campaign, which aims to raise awareness about the prevalence of mental illness. Ly and Tang will present facts about mental illness and profile individuals from a variety of backgrounds who have experienced mental illness.

"One in five Canadians will develop some form of mental illness in their lifetime," says Tang. "We want to reduce the stigma by helping people understand how prevalent it is."

"If you break your arm, you go to the doctor," says Lee. "People experiencing mental health issues won't do that—they isolate themselves. As society grows more aware, those who need help will be more likely to open up."

Mental wellness across campuses

For the first time, UBC's Okanagan campus will also hold Thrive.

"We are promoting positive mental health for all, meaning students, staff and faculty at both campuses," says Tracey Hawthorn, a work re-integration and accommodation program coordinator and a Thrive coordinator in the Okanagan.

At both campuses, mental health promotion is a growing priority of *Focus on People*, UBC's Human Resources strategy. Hawthorn says it's not just students who need to build mental well-being—a view echoed by Suzanne Jolly, health promotions coordinator for UBC Human Resources.

"Faculty and staff can't promote student mental health if they aren't looking out for their own well-being," says Jolly. "They need to take care of themselves in order to help students and role model healthy behavior." ●

For more information, visit: www.thrive.ubc.ca/about

Heathy Wheel adapted from Amundson, N.E (2003) *The Physics of Living* and Hettler, B. (1976).

How to thrive at UBC: eight dimensions of well-being

The theme for Thrive Week 2011 is:
"Building positive mental health for all." Positive mental health incorporates all aspects of a well-balanced life. Here are some strategies and resources to help you achieve balance and thrive all year long:

1
Physical Health: Get physical during your breaks by taking a walking tour designed by Campus and Community Planning. Maps are available from their office or online. (www.planning.ubc.ca)

2
Social Wellbeing: Invite a new friend to lunch and learn about healthy, sustainable food at Sprouts in the Student Union Building or the Loop in the UBC Centre for Interactive Research on Sustainability.

3
Personal Balance: Get to know yourself and your limits. Find strategies that work for you by visiting the Healthy Minds (students) or the Healthy UBC blogs (faculty/staff).

4
Emotional Wellness: Manage your stress by learning to meditate on Fridays at noon with the free UBC meditation sessions offered by Healthy Minds and Health Promotion Programs.

5
Financial Health: Take advantage of your student or faculty/staff extended medical benefits plan to save money on health care expenses.

6
Intellectual Wellbeing: Explore UBC Events to find a free lecture, event or speaker series to learn about a new topic, such as Frames of Mind (www.framesofmind.ca).

7
Play: Have fun trying something new! Diversify your physical activity pursuits by exploring all that UBC REC has to offer for leagues, events and classes.

8
Spiritual Wellness: Explore opportunities for spiritual connection and growth through the UBC Multi-faith Chaplain's Association.

PETER WALL INSTITUTE FOR ADVANCED STUDIES

Application Deadlines

NOVEMBER 1, 2011
Exploratory Workshop Grant

Exploratory Workshops provide funding for bringing together researchers from different disciplines at UBC with distinguished external experts to, for example, work jointly toward assessing the research possibilities in a new area. Typically, Exploratory Workshops will take place over a period of several days and have a mix of open and closed sessions. The amount of the award is up to $25,000.

MARCH 1, 2012
Major Thematic Grant, Letter of Intent

The Major Thematic Grant provides funding of up to $500,000 over a three to five-year period to a broad interdisciplinary team of UBC and external scholars to research a new area of basic research. It is expected that UBC will become a centre for research on the topic. Applicants for a Major Thematic Grant must first have held a Peter Wall Exploratory Workshop within the previous two years.

For more information, please visit our website at www.pwias.ubc.ca or call us at (604) 822-4782.

Making a smarter ski goggle in the middle of summer

Sharper algorithms = more air time = better stunts

By Darren Handschuh

Sometimes you need to think outside the box, or in the case of one engineering student, outside the season.

At UBC's Okanagan campus, electrical engineering Master's student Fazle Sadi faced the challenge of developing algorithms for a high-tech pair of ski goggles in the middle of summer.

So Sadi secured the instruments needed for his tests, stuffed them into a backpack and headed for the hills—literally—where he enlisted the aid of a volunteer mountain bike rider to simulate a snowboarder getting some air time.

The rider strapped on the instrument-laden backpack and took off from a hand-made dirt jump again and again so Sadi could get a series of readings.

Sadi is playing a key role in refining the technology in the already high-tech goggles featuring head-mounted display systems that could soon be the must-have item for skiers and snowboarders.

He is helping to optimize technology for Recon Instruments which makes head-mounted displays for ski and snowboard goggles. The system has GPS and motion sensors, giving users real-time feedback on their speed, altitude, vertical distance traveled and total distance traveled, as well as temperature, time, a stopwatch and a run-counter mode. The technology will also link via Bluetooth to the user's smartphone, wireless video cameras and will boast navigation and buddy-tracking capabilities.

Working with Recon's research team, Sadi is developing complex algorithms – to crunch data from sensors such as GPS, accelerometer, gyroscope and digital compass – that will make the goggle display systems even smarter. The goal is giving users instant and in-depth readouts on the height, drop and air time of each jump. For instance, snowboarders can immediately fine-tune their approach, take off and airborne technique to catch more air for better stunts.

"From a video, you can't get accurate measurements and you have to wait a long time for that information. With the goggles, you have the information right away," says Sadi. "It has a processor in it so it can compute everything right away."

The work was funded by Natural Sciences and Engineering Research Council of Canada (NSERC) through a $22,000 grant from NSERC Engage.

Richard Klukas, assistant professor at UBC's School of Engineering and Sadi's supervisor, says once the algorithms are shown to work as expected, they can be incorporated into the microprocessor contained in the goggles.

Recon Instruments has caught the attention of NASA for potential integration of their head-mounted displays in a new generation of spacesuits. Recon's technology is being tested at NASA's annual research and technology studies this autumn.

Recon Instruments was started in 2006 by Dan Eisenhardt, Fraser Hall and Darcy Hughes, MBA graduates from UBC's Sauder School of Business, and Hamid Abdollahi, who was earning his Master's in engineering at UBC.

"That's why we understand the importance of gaining relevant experience throughout education and it is for this reason we work extensively with UBC," says Abdollahi, Recon's chief technology officer.

"The calibre of students from the university has been fantastic and they provide an integral part in the R&D of our technology," says Abdollahi. "We have so far had over 10 research projects and internships with UBC in various research areas which in some cases, students were hired after completion of their research projects." ●

For more information, visit:
www.reconinstruments.com

Darren Handschuh Photograph

Snowboarders can immediately fine-tune their approach, take off and airborne technique to catch more air for better stunts.

UBC graduate student **Fazle Sadi** is working on complex algorithms that allow skiers to record height, drop and air-time of a jump.

outtakes

Reflections on academic life

Shape shifting plastics

By Lorraine Chan

Martin Dee Photograph

Srikantha Phani (left) and **Jayachandran Kizhakkedathu** test small strips of PVC.

Shape-shifting plastics—a much-favoured material for superheroes and über spies —are now possible thanks to a fortuitous discovery at UBC.

Jayachandran Kizhakkedathu, an investigator at UBC's Centre for Blood Research, noticed something intriguing in his quest to develop new surface coatings for medical implants and storage containers to hold blood or biosensors.

Assoc. Prof. Kizhakkedathu found that certain coatings caused the plastic film to morph and then revert back to its original shape.

To solve the mystery, he invited Srikantha Phani, Canada Research Chair in Dynamics of Lattice Materials and Devices, to design a series of experiments.

Recently detailed in the journal Angewandte Chemie, Phani and Kizhakkedathu developed a novel protocol for grafting nanoscale polymer chains to the surface of polyvinylchloride (PVC) film. Polymers are large molecules composed of repeating structural units made up of small molecules that are chemically bonded together.

The researchers coated a small strip of PVC on one side with polymer chains. The team observed that the plastic curls into a loop when submerged in water. And when the PVC strip was coated on both sides with polymer chains and dipped into water, the plastic expanded and stretched up to 10 per cent beyond its original length.

"As far as we know, we're the first group in the world to show this is possible in soft material systems, says Phani, assistant professor of mechanical engineering.

Phani explains the grafted polymer chains on the surface resemble toothbrush bristles and can react to external stimuli such as heat, light, electricity and pH. "The response translates into a mechanical reaction and force that causes the plastic to bend and change shape."

"As far as we know, we're the first group in the world to show this is possible in soft material systems."

"This is significant for future biomedical possible uses such as catheters that go into the human body, artificial muscles or sensors," says Kizhakkedathu, who also teaches in the departments of chemistry and pathology.

Collaborating on the project are postdoctoral fellow Yuquan Zou at the Centre for Blood Research, Prof. Donald Brooks, who is jointly appointed to the departments of chemistry and pathology, and Dept. of Mechanical Engineering undergraduate student Adriel Lam. ●

Videos of the UBC experiments can be viewed at:
www.sites.mech.ubc.ca/~dal/Media.php

To read the *Angewandte Chemie* paper, visit:
www.sites.mech.ubc.ca/~phani/Publications/YZ_AL_JKN_SP_Soft%20Materials.pdf

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