Board of Governors Report  
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B. Mario Pinto, Vice-President, Research

Recent Research News

Canada Foundation for Innovation (CFI) Competition Results

The national funding announcement of the results of the latest CFI Leading Edge Fund and New Initiatives Fund competitions will take place January 15, 2013 at SFU Burnaby. The Honourable James Moore, Minister of Canadian Heritage and Official Languages, will make the announcement, featuring two SFU-led collaborative initiatives funded under the Leading Edge Fund program: the Prometheus Project and the ATLAS project.

Working with a network of international partners, the Prometheus Project will build on research capacity and infrastructure at SFU, UBC, UVic, and BCIT to create a multi-institutional advanced materials science and engineering initiative. The aim is to deliver innovations in solar materials and devices, biomedical devices and sensory systems, and quantum computing and information devices. CFI will contribute $7.7M towards this $19.5M project, led by Dr. Neil Branda of SFU Chemistry. Professor Branda, Canada Research Chair in Materials Science, is also the founder of SFU spinoff company SWITCH Materials.

CFI is also providing $1M toward a $2.5M upgrade of the ATLAS Tier-1 Data Analysis Centre housed at TRIUMF in Vancouver, led by Dr. Michel Vetterli of SFU Physics. The equipment upgrades will enable Canadian researchers to continue to play a leading role in two international projects: the ATLAS particle physics experiment at the Large Hadron Collider at CERN in Geneva, and the Worldwide LHC Computing Grid (WLCG). Professor Vetterli is the Canadian Tier-1 project leader, and a member of the ATLAS International Computing Board and of the WLCG Collaboration and Overview Boards. He is also the Deputy Chair of the ATLAS Publications Committee and will take over as Chair this spring.

It is a significant milestone in SFU’s history that other Canadian institutions have confidence in its ability to lead regional and national initiatives; SFU is no longer just a tributary.

Research Collaborations with India

I accompanied Dean Rajapakse and Nav Chima, project director of SFU’s BC-India Mobility Initiative, on a visit to New Delhi from November 5-9, 2012 to coincide with Prime Minister Harper’s trade mission to India. Dean Rajapakse spoke at the high-level Canada-India Business Forum, and I presented SFU’s clean energy research capacity at the Renewable Energy India Expo. I also had the opportunity to meet with several high-ranking officials to further SFU-India research collaborations and student exchange opportunities: the University of Petroleum and Energy Studies, IIT Delhi, Datawind, Natural Resources Canada, Manipal Global Education Services, TERI University, Trade and Investment BC, and the High Commission of Canada.

Nav Chima met with Infosys, a global IT company headquartered in Bangalore, about SFU’s acceptance into the company’s flagship Instep Internship program to attract talent from the world’s top academic institutions. SFU is the 5th Canadian university (and the only one in Western Canada) to be selected as an Instep partner institution.

During the visit to TERI University in New Delhi, I signed a Memorandum of Understanding to promote future institutional collaboration, including student and faculty exchange and the development of collaborative research programs of mutual interest.

SFU is planning a workshop in March 2013 on Clean Energy in New Delhi with TERI, IIT Delhi, and other partners. Ten faculty members from SFU will visit India.
AUCC’s Open Doors, Open Knowledge Initiative

Last November, SFU’s Vice-President, Research Office launched an Open Doors, Open Knowledge website at [http://www.sfu.ca/vpresearch/open-doors-open-knowledge.html](http://www.sfu.ca/vpresearch/open-doors-open-knowledge.html) to highlight the university’s research, innovation, and entrepreneurship efforts. The site highlights SFU research and innovation, featuring videos of faculty and students, including Eric LeGresley, a concurrent SFU/high school student who was recently presented with a Manning Innovation Award. It also includes a slideshow of the SFU facilities built through the Knowledge Infrastructure Program. This was part of a larger Association of Universities and Colleges of Canada (AUCC) initiative to demonstrate the value of investment in education and innovation.

SFU Participation in International Research Project on Seniors’ Health

Andrew Sixsmith of SFU’s Gerontology Research Centre is one of the researchers involved in a $730K international research project funded under the European Research Area on Aging, Europe’s first joint research program in aging. Entitled “Ambient Assistive Living Technologies for Wellness, Engagement, and Long Life,” the project aims to develop intelligent, interactive sensors for use in seniors’ residences. In addition to SFU, research partners are the Toronto Rehabilitation Institute, University of St. Andrews in the UK, and Karolinska Institute in Sweden. The Canadian contribution comes through the Canadian Institutes for Health Research (CIHR).

Innovative Neuroscience Research

The January 2013 issue of Maclean’s magazine ran a story featuring SFU engineering scientist Ryan D’Arcy and his research project using functional MRI to track the incredible recovery progress and “brain hope” of Trevor Greene. Greene is a former competitive rower and Canadian Forces captain who suffered a brain injury while serving in Afghanistan.

This past fall, several media outlets including CTV News interviewed D’Arcy on the Halifax Consciousness Scanner (HCS), which measures brain waves using EEG technology to determine a patient’s level of conscious awareness. Dr. D’Arcy founded the team that built the device while he was the lead investigator with the National Research Council Institute for Biodiagnostics in Halifax. The HCS is being developed for market by Halifax-based company Mindful Scientific Inc., where D’Arcy is Chief Scientific Officer. It is currently being tested on brain trauma patients, and could also provide insight into the more subtle effects of concussion.

Aboriginal-Related Research Updates

SFU has a long-standing history of teaching, research, and community engagement with British Columbia’s diverse Aboriginal population. The following initiatives will further the vision laid out in SFU’s Aboriginal Strategic Plan—to establish a comprehensive framework for the promotion, encouragement and support of Aboriginal research.

- SFU’s Summit research repository is increasing access to aboriginal-related research via the Indigenous Academia collection ([http://summit.sfu.ca/collection/7](http://summit.sfu.ca/collection/7)) and Department of First Nations Studies. Indigenous Academia includes the Reanimating Storywork, oral histories of First Nations Elders documented by Alannah Young-Leon, an aboriginal researcher; Watershed Authorities reports; and Land Claims issues. Dr. annie ross of the Dept. of First Nations Studies will be depositing "Making Due with Us, Justice,” oral testimony work with individuals in BC with first-hand experiences concerning social and environmental justice. She aims to make this material available for the benefit of other researchers in the field and to digitize and put into Summit her previous research on HomeLand and aboriginal peoples.
November 6, 2012 marked the official SFU opening of the CIHR Institute of Aboriginal Peoples’ Health (IAPH), headed by Dr. Malcolm King of the Mississaugas of the New Credit First Nation. Dr. King’s role with the IAPH is to support the development of an agenda aimed at improving the health and wellness of Canada's Aboriginal peoples through research, knowledge translation and capacity building. The IAPH is already a recognized world leader in identifying the health disparities of Indigenous peoples as a national priority, and facilitating its transfer to SFU from University of Alberta is a major achievement.

The SFU Indigenous Research Institute was officially launched on National Aboriginal Day, June 21st. Its acting director is Eldon Yellowhorn, an Associate Professor of Archaeology at SFU and a member of the Blackfoot Nation. The purpose of the Institute is to promote research in areas related to indigenous peoples in Canada and the global community, and to facilitate community-based projects with Indigenous partners. The Institute's members are drawn from First Nations studies; archaeology; languages; education; health sciences; geography; communication, art and technology; economics; mathematics; and psychology.

The Hakai Network for Coastal People, Ecosystems and Management hosted a research gathering on December 4th at SFU Burnaby campus. The day featured short presentations by community partners, graduate students, postdoctoral fellows, and faculty members on the Hakai Centre’s collaborative research projects, which blend academic and local First Nations community knowledge. The Hakai Network is funded by the Tula Foundation, and is under the directorship of Dr. Ken Lertzman of Resource and Environmental Management.

Dr. Marianne Ignace, Director of the SFU First Nations Language Centre, has moved to the second stage of a SSHRC Partnership grant proposal for a project that aims to engage First Nations community delegates, academic co-investigators & collaborators in First Nations language documentation and revitalization. The name of the project is "Looking Back, Looking Forward: First Nations Languages in the Twenty-First Century.”

Updates: Innovation Activities

AUTM Global Health Initiative
The AUTM Global Health Initiative aims to help university licensing managers promote global health access by structuring medical technology license clauses that “promote innovation and product development while encouraging access to essential medicines by developing countries.” SFU has endorsed these principles and is committed to incorporate these clauses in future medical technology licenses. No new applicable licenses have been executed by SFU since this endorsement.

Cruise Control App for Runners Released
Based on research showing that sound tempo can control running speed, a new app from SFU biomedical physiologist Max Donelan and PhD candidate Mark Snaterse helps runners to meet their training goals. Called Cruise Control, the app automatically selects "good running songs" from the user’s playlist and slows or quickens their tempo to keep runners on track to their pace, heart rate, or cadence targets. This technology was licensed to Wahoo Fitness with the assistance of the SFU Innovation Office.
**Bionic Power's Portable Power Technology Wins Key Defence Contracts**
SFU spinoff Bionic Power Inc., based on the portable power technology developed by Dr. Max Donelan of the SFU Locomotion Lab, has secured contracts with three key defence clients: the United States Army, the Canadian Department of Defence, and the DARPA (Defense Advanced Research Projects Agency). The US and Canadian army contracts will further enhance the PowerWalk™ energy harvesting technology, allowing soldiers to recharge battery powered devices in the field. The DARPA contract involves a collaboration with the robotics company Boston Dynamics to reduce the effort required to harvest power from walking, and to employ assistive harvesting to aid soldiers when walking downhill while carrying heavy loads. These contracts represent a significant milestone for Bionic Power, and will result in an improved product and technology with multiple applications. News of the device and its potential military applications was recently featured in the Ottawa Citizen, Vancouver Sun, and Edmonton Journal.

**SFU Entrepreneur of the Year Selected for 2013’s “The Next 36”**
Michael Cheng, co-founder of Witty Cookie, SIAT student and Venture Connection incubator client, has been selected for the 2013 The Next 36, a national initiative to transform Canada’s most promising undergraduates into top entrepreneurs. Candidates were chosen from a group of 70 finalists from 19 universities. Jessica Fan from the Beedie School of Business is an alumna of the 2012 cohort. Her award-winning Penyo Pal app was named one of Canada’s 20 hottest innovative companies at the Canadian Innovation Exchange (CIX) annual forum last November.

**SFU Spinoff Nanotech Security Granted US Parent-Patent for NOtES®**
SFU spinoff Nanotech Security Corp. (NSC), based on nanotechnology co-developed by SFU engineering science professor Bozena Kamin ska and her graduate student Clint Landrock, has secured an overarching US patent for optical nanotechnology for security and authentication. Its NOtES® security technology, which replicates light-reflective structures similar to those found in nature, also has potential applications for electronic displays, batteries, and solar cells. Filed in 2009, the patent has been assigned to SFU where it is exclusively sub-licensed to NSC.

**SFU Mentor-in-Residence Named One of Canada’s Top 10 “Mentor Rock Stars”**
Jim Derbyshire, a Mentor-in-Residence at SFU, was selected as one of Startup Canada’s “Top 10 Mentor Rock Stars” at the Canadian Mentorship Challenge during Global Entrepreneurship Week last November. Ten mentors were selected from across Canada for their contributions and volunteer work and leadership development.

**SFU Undergraduate Student Project Selected in New BC Ideas Competition**
Fusion Kitchen is a project to employ immigrant women to teach cooking classes, helping to remove barriers to employment and community connection in the process. Undergraduate students Chantelle Buffie and Sonam Swarup developed the idea under the Beedie School’s Social Entrepreneurship Accelerator Program. Fusion Kitchen has been selected to receive almost $5K in funding as one of three university project winners in the new BC Ideas competition, seeking innovative solutions to challenges facing BC communities.

**BCTIA Centre4Growth Expands to Surrey**
The SFU Surrey node of the BCTIA Centre4Growth business acceleration program was officially launched this past December to complement the University’s existing entrepreneurship programming. The City of Surrey and SFU Surrey are partners in this initiative that will generate new opportunities for engagement with local technology businesses. Surrey-based technology businesses can benefit from access to CEOs-In-Residence, extensive resources, growth workshops, business clinics, and more.

www.bctia.org/centre4growth