



UBC REPORTS

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New UBC pep song something to cheer about



Prof. Stephen Chatman, an internationally renowned composer, has an encyclopedic knowledge of school fight songs.

BY SEAN SULLIVAN

The best part of UBC's new pep song may very well be the shouting.

"It's pretty easy to sing along," says composer Steve Chatman, a professor in the UBC School of Music. "You just have to remember to shout 'hail.'"

That UBC even has a pep song – let alone a newly recorded one – may prompt some surprise. University

fight songs are rare in Canada, where the tradition isn't held as dear as in the United States. At UBC, an older version of *Hail UBC* that's been kicking around since the 1930s wasn't even suitable to be played over the loudspeakers at games.

This proved troubling to UBC associate athletic director Steve Tuckwood and former athletic director Bob Hindmarch, who last year began asking around for a new version of "Hail UBC."

They quickly found Chatman, a Juno-nominated and internationally renowned composer, who has an encyclopedic knowledge of traditional fight songs.

"We set up a meeting, and about five minutes in, Steve said, 'You're looking for something like this?' He went over to a piano and started playing every fight song he knew," Tuckwood says. "He just knew them all."

And while one may think a pep song composed in 2009 would be a more modern take on the traditional format,

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Save the seeds, save ourselves

BY BUD MORTENSON

Native cultures and their plant seeds could be keys to addressing crises of food, medicine and energy, coping with climate change, and easing unprecedented rates of species extinction, according to Tirso Gonzales, an assistant professor of Indigenous Studies at UBC Okanagan.

"The dominant Westernized worldview tells us that nature has endless resources, and so we have unsustainable ways of living and doing agriculture in an era of oil addiction," says Gonzales. "That worldview is in crisis, and that's why we are looking for sustainability. There is great potential for Indigenous peoples to make important contributions to the world today."

A former Fulbright scholar with a PhD in sociology, Gonzales recently served as the Latin America and Caribbean lead author on the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD), a four-year, \$11-million project funded by the World Bank and United Nations Food and Agriculture Organization.

Published this year, the IAASTD five-volume report *Agriculture at a Crossroads* examines how science, technology and Indigenous knowledge can be used to reduce hunger and poverty, improve rural livelihoods, and promote development that is sustainable for the environment, societies and economies.

continued on p.3



UBC Okanagan professor Tirso Gonzales is planning a new Indigenous Centre of the Americas and Pacific Rim to foster intercultural dialogue on Indigenous cultures.



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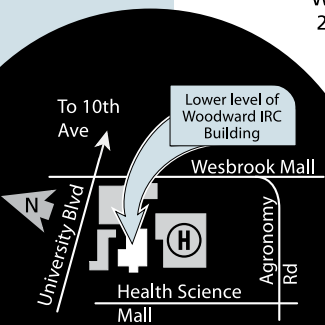
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PHOTO: DARIN DUECK

Prof. Michael Jackson authored a critical report on a federal prison plan.

Canadians uncover cancer map

The possibility of using a patient's genetic information to create personalized therapies to battle cancer is one step closer to reality after UBC and other Canadian scientists decoded, for the first time, the entire genome of a patient's metastatic breast cancer, reported the *Globe and Mail*.

The newspaper called it "a landmark achievement that sheds light on how cancer develops and provides new insights into how to fight it."

"I'm excited by the possibilities," said Samuel Aparicio, Canada research chair in molecular oncology, the Nan and Lorraine Robertson chair of breast-cancer research at UBC, and one of the lead scientists involved with the study.

"In fact, I never thought I would see in my professional lifetime that it would become possible to routinely sequence genomes in the way that we're now doing."

The findings were also heralded by *Reuters*, *AFP*, *Associated Press*, the *Los Angeles Times*, *The Canadian Press* and *Canwest News Service*.

Golden Mean turns heads

Author and UBC Creative Writing instructor Annabel Lyon has earned three major award nominations for her debut novel, *The Golden Mean*.

The *Golden Mean* is a

fictionalized story of Aristotle's childhood up to the time when he became a tutor to the boy who would become Alexander the Great, notes *Canwest News Service*.

The novel is a nominee for the Governor General's prize for fiction, made the longlist for the \$50,000 Scotiabank Giller Prize and is a finalist for the \$25,000 Rogers Writers' Trust Fiction Prize.

Lyon, a UBC alumna, was interviewed by the *Globe and Mail*, *The Canadian Press*, the *Vancouver Sun* and *CBC*.

Engineering student nets Discovery spot

Fourth-year UBC engineering student Aaron Coret was featured on the Discovery Channel's *Daily Planet* for the snowboard Landing Pad he co-invented with UBC alumnus Stephen Slen.

In 2005, Coret's freestyle career came to a dramatic halt when he had a bad landing and became a quadriplegic. In the *Daily Planet* feature, he is on Blackcomb Mountain in Whistler testing the latest prototype of the Landing Pad, a giant vinyl pillow that allows freestylers to land hard and continue safely downhill to reduce big injuries.

"It's like the best day of the year," Coret said.

Lynch goes to your brain

Surrealism may be good for the brain, according to a UBC

study published in the journal *Psychological Science* and covered by international media including the *New York Times*, the *Times of India* and the *Globe and Mail*.

Watching the films of David Lynch, director of *Blue Velvet* and *Eraserhead*, or reading a Franz Kafka short story, can improve learning by compelling the brain to make an extra effort to seek out structure, the *Globe* reported.

"We rely on structure to make sense of the world," said Steven J. Heine, co-author of the study and UBC professor of psychology. "If you encounter something that you can't relate [to other things], that you don't know what to do with it, this sort of puts you off your game and you need to search for a reference point again to again find some structure."

Prison plan slammed

UBC Law Prof. Michael Jackson made a national splash with a report that slams the federal government's plan to "toughen" Canada's prison system.

The report, co-authored with a former director of the John Howard Society of Canada, argues the government is ignoring "more than a century of correctional and legal history, empirical research and the recommendations of inquiries and royal commissions" in its blueprint to overhaul federal prisons.

The study attacks the Harper government for adopting an amateur and "alarming" document that ignores human rights, gives the false impression that crime is rising, and provides no costs for flawed policies that would flood penitentiaries with more inmates, reported *Canwest News Service*.

"With no public review or consultation, the plethora of recommendations - some good, some trivial, but many with draconian implications for the protection of human rights, public safety and the public purse, are being presented as the future of federal corrections in Canada," Jackson and Steward wrote.

The Canadian Press, *CBC*, the *Vancouver Sun* and the *Edmonton Sun* also reported on the study. **R**

UBC REPORTS

NEXT ISSUE: DECEMBER 3, 2009

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UBC Public Affairs Office

310 - 6251 Cecil Green Park Road

Vancouver BC Canada V6T 1Z1

UBC Reports welcomes submissions.

For upcoming UBC Reports submission guidelines:

www.publicaffairs.ubc.ca/ubcreports/about.html.

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NEW PEP SONG *continued from cover page*

Chatman's done the opposite. His new take on *Hail UBC* is a throwback to the pomp and bluster of the early 1900s, when such pep songs were in their heyday.

"The pep song or fight song tradition goes back even to the 1890s," says Chatman. "Most of these pep songs, and there are some really good ones, were written around 1900 or 1910. The traditional ones, like the University of Notre Dame's, they were all written early. There is a certain style that's unique to those times."

The former *Hail UBC* was written in 1931 by Arts student,

for the Performing Arts, retains only the title of the original 1931 version.

The song was recorded by the UBC Wind Ensemble, directed by Robert Taylor, produced by Karen Wilson and engineered by David Simpson. One short version was recorded with a full wind ensemble, including piccolo, oboe, clarinets, trumpets, trombones, baritone, horns, tuba, saxophones and percussion. The other, with combined band and 100 voices of the UBC Opera Chorus is by director Nancy Hermiston, the UBC Singers, and director Graeme Langageris longer and intended for ceremonies.

"It's supposed to be inspirational, so the team can feel good hearing it after they score."

trumpet player and band leader Harold King. Chatman calls it "more of a swing tune" than a rousing fight song.

"It's fine, but it's not really a pep song," Chatman says. "It's kind of a tune you'd do with a jazz combo."

"We needed something that can inspire spirit and pride at athletic events and throughout the UBC community," Tuckwood says. "Something like that gets ingrained in people's heads and builds a lasting legacy and tradition."

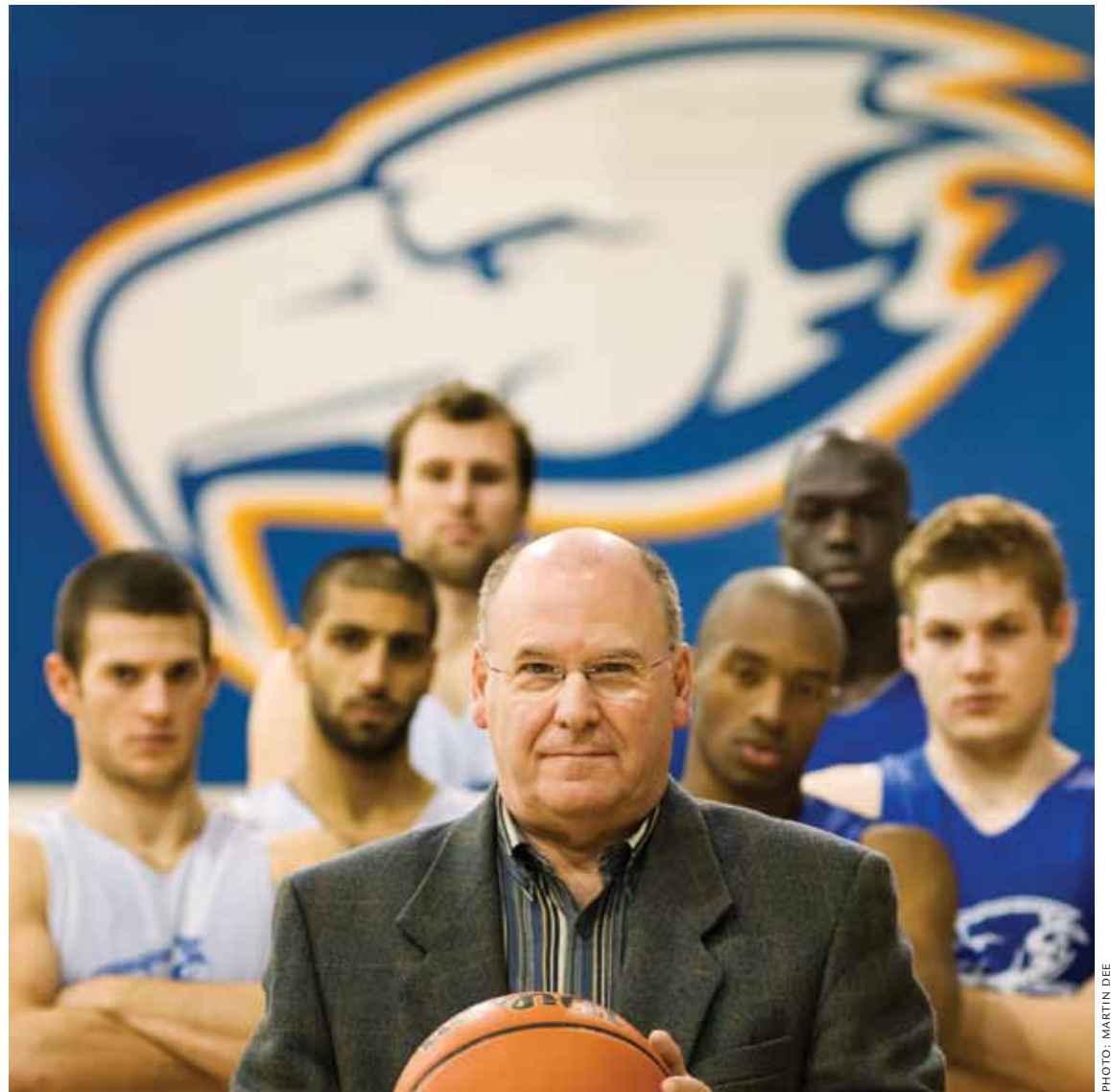
The new version, recorded in September at the Chan Centre

The version that will get the most use is the 20-second-long "stinger," to be played after the UBC Thunderbirds score a goal.

"It's supposed to be inspirational, so the team can feel good hearing it after they score," Chatman says.

"And hopefully the other team will feel bad," he adds with a laugh. "Of course, the more UBC scores, the faster the song will catch on."

Chatman's interest in the sub-genre of university pep songs stems from his visits to football games at the University of Wisconsin as a child. At



Prof. Chatman wants "Hail UBC" to help spur our teams to victory.

the University of Michigan, where he did graduate studies, he remembers cheering along with UMich's iconic song, "The Victors."

That song was reportedly called the "best fight song of all time"

by composer John Philip Sousa.

The new "Hail UBC" made one of its first appearances at a recent women's hockey game that the Thunderbirds won 4-1.

"By the fourth goal, people in the stands were singing along,"

says Tuckwood. "It's infectious."

"I wanted to have a song that was traditional enough that wouldn't go out of style. The only modern part about this one is when it was composed and recorded." **R**

SAVE THE SEEDS *continued from cover page*

The report points out a range of environmental impacts from agricultural practices around the world today, noting:

- Approximately 1.5 billion people are directly affected by land degradation
- Deforestation is proceeding at 13 million hectares per year
- Over half of the world's grasslands are degraded
- Depletion of marine resources is so severe that some commercial fish species are now threatened globally

Gonzales is focusing his attention.

"Indigenous culture is an undervalued, diminished and marginalized reservoir of knowledge," says Gonzales, citing colonization and a still-prevalent colonial mentality as major influences around the world. "We can't be entrenched in our own way of viewing the world – we need an intercultural dialogue."

Born and raised in Peru, Gonzales is related to the Aymara people, who have a rich

sustainability."

As an academic with close ties to what he calls Indigenous "cultures of the seed," Gonzales is keenly aware of the contrasts between science and Indigenous knowledge, and he's eager to help these disparate worldviews strike up a dialogue, not collide.

Last December, Gonzales began a pilot research project collaborating with Peruvian Andean-Amazonian Indigenous peoples' local organizations. The project is supported by UBC's

sector, and civil society at large.

"Where the seed goes, where genetic material goes, it goes with culture, place and language," he says. "We need society, policy makers and institutions to be flexible enough to respond to the challenge. If not, we will continue to exclude people in large numbers

from being who they are and from contributing to enriching sustainable, place-based *agricultures*."

The IAASTD reports *Agriculture at a Crossroads* are available from www.agassessment.org or www.islandpress.org/iaastd. **R**

"In Andean agriculture you take care of the roots, tubers and grains with love, care and nurturance."

■ The demand for water for agriculture has led to serious depletion of surface water resources

■ Half of the world's wetlands are estimated to have been lost during the last century

Of an estimated 525 million farms worldwide, 404 million have fewer than two hectares of land, the report says, advising that using local and Indigenous knowledge – as well as advanced sciences across a broad field of disciplines – would benefit these small-scale agricultural producers.

Achieving this will require a new kind of communication that spans the gulf between Indigenous and non-Indigenous cultures – and that's where

cultural tradition of rituals and sustainable life spanning more than 10,000 years. He says the Aymara and Quechua peoples of Peru, for example, have amassed vast experience and knowledge living in harmony with nature. Their Andean worldview holds that everything is alive – the seeds, the soil, mountains – and everything has its own culture and deserves respect.

"In Andean agriculture you take care of the roots, tubers and grains with love, care and nurturance. Life is nurtured as a whole," he says. "Food comes by default, but not because you are really concerned with producing food, but because your concern is with procuring balance and harmony. That is the spirit of

Martha Piper Research Fund and emphasizes interdisciplinary, intercultural dialogue and exchange, as well as gathering data and mapping of agricultural local knowledge and lore.

Gonzales envisions a new Indigenous Centre of the Americas and Pacific Rim to promote and endorse the Indigenous peoples' agenda as expressed in the United Nations Declaration on the Rights of Indigenous Peoples.

He says the centre would work to strengthen dialogue within and between cultures, and provide for training, exchange, education, and dissemination of information and research outcomes for key stakeholders such as Indigenous peoples, governments, the private



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Making beautiful music in the Downtown Eastside



PHOTO: BRIAN HAWKES

UBC students and some of Vancouver's homeless are composing music for gamelan – an orchestra of traditional Indonesian instruments – in a unique music course.

BY BASIL WAUGH

A UBC music researcher is teaching the world's first university course on musical expressions in a Canadian inner city.

The class will help more than 30 UBC music students to learn about music in Vancouver's Downtown Eastside and to showcase the musical talents of neighbourhood residents.

Heart of the City: Introduction to Applied Ethnomusicology is taught by

house and homeless – will pair with students for singing lessons, a First Nations song workshop and the creation and performance of original music for gamelan, a traditional Indonesian orchestra of specially-tuned xylophones, gongs and chimes. A showcase of neighbourhood singers and songwriters supported by UBC students in an orchestra, choir and production team will be another highlight.

The fourth-year seminar is being offered by the UBC

contexts to explore how music works towards solving social problems.

The Downtown Eastside Music Theatre Showcase will feature 30 songs created in and around the neighbourhood. Nineteen UBC students will serve in the orchestra, choir and stage crew for residents, who will star as lead performers. Students will also document the performance with a film crew, interview participants and research the transformative effects that music can have on

“Music can build trust, self-esteem and a positive sense of community. For some, it is a tool for emotional, psychological and physical survival.”

Klisala Harrison, a postdoctoral teaching and research fellow in UBC's School of Music who has researched inner city music in the area and around Canada for the past nine years.

“Music plays an important role in regenerating socioeconomically depressed urban areas,” says Harrison, 34. “It can build trust, self-esteem and a positive sense of community. For some, it is a tool for emotional, psychological and physical survival.”

Downtown Eastside residents – including some hard-to-

School of Music and the UBC Learning Exchange in partnership with the Faculty of Arts' First Nations Studies Program. It is one of a growing number of classes incorporating Community Service Learning, a form of experiential education that combines classroom learning with volunteer work to achieve community goals.

Harrison says the student projects are examples of applied ethnomusicology, an approach to music scholarship guided by principles of social responsibility that works within and beyond typical academic

communities under stress.

The singing and gamelan projects, which will include public performances, will occur at Vancouver's Carnegie Community Centre and Interurban Gallery between Nov. 28 and Dec. 1.

UBC School of Music:
www.music.ubc.ca
UBC Learning Exchange:
www.learningexchange.ubc.ca
Dr. Klisala Harrison:
<http://www.music.ubc.ca/faculty-and-staff/visiting-faculty/klisala-harrison.html>



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More UBC students volunteer for community service learning in 2010



PHOTO: MARTIN DEE

During and around the 2010 Games, UBC student Anushka Samarawickrama will join as many as 1,000 UBC Learning Exchange community service learners and volunteers in Downtown Eastside schools and other Vancouver non-profits.

BY BASIL WAUGH

UBC student Anushka Samarawickrama is looking forward to the 2010 spring break so she can hang out with some special friends.

But you won't find them dancing in any Fort Lauderdale conga lines this Olympic year. She and her buds are reuniting in the same place their unique relationship started one year ago: an elementary school on Vancouver's Eastside.

Samarawickrama's pals are the kids, teachers and fellow UBC students that she met last year during a powerful volunteer experience at Franklin Elementary. Together they played dodgeball, made fruit smoothies, jumped rope and did fun math problems in a school-wide effort to improve nutrition, fitness and learning skills.

They connected through the UBC Learning Exchange, which has been putting UBC student volunteers into schools and non-profit organizations in the Downtown Eastside and other Vancouver inner city neighborhoods since 1999. True to the program's name, Samarawickrama says the lessons went both ways.

"Seeing up close the impact I had on these young people really moved me," says the second-year arts student, who worked with seven boys in various grades. "There was so much that I learned, especially about

the adversity some people face every day. It was a really new environment for me, but I had a lot of fun. It actually really re-energized me for school."

This year, UBC's annual reading break for Vancouver campus students has been extended to two weeks – from February 15 to 26 – to help accommodate the concurrent 2010 Winter Games.

Many projects will have Olympic themes to help connect

UBC has helped to pioneer in Canada, combines classroom learning with volunteer work to achieve community goals.

Already home to the nation's largest university spring break CSL initiative, UBC is planning for a record turnout in 2010. As many as 1,000 students, faculty and staff are expected to participate in more than 50 projects in Vancouver schools and non-profit organizations

because of the challenges of inner city life, they can't always pursue them," says Steve Agabob, principal of Mount Pleasant Elementary School, a five-year UBC Reading Week partner. "Our students really connect with the UBC students and they produce awesome work together. University suddenly seems like an attainable goal for them. It's a match made in heaven for us."

The UBC Learning Exchange's

\$1.4 million of HSBC Bank Canada's recent \$2.17 million gift to UBC supports UBC Learning Exchange programs where students volunteer in literacy, math and science projects in Eastside elementary schools.

School-based volunteer teams will be led by UBC staff and senior students as well as employees from SAP Canada (formerly Business Objects), which has also provided financial support for the Reading Week projects.

The Learning Exchange receives support from a variety of UBC partners, including Student Development, Human Resources and External, Legal, and Community Relations.

Learn more and sign-up for a Reading Week 2010 CSL school project at: www.ubc.ca/readingweekprojects. **R**

"I learned so much, especially about the adversity some people face every day. It really re-energized me."

children with the Games. For example, UBC students and Britannia Elementary School youth are planning Olympic-themed math stations. Other non-2010-themed projects will expand a UBC-built YMCA rooftop garden that provides fresh fruit and vegetables to women and children in the Downtown Eastside and create wellness programs at Vancouver's Downtown Community Court.

"Although the Olympics create challenges – there is intense competition for volunteers and transportation will be more difficult – the extended reading break is an exceptional opportunity for students to engage in community service learning," says Margo Fryer, director of the UBC Learning Exchange.

Community service learning (CSL), an educational approach

between January and March.

"Every year, we hear how transformative these reading week projects are – for students and residents alike," says Fryer. "Participants are challenged to think more deeply about important community issues and gain important leadership skills. It is a learning experience we want as many students as possible to have."

According to National Survey of Student Engagement founder George Kuk, CSL is one of the top things universities can do to get undergraduate students more engaged in their learning. Research also suggests CSL has positive effects on teamwork, academic performance, civic engagement and interpersonal communication.

"All my students have passions and interests, but

growth is part of a university-wide commitment to develop CSL programs that engage 10 per cent of UBC students every year by 2014.

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**FACULTY OF ARTS
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Once again the University is recognizing excellence in teaching through the awarding of prizes to faculty members. Up to six (6) prize winners will be selected in the Faculty of Arts for 2010.

Eligibility: Eligibility is open to faculty who have three or more years of teaching at UBC. The three years include 2009 – 2010.

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

Nomination Process: Members of faculty, students, or alumni may suggest candidates to the Head of the Department, the Director of the School, or Chair of the Program in which the nominee teaches. These suggestions should be in writing and signed by one or more students, alumni or faculty, and they should include a very brief statement of the basis for the nomination. You may write a letter of nomination or pick up a form from the Office of the Dean, Faculty of Arts in Buchanan C105C.

Deadline: 4:00 p.m. on January 11, 2010. Submit nominations to the Department, School or Program Office in which the nominee teaches.

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

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

Get involved in the UBC Winter Games Volunteer Program

Help welcome the world to campus by becoming part of the UBC Winter Games Volunteer Program. Students, alumni, faculty and staff can volunteer with any one of a number of positions both off and on campus, including Campus Tours, the Learning Exchange Reading Week Program, Library Ambassadors or with the Province of British Columbia at the BC Pavilion or the 2010 Commerce Centre.

Groups with volunteer positions to be filled can post opportunities under the UBC Winter Games Volunteer Program profile on the Career Services CareersOnline website.

To learn more information on how to find or post volunteer opportunities, go to ubc.ca/2010.

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Straightening feet and building bridges



PHOTO: courtesy Brian Kladko

Clinical Prof. Dr. Shafique Pirani has dedicated himself to improving treatment of clubfoot in Uganda.

BY BRIAN KLADKO

Acting Communications Manager,
Faculty of Medicine

Fourteen thousand kilometres

separate the UBC Faculty of
Medicine from Uganda. Dr.
Shafique Pirani is trying to
bridge that gap.

A clinical professor in the
Department of Orthopedics,
Pirani first returned to the
country of his youth a decade
ago and has made 20 subsequent

trips, trying to rid the east
African nation of clubfoot, a
birth defect in which one or
both feet are turned inward and
downward.

It involves gently manipulating a
baby's foot, placing a cast on it,
and then repeating the process
over several weeks, the flexible
cartilage is molded into the
proper position and stays put as
it becomes bone.

Pirani, an orthopedic surgeon
at Royal Columbian Hospital
in New Westminster, has helped
make the Ponseti method the
mainstream treatment for
clubfoot in North America.
But he has been even more

Funded in part by the Canadian
International Development
Agency (CIDA), Pirani, Professor
Richard Mathias, of UBC's School
of Population and Public Health,
and Edward Naddumba, Head
of the Department of Orthopedic
Surgery at Uganda's Makerere
University, have worked to
create a network of 30 clinics
throughout the country staffed
by "orthopedic officers." He is
aiming to add 10 more before the
CIDA grant expires next year.

**By gently manipulating a baby's foot,
placing a cast on it . . . the flexible cartilage is molded into
the proper position and stays put as it becomes bone.**

determined to see it taken up in
Uganda, where the limitations
and pain imposed by clubfoot
are critical (the main means of
transportation is walking, while
farming and manual labour
are the main occupations.)

Moreover, because the treatment
doesn't have to be performed by
physicians, it's the best hope for
eradicating the condition in a
country with so few orthopedic
surgeons.

He has been working not as a
practitioner, but as a proselytizer
of the Ponseti method, a non-
surgical way of curing clubfoot.
Originated by U.S. orthopedic
specialist, the late Dr. Ignacio
Ponseti, the method is the "gold
standard" for clubfoot treatment.

Pirani estimates that about
40 per cent of Ugandan babies
born with clubfoot are now
being treated in one of those
clinics. Many of the other 60 per
cent, Pirani suspects, are babies
not born in hospitals so the
Ugandan Ministry of Health has
undertaken a public awareness
campaign using posters, brochures
and radio spots in various
languages. (To listen to the spots
in English and Luganda, go to
www.med.ubc.ca/media/med_mag/clubfoot.htm.)

"Because of the Ponseti
treatment, children born in
Uganda with clubfeet now have
a good chance to grow up with
normally functioning feet, freeing
them from a lifetime of pain and
suffering," Pirani says.

Pirani has received a \$100,000
gift from an anonymous donor to
expand training within Uganda,
and to replicate the project in
other countries. Governments
in Bangladesh, Mali, Nepal and
the Indian state of Karnataka,
have expressed interest, and he
has already taken his message to
Brazil and Malawi.

*The Ponseti International
Association estimates that
clubfoot occurs in 150,000-
200,000 babies each year
worldwide.* **R**



PHOTO: courtesy Brian Kladko

Dr. Shafique Pirani, far right, has traveled back and forth to Uganda
over the past decade in his quest to cure clubfoot.



THE UNIVERSITY OF BRITISH COLUMBIA

Do you remember an inspiring teacher from your past?
Why not recognize that teacher with a nomination for a:

FACULTY OF APPLIED SCIENCE UBC KILLAM TEACHING PRIZE

The University is again recognizing excellence in teaching through the awarding of teaching prizes to faculty members. Three prize winners from the Faculty of Applied Science will be selected for 2010.

ELIGIBILITY: Open to full-time tenure-track faculty or a sessional lecturer with at least half-time teaching in Architecture, Engineering or Nursing who have five or more years of teaching experience at UBC.

CRITERIA: Sustained teaching accomplishments at all levels at UBC, focusing on faculty members who have demonstrated that they are able to motivate students and are responsive to students' intellectual needs, or have developed innovative course materials for laboratory or classroom delivery.

NOMINATION PROCESS: Students, alumni or faculty members may nominate candidates. Student nomination letters should include at least five student signatures. Letters of nomination and supporting documents should be sent directly to:

Dean's Office, Faculty of Applied Science
The University of British Columbia
5000-2332 Main Mall
Vancouver, BC, V6T 1Z4
Attention: Laura Vigorito

NOMINATION DEADLINE: November 30, 2009

For further information, please contact the Dean's Office, Faculty of Applied Science
(Laura Vigorito, e-mail lvigorito@apsc.ubc.ca; tel: 604-822-6776), your
Department or School office, or the Killam Teaching Prize Committee Chair,
Cynthia Girling.

When Johnny can count by twos, but can't tie shoes



Developmental coordination disorder (DCD), a poorly known children's disorder, affects up to six per cent of children aged five to 11.

BY HILARY THOMSON

They may be labeled clumsy or lazy, but children who struggle to perform simple motor tasks may actually be unable to fully use key regions of the brain, according to research by a UBC graduate student.

Jill Zwicker, a PhD candidate in Rehabilitation Sciences, has conducted one of the first neuroimaging studies exploring motor performance of children with developmental coordination disorder (DCD), a motor learning disability seen in schoolchildren and shared by actor Daniel Radcliffe of Harry Potter fame.

Six per cent of children aged five to 11 have identified DCD

says Zwicker, who began her doctoral studies in January 2006.

Zwicker compared motor performance and brain activation patterns of seven children with DCD. Using functional magnetic resonance imaging (fMRI), the students completed a computerized tracing task. Over a two-week period, the eight to 12-year-olds used a joystick like a pen to trace a computer image of a flower in five separate sessions, both in and out of the fMRI scanner. Accuracy and speed were measured each time and fMRI charted brain activity. A control group completed the same tasks.

Although there were few

20 years' experience and also the mother of a 12-year-old boy with DCD. Her son was diagnosed 18 months ago.

"My 'battle' to have him tested and then be given support has been an ongoing struggle since he was six years old," she says. "You have to be the greatest advocate for your child . . . push to get testing, a diagnosis and the school support these children are entitled to."

Comments from family and friends suggesting her son is lazy, messy or slow by choice have been frustrating and devastating, she adds.

As a teacher she says the greatest challenge has been not even knowing until recently

DCD interferes with activities such as handwriting, tying shoes and handling a knife and fork. It is not a minor disorder yet it remains under-identified, says Zwicker.

– a higher prevalence than attention deficit hyperactivity disorder (ADHD). The conditions are related; about half of children with DCD also have ADHD and vice-versa. About 30 per cent of children with DCD also have a speech/language disorder or learning disability.

DCD interferes with activities such as handwriting, tying shoes and handling a knife and fork. It is not a minor disorder yet it remains under-identified, says Zwicker.

The term DCD has been recognized since 1994 but is not well-known among teachers, parents or physicians, says Zwicker. Its cause is unknown but researchers are investigating a genetic link. Zwicker has worked for 20 years as a school-based occupational therapist and has helped identify and assist students who have the disorder.

"These children are not able to meet their potential. That's what put me on this mission,"

participants in the study (started in June 2008 and to be completed in early 2010) the neuroimaging results are statistically significant. Children with DCD do not seem to use their attentional and error detection brain regions to the same degree as typical children.

Also, Zwicker found that kids with DCD traced more quickly but with less accuracy than the control group whose performance showed the reverse results.

She has interviewed children to determine how these coordination challenges have affected their lives.

A 10-year-old boy said, "it's a bit hard for me [basketball]. Nobody usually passes to me . . . It's like I'm left out of the game usually."

Another child "thinks [he's] a loser" because he is unable to do things other kids can do easily. This nine-year-old boy cannot tie his shoes or ride a bike.

Vicky Liakouras is an early primary schoolteacher with

that the disorder existed or how prevalent it is. She says more workshops are needed where teachers are made aware of DCD and how necessary it is to directly address the disorder.

When a teacher observes a child regularly having difficulty with motor skills, it is recommended that they meet with parents to discuss the child's performance at school and at home. Following an examination by the family doctor to rule out causes other than DCD, a referral to an occupational therapist can yield strategies for school and home.

It was previously believed that children "grew out of" DCD, but it is now known that it persists into adulthood. Because children are often marginalized by peers and criticized by parents and teachers, they can develop mental health, social and physical problems as teens and adults. These may include anxiety and avoidance of recreational activities or jobs that require good motor



Application Deadlines

JANUARY 29, 2010
2010–2011 Early Career Scholars

The Early Career Scholars Program is for full-time UBC faculty who are in the professorial ranks and at the early stage of their academic careers at UBC. The Institute will appoint up to fourteen untenured Assistant and recently tenured Associate Professors. Assistant Professors within two years of their appointment as Assistant Professor at UBC and Associate Professors within two years of tenure and promotion at UBC are eligible.

MARCH 1, 2010
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 \$20,000. Beginning March 1, 2010, the Institute will hold only a single competition each year.

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

performance. They may also have health issues such as obesity.


"Doctors need to know these children are different at a neurobiological level and that DCD is a legitimate disorder," says Zwicker. She hopes if more is known about what the brain is doing, it will lead to better and earlier interventions.

These can include individualized and repeated teaching of targeted motor skills needed for typical childhood activities, such as riding a bike or using a keyboard. Effects of DCD on daily life can be minimized through such practice and through problem-solving strategies to help the child generalize motor skills from one task to another. In addition, encouraging physical activities that incorporate a repeated sequence of movements, such as swimming or cycling, can help prevent secondary problems of lack of fitness and social

isolation.

Zwicker presented her findings at an international conference this summer and drew considerable attention from DCD researchers. Following graduation next year she will start post-doctoral work at Vancouver's Child and Family Research Institute where she will analyze neuroimaging data of pre-term infants and link these findings with motor outcomes at age 18 months to determine their risk for DCD.

Zwicker's doctoral committee members are Asst. Prof. Lara Boyd and Prof. Emerita Susan Harris of UBC's Dept. of Physical Therapy and Assoc. Prof. Cheryl Missiuna of McMaster University's School of Rehabilitation Science and the Director of *CanChild*, Centre for Childhood Disability Research.

For more information on DCD, visit *CanChild* at www.canchild.ca/en/. 

Students build tiny E.coli ‘traffic light’

BY HILARY THOMSON

A team of UBC undergrads will see how their new biosensor technology stacks up against international rivals during UBC’s first-ever participation in the International Genetically Engineered Machines (iGEM) competition, held at Massachusetts Institute of Technology (MIT) this month.

iGEM, launched at MIT in 2003, is widely recognized as the leading undergraduate learning opportunity in synthetic or engineered biology. Projects have ranged from banana- and wintergreen-fragranced bacteria to an arsenic biosensor. This year, more than 100 teams from 20 countries will participate, including 10 teams from Canadian universities.

“We were a glaring exception among Canadian universities because we had never participated in this premier competition,” says Eric Lagally, an assistant professor of chemical and biological engineering who founded the team and is its faculty advisor. “When we announced plans to enter iGEM, it tapped into a lot of latent interest.”

The team was made up of [then] first- to fifth-year students in disciplines that include microbiology and immunology, chemical and biological engineering, and computer science. iGEM organizers give competitors a kit of genetic material that can be inserted into *E. coli*, a well-studied model organism for operating and designing genetic circuits.

After more than 6,000 hours of research work over the summer, the team has produced the E.coli Traffic Light, a biosensor signaling mechanism operating in *E. coli* (still being tested at time of publication).

Traffic Light is a whole-cell biosensor – a machine built inside a single living cell – that measures concentrations of substances at finer levels than previously available. Students manipulated DNA and RNA in *E. coli* cells to detect levels of a sugar added to the medium used to grow the cell. The technique causes the cell to fluoresce green in response to



PHOTO: © iStockphoto.com

a low level of sugar, amber for a medium level and red for highest levels of sugar. Research problems included triggering the cell to fluoresce at the correct level and getting the non-relevant colours to stop fluorescing so the appropriate one would be clearly visible.

Lagally believes the work has the potential to be broadly significant – the research is entered in the iGEM category of “potentially fundamental advance.” Applications for the technology include detecting heavy metals for environmental analysis or finding the earliest signs of cancer or other disease.

The team was formed with a UBC Teaching and Learning Enhancement Fund grant of \$36,800. Lagally and co-advisor Joanne Fox, an instructor in the Advanced Molecular Biology Laboratory in the Michael Smith Laboratories, held a first meeting in October 2008 to determine level of interest – 40 students showed up. The ensuing selection process looked at academic

which many grad students don’t get to do.

Team member Amelia Hardjasa doubts there is another venue open to undergraduates that is as encouraging and supportive of self-directed work and organization.

“iGEM has definitely been a better introduction to the research world than anything else I’ve undertaken,” says Hardjasa, a sixth-year student pursuing a double degree in microbiology and classics. “One thing it’s certainly shown me is that research is not easy, but it is incredibly rewarding and I don’t think I’d ever be able to cut it out of my life completely.”

Fellow team member Eric Ma, a fourth-year integrated sciences student, says the best part of the international competition is the opportunity to exchange ideas with the best and most motivated individuals worldwide.

“Going through this has told me I’m ready for a PhD, hopefully in an applied field relating to cancer treatment and diagnostics,” says Ma, who initiated and ran a

weekly Journal Club series through UBC’s iGEM Club, created by the team.

The UBC iGEM project has been supported by Integrated DNA Technologies, an international DNA synthesis company, and by the Canadian Institutes of Health Research through a training program administered by BC Transplant Society. **R**



PHOTOS: courtesy Eric Lagally

UBC students are developing a technique that causes cells to fluoresce with different colours in response to different sugar levels.

New focus for the UBC United Way campaign

BY SEAN SULLIVAN

If United Way organizers have their way, the UBC campus will be rife with pyjamas, bathrobes and slippers on Nov. 13.

That’s the date of the UBC Community United Way campaign’s officially sanctioned PJ Day, which gives all members of the campus community an opportunity to wear their favourite lounging clothes to campus.

The one catch: You have to buy a cute United Way button, available at the UBC Bookstore, Koerner Library and some food service outlets.

The PJ Day is one of many new components of the university’s annual campaign for the United Way, which this year made a number of changes to better reflect the values of the university community.

Gone are the mass mail-outs, the flyers and the paper donation forms. In an effort to curb paper waste, the campaign has launched the online United Way @ Work, which allows employees to donate through a web portal.

“We used almost 45,000 sheets of paper in last year’s campaign,” says campaign chair Lynn Newman, assistant dean, students, in the Faculty of Land and Food Systems. “This year, we’ve cut it down to about 1,500.”

Staff members who would prefer a paper form can still contact organizers to request one.

The oversized thermometer is also absent, as increasing participation – not achieving a dollar figure – is one of this year’s campaign goals.

Given the campus’s reach, that involvement is essential.

“The United Way is second only to the provincial government as the largest provider of social services in the Lower Mainland, and UBC’s campaign is the largest in the area,” Newman says. “The campus community’s involvement can mean a world of difference to those in need.”

And there are ample ways to participate. Faculty, staff and students can organize an event among friends and colleagues, or join in one of the many bake sales, raffles, and 50/50 draws taking place across campus. Among the top prizes is a one-year campus parking pass.

For the first time, a group of philanthropists will match any new individual donation (as long as it is over \$20), or an individual donation that is increased by 15 per cent from the year previously.

All employees who donate will be put into a draw for the grand prize: two tickets to anywhere Air Canada flies in North America (excluding Hawaii).

Watch UBC Events for upcoming events, and visit the campaign website for news, videos and more information: www.unitedway.ubc.ca. **R**



United Way