



## We have a new name

We have an identity! We're calling our newsletter Bio-Matrix, a name that suggests something like a web or network. That's apt for the Golden Horseshoe Biosciences Network.

In biology, a matrix is (broadly speaking) the intercellular substance of a tissue or the substance in which fibres and cells of connective tissue are embedded.

The name suits us. We're the network that aims to spur innovations, form new ties, develop new research and investment. We hope you'll name-drop Bio-Matrix to others in the bio-sciences community.

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## American eyes are upon us

Cross-border bioscience deals are on the rise. Despite the post-9/11 fallout, the technology bubble of 2002-2003, and the lure of other technologies, foreign investment in Canadian life sciences is growing. That's good news for many entrepreneurs who have limited sources of Canadian funding to access.

Last year, almost \$500 million in venture capital from Canadian and foreign sources went to biopharma and other life-sciences investments, says the Canadian Venture Capital and Private Equity Association (CVCA). That was up 12 per cent over the prior year's level. Biopharma/life-sciences funding amounted to 29 per cent of all VC money invested in Canada in 2006.

"I can say there is growing interest by the U.S. equity community in investing in Canada," said Rick Nathan, CVCA president and managing director of Kensington Capital Partners. In general, almost one-third of VC money invested in Canada comes from foreign, principally American, sources.

That's good because there is a lack of VC funding north of the border flowing into Canadian opportunities, including bioscience firms. The CVCA says new VC money raised in Canada "dropped substantially" -- off 27 per cent last year from the \$2.2 billion raised the year before.

In addition to VC funding, there is investment by buyout funds -- those private equity giants that acquire companies. Last year, U.S. acquirers (cont'd on page 4)

## A super-lab to fight a super bug

To combat a super bug -- one increasingly resistant to drug treatments -- it takes a super-lab. That's the concept behind McMaster University's \$20-million laboratory for microbial chemical biology, a centre that aims at decoding the workings of pathogenic bacteria and finding out how bacteria 'talk' to each other.

The premise is that scientists can learn how bacteria trade genes and how they form protective biofilms to prevent antibiotics and other drugs from attacking. The promise is that such research can produce new ways of taking on resistant strains and developing new drug-like molecules to attack the vulnerabilities.

"We will be creating a facility that doesn't exist anywhere in Canada," said Dr. Gerry Wright, project leader and professor and chair of biochemistry and biomedical sciences at McMaster. "I see this as a tremendous area for us to really put McMaster on the map with this level of science. It's pretty mind-boggling. It's exciting."

So-called superbugs -- microorganisms that have the ability to withstand treatment by an antibiotic -- get the most attention today as a pressing health concern. Women's College Hospital's neo-natal ICU in Toronto was closed in early March because of an outbreak of staphylococcus aureus. In future, healthcare institutions will be asked to provide rates of methicillin-resistant staph (MRSA) or Clostridium difficile (C. difficile).

McMaster's centre marries the principles of chemistry to the study

(cont'd on page 3)



Dr. Gerry Wright  
Project Leader



## A fine wine to chew on

Like to have your wine and eat it too? That's what Vinifera for Life is all about. Chef de Cuisine Mark Walpole has taken the spent skins and seeds of grapes and turned them into flour products.

His Jordan Station company turns out four varieties of flour – Cabernet, Chardonnay, Icewine and Late Harvest – that are used to make breads and pastas.

The grape pomace is not only high in fibre but also Omega-3 and 6, and polyphenols, such as antioxidants and resveratrol that are said to have benefits in preventing heart disease and cancer.

## McMaster incubates tomorrow's jobs

For a new business, the future can seem less daunting when the trail has familiar signposts. That's the idea of an incubator centre – a facility that offers advice, legal and operational help, access to research, maybe even assistance for a start-up company heading to market.

Predictive medicine company PreMD has long passed the start-up stage. PreMD is now marketing a skin sterol test, a product that measures the amount of



Angela Chaput, Product Development Specialist and Carol Carte, Laboratory Manager

cholesterol in skin tissue as a predictive marker to possible cardiovascular disease. And it has other products in the pipeline.

Yet the public company ([www.premdinc.com](http://www.premdinc.com) -- traded on the TSX and Amex exchanges) remains in the McMaster Biosciences Incubator Centre (MBIC). It shares space with more-nascent neighbours, DC Bio and Fighting Chance. The relationship is "really a two-way street," says executive vice-president Mike Eveleigh.

"We certainly benefit by proximity to good people and good facilities . . . On the other side, we have a fourth-year (McMaster health sciences) student doing a project in our lab this year. We can give that person the structure and support assistance he requires."

PreMD can also offer help to university researchers working on recombinant virus manufacturing for vaccine purposes or to scientist-entrepreneurs going through the regulatory affairs maze. And Eveleigh is a part-time faculty member with McMaster's department of pathology too.

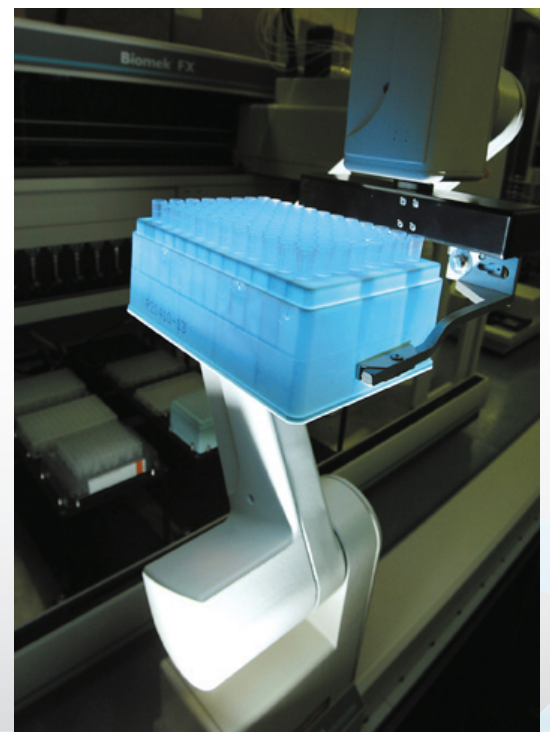
PreMD, the first tenant in MBIC, has six of its 15 employees in the Michael G. DeGroot building. The PreMD story is a good example of the symbiosis of incubator operations.

That's why MBIC is hunting for other start-ups that seek a high-end home with lots of support. Tenants not only can rely on in-house aid from McMaster, they also work alongside the Golden Horseshoe Biosciences Network.

Start-up businesses would be those "wanting to collaborate with the university or that are now (working with) some researchers" at the school, such as drug discovery firms or those in medical and assistive devices, said MBIC co-ordinator Nick Marketos.

McMaster, through the network, provides space and related equipment, business and operating services, contacts with researchers at the university, and help lining up venture capital and linking with incentive programs. GHBN can also help take discoveries and innovations to commercial reality.

McMaster offers about 7,000 square feet at \$40 per square foot a year to potential tenants. Labs can range up to 915 sq. ft. But the incubator space will grow to 50,000 sq. ft. this year when the program moves to McMaster Innovation Park.



## ■ From Greek to great collaboration

Tom Kerber was among hundreds of delegates at Hamilton's inaugural Health Research in the City forum back in January. He was keen but had few real expectations: "When I got invited I thought, 'This is Greek. What am I going to do here?'" But he sat in on two sessions on light therapy to treat cancer.

Flash forward two or three months. Now the entrepreneur and head of Kerber Applied Research is moving ahead with new opportunities and connections he made at the all-day seminar. Here's what he says now: "I made a number of contacts. It was just absolutely perfect timing. There couldn't have been a better time for that event to occur."

Kerber, who was working with LEDs in the dental field, is now teamed with the Juravinski Cancer Centre in using light therapy in oncology

treatment. Similarly, they are working with an Israeli company on anti-cancer medication that uses photodynamic therapy to go after cancer.

The Kerber story illustrates the collaboration going on across the Golden Horseshoe and how innovative research is leading to treatment solutions. At more than \$260 million in research spending, Hamilton is home to one of the top five medical research clusters in Canada.

"Collaboration," said Dr. Bill Evans, of the Juravinski centre, "is core to the future of research." Scientists from many disciplines are co-operating in their work. Now, the drive is to turn innovation to invoice, transferring top-line networking into bottom-line revenues.

Commercialization means working with the private sector, learning to become an entrepreneur, Christian Dube, of the Trillium Medical Technology Association, based in Markham, told the January forum.

While cancer has long been a 'headline' disease, the fight against obesity is gaining international attention too. Obesity, said Dr. Arya Sharma, director of the Centre for Obesity Research and Management, "is the mother of all diseases". It is informed by the very nature of culture and society.

Just as cancer has long since evolved into an interdisciplinary field, so must obesity research. Treatment and prevention must be aligned to combat this chronic syndrome, he said.

## ■ A super-lab to fight a super bug (cont'd from cover)

of biology and applies them to infectious-disease research. But the weave is broader than that, also including medicine and geography and earth sciences. Operational within the year, the institute is a prime example of the cross-disciplinary efforts that now mark modern healthcare.

"I see this as a tremendous area for us to really put McMaster on the map with this level of science," said Wright. With its leading-edge science, the laboratory's profile will allow it to seek funding and research-partnership matches around the world, he added.

The centre will be looking at chemical compounds, identifying

and engineering new molecules, as scientists attempt to find answers that may lead to new drugs to combat infectious diseases.

"I see this as a tremendous area for us to really put McMaster on the map"

The 12,500 sq. ft. laboratory – essentially, a series of interjoined units -- will have facilities that will allow investigators to perform organic syntheses of molecules,

high-throughput screening, cell biology, DNA sequencing and other top-flight research science.

It will also have a level-2 biosafety area, a centre to tackle organisms that cause infections. The laboratory will also house an informatics database of chemical genetic interactions that can be accessed anywhere in the world over the Internet.

McMaster succeeded last fall in gaining an infrastructure investment of more than \$8 million from the Canadian Foundation for Innovation. Now it is seeking public and private-sector funding.



## Brock's UN vintage

Wine research now carries a United Nations label and Brock University is part of that vintage brand.

The school's Bacchus at Brock event will take place under the auspices of the UN's educational, scientific and cultural organization (UNESCO).

UNESCO has created a chair for wine and culture, all in aid of global co-operation in vine and wine research.

Brock's three-day Bacchus conference (June 7 to 9) is part of the international exchange and collaboration under UNESCO's program, itself proposed by Brock's partner in Bacchus, the University of Burgundy in France.



## Vineland on the grow

It was a model when first created in 1906 and Vineland Research Centre remains a prototype in Canada today. Now – thanks to federal and provincial co-operation -- the hub for horticultural science and innovation is on the grow.

Queen's Park and Ottawa are investing more than \$25 million in financial and in-kind commitment to the Vineland Research and Innovations Centre Inc.

The governments have been joined by several industry partners, including Flowers Canada (Ontario) and the Niagara Peninsula Fruit and Vegetable Growers Association.

## ■ Building bridges from the ground up

The new home doesn't look like much yet – an office-tower rump within a park-in-the-making, the former home of an appliance manufacturer. But Elsie Quaite-Randall's first-floor shop is a visible sign of a new McMaster mandate: the university as economic driver.

Quaite-Randall likes the symbolism of building from the ground up. Her research contracts and intellectual property office, with a staff of 20, is the bridge between university and economy. The Longwood Road innovation park will be McMaster's factory for developing mind-capital into jobs and investment.

"We try to take what they (researchers and innovators) create and find a partner in the real world. It's like a matchmaking process," says the executive director. "I really think McMaster is trying to make things happen, to spin things out and become more

active in society (as an economic innovator)".

Technology transfer is the big mission among universities and research hospitals today. It's an imperative that in many ways is reshaping schools. McMaster is part of the C4 consortium – along with the universities of Waterloo, Guelph, and Western Ontario – that shares resources and best practices to take technology to commercial stages.

Quaite-Randall's office transfers this knowledge and capacity for McMaster, Hamilton Health Sciences, and St. Joseph's Healthcare via patents, licensing and research agreements, partnerships, and start-up companies.

A drug-testing company, for example, might use a university-developed questionnaire to validate its trial results with clinical subjects.

The native of Northern Ireland actually knew about McMaster long before she arrived. With a background in biochemistry, she knew of the university's research reach. Years later, working at the



**Elsie Quaite-Randall**  
Executive Director Office of Research Contracts & Intellectual Property (ORCIP), McMaster University

Argonne National Laboratory in Chicago, and doing a fair bit of biotech licensing, she met up with McMaster again. Hamilton, she says, "obviously was a great opportunity for me."

## ■ American eyes are upon us (cont'd from cover)

made up almost 40 per cent of the \$10.9 billion US of all disclosed buyout money going into Canadian companies, including life-sciences enterprises.

Ken Yoon, senior associate with VenGrowth Advanced Life Sciences Fund in Toronto, sees the same south-to-north trend: "My sense is we will see more cross-border deals, more capital raised."

The problem is that the money goes to fewer companies. Venture capital and similar investors are injecting larger amounts of capital but into more later-stage deals.

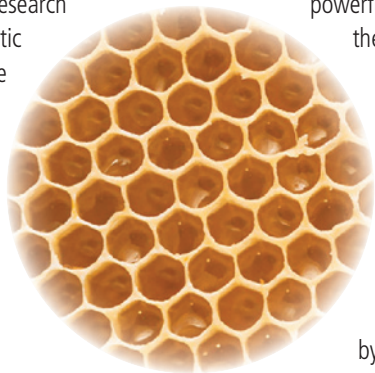
For the early-stage companies, the problem often lies in a failure to marry world-class science and

technology skills with been-there, done-that smarts. The gap from science to commercialization remains.

"Aggressivity (by Canadians) could be much higher," said Gilles Lapointe, CEO and co-founder of GeneOb Inc ([www.geneob.com](http://www.geneob.com)), a company that studies the genetic predisposition to and the treatment of obesity. "We have good facilities here in Canada and it's so cheap to do business here due to our (relatively low) research costs and (handsome) tax-writeoff credits," says Lapointe. It's "very important" to have a U.S. presence. GeneOb linked with the University of Buffalo and U.S. private-sector interests, a good step for any Canadian bio-firm.

## The sweet science of therapeutic honeys

Katrina Brudzynski is making medical advances on the backs of thousands of tiny workers. The Brock University biochemist is at the leading edge of research into the therapeutic uses of honey, the sweet substance made by bees that can heal wounds, fight infections, and help ward off injury caused by diseases.



The science isn't new. Honey has been used for thousands of years to treat wounds. But what today's science is now unlocking is which pharmacologically active compounds within the honey have the greatest antibacterial and disease-fighting efficacy.

Brudzynski isn't shy in saying that Canadian honeys – largely derived from buckwheat, clover, and blackberry sources – are showing powerful promise as therapeutic agents.

She believes that home-grown honeys are more potent than those now being sold internationally by Australian and New Zealand companies.

The Canadian Honey Council is helping to fund her research into developing honey with sufficient purity standards to gain medical-grade approval.

"Wound treatment is a huge business at the moment," she says. "Surgical wounds can become

infected and honeys are used in incisional wounds. They can be used on abscesses and in problems with C-sections."

Brudzynski has studied the clinical applications of honey in both cancer and diabetes research. For now, however, she is looking at honey's components.

Hydrogen peroxide levels in honey have significant antibacterial activity. She hopes to identify the efficacy of other compounds, such as aromatic and phenolic acids, and is seeking clinical trials with contaminant-free, medical-grade therapeutic honey.

Brudzynski would also like to see further research into honey's use against methicillin-resistant staphylococcus aureus, also known as a so-called superbug.



## Dine on great ideas

Share a sandwich, share an idea. The new lunchtime 'Interact series' is the place for it as we draw people from all sorts of research backgrounds together.

Get to know each other and trade information. We'll offer key speakers who are experts in their fields within the Golden Horseshoe biosciences community.

Join us for lunch and refreshments in the coming months! If you want to hold an informative lunch, this is your time slot – just let us know!

## Sign on as a partner with GHBN

Over the past year, the Golden Horseshoe Biosciences Network has been on a voyage of discovery. We've learned what we can do for you in the biosciences community and what you are doing as you run your companies, engage in R & D, and raise capital.

The Golden Horseshoe is rich in talent: scientists and researchers, serial entrepreneurs and first-time young inventors. Knowing that helps focus our aims and opportunities. We want to bring you programs and events that will help you, your companies and your ideas succeed.

When the leaders and stakeholders behind the network started out, the plan was to focus on life sciences biotechnology. But we know now that the capabilities in the horseshoe extend way beyond biotechnology.

That has allowed the GHBN to stretch our legs. We're a regional innovation network, a concept that demands we focus on innovation in the biosciences and convergent

technology sector. So, to bring the right expertise to your door, we're reaching out to other networks and organizations in and outside of our area.

We've created partnerships with such expert groups as MaRS, MaRS Landing, the Toronto Biotechnology Initiative, the Health Technology Exchange, and Allergen.

The word network implies different channels, perhaps a web of links radiating out. So much of bioscience involves synergistic technology, partnering with others, that it is critical to develop awareness and programming with other segments of the community.

That brings us back to the role of GHBN. If you haven't come out to one of our events yet, I strongly urge you to do so. In the coming year, we will partner with many organizations to bring you programs, events, seminars and workshops reflective of the diverse industry and academic R & D presence in the Golden Horseshoe.

## Non-drug asthma study

McMaster physicians have proven that a non-drug, minimally invasive procedure can help in controlling asthma.

Bronchial thermoplasty, using a flexible bronchoscope to reduce the amount of airway smooth muscle, can bring significant positive changes, such as decreases in asthma attacks, more asthma-free symptom days, and less medication used.

The BT device generates radio frequency-thermal energy that can be utilized in three treatment sessions under light anesthesia.

The study, led by investigators Drs. Gerard Cox (a respirologist at Firestone Institute for Respiratory Health) and John Miller (head of thoracic surgery at St. Joseph's Healthcare), has been published in the New England Journal of Medicine.

## EVENTS **inside** the Golden Horseshoe

### Innovation Cafe™ Series

Date: June 8, 2007

Time: 1:45 pm.

Location: Bacchus during the International Wine Conference - Brock University  
<http://www.brocku.ca/bacchus/>

### 2007 Imaging Series – GHBN, BioDiscovery Toronto, YORKbiotech, WGTACC, and Institute of Electrical & Electronics Engineers

#### SESSION III: Cardiac MRI

Date: June 11, 2007

Location: University of Toronto Mississauga, Faculty

Time: 6:00 p.m. - 8:00 p.m.

Speaker: Dr. Graham Wright

For more information: visit [www.wgtacc.com](http://www.wgtacc.com)

### BACCHUS at Brock – Third International Interdisciplinary Wine Conference in Niagara

Date: June 7th – 9th 2007

Location: Brock University

For more information: visit [www.brocku.ca/bacchus](http://www.brocku.ca/bacchus)

### Energy 2100 - Global Perspective on a Sustainable Future

Date: June 18-20, 2007

Location: Hamilton Convention Centre, 1 Summers Lane, Hamilton, Ontario

For more information:

visit [http://msepmcmaster.ca/epp\\_program.html](http://msepmcmaster.ca/epp_program.html)

## EVENTS **outside** the Golden Horseshoe

### Bio VentureForum East

Date: June 18-20, 2007

Location: Marriot Chateau Champlain Montreal, Quebec

For more information: visit [www.bio.org](http://www.bio.org)

### 9th Annual INET Mini-Conference – Telehealth: Supporting Diabetes Self-Care

Date: June 20, 2007

Location: Four Seasons Hotel, Toronto

For more information:

visit [www.inet-international.com](http://www.inet-international.com)

### 7th Annual TBI Golf Classic

Date: August 14, 2007

Location: Copper Creek Golf Club

Time: Sunrise Breakfast at 6:45 a.m. Shotgun Start at 7:45 a.m.

For more information: visit [www.torontobiotech.org](http://www.torontobiotech.org)

For events at MaRS Discovery District please visit [www.marsdd.com](http://www.marsdd.com)

## Contact Golden Horseshoe Biosciences Network



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