

# MaRS NEWS

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The Honourable David Emerson (centre), the federal Minister of Industry, with Dr. John Evans (left), Chair of the MaRS Board of Directors and, Dr. Ilse Treurnicht (right), newly appointed CEO of MaRS, in the Atrium of the MaRS Centre. The Minister visited with the MaRS Board and discussed strategies to improve commercialization in Canada.



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## FIRST STEPS ON MARS ONLY MONTHS AWAY

### Phase One of MaRS Centre Open for Business in May

In just a few short months, several hundreds of people will claim to be the first humans on MaRS. By the summer, the population of MaRS will swell to over one thousand. And with the official Opening Celebrations and Fall Programs starting in September, many thousands more visitors from the science and business communities from across Canada and around the world will get a glimpse of the possibilities that are in store when life on MaRS really begins!

While MaRS may not in reality be on a different planet, it does represent an important new force in Canada's innovation and commercialization landscape. MaRS is many things. It is a physical "place", with over 1.5 million square feet under renovation and construction in the heart of Toronto's downtown Discovery District. Tenants in the MaRS Centre include multi-disciplinary scientific research groups, start-up, emerging and established technology companies, leading service providers and community groups, as well as funding agencies and venture capitalists. The MaRS Centre will create both purposeful and serendipitous opportunities for this community to come together, and to

engage with the bigger commercialization marketplace.

MaRS is also a virtual "place", with its multi-purpose online portal up and running to serve a geographically dispersed community of participants. The MaRS Centre will be the catalyst for a wide range of programs and events, designed to foster higher levels of collaboration within and among the disciplines of science, business and capital.

Phase One of the MaRS Centre opens in May 2005. Almost 90% of the 700,000 square feet available has been leased to a diverse mix of tenants. These organizations include: CMDF (Canadian Medical Discoveries Fund), Heenan Blaikie LLP, The Hospital for Sick Children, Innovations Foundation (University of Toronto), Interface Biologics, MDS Inc. (MDS Sciex Division), NPS Pharmaceuticals, PricewaterhouseCoopers, RBC Technology Ventures Inc., RBC Financial Group, Transition Therapeutics, the University Health Network (UHN), UHN Business Development Office, UHN Global Ventures, Vasogen and others.

To pull together the many facets that will comprise MaRS, the Board of Directors recently appointed Dr. Ilse Treurnicht to the position of CEO. In making the announcement, Dr. John Evans, Chair of the Board

said, "Dr. Treurnicht has broad experience in supporting Canadian companies in their quest to become global market leaders. She has a deep understanding of the innovation ecosystem, and her leadership will contribute to realizing the MaRS vision."

Dr. Treurnicht joins MaRS from Primaxis Technology Ventures, one of Canada's leading seed stage venture funds in the advanced technology arena. She has been an academic, as well as an entrepreneur, and has held senior management roles in start-up companies.

## The MaRS Centre will be the catalyst for a wide range of programs and events, designed to foster higher levels of collaboration

"Canada faces major competitive pressures in the global knowledge economy. We must stay on the forefront of innovation and convert that innovation into economic performance. The MaRS Centre is anchored in one of the world's most powerful and concentrated clusters of scientific and biomedical research. I believe that MaRS will bring the leadership in science, business and capital together to create results, and make a fundamental contribution to the health and economic future of Canadians. I'm very excited to be part of this process," says Dr. Treurnicht.

A number of events to celebrate the opening of the MaRS Centre are currently being planned for September. A key event, which embodies the convergence trends in science, is the joint opening symposium on Computational and Chemical Biology organized by the Terrence Donnelly Centre for Cellular and Biomolecular Research and MaRS. At the conference, top international experts will present their research to a live audience, while state-of-the-art technology will broadcast to thousands more remote participants. The first of its kind in Canada, the Donnelly CCBR is a multi-disciplinary research institute located on the University of Toronto campus across from the MaRS Centre, and scheduled to open in the same timeframe.

The MaRS team will be engaging key stakeholders in the design of the ongoing MaRS programs as it moves towards its Opening Celebrations. "We'll be listening to our partners and the community to ensure that our programs meet their needs and offer next generation thinking as well. We want to facilitate new conversations and collaborations within and across the boundaries of the scientific, business and investment communities. MaRS also wants to support the launch and growth of strong Canadian companies. The MaRS Centre will house incu-

bation space for young companies and a resource centre for scientists, entrepreneurs, tech transfer professionals, angels and early stage investors, as well as non-resident companies. The mix of programs and support services will help make the innovation ecosystem more robust," says Dr. Treurnicht.

While the opening of the MaRS Centre and full scale programming at the facility are a couple of months away, the virtual component of MaRS is now live. The MaRS portal, [www.marsdd.com](http://www.marsdd.com), is the online destination for information, tools, and resources central to the commercialization of research and innovation. Members of both the science and business communities will find information tailored to meet specific needs. Over the next few months, the MaRS portal will continue to expand with new community building tools and applications. Development plans include microsites for Ontario's Regional Innovation Networks, enhanced features and functionality, and opportunities for personalization.

"MaRS is a bold Canadian initiative, with a bold set of objectives," says Dr. Treurnicht. "We have our virtual MaRS space up and running, and very shortly the MaRS Centre will come to life. We need to harness our immense research output in science and technology to deliver economic benefits to Canada. MaRS will create the "magic" that will make it happen."

### Biography: Dr. Ilse Treurnicht

Dr. Treurnicht joins MaRS from her position as President & CEO of Primaxis Technology Ventures Inc., a Toronto based start-up stage venture capital firm.

Prior to joining Primaxis, Dr. Treurnicht was an entrepreneur with senior management roles in a number of start-up companies. She has been involved in the commercialization of a variety of technologies, ranging from materials to environmental products, medical devices and consumer products. In the process, she has worked with small and large companies, academic inventors and university technology transfer offices, as well as government research organizations. She currently serves as a Director of MaRS, Primaxis Technology Ventures, BTI Photonic Systems, Optimizer Photonics, the Toronto Venture Group (TVG), the Ontario Centres of Excellence (OCE Inc.) and the Canadian Institute for Advanced Research (CIAR).

Dr. Treurnicht received both her B.Sc. Honours and M.Sc. degrees cum laude from the University of Stellenbosch in South Africa. She earned a doctorate in chemistry at Oxford University in the United Kingdom, where she was a Rhodes Scholar, and conducted postdoctoral research at the University of Western Ontario.

### MaRS Opening Countdown

February 15, 2005

- MaRS portal, [www.marsdd.com](http://www.marsdd.com), is live

May 1, 2005

- Phase One of MaRS Centre open for business

Summer, 2005

- MaRS Collaboration Centre opens

September to December, 2005

- MaRS Opening Celebrations and programs underway

2008

- Phase Two of MaRS Centre opens

## MaRS Tenant Luncheon



In January, tenants of MaRS Centre attended an information session on moving in presented by the MaRS Property Management and Real Estate teams. A luncheon followed with the opportunity to meet Dr. Ilse Treurnicht, new MaRS CEO.

## MaRS Incubator for Biotech and IT Companies - 55% Leased

- 42 Private Outfitted Wet Labs (gas, R.O. water, vacuum, fume hood, benching, MillQ, autoclave, centrifuge, warm room, cold room, ice, biowaste, glass cleaning)
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- Business services available including accounting, payroll, IT
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For more information visit, [www.marsdd.com/incubator/](http://www.marsdd.com/incubator/) or contact Colin Ross at 416-977-9190 ext. 264, or [cross@marsdd.com](mailto:cross@marsdd.com)



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# BIOINFORMATICS AND COMPUTATIONAL BIOLOGY TAKES RESEARCH CENTRE-STAGE

## Cross-disciplinary studies abounding in Ontario

The Terrence Donnelly Centre for Cellular and Biomolecular Research (Donnelly CCBR) at the University of Toronto will be the first of its kind in Canada, allowing scientists from a wide range of disciplines to collaborate as they explore the roles that genes play in health and disease. Scheduled to open next September, the Centre will bring together researchers from the faculties of medicine, pharmacy, and science and applied engineering. Many projects will involve bioinformatics and computational biology, which are helping to advance genetic research and are leading to new companies and education programs in Ontario.

"The need to use computers in biology has increased within the past five years as the sequencing of human genes has provided a huge mountain of information and has led to other investigations that also are producing reams of information," says Dr. Jim Friesen, Professor Emeritus in the university's Banting and Best Department of Medical Research and a former co-director of the Donnelly CCBR.

For example, studies are trying to find out the role of genes in cells, how they make proteins, how many proteins, under what circumstances, what the proteins interact with, and a host of other details that eventually may help pinpoint the causes of diseases and help with prevention, diagnosis or treatment. This type of approach may be used in the study of almost any disease.

Bioinformatics and computational biology help to organize and make sense of the data coming out of the studies. "They are sort of two interlinked fields, bioinformatics being more shaded toward assembling the initial data, and computation aimed at using those assemblages of data to make sense of it and to get patterns out of it," says Dr. Friesen.

"Mathematicians, statisticians, biologists, even physicists and chemists, people who have a quantitative viewpoint of the world are now building into all of this biological information. They're trying to make sense of it, organizing it, collating it, looking at the interactions. From that eventually, and in fact it's even starting, people will be able to make certain predictions about how biological systems work."

For example, cancer researchers already are using a lot of this type of information to look at different kinds of cancers and to try to identify people who have a disposition for certain kinds of cancers, which then would allow the clinician to zero in on the most appropriate dosages for chemotherapy.

Years ago, researchers looked at just one gene at a time but now they look at hundreds or thousands of genes at a time with the help of computers, using them to put information from studies into organized databases and then to examine the data. Computer scientists, mathematicians, statisticians and other researchers are devising many computer tools to work with the data, including specific sets of software to try to wrinkle out the patterns and knowledge coming from all the data.

The Donnelly CCBR and MaRS are planning to have a joint symposium on bioinformatics and computational biology in the fall of 2005. "MaRS offers a really fantastic opportunity for us to try to bring together some of the computational biology and bioinformatics that kind of bridges the gap between the very basic kind of research and the more applied and clinical research," says Dr. Friesen. "For example, The Hospital for Sick Children will have its computational biol-



Students in the first graduating class with a specialization in biomedical computing at Queen's University in Kingston, Ontario. The state-of-the-art ultra sound machine in their medical imaging laboratory is being used to capture images that are then analyzed computationally.

ogy group at the MaRS Centre, and there is a possibility that others will be there too. We hope there can be a kind of access between MaRS and the Donnelly CCBR that will provide at least the conceptual backbone for bioinformatics and computational biology studies in the city."

Where does Ontario stand in these fields? "We do have some strengths for sure," says Dr. Friesen. "For example, at Mount Sinai Hospital there is the Blueprint research program headed by Christopher Hogue, which has one of the world's best databases for the interaction of proteins."

"I would say that Ontario probably has the best overall setup in Canada and that a year or two from now we will be by far the best in Canada. I think in a couple of years we are aiming to be one of the world locations for computational biology."

Bioinformatics Solutions Inc., founded in Waterloo, Ont., in 2000, develops software that has attracted customers from Europe, Japan and the United States, as well as Canada. Its products include PEAKS software for protein and peptide analysis and RAPTOR, a protein structure prediction program that received a top ranking in the international Critical Assessment of Fully Automated Structure Prediction competition in 2002.

"The world of biology is sort of transforming itself from a wet science to a dry science, moving out of the labs and into the computer world because they have to analyze so much information," says Dr. Ming Li, a computer scientist who is one of the company founders and a professor at the University of Waterloo. The University of Waterloo's undergraduate program in bioinformatics was one of the first of its kind in North America, and graduated its first students in 2004.

In Kingston, Ont., Queen's University will be graduating its first class of biomedical computing students in April, says Dr. Janice

Glasgow, a professor and Queen's Research Chair in Biomedical Computing at the School of Computing. Graduates of the four-year program will have studied the fundamentals of mathematics, statistics, chemistry, biology, molecular biology and physiology. As well as possessing advanced programming skills, they are well versed in areas such as software design, database management, artificial intelligence, computational biology and medical informatics.

"In the first class we have about 20, and in the following year there will be about 40, so it's a growing area of interest for students," Dr. Glasgow says. "They're getting a good grounding in the life sciences. They do all the basics, including biology, chemistry, biochemistry, some physiology, anatomy and genetics. They're also getting a very computational background."

"The idea is that they will have the tools and the ability to create the new software that is needed in individualized development, whether it be in research labs, pharmaceutical companies, biotech or bioinformatics companies."

The collaborative nature of bioinformatics and computational biology in Canada is also attracting researchers such as Dr. Miguel Andrade, a biochemist with a PhD in computational biology. He came to the Ottawa Health Research Institute last year after working in Germany and is now part of a stem cell research project. His group includes people with various backgrounds, such as biochemistry, biology, physics and software development.

Dr. Andrade says that when he worked in a bioinformatics group in Germany it was so large that collaboration with biologists was not a regular part of the work. "I like it here because we are working more in close collaboration with biological groups, and that's more rewarding."

## Donnelly CCBR/MaRS Scientific Symposium

September 29 - 30, 2005

The Donnelly CCBR and MaRS are organizing an international symposium on Computational and Chemical Biology to mark their joint openings. According to Dr. Brenda Andrews, the new Director of the Donnelly CCBR, and Chair, Banting and Best Dept. of Medical Research at U of T, these are relatively new areas that cross traditional disciplines and are rapidly moving to research centre-stage. "Computational biologists aim to find patterns and make sense of the floods of new data from the human genome project. Chemical biologists aim to use small molecules as probes to explore cellular pathways. Their analyses are key to the understanding of almost every research problem that we encounter today—from simple cells to clinical trials." Confirmed speakers include:

- Roger Brent, The Molecular Science Institute, Berkeley
- Drew Endy, Molecular Sciences Institute, MIT
- Jack Greenblatt, University of Toronto
- Tommi Jaakkola, MIT Computer Science and Artificial Intelligence Laboratory
- Stuart Kaufmann, The University of New Mexico
- Bernhard Palsson, The University of California, San Diego
- Eric Schadt, Rosetta Bio, Seattle
- Kevan Shokat, University of California, Berkeley
- Brent Stockwell, Columbia University
- Saeed Tavazoie, Princeton University
- Gerry Wright, McMaster University

Visit the new MaRS portal at [www.marsdd.com/donnellyccbrmars/](http://www.marsdd.com/donnellyccbrmars/) for more details.

# ONTARIO OFFERS A WEALTH OF RESOURCES FOR HIGH-TECH ENTREPRENEURS

Entrepreneurs in Ontario can take advantage of a large number of support organizations that offer assistance locally and virtually.

## Enterprise Toronto [www.enterprisetoronto.com](http://www.enterprisetoronto.com)

Enterprise Toronto conducts business seminars on a variety of topics of relevance to entrepreneurs, including legal matters, financing, and marketing; provides one-on-one consultation and advice on business development; and offers resources through libraries at the Toronto City Hall, Scarborough, North York, and Etobicoke locations. Through its web site, Enterprise Toronto offers "Ask an Expert" and discussion forums, a business directory, and local event listings.

## Ottawa Centre for Research and Innovation [www.ocri.ca](http://www.ocri.ca)

OCRI provides regular events on various topics, including government opportunity sessions, legal issues, financial information, and technology exchange programs between industry and academic institutions. Through its virtual Entrepreneurship Centre ([www.entrepreneurship.com](http://www.entrepreneurship.com)), OCRI offers online guides and workshops addressing specific topics of interest, including marketing, business development, government procurement, and financing.

## Toronto Venture Group (TVG) [www.tvg.org](http://www.tvg.org)

"Toronto-based and Ontario-focused," TVG aims to connect entrepreneurs with investors through monthly networking breakfasts, venture fairs, and seminars.

## MaRS Portal [www.marsdd.com](http://www.marsdd.com)

The MaRS portal offers tools to "Accelerate Your Business" and "Accelerate Your Science," including information about additional resources. In the coming months, new interactive capabilities will be added to the MaRS portal to connect entrepreneurs and researchers to a vibrant virtual community with world-class resources for advancing commercialization.

## Waterloo Technology Startup Network (WatStart) [www.watstart.com](http://www.watstart.com)

In collaboration with Communitech, WatStart provides "Chapter 1" and "Chapter 2" resource guides that address specific needs of high-technology businesses. WatStart also provides an online discussion forum.

## Canada-Ontario Business Service Centre (COBSC) [www.cbosc.org/ontario](http://www.cbosc.org/ontario)

The COBSC web site is home to the Interactive Business Planner, a powerful online business planning software. The COBSC also offers a myriad of other useful electronic resources, including information about marketing, taxation, regulation, financing, management and planning, technology and innovation, and exporting / importing.

## Communitech [www.communitech.ca](http://www.communitech.ca)

Located in Canada's Technology Triangle of Waterloo, Kitchener, and Cambridge, Communitech offers support to the area's entrepreneurs through networking and training events, a business accelerator, and peer-to-peer group assistance.



Enterprise Toronto conducts seminars on an extensive selection of topics, such as business plan preparation, networking tips, legal issues for small businesses and raising capital, in addition to offering a wide range of information on a drop-in basis and personal one-on-one consultations with business advisers.

## Tips from Enterprise Toronto Seminars

Enterprise Toronto organizes free seminars on a wide range of topics to help aspiring entrepreneurs and small businesses. Here are some tips from facilitators.

### Networking can lead to new contacts

Networking is important at any stage—whether a person is thinking about starting a business, in the process of launching it or already has it up and running. "Networking gives you an opportunity to meet potential clients, investors and friendly competitors who can provide you with sales, capital, lessons learned and valuable resources," says Wendy Woods, principal of Watershed Training Solutions ([www.watershedtraining.ca](http://www.watershedtraining.ca)). "You'll meet people who might be able to make your path that much easier in terms of information or contacts."

These are some suggestions that Woods discusses in her seminars:

- Go to about four networking events a month—about one a week. Select events

most likely to attract your networking targets. For example, for some people that may mean joining an association in their field. Evaluate each event afterwards, reflecting on whether or not you obtained a return on your time and your dollar investment.

- Rather than waiting to be introduced, put out your hand and introduce yourself. Approach individuals or groups of three or more. When you approach two people it often is difficult to break into their conversation.
- When talking, focus on the other person rather than yourself. Treat that person like he or she is the most important person in the room. Ask about the person's interests or business challenges and look for common ground.
- Giving is really the premise behind networking—being able to help people in any way that you can, whether it is a contact, a resource or knowledge of a networking event. Take time to think about how you can help someone and what you have to offer, because people's natural reaction when you help them is for them to want to help you back. The more you give to your network, the more you are likely to receive.

## Personality styles and communication

"Networking doesn't replace learning how to sell, and selling doesn't replace learning how to network," says Michael Ballard ([mhballard@sympatico.ca](mailto:mhballard@sympatico.ca)). "We have to do both."

His seminar about selling to different personality styles looks at four styles and traits people should be aware of to communicate more effectively. "We all use all four styles but we usually have one or two favourites and one that we don't use enough," Ballard says.

Here are some of the points he discusses in his seminars:

- **Action-based people** are eager to get started, they are competitive and they are risk-takers. When communicating with them, you don't want to be overly structured in the beginning because they just want to float an idea, throw up a trial balloon and see who salutes or shoots it down.
- Those who prefer a **relationship style** expect sincerity and co-operation. They want to see enthusiasm for what you do, but not over the top. They are into flexibil-

ity and will tire easily of someone who is very competitive. They expect answers to all their questions and will understand if you say you do not have all information at your fingertips and will get back to them. But if you do not get back to them, they will see it as an affront to them.

- People in the **planning style** are into dotting the i's and crossing the t's of the process. They are goal- and task-oriented and organized. They want to create rules and procedures before moving forward and to get a budget in place. They are sticklers for punctuality and accuracy. When dealing with them it is crucial not to stray off topic.
- People with a **questioning style** really value wisdom or intellect. They want lots of time for questions and answers. When dealing with them, you want to encourage problem solving because they see all the problems you are going to solve and create by your new technology or service. You also want to encourage independent thinking because they might come up with a different use for your product or service or a potential problem that you never thought of, even though they may not have any degrees or education in your field.

# UNIQUE GLOBAL CENTRE FOR THEORETICAL PHYSICS OPENS DOORS



The Perimeter Institute for Theoretical Physics in Waterloo, Ontario, opened last fall, is predicted to become one of the major world centres. Mike Lazaridis, president and co-CEO of Research in Motion (RIM), made a substantial donation to found the Institute. MaRS hopes to work with Perimeter Institute in making its popular science lectures even more accessible.

## Discoveries key to driving innovation

Perimeter Institute for Theoretical Physics in Waterloo, Ontario, is a uniquely independent research centre attracting scientists from around the world, with two Nobel Prize winners on its Scientific Advisory Committee. Discoveries in theoretical physics help drive innovation, according to Mike Lazaridis, founder of the Institute and president and co-CEO of Research in Motion (RIM).

He says physicists' understanding of how nature works at its most fundamental level is responsible for the technology that supports modern society, including radio, television, computers, MRIs, lasers, fibre optics, semiconductors and a whole host of other systems and devices.

Discussions about the mysteries of quantum mechanics and foundational physics fuelled his interest when he was a student at the University of Waterloo. He began to dream about creating a place where scientists could devote themselves to unlocking other forces of nature.

Lazaridis later founded RIM, and following the success of products such as its BlackBerry wireless platform, he had a chance to turn his dream into a reality.

He committed \$100-million of his personal wealth to the venture. Fellow RIM executives Doug Fregin and Jim Balsillie contributed another \$10 million each. The federal government and Province of Ontario contributed a combined total of \$55 million and the City of Waterloo participated by providing the land for the new research facility.

Perimeter Institute was officially launched in temporary quarters in the fall of 2000, and research operations began in October 2001 with a core scientific staff of nine internationally recognized scientists, expanding to 24 in just over a year. It now has 39 resident researchers on staff, including long-term researchers, postdoctoral fellows, associate members and long-term visitors.

At the official opening of the Institute's new research complex this past fall, Prime

Minister Paul Martin called it a world-class facility and said he believes that Waterloo is going to become one of the major world centres in terms of theoretical physics. He went on to state, "I think the Perimeter Institute stands for the kind of Canada we want to build."

The Institute focuses on foundational non-directed research, giving scientists the opportunity to do the kind of theoretical work that can lead to discoveries.

Einstein's legacy is a good example. This year (2005) marks the 100th anniversary of three famous publications by Einstein that helped shape 20th century physics. His theories continue to have impact on life today in more ways than many people realize. One theory about space and time now plays a role in the operation of the Global Positioning System (GPS), used to track people and vehicles.

Einstein's theories showed that 'time' is relative and that it is affected by both gravity and motion. For example, time moves more slowly for someone who is travelling at great speed compared to someone standing still. Today, this information is crucial to the design and proper functioning of the Global Positioning System. Clocks onboard orbiting satellites in space must compensate for a different rate of time down on the earth in order to accurately locate people and vehicles.

So what other forces and mysteries of nature are out there? Researchers at Perimeter Institute are trying to find that out on several fronts including superstring theory, foundations of quantum theory, quantum gravity and quantum information theory - a discipline that brings the mysterious, quirky nature of atoms and subatomic particles together with the ideas underlying computer science. Discoveries in some of these areas are already yielding results in the promising world of quantum computing and quantum cryptography.

Quantum cryptography is a form of communication that, by its very nature, is totally secure. Currently, when you send e-mails over the internet, it's technically possible for others to eavesdrop without being detected. Quantum cryptography, on the

other hand, uses weird quantum properties of our universe that make it impossible for anyone to snoop without being found out. That's why many people are looking toward the quantum world for the next major form of secure communications - not just for personal internet messages but also for governments and businesses who want absolute security.

The Institute's Scientific Advisory Committee includes Frank Wilczek, the 2004 Nobel Prize winner in physics, and Sir Anthony Leggett, the 2003 winner. The resident researchers on staff come from Canada, the United States, Britain, France, Spain, Germany, Brazil and other parts of the world.

Howard Burton, Perimeter's Executive Director, says the Institute attracts international scientists because of the research climate and supporting environment and opportunity to focus on their particular area of research at the highest possible level.

He adds that the Institute takes a collaborative rather than competitive approach to partnerships with the surrounding academic community and research universities across the country to help develop, attract and keep top talent. It has signed memoranda of understanding with 29 universities and institutions in the country, such as the University of Waterloo, Wilfrid Laurier University, the

University of Toronto, York University, the University of Guelph, Queen's University, Laurentian University, the University of British Columbia and Dalhousie University.

The Institute's newly built facility is full of creative workspaces for theoretical research. Scientists have quiet private offices with floor-to-ceiling blackboards for their calculations and a wall with floor-to-ceiling glass overlooking Silver Lake. There are also informal meeting areas and lounges on every floor with coffeemakers, wood-burning fireplaces and comfortable furniture, so that researchers can get together to chat, compare notes, debate and exchange information. Other features include a two storey library, lecture theatre and two seminar rooms.

In addition to its research operations, the Institute offers several outreach programs that connect with the general public, students and teachers. For the public, there are monthly lectures on various topics from top scientists who make abstract ideas accessible in easy-to-understand terms. These talks regularly draw audiences of 500 people or more. The free Public Lectures are held on the first Wednesday of each month. In addition, the Institute offers informal 'Black Hole' drop in sessions on the first Saturday of each month. Everyone is free to stop by and, fuelled by coffee and questions, take part in wide ranging discussions with Perimeter's experts.

For students, the Institute offers in-class presentations right across the country. Interactive talks, complete with powerpoint animations, inspire students to the mysteries and marvels of space, time and matter. The Institute also offers a two-week summer camp for select high school students from across Canada and around the world. They come to the Institute in Waterloo and work closely with the leading scientists in a mentorship program. There are also workshops for teachers - providing new ways to reach students with cutting-edge ideas. The teacher workshops are offered on-location across North America. The Institute also provides an intense week long version in Waterloo during the summer.

"The teacher, student and public outreach programs are extremely important to Perimeter," says John Matlock, Director of Communications. "We work very aggressively at making our programs accessible and understandable so that everyone, especially younger generations of people, appreciate the role science plays in society."

More information about the Institute and its programs is available on its Web site, [www.perimeterinstitute.ca](http://www.perimeterinstitute.ca)

## MaRS HOTELLING SPACE FOR REGIONS

MARS CENTRE WILL BE OFFERING HOTELLING OFFICE SPACE FOR PARTNER ORGANIZATIONS ACROSS ONTARIO.

# INTERFACE BIOLOGICS - STRATEGY ON COURSE WITH \$10-MILLION SERIES A EQUITY FINANCING

## One of the largest financings in Canadian medical device sector in 2004

Toronto-based Interface Biologics raised \$10-million in Series A equity financing this past fall shortly before the third anniversary of its founding. How did the therapeutic biomaterials company raise this much so quickly, after starting with \$1 million and receiving another \$1 million a year later? Its story includes development of three innovative technologies to enhance medical devices and making strategic choices at an early stage.

The technologies are from the laboratory of Dr. Paul Santerre, now the company's president and Chief Scientific Officer, and a full professor and associate dean of research in the Faculty of Dentistry at the University of Toronto (cross-appointed between the faculty and the Institute for Biomaterials and Biomedical Engineering). The core areas of his lab are drug delivery and biodegradation, studying and taking advantage of the body's natural process by which cells degrade polymeric biomaterials. The body sees medical devices, such as catheters or cardiovascular stents, as foreign objects that need to

Sciences Fund. "There are very few biomaterials that offer powerful value added features for the medical device market yet simultaneously possess extremely flexible manufacturing attributes."

Interface plans to use the raise mainly on its product development plan, working on commercializing its proprietary products and getting them into clinics. It is a spin-out company of the University of Toronto's Innovations Foundation, established to help researchers capitalize on opportunities in a variety of technologies, and Materials and Manufacturing Ontario (MMO), one of the Ontario Centres of Excellence working to make connections between university research and the needs of industry in the province.

Dr. Santerre says three technologies were presented in a pitch to Genesys for seed investment in 2001, and seeing the synergy and common theme between them—biodegradation and drug delivery—Genesys suggested taking all three to create a company that basically would have more than a one-trick pony.

"I think the bundled technology concept was one very crucial and important aspect of the company's success over the last

enabling drug/device combination products, to work better inside the body, was an area of high growth potential, says Kelly Holman, managing director of Genesys Capital Partners. As founding investor, it provided \$1 million, then decided to invest another \$1 million a year later. Genesys wanted to help Interface continue on the path that the company developed over the first 12 months. "It made some great strides but they needed a bit more capital to show the value of the technology with some preliminary in vivo work," says Holman, who is acting CEO of Interface.

Dr. Santerre says another key element contributing to the company's progress is the people involved, the individuals and the partners. Interface chose to show some customer validation of its technologies by partnering earlier than usual, says Mark Steedman, director of business development. The company decided to pursue this strategy because the suite of technologies was mature enough, and had a lot of ready-made features that would allow customers to enhance their existing products at a relatively low cost.

To help deliver drugs on devices and protect the devices, Interface is developing

were making it amenable and to fit within the therapeutic characteristics, but also demonstrated the desired mechanical characteristics of the device," he says.

"We have a variety of agreements. Some of them are more advanced than others. But we do have paying customers. We have customers who are interested in utilizing the technology in a variety of applications. We have customers who have in-licensed various aspects of the technology. As part of our commercialization strategy we're flexible in working with these companies for the benefit of both parties."

The strategic partners showed a lot of interest in participating in the equity round with Interface, and this in turn attracted interest from the venture capital community in the U.S. But interest in Canada was high, too.

"The Series A round was oversubscribed, so we had to ask groups to take a step back in order to achieve a balance between dilution and ownership," Steedman says. "We topped up around the \$10-million mark, which was at our highest attainable level."

Earlier in the game, Interface participated in financing forums such as BioNorth in Ottawa and BioFinance in Toronto. Making such presentations helped Steedman to focus on the business aspects of why Interface thought it could be competitive and could address some of the interesting aspects of the market.

One of the challenges facing Interface at the beginning was trying to zero in on a particular target market. "The technology was fairly broad and fairly new and could be applied in a lot of different areas," Steedman says. "Initially, we were trying to be everything to everybody, and I think that was the wrong approach."

The company quickly focused on what they thought would be a good niche market for it. The realm of tissue engineering and regenerative medicine was contemplated but it was found that the market was about 10 to 15 years away. "We had to tack a little bit and just focus on existing products in existing markets and how we could better refine those, rather than focus in on the true longterm vision of the company," says Steedman.

One of the first technologies that Interface acquired from Dr. Santerre's lab is a molecule called surface modifying macromolecule (SMM), used for additives that can be blended into the base polymer of a device to help shield the surface and help prevent cells from taking strong footholds on the polymer material—somewhat like a non-stick shield on a Teflon frying pan.

The initial ideas for the SMM technology, now patented as Endexo, evolved during Dr. Santerre's work at the University of Ottawa Heart Institute, which he joined in 1990 as manager for the materials packaging lab in Canada's first foray into a total artificial heart development program. "I think my work there started shaping a lot of the attitudes as to how I perceived developing a research program in connection with an industrial element in it," he says. "I also got a real quick grasp of the problems clinicians were facing."

A few years later he moved to the University of Toronto. "I took that opportunity because Toronto was the centre of the world in terms of biomaterials in Canada as well as being considered one of the top centres in North America," says Dr. Santerre. "It truly is unique, not just



President and Chief Scientific Officer, Dr. Paul Santerre (left), and Mark Steedman, Director of Business Development (right), of Interface Biologics, a therapeutic biomaterials company, have been able to attract investors successfully by making key strategic decisions at an early stage of the company's life. Interface will be a tenant of the MaRS Incubator.

be eliminated. As a result of the research, the company has technologies to help minimize the body's ability to attack and degrade devices and to help deliver therapeutic drugs that enhance healing in combination with devices.

The \$10-million financing, one of the largest financings in the Canadian medical device sector in 2004, was co-led by VenGrowth Capital Partners and the Business Development Bank of Canada. Founding investor, Genesys Capital Partners also participated through the New Generation Biotech Funds.

"We feel that Interface is unique in the field of biomaterials," said Jeff Courtney, VenGrowth general partner and a lead manager of the VenGrowth Advanced Life

three years," he says. "This gave us a lot more versatility on what we could do and what we could sell to our clients, partners and investors."

Dr. Santerre says another key reason for the company's progress was "patient capital." Money to start the company came from the Discovery District Biotechnology Fund, which invests in early-stage biotech opportunities affiliated with the University of Toronto and the major research institutes and hospitals. Genesys manages and advises the fund. "It filled in the gap between the very small amounts of research grants and the larger amounts of money that come from typical investors such as VenGrowth," he says.

Genesys believed that technology

a suite of platforms at the nano level and enabling its additives to be part of the material pre-processing. The company has been working with some of the top medical device manufacturers in the United States to get its technologies into their existing products for established markets. "In addition to our out-licensing strategy, we are developing proprietary de novo products in two franchise areas - cardiovascular disease and urological indications," says Steedman.

To help gain customer validation, Interface had prototypes made using the manufacturing processes of partners. "They have very fixed costs and fixed processes that you need to adhere to, and we were able to show, not only how well we

# KEY VENTURE CAPITAL TRENDS

because it has about 20 investigators doing biomaterials-related work, but its biggest jewel is the engineering and scientists' proximity to the hospitals. There was no shortage of surgeons and clinicians with problems for me to be able to go to interact and do work with, so I saw it as a really big growth opportunity."

He continued his collaboration with the Heart Institute, kept working on the development of the SMM technology and started new collaborations in Toronto, including one with The Hospital for Sick Children. Ideas for the concepts of the other two technologies evolved.

Kinesyx is an extension of the Endexo technology, using the additives to help carry drugs or other biological agents to the surface of medical devices. For example, they may be used for delivery of anti-proliferative drugs, on vascular stents to help prevent a rapid regrowth of tissues that can cause the artery to become blocked again.

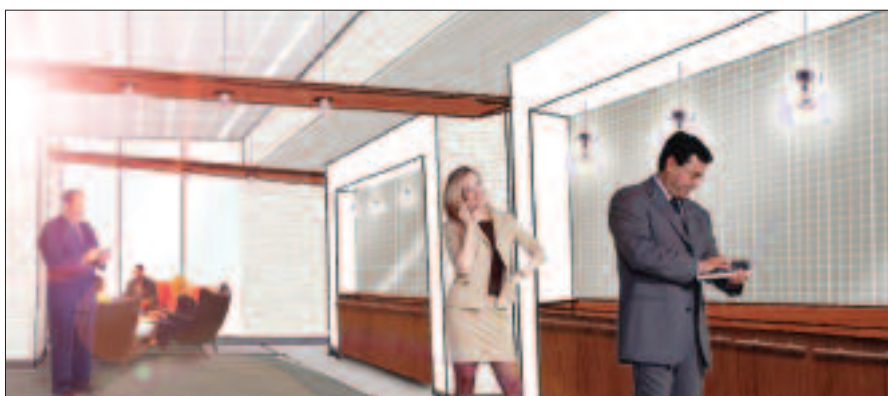
The Epidel technology involves antimicrobial drug polymers, using antibiotics as building blocks in polymers for devices and using the body's response to infection and foreign objects to help deliver the drugs as needed, via devices. The drug polymers can be used in forming devices or as a coating on devices, such as dialysis catheters made of plastic, which attracts bacteria that can result in infections almost impossible to eliminate with oral or injected antibiotics. "We started thinking about ideas of how to eliminate these bacteria off these tubes that are being placed into patients all

across the country and the world," says Dr. Santerre. "So we said what if we design our polymer, our plastic, out of the drug itself."

"The greater the infection, the greater the inflammation, the more polymer would be degraded, the more drug would be released, the more kill of bacteria. Then, the bacteria would be knocked off, inflammation would subside, polymer degradation would stop and then your polymer would be there ready for the next time it got challenged by bacteria."

Dr. Santerre's University of Toronto lab, which now includes about 15 people, is continuing to work with Interface. Provincial and federal agencies, including MMO, the Canadian Institutes of Health Research and the National Sciences and Engineering Research Council, and industry grants have formed his funding basis, which over the past 10 years has ranged between about \$400,000 and \$800,000 a year and has allowed the funding of his research group.

Dr. Santerre says organizations such as MMO helped expose him to other valuable resources, including people who helped him learn more about patenting and making connections with industry, which helped advance his lab's work on the concepts leading to the technologies now acquired by Interface. He adds that timing and luck also have been elements in the company's success. "The timing of the concept of merging the pharmaceutical industry and medical device field together was a perfect story, a good one to sell and one that made a lot of business sense to investors who listened to the story."



## MaRS Collaboration Centre - Open for Business Summer 2005

Much of the work of the creative economy takes place in large rooms filled with innovative people sharing ideas. The MaRS Collaboration Centre is a high-tech auditorium with seating for 350 surrounded by flexibly configured break-out rooms, all meticulously designed to provide the multi-media stage upon which MaRS-style collaboration occurs.

Ideally suited for hosting a wide variety of events:

- Academic and business conferences (up to 350 people)
- Trade shows
- Research and educational activities
- Collaboration activities
- Investor relations and corporate events
- Networking events
- Other multimedia events
- Award events, receptions and small banquets.

Key features and amenities:

- Flexible, multi-purpose rooms
- 1 large auditorium (350 people maximum capacity) with partition
- 2 seminar rooms for medium groups (30-75 people)
- 3 breakout meeting rooms (including boardrooms)
- Superior acoustics and lighting
- Quality, attractive and comfortable furnishings
- Standard conferencing equipment such as flip charts and white boards.

Superior "plug and play" technology:

- Audio-video equipment
- Wireless access
- Carrier grade infrastructure and Internet access
- In-house highly trained audio visual staff.

Broad suite of advanced services:

- State-of-the-art video conferencing suite
- Multi-point collaboration
- Webcasting of events and archiving for future use
- Capability to virtually link to remote sites globally
- Capability to do television broadcast
- Interactive white-boarding environment over existing local or networked applications
- Advanced visualization technologies and 3D immersive environment.

MaRS reception space:

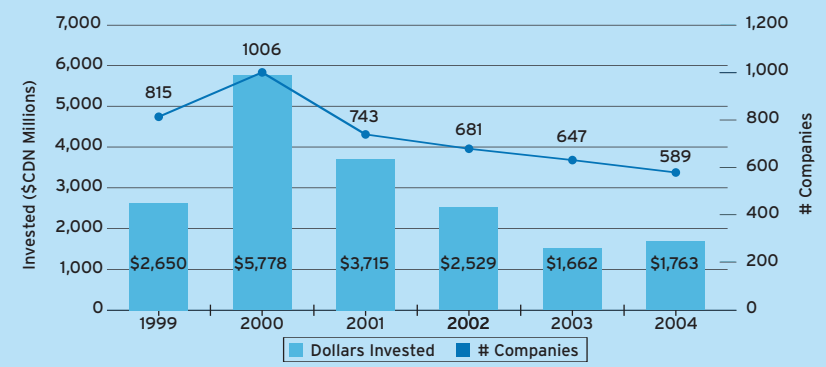
- In addition to the Collaboration Centre, the MaRS Atrium is available for receptions to the public.

Full catering services

To book space, visit our new MaRS portal at [www.marsdd.com/collaboration/](http://www.marsdd.com/collaboration/), or please contact Nina Chagnon, Director, Business Development at 416-977-9190 ext. 230 or [nchagnon@marsdd.com](mailto:nchagnon@marsdd.com).

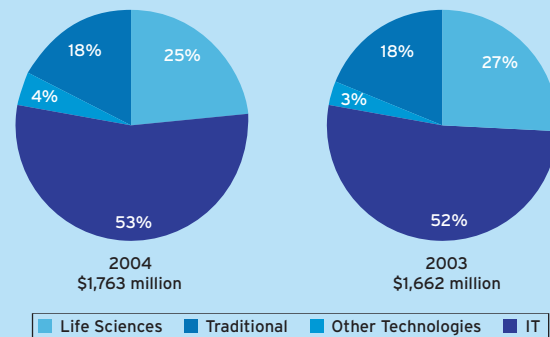
## VC Disbursements Up, But Going to Fewer Companies

VC Investment Activity in Canada



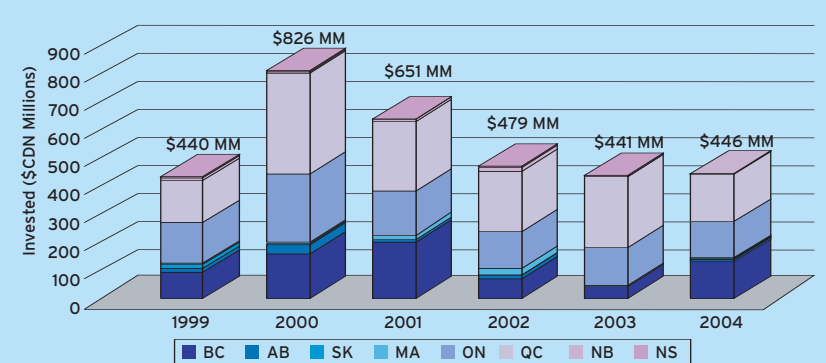
## Life Sciences Remain Stable in 2004

Amount Invested by Sector in Canada



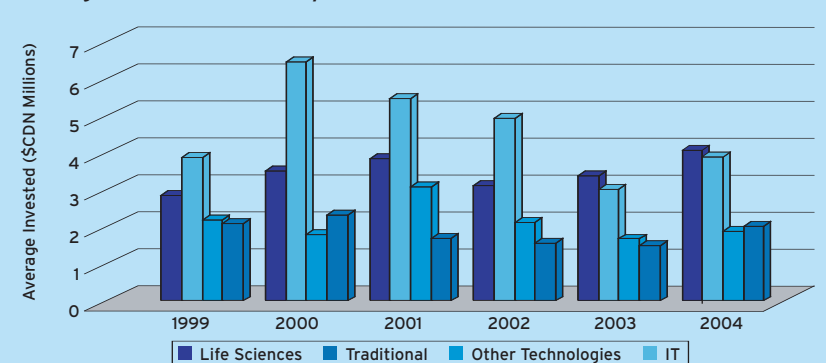
## Québec, Ontario and BC Capture Bulk of Life Sciences Disbursements

Life Science Disbursements by Region



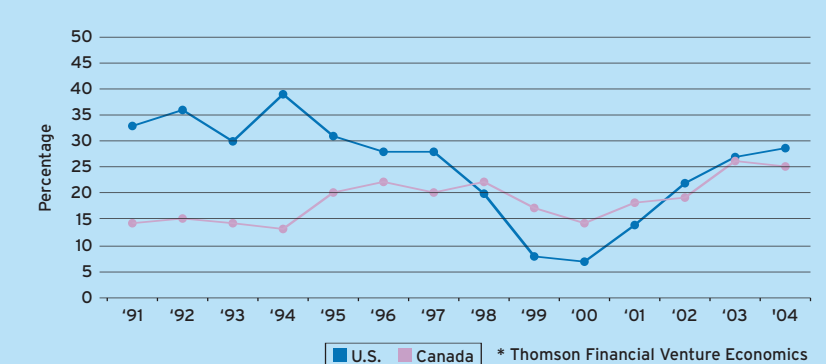
## Several Large VC Financings Drive Up Average Life Sciences Deal Size

Average Dollars Invested by Sector in Canada



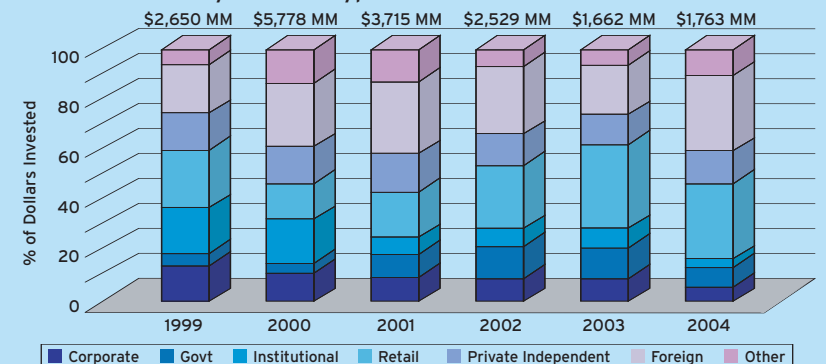
## U.S. Continues To Ramp Up Life Sciences' Share

Dollars Invested in Life Sciences in Canada and the U.S.\* as % Total



## U.S. VC Funds Important Players in Canadian Market

Dollars Invested by Investor Type in Canada



Source: Macdonald & Associates Limited

## MaRS EVENTS

On October 22nd, MaRS hosted its Workshop Series event, Commercialization of Your Invention: Alternatives and Trends in Intellectual Property for ICT and Biotech, presented in conjunction with the Centre for Innovation Law and Policy. On November 23rd, Dr. Julia Levy, co-founder and Executive Chair, Scientific Advisory Board of QLT Inc., was our guest speaker at the MaRS Entrepreneur Series event. View both presentations at [www.marsdd.com/portal/desktop/explore/liveArchive.jsp](http://www.marsdd.com/portal/desktop/explore/liveArchive.jsp)



Panel of speakers: Moderator, Rajen Akalu, Centre for Innovation Law & Policy, Andrea Rush, Heenan Blaikie LLP, Bradley Limpert, Gowling Lafleur Henderson LLP, and Geoffrey Taber, Osler, Hoskin & Harcourt LLP.



Presenter Dr. Julia Levy, co-founder and Executive Chair, Scientific Advisory Board, QLT Inc., and Niclas Stiernholm, Trillium Therapeutics.

## INTRODUCING THE NEW MaRS PORTAL



[www.marsdd.com](http://www.marsdd.com)

MaRSNEWS welcomes any contributions to or feedback on our newsletter at [info@marsdd.com](mailto:info@marsdd.com)

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