GBC Research Labs awarded CCI funding

A special event on February 25 at the ACCC Applied Research Symposium brought good news for research at George Brown College. The announcement, made on February 25, declared that the Natural Sciences and Engineering Research Council of Canada (NSERC) College and Community Innovation Program (CCIP) has granted funding for the GBC Research Labs proposal.

In brief, the proposal details how GBC Research Labs will develop applied research, innovation and commercialization capacity at George Brown College by directly addressing the needs of industry and community partners. Currently, our core areas of research are health & information technologies and health promotion, which are well-aligned with GBC’s Strategic Plan and the needs of these significant local sectors. Continuing and proposed projects emphasize multidisciplinary problem-solving and opportunity development for industry in our region, and investigate: health systems change management, utilization and human services; health promotion, healthy recipe creation and nutrition; medical devices, prosthetics and aids; and, prototyping for health technology development and health informatics. We conduct research in collaboration with Small and Medium-sized Enterprises (SMEs), larger companies, health care and community agencies and other research institutes. Our services help foster adoption of new devices and systems, better patient outcomes as well as adaptation and integration of new technologies/practices into health care and health promotion.

Most importantly, the CCIP funds will enable us to help faculty dedicate more time to existing and new projects, and to engage with industry partners. It will also provide for student stipends, the development of a Research Partnerships Portal and the implementation of our SME Engagement Plan. Our motivated faculty and students, various unique facilities, strong industry partnerships and leadership in applied research capacity development at the national and provincial levels position us well to strongly leverage CCI program support to further the growth of applied research at George Brown College.

We are looking forward to initiating the projects as outlined in the proposal, and continuing our capacity development for applied research in the college and the Toronto region.

Read more at: http://hdl.handle.net/10299/162

ACCC Symposium

The ACCC 2009 Applied Research Symposium: What does success look like? was held in Ottawa on 25-26 February, and featured interesting and informative presentations about the role of colleges in the R&D innovation chain. The conference focused mainly on some of the issues involved in establishing college applied research: building a research culture, intellectual property, metrics, and community-focused versus industry-focused research. A contingent of GBC faculty and staff attended the symposium.

When it comes to getting the right fit between a residual limb and a manufactured appendage, one size never fits all. Working with clinical partner Prosthetic Energy Inc., George Brown’s Orthotics/Prosthetics Department has used real socket science to make novel customized casts.

See our Spotlight: Research story on Page 2!
Staff Profile: Andrew Fraser

Andrew Fraser has a Ph.D. from McGill University in molecular developmental neuroscience, with postdoctoral work at the Montreal Neurological Institute, in the Centre for Neuronal Survival. His MBA is from Universiteit Nijenrode in the Netherlands.

Andrew put his skills and keen interest in business into action working in Venture Capital in Canada and Europe. There, he gained over eight years of experience working closely with technology companies to help them plan strategy and develop and commercialize their technologies. He specialized in evaluating and assessing new technologies, market opportunities, and competitive advantage, and negotiating financing terms.

Now, Andrew facilitates applied research activities here at GBC. As Industry Liaison and Technology Transfer Manager, he works with the Research & Innovation team and other stakeholders in refining applied research strategy. Andrew's main focus is to identify, negotiate and arrange new applied research partnership opportunities for GBC faculty and students.

Andrew not only works at George Brown College, but he is one of our students too, as he is currently aspiring to complete the Bakery Arts Certificate at GBC.

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Ontario Budget Supports Applied Research

The budget announced on March 26th by the Ontario government includes $10M, for three years, for the continuation of the Colleges Ontario Network for Industry Innovation (CONII). This represents a very favourable environment for industry-focused applied research and other avenues for accelerating innovation.

CONII is an applied research and development network comprising 10 of Ontario’s leading postsecondary institutions, including GBC. The network focuses on helping small and medium enterprises (SMEs) solve technical problems, adapt new technologies for the marketplace, and develop new or improved products and processes. Funding for programs such as CONII are excellent vehicles for what we have termed P3RD - the Public Private Partnership R&D investment required for increasing productivity.

The $10M allocation is in addition to the tax cuts for businesses and infrastructure spending to match federal money from the 2009 budget. Other highlights of the new budget include infrastructure spending for colleges and universities, and funding for skills training.

Read more at: http://hdl.handle.net/10299/161

Spotlight: Research

Socket Science

When designing an artificial leg or arm for someone who has lost a limb through injury or illness, the most critical question is the fit between the residual limb and the manmade appendage. It’s all about making the socket connection.

Supported by seed funding from GBC’s Office of Applied Research and Innovation, Professor RJ Clements, with colleagues and students in the college's Orthotics/Prosthetics Program, set out to determine whether a newer, simpler method of making the socket cast, the Wu casting technique, would provide a more accurate fit than conventional socket casts. The program is based at the college's satellite clinic, the Sunnybrook Centre for Independent Living (SCIL) at Sunnybrook Health Sciences Centre in Toronto.

The socket begins as a vase-like container that is moulded to the particular anatomy of a person's residual limb. The socket takes the weight-bearing load and must prevent the residual limb from rotating or wearing.

“Conventional casting techniques can certainly use improvement,” says Clements, “particularly since liners have been added as a consideration in socket fit.” Liners, which lock into the base of the socket, are made of soft, pliable materials and act as a buffer between the residual limb and the socket. The Wu casting method has never been tried with a socket and liner combo.

Clements and his team collaborated with industry partner Prosthetic Energy Inc., a private clinic in Scarborough, Ontario to address the research question. With the consent of the study participants, four adults from the clinic with prostheses below the knee had impressions of their limbs made three different ways. To correct for any clinician bias in assessing the results, two different prosthetics clinicians, who design and monitor prostheses for patients, made the complete series of three casts for each of the four participants—for a total of 24 trials. Each participant was healthy and already fitted with what is considered to be an ideal socket connection, with no residual limb discomfort or breakdown, and no wear on the liner.

The other two conventional casting methods tested were a pressure-pump system called an ice cast, and a vacuum method that inflates a bag around the socket prior to casting. The Wu method involves applying a bean-bag-like casing to the residual limb and liner, then placing the bag under vacuum pressure until the material in the casing goes permanently rigid, and becomes the cast. The Wu method is the only one of the three that does not require a plaster impression.

Preliminary findings with this study sample indicate that the Wu casting technique appears to produce shapes with characteristics that offer a good socket fit. The research has also given clinicians and students insight into the importance of casting technology. “The study reinforced the need,” says Clements, “for future research into better means of measuring the volume of the residual limb, which can change under different conditions and stages in a person's life.”

George Brown College's Orthotics/Prosthetics program is one of only two in Canada. Students in the program graduate with either a two-year technician's diploma or a four-year undergraduate degree as a prosthetist. Both are certified through the Canadian Board for Certification of Prosthetists and Orthotists (CBCPO). George Brown College also coordinates a two-year Clinical Methods in Orthotics/Prosthetics Program (Postgraduate) with Sunnybrook Health Sciences Centre, with associate clinics at Chedoke Rehabilitation Centre (Hamilton) and Bloorview Kids Rehab (Toronto). Amputation currently affects approximately 15,000 Canadians.

Read more at: http://hdl.handle.net/10299/159
What do you get when you combine and temper: one part traditional recipe, one talented George Brown Professor of Nutrition, one highly motivated George Brown Culinary Management Nutrition class, and one part commitment to making an impact on the health of high risk ethnic groups? The tasty answer is Professor Sobia Khan’s project: Developing Diabetic Friendly Recipes for Ethnic Populations.

Community programs throughout Canada have indicated a significant need to augment their health education and support services for ethnic populations that have an extremely high risk of developing diabetes. Lifestyle patterns, such as cooking and eating habits and exercise, are known major factors in the onset, severity and management of this chronic and debilitating disease. Almost 80% of new Canadians come from populations that are at higher risk for type 2 diabetes, including South Asian, Asian, Hispanic, Chinese and African cultures. Native Canadians (Aboriginal) are also known to be at higher risk for diabetes. While community Centers do provide nutrition education and sample menus to their clients based on the North American diet model, they lack the resources to develop culturally relevant recipes based on specific ethnic diet preferences and traditional methods of food preparation.

Professor Khan, a brilliant and innovative Dietitian, is particularly cognizant of these lifestyle factors affecting high-risk populations. She has chosen to make an impact on the community through leveraging her role as a Professor of Nutrition at George Brown College, her connection to the community, and the applied research mandate of GBC and its partners: Canadian Diabetes Association (CDA), West Toronto Diabetes Education Program (WTDEP - LAMP and Four Villages Community Health Centres) and Rexdale Community Health Centre.

In 2007, Professor Khan began this project through the Seed Funding Program of the Office of Research and Innovation at George Brown College. The mandates of this project are to reach out to ethnic communities to collect their traditional recipes, and to reformulate the recipes to make them diabetic friendly, as part of the GBC Culinary Management Nutrition Program curriculum for the Centre for Hospitality and Culinary Arts (CHCA). The methodology also includes testing the revised recipes in the target community through the community center partners to evaluate the taste of the diabetic friendly recipes, and obtaining approval and endorsement by Canadian Diabetes Association.

The primary outcome of this project is the development and testing of ethnically sensitive healthy recipes to help manage diabetes in communities with high occurrences. The first recipes to be redeveloped are South East Asian recipes. A second benefit is the creation of a useable and transferable teaching model that can be extended to various ethnicities, community programs and can be related to other chronic conditions (e.g. heart disease) in the future. The project has also enabled the exposure of culinary students (specifically in the new 2-year Culinary Management Nutrition diploma program) to nutrition related community programs and chronic conditions.

We would like to thank our partners CDA and WTDEP, and our participating community health centres for their support and collaboration.

Read more at: http://hdl.handle.net/10299/160
For more information on this project, contact:
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Note from our Vice-President Academic: Innovation Strategy

Innovation is one of the four core values on which GBC’s Academic Strategy is built. I have two favorite quotes about innovation:

1. Learning and innovation go hand in hand. The arrogance of success is to think that what you did yesterday will be sufficient for tomorrow. - William Pollard

2. There has been opposition to every innovation in the history of humanity, with the possible exception of the sword. - Benjamin Dana

Our Academic Strategy commits us to fostering a culture of risk-taking, experimentation and reflection that generates new knowledge and practices. That culture should infuse every dimension of our work – new program development, new teaching methodologies, new applications of technology and e-learning, applied research and scholarly publication. Our Office of Applied Research puts wheels under our commitment. Through it, we are investing over half a million dollars annually to engage staff and to cultivate an environment that favours cutting-edge innovation in all that we do.

I can see the results. Our 2009-10 business plans put considerable emphasis on the development of innovative capability. Every divisional plan includes activities that will help us achieve our goal of being a thought-leader in our areas of expertise, an innovator in teaching and applied research and best-in-class in the experience we give our students.

These plans lay out concrete steps to build a culture and practice of innovation that is at once bold, cutting-edge, strategic, measurable, affordable and powerful. The opportunity is particularly great in 2009 as we embark on our first major NSERC grant and on the development of our new waterfront campus.

We need to do more. In the coming year, we will launch an innovation council, increase seed funding for research, develop an innovation index that will enable us to measure, assess and quantify innovation across the College, and expand our “innovation engines” like the Institute Without Boundaries and our new Institute for Entrepreneurship and Community Innovation.

Learning and innovation go hand in hand. We will recognize and promote innovation activities, including successes and failures. We will foster a “fail fast/learn quickly” approach to recognizing and celebrating innovation. We will de-stigmatize “failure” and show by example that we need to test new ideas, learn form mistakes, and incorporate this learning into our action plans. We will recognize innovation in teaching and learning and we will work with our partners to develop practical solutions to their problems and needs.

Michael Cooke, Ph.D.
This is the second issue of our newsletter, and there is a lot of news to share! Our biggest news is our front page story of our success in obtaining first round funding in the College and Community Innovation Program (CCIP), administered by the Natural sciences and Engineering Research Council of Canada (NSERC). George Brown is one of eight colleges across the country that succeeded in the first (and highly competitive) round. This is a significant achievement, and represents the hard work and dedication of the Applied Research and Innovation team and the many faculty members we work with on a regular basis. Notable are those included in the NSERC application: Winnie Chiu, Khalid Danok, and Iris Epstein, as well as those who joined us in Ottawa for the announcement (see photo on front page).

Other exciting news is the recent Ontario Budget announcement of an additional $10M in funding over three years for the Colleges Ontario Network for Industry Innovation (CONII). This too is a significant achievement: members of CONII are top colleges across the province: Algonquin, Conestoga, Sheridan, Niagara, Humber, Fanshawe, St. Clair, Seneca, Centennial - GBC has been a partner in CONII since its inception. The new funding will allow the network to be expanded to include all Ontario colleges. Stay tuned to learn more and to find out how you can get involved. Many of our sponsored projects over the past two years have been supported - indirectly and directly - by CONII funding.

Both funds will allow us to continue to build applied research capacity across the College commensurate with our Academic Strategy, and our new Innovation Strategy. The Innovation Strategy represents GBC’s commitment to excellence in teaching and learning, applied research, and its role as a leader within the Toronto area and the sectors we serve. Please see page three for a note from our Vice-President Academic, Michael Cooke, about the Innovation Strategy.

For the time being, visit our website to learn more about the many exciting new developments. Please contact us if you have an idea you wish to explore, or if you would like to learn more about what your colleagues across the college are up to!

Robert Luke Ph.D.

Visit our applied research projects and success stories online on the George Brown searchable repository at:
archive.georgebrown.ca

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GBC achieves SSHRC Eligibility!

Any institution wishing to administer SSHRC (Social Sciences and Humanities Research Council) grants, scholarships and fellowships must submit a written institutional eligibility request. The request for GBC was approved on March 26, good news for both students and faculty.

Contact the Research office if you are interested in applying for SSHRC funding.