

## Message from the Director



Welcome to the first issue of the newsletter of GBC Research and Innovation. Three times yearly we will update you on research developments here at the College and beyond. For our first issue, we have collected a few of the many research success stories from around the College.

These are exciting times for applied research in Canada's colleges. The \$2 billion Federal Science and Technology Strategy from Budget 2007 provided a \$48 million boost to College research. This is in addition to the many other funds available to support applied research undertaken in concert with industry needs. We are working together to improve social and economic productivity in Ontario and Canada.

Over the past 18 months we have developed our applied research capabilities by creating the GBC Research Labs network. The Research Labs enable us to pursue and realize problem- or opportunity-driven solutions for industry by bringing together faculty from across all divisions with specialized facilities and research environments. Our very successful media campaign advertising research "from soup to nuts" will give you a taste of the varied research projects already underway at GBC.

Faculty and students engaged in applied research gain innovation literacy: a reflexive ability to think creatively and apply problem-solving skills to diverse and challenging issues within industrial and community contexts. Innovation literacy is a transferable skill that enables our students to be flexible innovators in the workforce. The importance we place on applied research is one more way in which we offer our graduates the skills they need not just to get a job in today's or tomorrow's work force, but also to be future innovators.

Applied research at GBC is closely linked to our Academic Strategy and Business Plan. Our focus is on developing faculty and student expertise in applied research and working with our many industry, community, and academic partners from across the research and development continuum. The GBC Research Labs provide complementary capacity to these established centres.

In the innovation-to-market cycle, GBC Research Labs have the industry connections and the expertise - from food science, to microelectronics, to health and safety - to accelerate the discovery wheel. GBC's Office of Research and Innovation operates as a single point of contact at the hub of the wheel. We deliver high returns on private and public partners' investments. For Canadian advantage. For GTA productivity. For community wellbeing.

The applied nature of the GBC Research Labs fills an important gap in the innovation-to-market cycle in the GTA region: we offer a platform for assessing the value of (technology and service) designs emerging from research and for suggesting appropriate modifications that increase potential for market success. GBC facilitates maximizing the return on investment in research, as well as the return on innovation in development activities.

We do this through our annual seed/venture funding program, and by working with faculty to identify and apply for external awards. Last year a total of \$224,883 in external funding was secured in 2007-08 for six applied research projects. The work we have done to date represents significant progress as we integrate applied research within all aspects of our curricula and across all programs at the College.

I invite you to browse through the many success stories of our work so far, and to follow up by visiting our website for more information. Through these media you can learn about what we do and how we link our faculty, students, industry, and community partners. You can also learn about the many events we sponsor for professional development in research and innovation at George Brown.

Please contact us to let us know what you think about these stories, or if you have an idea you wish to pursue.

**Robert Luke, Ph.D.**

## FROM SOUP TO NUTS



# Seed Funding for Success

## Communication Professor's Textbook Case of Training the Brain

Composition teaching—teaching community college and university students how to develop clear, analytical thinking through essay writing—has a patchwork history in Canada. In order to advance research in this little-studied area, Dr. Richard Almonte, English and Business Communication professor in the School of Business, has polled and interviewed 41 Ontario postsecondary institutions with the goal of understanding what and how composition is taught and what institutions' attitudes are toward it.

Nelson Education Ltd., the Ontario Centres of Excellence, and GBC Research and Innovation Seed Funding have supported Almonte's preliminary research.

"Composition," says Dr. Almonte, "far from being a remedial subject for students, is the defacto critical-thinking course," the bedrock of effective education at an advanced level. Employers across sectors also highly prize new graduates' ability to reason their way through problems and issues and to express themselves articulately on such matters. Dr. Almonte has discovered that two-thirds of the province's community colleges teach composition, while university composition teaching is much more difficult to evaluate. Some Ontario universities are just beginning to develop formal courses in composition, distinct from the study of English literature.

Dr. Almonte plans to develop this research further in his upcoming textbook with Nelson Education, one of the few Canadian texts on the history, evolution and pedagogy of composition teaching in the country.

Read more at:

<http://hdl.handle.net/10299/147>.

# Spotlight: Students

## The Shape of Eye Candy to Come



On the quest to develop an organic gummy candy as a healthy alternative in a sugar-glutted marketplace, Pure Fun!™ is working with food scientist Winnie Chiu in the Centre for Hospitality and Culinary Arts.

Natural tastes and colours are key for this product line, but food marketers know that candy shape is also important to a candy's appeal. That's why Mike Doell of Ross + Doell, an industrial design and brand development company hired by Pure Fun!, came to George Brown's School of Design looking for help in surveying Toronto's retail stores. The goal was to find out what's there and what might be missing shape-wise.

Supported by a GBC Proof of Principle grant, two design students, Kimberley Pereira and Amy Wong, scoured 40 Toronto candy, grocery and convenience outlets in summer 2008, amassed extensive photo footage and catalogued 200 candy shapes and their packaging. "Research is the most important part of designing," says Pereira, "and the most challenging part of this project was organizing large amounts of information."

Pereira and Wong showed their design stripes when it came to presenting the survey to Doell. The students mounted a detailed, tantalizing flash presentation, complete with interactive maps of the neighbourhoods and stores they visited, along with the relevant data. "I can't imagine having worked on the project without the students from George Brown," says Doell. "They gathered information and formulated a presentation that was both visually impactful and provided key insights for the development of our marketing strategy." For Pereira and Wong, the summer job was as close to pure fun as a design student can get.

Read more at: <http://hdl.handle.net/10299/145>

## Students Deliver High-End Results to Global Communications Company

Electrical and computer engineer professor Dr. Khalid Danok has made the educational, technological and funding connections that have put Motorola Canada on the road to commercializing a new wireless application. In 2007, Dr. Danok's third-year students in George Brown's Computer System Technology program engaged in a field project as a course requirement—"a field project likely at the highest end that our students have ever experienced," says Dr. Danok. The Ontario Centres of Excellence (OCE) Connections Program funded the research, through which final-year undergraduates work with industry partners on an industry-generated project.

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Motorola Canada specializes in broadband, embedded and wireless systems for diverse clients in health care, warehousing and retail operations. Working with a new Motorola device (a personal digital assistant, or PDA), with a Motorola engineer and with Dr. Danok's supervision and training, eight students over five months developed and demonstrated the capability of their software application design in health care and warehousing scenarios. The device connected with a server and its database, then retrieved and displayed the required data. The students also installed the server. When the students presented their PDA software simulations to Motorola Canada at their Mississauga plant, and then to OCE during a campus visit, both were markedly impressed.

Now in 2008, with his students in the post-diploma Wireless Networking Program, Dr. Danok has begun a new project, developing and demonstrating an interactive voice response (IVR) system for industry partner Canadian Computer Technology. GBC Seed Funding is supporting this project. The goal is to configure and install a complete network voice-over phone system, for example, to enable the customer to be connected directly to a computer when ordering pizza.

In the case of Dr. Danok and his students, "getting it while it's hot" seems to describe their field and their approach.

Read more at: <http://hdl.handle.net/10299/146>

## Spotlight: Research

### Professor Taras Gula Turns "Sadistics" into Statistical Literacy

How do you turn \$7,500 into \$75,000? Apart from knowing how to multiply—as Professor Taras Gula of the School of Health Information Management certainly does—it took GBC to seed-fund Gula's statistics-education project, and the Inukshuk Fund to leverage the initial investment by a factor of ten. As a result, Gula and colleagues at George Brown and York University are developing innovative math modules and online gaming to help teach statistics to those health science students who quake when they see "required" beside Introductory Statistics in their course curricula.

A graduate of the University of Waterloo in math with a statistics focus, Gula taught in the public system, at an alternative high school, before coming to George Brown. He also holds a Master's in Education from the Ontario Institute of Education of the University of Toronto (OISE/UT). As a result of his experience and his review of the research, he's learned a thing or two about how to teach math—and especially the thorn in many a student's side, commonly called "sadistics."

Fundamentally, Gula has learned that "introductory statistics courses on their own are not a proper way to teach stats to non-mathematicians." Research across disciplines shows that students think statistics course material is poorly presented and doesn't motivate them to achieve depth of understanding.

Gula teaches introductory stats to non-mathematician students aplenty at George Brown: in nursing, psychology, health information management and other health sciences. Many of them, bright students, struggle with a subject that is at the heart of research and that students must now grasp in order to take on jobs in their field and contribute to evidence-based practice in healthcare. Says Gula, "From understanding why hand washing has become official public-health policy to being able to contribute to our understanding of how a widespread phenomenon like listeria sometimes becomes deadly—these are important concerns and analytical skills for many health science students: for undergraduates and practicing professionals who must upgrade."

As a first step in making statistics accessible to students, GBC Seed funding helped Gula develop his online "statcat" prototype ([www.statcat.ca](http://www.statcat.ca)), a game-like form of learning that uses levels of skill and scenario-based case studies to help students visualize data, one of the most crucial yet difficult topics in intro stats courses. Gula surveyed his students on the usability of statcat, both form and content. Comments were largely favourable—"Some were even enthusiastic!" Gula says.

He then teamed up with colleagues and fellow introductory stats teachers, Professors Julie Gaudet in George Brown's School of Nursing and Mina D. Singh in Nursing at York University, both to expand statcat to 100 scenarios and to develop 17 new online essential math modules to complement statcat. The interactive modules will target students at the outset of their intro stats courses at both institutions. Using the modules, students will be able to review and re-review, according to their own diverse schedules and needs, core topics in math and statistics that were taught in earlier grades, like arithmetic, basic algebra and probabilities. The Inukshuk grant ("inukshuk" is Inuit for "stone man who points the way") is supporting the two-part development and expansion project over the next year.

Currently, statcat is freely available to anyone who goes to the website, just as the expanded version will be. Gula, Gaudet and Singh will also house the 17 new learning modules as a public website, hosted by George Brown, that anyone at all levels of the education system—students, teachers and professors—can use for teaching or learning.

Gula himself has already organized his intro stats course around the existing statcat scenarios. Meanwhile, the new learning modules will lead to an important applied research project. Once they're up and running, Gula wants to investigate whether they help students gain a positive appreciation for math and statistics; what the gaps are, if any, in what the modules teach; whether health science students will then be more successful in their introductory stats courses; and whether introductory stats curricula must change to reach students.

That research will need its own grant. You can be sure that Gula will aim to multiply or otherwise work math magic to enable him to advance the state of statistics curriculum and teaching for students.

Read more at: <http://hdl.handle.net/10299/143>.



# News and Events

## ePresence Webcasting

Stream, capture, and publish presentations with ease.

GBC Research & Innovation will begin **webcasting** our office's professional development workshops and Research Rounds this fall. (For a full list of upcoming events and to register, please see back panel.)

Our new website is now online. Visit us at [www.georgebrown.ca/research](http://www.georgebrown.ca/research). This site is complete with services for faculty and industry, lists of George Brown's industry partners, links to industry and government websites, and the latest research news. You can also find updates at <http://applied-research.blogspot.com/>.

The first annual report (2007) of the George Brown Research Ethics Board (REB) is now available. It is posted at [hdl.handle.net/10299/136](http://hdl.handle.net/10299/136). The research ethics policy states that any research undertaken at George Brown with human subjects and/or using George Brown equipment must minimize harm and maximize benefit. Subjects' human dignity, their right to free and informed consent, confidentiality, justice and inclusiveness must all be respected in the conduct of research.

Visit [www.georgebrown.ca/research/ethics.aspx](http://www.georgebrown.ca/research/ethics.aspx) for more information.



You may have noticed links to "handles" from some of our stories. These are permanent links to George Brown's **searchable repository of applied research projects and success stories**, online at [archive.georgebrown.ca/](http://archive.georgebrown.ca/)



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Please visit our Website at [www.georgebrown.ca/research](http://www.georgebrown.ca/research)

## Calendar

### Professional Development Workshops for Faculty:

**October 15, 2008**

#### Managing Research Budgets

Developing a budget; keeping records; communicating with funders; reporting requirements and managing your budget for the duration of your project.

**October 22, 2008**

#### Engaging Students in Applied Research

Motivating students; designing a work plan; providing positive outcomes; linking research with teaching and learning.

**November, 2008**

#### Working with Industry

Identifying key industry partners; negotiating roles; communication and how to keep the relationship going.

**December, 2008**

#### Showcasing and Publishing Research

Your options for showcasing results of applied research projects; on-line to print publications; and talks to poster presentations.

### Other Events:

**October 8 & December 17, 2008**

Office of Applied Research and Innovation's Innovation Rounds Please join one or both of these dates to learn the outcomes of our 2007 seed-funded projects. Time and Location TBA.

To book a workshop or event of interest to you, please visit the **Staff Development Calendar** at:

[www.georgebrown.ca/CalendarEvents/](http://www.georgebrown.ca/CalendarEvents/)

